

UNDP / MNRE initiative

Enhancing Access to Clean Energy

INCEPTION WORKSHOP PROCEEDINGS



New Delhi, December 23, 2009

Prepared by



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INTERNATIONAL
INDIA

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Organized by



United Nations
Development Programme



Ministry of New and
Renewable Energy

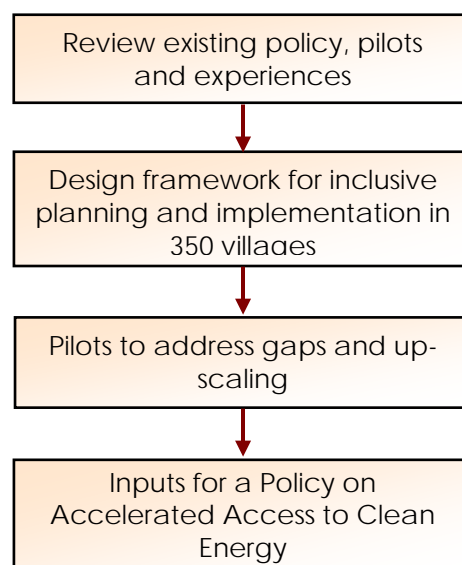
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1.0 BACKGROUND

Government of India and UNDP has initiated a programme entitled ‘**Supporting national development objectives with co-benefits of mitigating climate change**’. This initiative aims to support the Government of India’s efforts to fulfil national commitments under the UN Framework Convention on Climate Change and the Kyoto Protocol. The project proposes to support national efforts to reduce GHGs by focusing on the following themes– (i) energy efficiency improvements in select energy intensive sectors (ii) enhanced access to clean energy, (iii) leveraging environmental finance and (iv) knowledge sharing. Ministry of New and Renewable Energy (MNRE) is the implementing partner for the component of the project dealing with ‘enhanced access to clean energy’. This note provides some selected details of this component of the UNDP project.

Access to clean energy is an important ingredient of any energy and development policy with a direct bearing for GHG mitigation. Efforts would be undertaken under the project for direct interventions towards accelerated access to energy services particularly for increasing livelihoods of the poor and marginalized in *at least 35 remote villages* in at least seven UNDAF states (based on prominence of the energy access issues). As access must be complemented by quality of energy services, the project will also demonstrate mechanisms for management of energy/electricity at the district level. The various elements under the access to clean energy components are depicted in the diagram below.



In order to accomplish the objectives as highlighted above, the following specific actions are proposed to be carried out.

➤ ***Design a framework to address gaps and up-scale clean energy technologies***

Based on a review of existing policies, schemes and programmes, a feasible framework for up-scaling clean energy technology intervention in the identified districts in the relevant states will be designed. The state nodal agencies (SNAs) will be involved in collating the experiences at the grass roots and will be the link with national level actions.

➤ ***Support to upscale implementation***

The project will up-scale implementation through provision of technology packages, strengthening supply services (manufacturer development), demand development (by facilitating livelihoods), awareness, capacity building and skill development. The project activities will be part of and get amalgamated with district energy plans.

➤ ***Development of National strategy for “Accelerated clean energy access”***

The learning will serve as inputs to the process for developing a national strategy for “Accelerated clean rural energy access”.

➤ ***Strategic partnerships to leverage environmental financing***

Possibilities will be explored for leveraging local level finances and strategic partnerships for climate change relevant initiatives.

➤ ***Knowledge sharing platforms and networking***

The project will provide inputs for environmental policy and climate change policy regimes through (a) strengthening database on mitigation and vulnerabilities, (b) providing a platform for discussion on climate issues, (c) supporting joint partnerships and activities aimed at knowledge sharing within different stakeholders.

The following concrete deliverables are expected from the project.

