

No.51/2/2007- 08/VESP
Government of India
Ministry of New and Renewable Energy

Block No.14, CGO Complex,
Lodi Road, New Delhi – 110003

Dated: 16th April, 2008

To,

The Heads of State Government Nodal Agencies / Departments / Project
Implementing Agencies.

**Sub:- Implementation of Village Energy Security Test Projects during
2008-09 and 2009-10 - sanction reg.**

Sir,

I am directed to convey the sanction of the President of India for implementation of 120 nos. of Village Energy Security Test Projects during 2008-2009 and 2009-10. The VESP Test Projects would be implemented as per provisions and other terms and conditions contained in the enclosed 'Guidelines for Planning, Implementation and Funding of the Village Energy Security Test Projects' [**Annexure**].

2. State Government Nodal Agencies/Departments/Project Implementing Agencies are requested to initiate action for setting up of VESP Test Projects during 2008-2009 as per the Guidelines.

3. These guidelines modify the earlier guidelines for planning, implementation & funding of Village Energy Security Test Projects and will continue for a period of two years i.e. for 2008-09 & 2009-10 where after a detailed programme will be developed depending upon success of these projects. There could be a spill over to the third year depending upon the progress made. The guidelines are subject to changes / modifications as may be decided by the Government from the time to time, and is also subject to availability of funds.

4. The expenditure on implementation of 120 VESP Test Projects will be met from the Budget provisions under Demand No.67 Ministry of New and Renewable Energy, Major Head "2810" – Non-Conventional Sources of Energy 20- Village Electrification Programme, 20.00.31 – Grant-in-aid during the current financial year 2008-09 (Plan).

Contd....p. 2/-

5. This sanction issues under the powers delegated to this Ministry with the approval of competent authority and also with the concurrence of IFD, MNRE vide sanction No. IFD/SAN/109/14/2008-09 dated 16th April, 2008.
6. This sanction has been recorded at Sl. No. 01 of the Register of grants.
7. Please acknowledge the receipt of this letter.

Yours faithfully,

Sd/-

(G.R. Singh)
Principal Scientific Officer

Copy for information and necessary action to:-

1. The Principal Director of Audit, CW&M-II (Scientific Deptt.), DGACR Building, New Delhi.
2. Accountant General of All State Governments/ UTs.
3. The Heads of All State Government Nodal Agencies/Departments/Project Implementing Agencies.
4. National Consultant and all Regional Consultants under World Bank project on "Biomass for Sustainable Development".
5. PS to MOS (NRE)
6. Sr. PPS to Secretary, MNRE.
7. JS &FA, MNRE, New Delhi.
8. Dir (F)/US (F)/SO (IFD), MNRE, New Delhi.
9. Adviser (VESP)/Dir (AKT)/PSO (GRS)/US (VESP).
10. Regional Offices of MNRE (Lucknow, Guwahati, Chennai, Hyderabad, Ahmedabad, Bhubaneswar, Chandigarh and Bhopal).
11. Dir (P&C), MNRE.
12. Individual files of States/ UTs.
13. Guard File.

Sd/-

(G.R. Singh)
Principal Scientific Officer

TEST PROJECTS ON VILLAGE ENERGY SECURITY

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Guidelines for Planning, Implementation and Funding of the Village Energy Security Test Projects

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### I. INTRODUCTION

Renewable energy technologies such as solar photovoltaics, small hydro, biomass etc. are being deployed for lighting and electrification of villages and hamlets. The aim of the test projects on village energy security goes beyond electrification by addressing the total energy requirements for cooking, electricity, and motive power.

### II. OUTLINE PLAN ON VILLAGE ENERGY SECURITY

2. An Outline Plan on Village Energy Security was prepared by the Ministry in association with forestry officials from the Ministry of Environment & Forests and the States. The Outline Plan was prepared with the objective of providing energy security in villages by meeting total energy needs for cooking, electricity and motive power through various forms of biomass material based on available biomass conversion technologies and other renewable energy technologies, where necessary. Modern biomass technologies offer considerable efficiency gains over traditional biomass use. The benefits from such projects can be immense, including employment generation and enhanced incomes to rural households. This can be achieved in an environment friendly and sustainable manner through active and full participation of local communities.

### III. TEST PROJECTS ON VILLAGE ENERGY SECURITY

3. It was decided to take up test projects on village energy security with a view to demonstrate the techno-economic parameters of the village energy security plan, provide operational experience, mobilize local communities and firm up the institutional arrangements. The villages for the projects would be selected with a view to provide broad based feedback in the light of inter-regional variations in regard to resource availability, energy requirements and social cohesion among local communities. Maximum demonstration effect would be sought to be derived through coverage in several States in different regions.

### IV. GUIDELINES FOR PREPARATION OF PROPOSALS FOR THE TEST PROJECTS

#### Identification of villages / hamlets

4. Identification of suitable villages / hamlets, which have a conducive environment for implementation of such test projects, is critical for their success. The village / hamlet identified could be a tribal or forest-fringe village / hamlet. The selected village / hamlet should have adequate availability of fallow, common or uncultivated non-grazing land for raising plantations. A cohesive and progressive social structure is also an important requirement.

The village / hamlet should have minimum of about 50 and maximum of 400 households and should be identified in consultation with forest, tribal and rural development departments / agencies. After selection of the village / hamlet, a preliminary proposal would have to be prepared, got duly endorsed by the concerned State Nodal Agency and forwarded to the Ministry for consideration of 'in principle' approval. The format for preparation of preliminary proposal is given in the **Appendix I**. An agree-to-do (ATD) Resolution should be forwarded alongwith the preliminary proposal.

5. The test projects would be undertaken in unelectrified villages and hamlets that are not likely to be electrified through conventional means. A certificate to this effect from a State Agency should be forwarded alongwith the preliminary proposal.

### **Preparation of a Village Energy Plan**

6. After receiving 'in principle' approval from the Ministry, a Village Energy Plan will have to be prepared, with active and full participation of the village community. An assessment of the total energy demand should be made, which may include requirements for:-

- Household cooking, lighting and entertainment
- Community, commercial facilities such as shops, streetlights, health center, school, flourmill, information and communication technology
- Pumping water for drinking, irrigation
- Rural / cottage industry

The minimum energy services to be provided for in any project should include cooking, lighting, street lights, pumping for drinking water supply, lights / fans in the school and primary health center.

An assessment of the biomass resources available locally would have to be carried out. These may include dung, agro wastes, forestry residues, etc. Appropriate fast growing / oil seed bearing tree species should be identified and a plan be prepared for raising the plantations for obtaining wood, vegetable oil and other raw materials. Until the plantations reach an age when annual increments of growth and other raw materials become available, biomass offset from use as cooking fuel and other locally available biomass should be utilized for energy production.

Based on the total energy requirements and the local resource availability, the energy production system would have to be configured. For an energy production system based on biomass, an appropriate technology mix should be selected from available biomass conversion technologies such as:-

- Single / Bi-phasic biogas production using tree based organic substrates, vegetable wastes / residues, vegetable wastes / kitchen wastes, etc.
- Biomass Gasifier coupled with 100% gas engines or dual fuel engines run on bio-fuels in lieu of diesel.
- Stationary diesel engines run on straight vegetable oils or bio-diesel.

Depending upon specific requirements, inclusion of solar photovoltaic devices such as solar lanterns or an appropriate battery backup arrangement could be considered in the system configuration.

Electricity distribution should preferably be carried out through a local mini grid. Emphasis should be on energy to be provided for productive activities with thrust on micro enterprise development, backed by micro credit facilities, with a view to facilitating job creation, income generation, increasing the purchasing capacity and reducing the migration from villages.

Guidelines towards preparation of the Village Energy Plan are given in **Appendix II**.

### **Formation of a Village Energy Committee**

7. Full participation of the village community should be secured from inception. The constitution of a Village Energy Committee should be through the Gram Sabha and got duly notified by the Gram Panchayat as a Sub-Committee or Standing Committee of the Gram Panchayat as per the relevant provisions of the State Panchayati Raj Act and rules in this regard. Care should be taken that the elected Panchayat member/s from that village are ex-officio members of the VEC.

### **Creation of a Village Energy Fund**

8. A Village Energy Fund should be got created under the provisions of State Panchayati Raj Act, initially with beneficiary contributions for sustained operation and management of the project. Subsequent monthly / annual user charges would have to be deposited in this account. Grants from other Government Programmes such as rural development, forestry, tribal development, etc., if available, should be placed in this account, to be utilized towards operation and management of the project. The Fund should be managed by the Village Energy Committee with two signatories nominated by the Committee. One of the signatories would be the Gram Panchayat member who is the ex-officio member on the Committee.

9. A separate capital account should also be got created, for receipts towards supply and installation of the energy production units. This Capital Account would also be operated by the VEC in accordance with the same procedure of joint signature and maintenance of accounts, which govern the Village Energy Fund. Both the VEF and the Capital Account of the VEC, being the accounts of the Gram Panchayat under the provisions of the law, would be subject to the processes of accounts maintenance and audit that apply to the Gram Panchayat. Expenditure of funds by the VEC should be disclosed to the Gram Panchayat at its monthly meeting as prescribed under the Panchayati Raj Act and Rules. VEC, being a Sub-Committee of a Standing Committee of the Gram Panchayat would also be under obligation to disclose information in accordance with the Right to Information legislation. It will also be authorized to submit the Utilization Certificate to the Gram Panchayat, which in turn will submit the Utilization Certificate to the agency concerned at the district level. Technical facilitation and capacity building through implementing Agencies or Consultants such as NGOs would be focused at the VEC level through the Gram Panchayat.