- Rural Energy Access Advisory committee formed and current scenario reviewed,
- Urja Sanghathan formulated to build in grass root feedback to the activities in participating districts,
- Capacity building of Urja Sanghathan and training of trainers for rural franchisee,
- Mainstream modern clean energy devices for meeting thermal applications in selected areas for the end uses of both domestic and enterprises,
- Energy Efficiency, Electricity generation and distribution for 350 rural villages,

- Establishment of criteria for Renewable Energy Service Company (RESCO) as viable business model,
- Demonstrating energy efficiency in villages,
- Support actions to reduce Transmission & Distribution losses,
- Developing communication strategy to disseminate the learning,
- A national policy to accelerate “Access to clean energy” developed,
- Partnerships and strategies explored, and
- Inputs provided for environmental policy and national as well at international climate policy regimes

In order to sensitize key stakeholders and to solicit feedbacks based on their past learnings an inception workshop was organized in ‘Casurina’ at India Habitat Center, Lodhi Road, New Delhi on 23rd December 2009. The workshop was organized with the following specific objectives:

- Discuss the learnings and past experiences of the NGO’s.
- Review of the existing policies and programs for upscaling clean energy technology interventions and
- To draw up a strategy and action plan for accelerating access to clean energy at grassroot levels across India.

The list of the participants is provided at ***Annexure 1***.

2.0 INAUGURAL SESSION

The workshop began with the welcome address by Mr. K.P. Sukumaran, Advisor, Ministry of New & Renewable Energy. He informed the participants about Ministry’s objective behind organizing the workshop. He encouraged the participants to share their learnings and experiences from the past renewable energy projects and to provide feedback on the existing policies and programs for upscaling clean energy technology interventions so that a realistic strategy and action plan could be evolved.

Dr. Preeti Soni, Assistant Country Director, United Nation Development Program (UNDP) apprised the participants with the background and objectives of the project. She informed them about the proposed strategy and focus states under the project and emphasized upon the need for participation of grassroots level NGOs in the proposed initiative.

Mr. Deepak Gupta, Secretary, Ministry of New & Renewable Energy gave the inaugural address. He emphasized that access to electricity is vital for the economic development of any country. But in spite of the overall development that has taken place, the power sector has been under constant pressure to bridge the gap between

supply and demand and we continue to face power shortages both in terms of peak demand and energy, with no respite in sight. We still need to go a long way to improve rural energy access in terms of household electrification. He said that access to energy is not an end in itself – but essential means of achieving development – sustainable development, acting as a driver for transportation, communications, information technology, level of comfort, and most importantly for a developing country like India, as a means of improving livelihood opportunities, and social evolution for the vast majority of the population deprived of energy services. He said that Ministry’s policy has been successful in creating a fairly large and diversified manufacturing base, and an infrastructure (technology-support groups and facilities, as well as the nodal agencies) to support Renewable Energy Technology (RET) design, development, testing, and deployment. However, in spite of the proactive stand taken by the Ministry, and the achievements made so far, renewable energy still remains far from the energy mainstream. He said that several barriers impede commercialization of RETs and in the development of commercially viable small-and-medium scale enterprises (SMEs) that harness these technologies and emphasized that MNRE is looking at active support of the grassroots NGOs for creating awareness on renewable energy and its linkage with livelihood, environment, health etc. along with helping in creating technological choices and management.

The inaugural session ended with a Vote of Thanks by Mr. V.K. Jain, Director, Ministry of New & Renewable Energy. On behalf of MNRE and UNDP he thanked Mr. Deepak Gupta, Secretary, MNRE, Ms Gauri Singh, Joint Secretary, MNRE, Dr. Preeti Soni, Assistant Country Director, UNDP, Mr K. P. Sukumaran for their support and encouragement towards this project. He thanked the speakers and participants for sharing their valuable experiences. In the end, he thanked Winrock International India (WII) for their help in organizing the workshop.