## **V. GUIDELINES FOR IMPLEMENTATION OF THE TEST PROJECTS**

10. The test projects would be undertaken by the Panchayats duly facilitated by implementing Agencies such as DRDAs, forestry departments, NGOs, entrepreneurs, franchises, other corporate entities, co-operatives and State Nodal Agencies. An implementing agency would forward the proposals for the test projects to the Ministry through the State Nodal Agency. The Detailed Project Report should, inter-alia, include the following information: -

- (i) Census code number of the village
- (ii) Village Energy Plan
- (iii) Confirmation about setting up of Village Energy Committee and creation of Village Energy Fund
- (iv) Plan for training
- (v) Implementation modalities
- (vi) O&M arrangements
- (vii) Commitment about balance 10% capital cost and funds for operation and management

11. The projects should be owned by the village community with the responsibility for overall operation / management resting with them. However, the implementation agency should help them for about two years in this activity for which one-time Central assistance would be provided. During this period, the implementing agency would train local youth in the operation and management of the project. After this period, the responsibility of operation / management should be undertaken by the Village Energy Committee. The Village Energy Committee may hire / lease out these services to an entrepreneur as a preferred option.

12. The District Advisory Committees on Renewable Energy with the Collectors as the Chairman, Project Director, DRDA as Member-Secretary and comprising district-level functional heads and prominent citizens should be involved in the implementation of the test projects.

13. The concerned State Nodal Agency would have to closely monitor the implementation of the projects and provide monthly progress reports to the Ministry until commissioning. Thereafter, they should forward quarterly reports on performance and other feedback to the Ministry. The Ministry would also carry out intensive monitoring and evaluation of the projects directly as also through independent agencies.

## **VI. GUIDELINES FOR CENTRAL FINANCIAL ASSISTANCE FOR THE TEST PROJECTS**

14. The estimated costs for various packages based on different technology configurations for electricity generation systems are given in **Appendix-III (A to G)**. The costing of different packages is based on the no. of households (50-250) in the village. For bigger villages upto 400 households, projects could be considered based on similar cost benchmarks. However, in specific cases the applicability of a package may not be dependent only on no. of households but will have to be considered on merit taking into account the resource availability, technology configuration, load profile, layout of the village etc. The component on fixed cost under Part-A for biomass gasifier or biogas based packages should work out to be within Rs.20,000 per household, or within Rs.12,000 per household for the biofuels based packages. In those cases where this is exceeded, sufficient justification would have to be provided. 90% of the project cost approved by the Ministry would be met through central

grant. The balance 10% towards the project cost would have to be mobilized by the community / implementing agency / State Nodal Agency.

15. Release of the Central Financial Assistance (CFA) towards the project cost into the designated capital account of the Village Energy Committee would be made as per the following pattern: -

|                                                                                                                                                  |   |                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------|
| Initial release alongwith the sanction order                                                                                                     | : | Full cost of civil and electrical works and 50% of the remaining project cost                                                         |
| Second installment on installation & commissioning* of electricity generating system & receipt of UC for initial release & SOE.                  | : | 40% of remaining project cost, including the cost of the electricity generating system.                                               |
| Final installment after successful one month operation & receipt of UC of 2 <sup>nd</sup> installment & audited SOE for full actual expenditure. | : | 10% of remaining project cost and 50% of O&M charges with balance O&M charges to be released after successful operation for one year. |

(Project cost would comprise parts A, B & C of respective modules / packages as given in Annexure II, excluding O&M charges).

\* Commissioning would imply trouble free operation for 30 hours over at least three consecutive days

16. The procurement under the VESP Projects should be carried out through competitive bidding. As the VECs may not be fully equipped to deal with procurement of various equipment under the project, such procurement may be undertaken on behalf of the VEC by the Implementing Agency/SNA, subject to an appropriate Resolution being passed by the VEC in this regard. Sanctioned funds pertaining to such procurement may then be retained by the Implementing Agency/SNA for releases against procurement, installation and commissioning of various equipment/works, as per the pattern of release given in para 15 above.

17. CFA will also be provided towards the following associated costs: -

- 20% higher project cost will be allowed for test projects to be taken up in special category States, namely, North-Eastern States (including Sikkim); Himachal Pradesh; Uttarakand; and Jammu & Kashmir.

- Maximum amount of Rs.1.00 lakh per project, subject to actuals, would be provided towards capacity building, training, awareness and visits to project sites.
- Maximum amount of Rs.1.00 lakh per project, subject to actual, would also be provided for Social engineering / community mobilization.
- Professional charges @ 10% of the project cost would be provided to the implementing agency for various services from concept to post commissioning (including preparation of VEP and DPR), subject to a maximum of Rs. 5.00 lakhs per project.
- Service charges @ 5% of the project cost subject to a maximum of Rs. 2.50 lakhs would be provided to the State Nodal Agency for coordination / monitoring and reporting of progress and feedback on performance. In case State Nodal Agency is the implementing Agency, only Professional Charges as mentioned above would be provided.
- The operation, maintenance and management charges @ 10% of the project cost would be provided per project to the Implementing Agency / VEC. This should include mandatory employment of one ITI trained operator-cum-mechanic and one semi skilled helper for a minimum period of two year. Competent operators with commitment and stability should be identified from the very beginning and be sent to the factory of the supplier for training so that they are subsequently involved during erection and commissioning at site at which time they could also be given a refresher training for daily Operation and Maintenance of the system for effective O&M, the concept of a manufacturer driven support structure/service framework could be encouraged, wherein the manufacturer enters into a contract for technical personnel to be provided at a fixed annual charge and a variable charge based on per unit of electricity delivered.
- Funds for seminars, workshops, etc. will be provided on case-by-case basis.

18. Terms of payment for procurement of equipment, including the electricity generating system, should strictly be followed as given in para 15 above.

19. The professional charges to the implementing agency, service charges to the State Nodal Agency (in case SNA is not the implementing agency) and funds to the implementing agency / VEC will be released as per the pattern of release given in para 15 above. However, 50% of O&M charges will be released with the final installment and balance to be released after one year of successful operation.

20. Certificate of a project having been successfully implemented and made operational, as per the Sanction Order, shall have to be provided by the State Nodal Agency, after obtaining the same from the Village Energy Committee, before release of the final installment.

21. The Gram Panchayat or the Joint Forestry Management Committee, as the case may be, shall cause all accounts of the Village Energy Committee to be duly audited and sent along with the Utilization Certificate (UC) in the prescribed format to the State Nodal Agency for being forwarded to the Ministry. SNA / other concerned Agency / Organization will be responsible for forwarding UC & Audited Statement of Expenditure (SOE) & settlement of Accounts, the format of UC will be same as given in GRF 19-A of GFRs 2005.

22. These guidelines will be applicable to fresh VESP Test Projects only.

**FORMAT FOR PREPARATION OF PRELIMINARY PROPOSALS FOR  
TEST PROJECTS ON CREATING ENERGY SECURITY IN VILLAGES THROUGH  
BIOMASS**

1. Name & Full Address of the Implementing Agency  
(Forest Department / DRDA / NGO)
2. Name & Full Address of State Nodal Deptt./Agency
3. Name of Gram Panchayat, Block & District
4. No. of Villages under Gram Panchayat
5. Name of Village / hamlet selected for the Project
6. Village census code
7. Distance from nearest road-head
8. Distance from the grid
9. Length of transmission and distribution line required in the village.
10. Total population of the village / hamlet
11. Male / Female ratio
12. Rate of literacy
13. No. of households
14. Number of Hamlets / Dalit Bastis in Village
15. Type of Social Structure
16. Community buildings – school, PHC, panchayat ghar, etc.
17. Main occupation, indicating cash crops
18. Biomass resource availability - type of biomass, local fuel wood / oil-seed bearing species, if any, cattle population and likely availability of dung for biogas plant.
19. Availability of fallow land / waste land / uncultivated land etc. for energy plantations

20. Availability of water with distance, depth etc.
21. Indicative Estimate of Energy Demand
  - (a) Household – cooking, lighting, other
  - (b) Community services, including streetlights
  - (c) Irrigation/Agriculture Operations
  - (d) Commercial (Shops, Atta chakki, Oil expeller, etc.)
  - (e) Industrial
22. Proposed productive load development in the village.
23. Existing pattern of energy / fuel use and average monthly expenditure per household
24. Existing renewable energy devices in the village, if any
25. Existing rural developmental schemes of Central/State Govt. in the village and proposed possible lineages with VESP.
26. Biomass Technology package proposed to be deployed
27. Indicative capacity of the energy systems
28. Role of local community in planning, implementation and management, including revenue management
29. Details of any local NGO already associated with the village / hamlet
30. Agree-to-do (ATD) resolution to be attached to the preliminary proposal.
31. Any other information

**PREPARATION OF VILLAGE ENERGY PLAN**

The Village Energy Plan (VEP) should provide information on the following as expects:

- **Demand** – Current and potential, special emphasis on loads related to income generation. Estimate of time taken to ramp up to full projected demand
- **Load management** – Load chart preparation taking into account seasonal variations in use of electricity, especially for irrigation
- **Plant sizing** - Sizing of the plant, capacity utilization factor for the plant as per the load chart
- **Technological options** – SVO or gasifier or biogas, taking into account load pattern, capacity utilization factor and type of biomass fuel available
- **Sources of biomass** – Current and potential, its stability
- **Financing plan** – Capital expenditure for power plant and other investments needed to reach projected demand. Sourcing working capital, sources of revenue, tariff setting, other non-tariff sources of revenue, operational sustainability, cash flow statement, plan to meet revenue gap if any, pay back period
- **Human resources** – Community empowerment, involving them in ownership and decision-making, training in operation and management of the power plant
- **MIS**: How information would be captured with respect to key elements and how it would be used by the management (Village Energy Committee) should be spelt out.
- **Risk management** – Identification of risk and how it would be managed
- **Project implementation plan** – Tasks and milestones with timelines and clear identification of responsibilities should be presented

In preparing and finalizing the VEP, Participatory Rural Appraisal (PRA) techniques should be used. This would among other things help:

- Introduce the VESP project, its structure, guidelines, etc. to the community.
- The community in making a choice of which energy needs is more important to them.