3.0 TECHNICAL SESSIONS

A. Technical Session I

The First Technical Session was on ‘**Clean energy access: Issues, challenges and way forward – Voices from the State**’. The session was co-chaired by Mr. K.P. Sukumaran, Advisor, Ministry of New & Renewable Energy and Mr. V.K. Jain, Director, Ministry of New & Renewable Energy.

The Chairpersons briefed the participants that energy plays a crucial role in underpinning efforts to achieve overall development and in improving the quality of lives of poor people. However, energy access is a growing concern, wherein several

million people still depend on traditional bio-mass to meet their cooking energy needs and lack access to electricity in their homes. Mainstreaming renewable energy to extend energy services to the rural poor seems extremely relevant not only in terms of stimulating regional development and in improving the quality of life, but also in enhancing livelihood opportunity of the vast majority of the rural population deprived of energy services. In spite of the overall enthusiasm and activity, not much achievement has been made to address the issue of energy access.

Given the above backdrop, they apprised the participants that the primary objective of this technical session was aimed at getting feedback from the grassroots level NGOs on their learnings and experiences from past projects on mainstreaming renewable energy. The purpose of this session was also to review the existing policies and programs of the government for upscaling clean energy technology interventions so that the past gaps could be addressed and appropriate energy solutions for poverty alleviation for the low-income households could be developed.

The Chairperson of the session encouraged representatives of the NGOs from different states and institutions to share their experiences on clean energy initiatives and contribute their expertise towards developing a strategy for enhancing access to clean energy.

NGOs from the state of Orissa, Madhya Pradesh, Uttar Pradesh, Rajasthan, Bihar, Gujarat, Jharkhand and Chattisgarh shared their experiences, which has been summarized in the table below.

➡ Key Speakers/ Contributors for discussion

▪ Orissa

Organization	Relevant experience	Issues highlighted
Sambandh	Found Entrepreneurial model to be viable, through bank financing	<ul style="list-style-type: none"> • Need of renewable energy for diversification of existing livelihoods opportunity. • High upfront cost of RE installations acts as major hindrance towards upscaling. • Lack of finance for end users due to relative inexperience of Banks on financing RE projects. • Micro Finance Institutions (MFIs) don't support RE initiatives • Innovation projects need incubation funding. • Need for one stop shop for service, finance and technology and after sale services. • Policy gap -portfolio financing is needed for linking RE with livelihood initiatives.

Organization	Relevant experience	Issues highlighted
Sanjeevni	No specific experience in RE	<ul style="list-style-type: none"> • Diversion of provision of energy from farm to industries needs to be explored.

■ **Madhya Pradesh**

Organization	Relevant experience	Issues highlighted
CARD	No specific learning in RE, however, they had developed paddle pump for irrigation in small farms.	<ul style="list-style-type: none"> • Emphasized on the need for linking RE with livelihood programs of rural development.
Barli	Initiated work on solar food processing and food drying.	<ul style="list-style-type: none"> • Develop Micro-credit groups for financing RE installations. • Major challenge is to persuade villagers to purchase solar technology despite the fact that they understand its utility.
Development Alternative	<p>Have worked on</p> <ul style="list-style-type: none"> • REZ (rural entrepreneurship zone) model- centralized power station for local enterprises. • Gaushala models- slowly evolving into a profit model. 	<ul style="list-style-type: none"> • Acceptance of the community for renewable energy technology is less. • Lack of awareness is major challenge for commercialization. • Problem is with spare parts for small scale entrepreneurs and trained personal- Development of clusters could be one solution. • Energy for irrigation is a primary area that needs to be addressed
SRIDA	<p>Have experience of</p> <ol style="list-style-type: none"> 1. Jatropha oil based electrification for 30 HH. 2. Providing lighting in rural haats through solar lanterns- trying to move from diesel to centralized 60 kw solar generation unit. 3. Developed stove based on straight jatropha oil. 	<ul style="list-style-type: none"> • Subsidy for RE should be extended in parity with kerosene
Utthan	No specific experience in RE	<ul style="list-style-type: none"> • Need to develop a model RE generation from waste.

■ **Uttar Pradesh**

Organization	Relevant experience	Issues highlighted
CERT	<ol style="list-style-type: none"> 1. Acceptance of RE technology is less among poor and marginal households 2. Demonstration of energy plantation through <i>Sesbania</i> & <i>Subabul</i> plantation to deal with the needs of fuel/fodder at the village level- acceptable to community 	<ul style="list-style-type: none"> • Need to move from small scale demonstration models to large scale integrated energy planning. • Provision of maintenance and service infrastructure for RE systems needs to be given equal importance.
GNNS	Experience with Village Energy Security Programme (VESP) has not been encouraging	<ul style="list-style-type: none"> • Need for transparent process • Capacity building of local administration to make it more responsive • In Solar PV there is need for improving battery life • High Upfront cost is major hindrance for upscaling RE projects.

■ **Rajasthan**

Organization	Relevant experience	Issues highlighted
AFPRO	Have worked on <ol style="list-style-type: none"> 1. Improved Chulha 2. Microhydel projects in Kerala, Tamilnadu, Orissa and Jharkhand. 3. Gravity flow system-construction of storage and diversion channels 	<ul style="list-style-type: none"> • Demand generation and financing are two major challenges
WORLD	<ul style="list-style-type: none"> • Spreading awareness for solar with rural women • Building capacity of local enterprise 	<ul style="list-style-type: none"> • Financing is an issue

■ **Bihar**

Organization	Relevant experience	Issues highlighted
Bihar Rural Livelihoods Project	No specific experience in RE	<ul style="list-style-type: none"> Biomass, solar and community kitchen needs to be promoted.
BDT	No specific experience in RE	<ul style="list-style-type: none"> Telecom sector in Bihar booming and mostly dependent on diesel gensets-This area can be tapped by replacing diesel with solar. Formulate Site specific proposals.
ADITHI	No specific experience in RE	<ul style="list-style-type: none"> Development of renewable energy resource centre for migrant labor mobile charging stations

■ **Gujarat**

Organization	Relevant experience	Issues highlighted
SEWA	<ol style="list-style-type: none"> They are working for training women for construction of biogas, smokeless cooking stoves & solar lantern SEWA bank financing is made available to their members for RE installations. 	<ul style="list-style-type: none"> Biomass, solar and community kitchen needs to be promoted.

■ **Jharkhand**

Organization	Relevant experience	Issues highlighted
KGVK	<ol style="list-style-type: none"> Worked for cost reduction through localization of components in cook stove by end users 	<ul style="list-style-type: none"> Experience of Biomass Gassifier has not been good Biogas system have worked well Need for assessment of energy need at HH level and then targeting it through basket of energy choices/technology Need for energy efficiency and reducing cost

■ **Chattisgarh**

Organization	Relevant experience	Issues highlighted
Samarthan	Adopted one village- for installation of Biogas Plant and smokeless Chulha in all households.	<ul style="list-style-type: none"> Community mobilization is major issue

B. Technical Session II

The **Second Technical Session** was on ‘**Business models for clean energy access**’. The session was co-chaired by Mr. K.P. Sukumaran, Advisor, Ministry of New & Renewable Energy and Mr. S.N. Srinivas, United Nation Development Program.

The Chairpersons briefed the participants that several barriers impede private investment in the commercialisation of RETs and in the development of commercially viable business models for clean energy access. The major barriers include: limited financing to defray high up-front costs associated with developing renewable energy projects; entrepreneur’s unfamiliarity with how to structure commercially viable business; tough competition from subsidized conventional energy sources that lower the market price for electric and thermal power; and market penetration costs. Besides there is still a perceptible absence of an institutional mechanism that can allow enterprises for harnessing renewable energy technology to come together to script and articulate suggestions on policies which will encourage private investment in renewable energy as well as connect with associations in other countries to form investment and trade links.