**BIOMASS GASIFIER BASED MODULE  
(Package I- for 50-100 Households)**

| S.No.                                         | Items                                                                                                                                                          | Qty./Nos. | Estimated cost (Rs.)      |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------|
| <b>Part A- Fixed Cost</b>                     |                                                                                                                                                                |           |                           |
| 1.                                            | Biomass gasifier system with 100% producer gas engine/genset including all accessories with 5 years Annual Maintenance Contract including two year's warrantee | 1X10 kW   | 775000                    |
| 2.                                            | Civil foundation & shed including storage shed for biomass and water tank.                                                                                     | LS        | 200000                    |
| 3.                                            | Gasifier room lights @ Rs.500/- per light                                                                                                                      | 5         | 2500                      |
| 4.                                            | Atta Chakki / Rice Huller including connection and all equipments (Load development such as Dona Patta making machine etc.)                                    | 1         | 20000                     |
| <b>SUB TOTAL (fixed cost)</b>                 |                                                                                                                                                                |           | <b>997500</b>             |
| <b>Variable Cost<sup>1</sup></b>              |                                                                                                                                                                |           |                           |
| 5.                                            | Plantation for fuel wood and oil-seed bearing trees @ Rs.30,000/- per ha                                                                                       | 5 ha      | 150000                    |
| 6.                                            | Distribution line for 2 km @ Rs.1,50,000/km (As per SEB norms)                                                                                                 | LS        | 300000                    |
| 7.                                            | Service line (@ Rs.1500/- per HH) with 2 light points and one 5 Amp. socket point per HH (As per SEB norms)                                                    | 100       | 150000                    |
| 8.                                            | Battery back-up with Inverter to be charged by electricity generating unit.                                                                                    | 1 X 5 kW  | 350000                    |
| 9.                                            | Street Lighting @ Rs.2,500/- per light                                                                                                                         | 10        | 25000                     |
| 10.                                           | Dung based biogas plants inclusive all accessories & Civil Works for 25 HH @ 2 CuM per HH @ Rs.5000/- per CuM                                                  | 50 CuM    | 250000                    |
| 11.                                           | Improved Chulha fixed type / Portable or Turbo Portable Chulha (maximum Subsidy @ Rs.500/- per chulha)                                                         | 100       | 50000                     |
| <b>SUB TOTAL (variable cost)<sup>#</sup></b>  |                                                                                                                                                                |           | <b>1275000</b>            |
| <b>Optional Cost<sup>2</sup></b>              |                                                                                                                                                                |           |                           |
| 12.                                           | Oil Expeller with filter press and heater (35 kg/hour)                                                                                                         | 1         | 100000                    |
| <b>Sub Total [A]</b>                          |                                                                                                                                                                |           | <b>2372500</b>            |
| <b>Part B- Capacity building</b>              |                                                                                                                                                                |           |                           |
| 13.                                           | Capacity building, training, awareness and visits to project sites and manufacturer's works.                                                                   | LS        | 100000                    |
| 14.                                           | Social Engineering/Community mobilization                                                                                                                      | LS        | 100000                    |
| <b>Sub Total [B]</b>                          |                                                                                                                                                                |           | <b>200000</b>             |
| <b>GRAND TOTAL [A] + [B]</b>                  |                                                                                                                                                                |           | <b>2572500*</b>           |
| <b>Part C- Execution and Operational Cost</b> |                                                                                                                                                                |           |                           |
| 15.                                           | Professional Charges to the Implementing Agency (10% of the Part A)                                                                                            |           | 237250                    |
| 16.                                           | Charges to State Nodal Agency for coordination and monitoring (5% of the Part A)                                                                               |           | 118625                    |
| 17.                                           | Operation and Maintenance Charges to the Implementing Agency for initial period of 2 years (10 % of the Part A)                                                |           | 237250                    |
| <b>Sub Total [C]</b>                          |                                                                                                                                                                |           | <b>593125<sup>+</sup></b> |
| <b>GRAND TOTAL [A+B+C]</b>                    |                                                                                                                                                                |           | <b>3165625</b>            |

1 - Depending on Village layout and number of households.

2 – Depending on resource availability and demand.

# - Estimates for 100 households.

\* - Cost sharing on 90:10 basis between the Ministry and SNA/Implementing Agencies/beneficiary.

+ 100% support from the Ministry.

*20% higher project cost will be allowed in special category states, namely, North-Eastern States (including Sikkim); Himachal Pradesh; Uttarakhand; and, Jammu & Kashmir.*