In context of the above, they apprised the participants that the primary objective of this technical session was aimed at understanding how some of models have succeeded in overcoming these barriers and getting their feedback and inputs for designing models for mainstreaming renewable energy. They said that the purpose of this session was also to review the existing policies and programs of the government for promoting sound business models.

The Chairpersons of the session encouraged representatives of the NGOs from different states and institutions to share their experiences on promoting business models for enhancing access to clean energy. The key Speakers / Contributors in the session were:

1. Mr. Gyanesh Pandey

Director
Husk Power Systems

2. Ms. Svati Bhogle

Secretary and Chief Executive
Technology Informatics Design Endeavour (TIDE)

3. Mr. R D Deshmukh

Vice President

Appropriate Rural Technology Institute (ARTI)

4. Mr. Brijesh Rawat

Head

Rural Renewable Urja Solutions Pvt. Ltd

Their presentations are provided at **Annexure – 2**.

4.0 PLENARY SESSION

A Plenary Session was organized under the Chairmanship of Ms. Gauri Singh, Joint Secretary, Ministry of New and Renewable Energy to develop a '**Strategy & Action Plan for Enhanced Access to Clean Energy**'.

She opened the session by highlighting the key barriers impeding the growth of renewable energy. She highlighted that many renewable energy technologies are still relatively new to market so the commercial chains, networks, marketing and financial links and other institutional structures that service traditional energy technologies are not fully in place to assist the entrepreneur even if the skills and know-how. Given the nascent stages of the RET industry, there is limited availability of investment capital to finance the high up-front costs associated, especially with the initial stages of developing a RET project. Further the existing schemes of the Ministry are rigid and does not promote entrepreneurs and innovative models and the delivery mechanism for subsidy under schemes are tardy that discourages participation from small entrepreneurs.

She emphasized that there is a need for innovative structures that can fill the funding gap between the equity and debt available to a project. An innovative funding structure would seek to connect entrepreneurs proposing small-scale renewable energy projects/ or those who plan to integrate renewable energy in existing business units with small amounts of low cost, long term credit and enterprise assistance services at an early stage. These projects can then link with the commercial credit operations of banks / lending agencies/ financial institutions making strategic investments in the sector and other suppliers of second stage debt and equity to meet the financing requirements of their project.

She said that MNRE is proposing to launch two projects in partnership with UNDP and World Bank. The objective of these projects will be to send creativity and responsiveness up the RET financing spectrum in major financial centers, while

sending capacity, credit strength and distribution networks back down. In this way, existing demand for smaller-scale funding, delivery mechanism & management structures can be satisfied, while concurrently building critical mass for later-stage, large scale commercial deployment of RET. The deliverable results of the initial exercise are expected to be product blueprints with an action plan for implementing a scalable program.

The session was then opened for discussion to seek inputs from the participants for identifying a possible way forward develop and developing a strategy and action plan for the project.

Based on the inputs received from the participants the following recommendations were drawn for developing a possible way forward for the project:

- To promote RE in Rural areas through actions that link provision of energy services to productive uses
- Promote Local anchoring of such initiatives through capacity building of community / Grassroot level NGOs
- To promote small scale RE business through fund facilitation and enterprise assistance services
- To promote innovative delivery models
- Identify and support Projects that are technology neutral, location neutral, User profile neutral and entrepreneur driven.
- Support project that presents high upscaling potential.
- Support project that promote innovative delivery/ business model/ product design.
- Support project that seeks to leverage resources from financial institutions/ government program.
- Promote innovation in Business model or product design etc.
- Synergy with other institutional partners for eg. Banks, SHGs, etc.
- To leverage funds of the existing MNRE schemes and commercial bank resources

The plenary session concluded by presentation of an Action Plan for the project developed on the basis of the feedback of the participants. The key highlights of the proposed action plan are as follows:

- There will be a call for Expression of Interest from NGOs, entrepreneurs, Technology suppliers, Equipment Manufacturers, Self Help Groups, Users Associations and others
- Initial screening will be undertaken to identify good project ideas which are cost effective, scalable, replicable, financially viable, demonstrate sound business & delivery models along with linkages with financial & other institutions.

- Support the shortlisted project proponents for preparation of detailed business plan.
- Second level of screening for finalization and approval for financing and support.
- Funding support for project implementation
- Setting milestones for monitoring

5.0 CONCLUDING SESSION

The **concluding session** was Chaired by Mr. Deepak Gupta, Secretary, MNRE and the panelists included Ms. Gauri Singh, Joint Secretary, MNRE, Mr. K. P. Sukumaran, Advisor, MNRE, Dr. Preeti Soni, Assistant Country Director, UNDP, Ms. Anjali Garg, Energy Specialist, South Asia Sector Sustainable Development Energy, The World Bank and Dr. Kinsuk Mitra, President, Winrock International India.

The Chairperson was appraised about the proceedings of the workshop and the key conclusions drawn from the recommendations of the participants, which are as follows:

A. Conclusions 1

Guiding principles for the project would be:

- Project will not only involve NGO's but also new generation entrepreneurs, Technology suppliers, Equipment Manufacturers, Self Help Groups, Users Associations and others in renewable arena.
- Focus of the project will be on promoting sound economic/business models.
- Targeting unmet demand will be done under the project.
- Quantum and mode of financing will be evolved.
- Creation of a space related to the project on the website of WII with links on MNRE and UNDP website. This will be used for sharing project related information, documenting NGO's experiences, registration of NGOs etc.

B. Conclusions 2

Development of Operational Manual which will have the following key components:

- Guidelines for Governance and Management of the project fund.
- Operational Procedures for management of project fund.
- Eligibility of entities that can apply for the fund.
- Criteria for review and selection of the proposals/ ideas under the project.
- Composition of Screening Committee for the project.
- Process and timeline for issuance of notification (RFP) for inviting proposals for the project Fund.

- Process and timelines for screening and review of the proposals for Short listing of project proposals/ideas for development of detailed business plan.
- Process, criteria and timeline for review of the detailed Business Plans received from short listed agencies/individual/ entrepreneurs.
- Nature of contract with the selected agency/ individual/ entrepreneur.
- Concurrent and periodic monitoring, review and evaluation required and mandated under the project.
- Review and monitoring procedure under the project.

Timeline – The operational manual is proposed to be completed and put up for discussion and input on the website by end of March, 2010

C. **Conclusions 3**

Need for undertaking study on

- Comparative evaluation of grid and off grid renewable energy power with respect to
 - ↳ pattern of financing and subsidy support to grid and off grid renewable application and
 - ↳ economics of investment
- Evolving Incentive mechanisms for assisting promotion of off-grid applications in sync with grid based applications

Timeline – The study is proposed to be completed by end of March, 2010

D. **Conclusions 4**

Timeline set for project related action will be as follows:

- Request for proposal by April, 2010
- Desk Review of Proposals by May, 2010
- Field Review by June, 2010
- Funding in first call by end of July- August, 2010

The workshop succeeded in achieving its entailed objectives. The **key outcomes of the workshop** can be summarized as follows:

- NGO's/ entrepreneurs shared their valuable experiences.
- Quick review of the existing policies and programs for upscaling clean energy technology interventions was undertaken.
- Understanding of barriers in upscaling of RE applications.
- Drawing up of strategies for accelerating access to clean energy at grassroot levels across India was done.
- Development of an action plan and timelines.

The workshop concluded with a vote of thanks by Dr. Kinsuk Mitra, President, WII. On behalf of MNRE, UNDP and WII he thanked all the speakers and participants of the workshop for sharing their valuable experiences and helping in achieving the objectives of the workshop.