**BIOFUEL ENGINE BASED MODULE  
(Package I- for 50-100 Households)**

| S.No.                                         | Items                                                                                                                                                          | Qty./Nos.         | Estimated cost (Rs.) |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------|
| <b>Part A- Fixed Cost</b>                     |                                                                                                                                                                |                   |                      |
| 1.                                            | Biofuel engine with alternator including all accessories (based on 100% Biofuel / SVO) with 5 years Annual Maintenance Contract including two year's warrantee | 1X10 kW           | 200000               |
| 2.                                            | Civil foundation & shed including storage shed for seeds.                                                                                                      | LS                | 200000               |
| 3.                                            | Biofuel engine room lights @ Rs.500/- per light                                                                                                                | 5                 | 2500                 |
| 4.                                            | Atta Chakki / Rice Huller including connection and all equipments (Load development such as Dona Patta making machine etc.)                                    | 1                 | 20000                |
| 5.                                            | Oil Expeller with filter press and heater (100 kg/hour)                                                                                                        | 1                 | 175000               |
| <b>SUB TOTAL (fixed cost)</b>                 |                                                                                                                                                                |                   | <b>597500</b>        |
| <b>Part A- Variable Cost<sup>1</sup></b>      |                                                                                                                                                                |                   |                      |
| 6.                                            | Plantation for oil-seed bearing trees @ Rs.30,000/- per ha                                                                                                     | 5 ha              | 150000               |
| 7.                                            | Distribution line for 2 km (@ Rs.1,50,000/km (As per SEB norms)                                                                                                | LS                | 300000               |
| 8.                                            | Service line (@ Rs.1500/- per HH) with 2 light points and one 5 Amp. socket point per HH (As per SEB norms)                                                    | 100               | 150000               |
| 9.                                            | Battery back-up with Inverter to be charged by electricity generating unit.                                                                                    | 100 nos./<br>5 kW | 350000               |
| 10.                                           | Street Lighting @ Rs.2,500/- per light                                                                                                                         | 10                | 25000                |
| 11.                                           | Dung based biogas plants inclusive all accessories & Civil Works for 25 HH @ 2 CuM per HH @ Rs.5000/- per CuM                                                  | 50 CuM            | 250000               |
| 12.                                           | Improved Chulha fixed type / Portable or Turbo Portable Chulha (maximum Subsidy @ Rs.500/- per chulha)                                                         | 100               | 50000                |
| <b>SUB TOTAL (variable cost)<sup>2</sup></b>  |                                                                                                                                                                |                   | <b>1275000</b>       |
| <b>Sub Total [A]</b>                          |                                                                                                                                                                |                   | <b>1872500</b>       |
| <b>Part B- Capacity building</b>              |                                                                                                                                                                |                   |                      |
| 14.                                           | Capacity building, training, awareness and visits to project sites and manufacturer's works.                                                                   | LS                | 100000               |
| 14.                                           | Social Engineering/Community mobilization                                                                                                                      | LS                | 100000               |
| <b>Sub Total [B]</b>                          |                                                                                                                                                                |                   | <b>200000</b>        |
| <b>GRAND TOTAL [A] + [B]</b>                  |                                                                                                                                                                |                   | <b>2072500*</b>      |
| <b>Part C- Execution and Operational Cost</b> |                                                                                                                                                                |                   |                      |
| 15.                                           | Professional Charges to the Implementing Agency (10% of the Part A & B)                                                                                        |                   | 187250               |
| 16.                                           | Service Charges to State Nodal Agency (5% of the Part A & B)                                                                                                   |                   | 93625                |
| 17.                                           | Operation and Maintenance Charges to the Implementing Agency (10 % of the Part A & B)                                                                          |                   | 187250               |
| <b>Sub Total [C]</b>                          |                                                                                                                                                                |                   | <b>468125+</b>       |
| <b>GRAND TOTAL [A+B+C]</b>                    |                                                                                                                                                                |                   | <b>2540625</b>       |

1 - Depending on Village layout and number of households.

2 - Estimates for 100 households.

\* - Cost sharing on 90:10 basis between the Ministry and SNA/Implementing Agencies/beneficiary.

+ 100% support from the Ministry.

*20% higher project cost will be allowed in special category states, namely, North-Eastern States (including Sikkim); Himachal Pradesh; Uttarakhand; and, Jammu & Kashmir.*

**BIOGAS BASED MODULE  
(Package I- for 50-100 Households)**

| S.No.                                         | Items                                                                                                                                                                       | Qty./Nos. | Estimated cost (Rs.)      |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------|
| <b>Part A- Fixed Cost</b>                     |                                                                                                                                                                             |           |                           |
| 1.                                            | Biogas Plants (2x45 CuM) with 100% gas based engine <sup>§</sup> / genset including all accessories with 5 years Annual Maintenance Contract including two year's warrantee | 2X5 kW    | 850000                    |
| 2.                                            | Civil foundation & shed for housing biogas engine/genset and water tank.                                                                                                    | LS        | 200000                    |
| 3.                                            | Biogas engine room lights @ Rs.500/- per light                                                                                                                              | 5         | 2500                      |
| 4.                                            | Atta Chakki / Rice Huller including connection and all equipments (Load development such as Dona Patta making machine etc.)                                                 | 1         | 20000                     |
| <b>SUB TOTAL (fixed cost)</b>                 |                                                                                                                                                                             |           | <b>1072500</b>            |
| <b>Variable Cost<sup>1</sup></b>              |                                                                                                                                                                             |           |                           |
| 5.                                            | Distribution line for 2 km @ Rs.1,50,000/km. (As per SEB norms)                                                                                                             | LS        | 300000                    |
| 6.                                            | Service line (@ Rs.1500/- per HH) with 2 light points and one 5 Amp. socket point per HH (As per SEB norms)                                                                 | 100       | 150000                    |
| 7.                                            | Battery back-up with Inverter to be charged by electricity generating unit.                                                                                                 | 1 X 5 kW  | 350000                    |
| 8.                                            | Street Lighting @ Rs.2,500/- per light                                                                                                                                      | 10        | 25000                     |
| 9.                                            | Dung based biogas plants inclusive all accessories & Civil Works for 25 HH @ 2 Cu M per HH @ Rs.5000/- per CuM                                                              | 50 CuM    | 250000                    |
| 10.                                           | Improved Chulha fixed type / Portable or Turbo Portable Chulha (maximum Subsidy @ Rs.500/- per chulha)                                                                      | 100       | 50000                     |
| <b>SUB TOTAL (variable cost)<sup>#</sup></b>  |                                                                                                                                                                             |           | <b>1125000</b>            |
| <b>Optional Cost</b>                          |                                                                                                                                                                             |           |                           |
| 11.                                           | Oil Expeller with filter press and heater (35 kg/hour)                                                                                                                      | 1         | 100000                    |
| 12.                                           | Plantation for oil-seed bearing trees @ Rs.30,000/- per ha                                                                                                                  | 3 ha      | 90000                     |
| <b>SUB TOTAL (Optional Cost)<sup>2</sup></b>  |                                                                                                                                                                             |           | <b>190000</b>             |
| <b>Sub Total [A]</b>                          |                                                                                                                                                                             |           | <b>2387500</b>            |
| <b>Part B- Capacity building</b>              |                                                                                                                                                                             |           |                           |
| 13.                                           | Capacity building, training, awareness and visits to project sites and manufacturer's works.                                                                                | LS        | 100000                    |
| 14.                                           | Social Engineering/Community mobilization                                                                                                                                   | LS        | 100000                    |
| <b>Sub Total [B]</b>                          |                                                                                                                                                                             |           | <b>200000</b>             |
| <b>GRAND TOTAL [A] + [B]</b>                  |                                                                                                                                                                             |           | <b>2587500*</b>           |
| <b>Part C- Execution and Operational Cost</b> |                                                                                                                                                                             |           |                           |
| 15.                                           | Professional Charges to the Implementing Agency (10% of the Part A)                                                                                                         |           | 238750                    |
| 16.                                           | Charges to State Nodal Agency for coordination and monitoring (5% of the Part A)                                                                                            |           | 119375                    |
| 17.                                           | Operation and Maintenance Charges to the Implementing Agency for initial period of 2 years (10 % of the Part A)                                                             |           | 238750                    |
| <b>Sub Total [C]</b>                          |                                                                                                                                                                             |           | <b>596875<sup>+</sup></b> |
| <b>GRAND TOTAL [A+B+C]</b>                    |                                                                                                                                                                             |           | <b>3184375</b>            |

1 - Depending on Village layout and number of households.

2 - Depending on resource availability and demand.

# - Estimates for 100 households.

- - Cost sharing on 90:10 basis between the Ministry and SNA/Implementing Agencies/beneficiary.

+ 100% support from the Ministry.

§ Wherever feasible, dual fuel engine/genset running on biofuel and biogas may be considered for which the cost will be lower than the 100% gas engine and will be accordingly worked out.

20% higher project cost will be allowed in special category states, namely, North-Eastern States (including Sikkim); Himachal Pradesh; Uttarakhand; and, Jammu & Kashmir.

**BIOMASS GASIFIER BASED MODULE**  
**(Package II (option I) - for 101- 250 Households)**

| S.No.                                         | Items                                                                                                                                                          | Qty./Nos. | Estimated cost (Rs.)       |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|
| <b>Part A- Fixed Cost</b>                     |                                                                                                                                                                |           |                            |
| 1.                                            | Biomass gasifier system with 100% producer gas engine/genset including all accessories with 5 years Annual Maintenance Contract including two year's warrantee | 2X10 kW   | 1550000                    |
| 2.                                            | Civil foundation & shed including storage shed for biomass and water tank.                                                                                     | LS        | 300000                     |
| 3.                                            | Gasifier room lights @ Rs.500/- per light                                                                                                                      | 5         | 2500                       |
| 4.                                            | Atta Chakki / Rice Huller including connection and all equipments (Load development such as Dona Patta making machine etc.)                                    | 1         | 20000                      |
| <b>SUB TOTAL (fixed cost)</b>                 |                                                                                                                                                                |           | <b>1872500</b>             |
| <b>Variable Cost<sup>1</sup></b>              |                                                                                                                                                                |           |                            |
| 5.                                            | Plantation for fuel wood and oil-seed bearing trees @ Rs.30,000/- per ha                                                                                       | 10 ha     | 300000                     |
| 6.                                            | Distribution line for 3 km @ Rs.1,50,000/km. (As per SEB norms)                                                                                                | LS        | 450000                     |
| 7.                                            | Service line (@ Rs.1500/- per HH) with 2 light points and one 5 Amp. socket point per HH (As per SEB norms)                                                    | 250       | 375000                     |
| 8.                                            | Battery back-up with Inverter to be charged by electricity generating unit.                                                                                    | 1X10kW    | 700000                     |
| 9.                                            | Street Lighting @ Rs.2,500/- per light                                                                                                                         | 25        | 62500                      |
| 10.                                           | Dung based biogas plants inclusive all accessories & Civil Works for 60 HH @ 2 CuM per HH @ Rs.5000/- per CuM                                                  | 120 CuM   | 600000                     |
| 11.                                           | Improved Chulha fixed type / Portable or Turbo Portable Chulha (maximum Subsidy @ Rs.500/- per chulha)                                                         | 250       | 125000                     |
| <b>SUB TOTAL (variable cost)<sup>#</sup></b>  |                                                                                                                                                                |           | <b>2612500</b>             |
| <b>Optional Cost<sup>2</sup></b>              |                                                                                                                                                                |           |                            |
| 12.                                           | Oil Expeller with filter press and heater (50 kg/hour)                                                                                                         | 1         | 135000                     |
| <b>Sub Total [A]</b>                          |                                                                                                                                                                |           | <b>4620000</b>             |
| <b>Part B- Capacity building</b>              |                                                                                                                                                                |           |                            |
| 13.                                           | Capacity building, training, awareness and visits to project sites and manufacturer's works.                                                                   | LS        | 100000                     |
| 14.                                           | Social Engineering/Community mobilization                                                                                                                      | LS        | 100000                     |
| <b>Sub Total [B]</b>                          |                                                                                                                                                                |           | <b>200000</b>              |
| <b>GRAND TOTAL [A] + [B]</b>                  |                                                                                                                                                                |           | <b>4820000*</b>            |
| <b>Part C- Execution and Operational Cost</b> |                                                                                                                                                                |           |                            |
| 15.                                           | Professional Charges to the Implementing Agency (10% of the Part A)                                                                                            |           | 462000                     |
| 16.                                           | Charges to State Nodal Agency for coordination and monitoring (5% of the Part A)                                                                               |           | 231000                     |
| 17.                                           | Operation and Maintenance Charges to the Implementing Agency for initial period of 2 years (10 % of the Part A)                                                |           | 462000                     |
| <b>Sub Total [C]</b>                          |                                                                                                                                                                |           | <b>1155000<sup>+</sup></b> |
| <b>GRAND TOTAL [A+B+C]</b>                    |                                                                                                                                                                |           | <b>5975000</b>             |

1 - Depending on Village layout and number of households.

2 - Depending on resource availability and demand.

# - Estimates for 250 households.

- - - Cost sharing on 90:10 basis between the Ministry and SNA/Implementing Agencies/beneficiary.

+ 100% support from the Ministry.

20% higher project cost will be allowed in special category states, namely, North-Eastern States (including Sikkim); Himachal Pradesh; Uttarakhand; and, Jammu & Kashmir.

**BIOMASS GASIFIER BASED MODULE  
(Package II (option II) - for 101- 250 Households)**

| S.No.                                         | Items                                                                                                                                                          | Qty./Nos. | Estimated cost (Rs.)       |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|
| <b>Part A- Fixed Cost</b>                     |                                                                                                                                                                |           |                            |
| 1.                                            | Biomass gasifier system with 100% producer gas engine/genset including all accessories with 5 years Annual Maintenance Contract including two year's warrantee | 1X25 kW   | 1850000*                   |
| 2.                                            | Civil foundation & shed including storage shed for biomass and water tank.                                                                                     | LS        | 300000                     |
| 3.                                            | Gasifier room lights @ Rs.500/- per light                                                                                                                      | 5         | 2500                       |
| 4.                                            | Atta Chakki / Rice Huller including connection and all equipments (Load development such as Dona Patta making machine etc.)                                    | 1         | 20000                      |
| <b>SUB TOTAL (fixed cost)</b>                 |                                                                                                                                                                |           | <b>2172500</b>             |
| <b>Variable Cost<sup>1</sup></b>              |                                                                                                                                                                |           |                            |
| 5.                                            | Plantation for fuel wood and oil-seed bearing trees @ Rs.30,000/- per ha                                                                                       | 10 ha     | 300000                     |
| 6.                                            | Distribution line for 3 km @ Rs.1,50,000/km (As per SEB norms)                                                                                                 | LS        | 450000                     |
| 7.                                            | Service line (@ Rs.1500/- per HH) with 2 light points and one 5 Amp. socket point per HH (As per SEB norms)                                                    | 250       | 375000                     |
| 8.                                            | Battery back-up with Inverter to be charged by electricity generating unit.                                                                                    | 1 X10 kW  | 700000                     |
| 9.                                            | Street Lighting @ Rs.2,500/- per light                                                                                                                         | 25        | 62500                      |
| 10.                                           | Dung based biogas plants inclusive all accessories & Civil Works for 60 HH @ 2 CuM per HH @ Rs.5000/- per CuM                                                  | 120 CuM   | 600000                     |
| 11.                                           | Improved Chulha fixed type / Portable or Turbo Portable Chulha (maximum Subsidy @ Rs.500/- per chulha)                                                         | 250       | 125000                     |
| <b>SUB TOTAL (variable cost)<sup>#</sup></b>  |                                                                                                                                                                |           | <b>2612500</b>             |
| <b>Optional Cost<sup>2</sup></b>              |                                                                                                                                                                |           |                            |
| 12.                                           | Oil Expeller with filter press and heater (50 kg/hour)                                                                                                         | 1         | 135000                     |
| <b>Sub Total [A]</b>                          |                                                                                                                                                                |           | <b>4920000</b>             |
| <b>Part B- Capacity building</b>              |                                                                                                                                                                |           |                            |
| 13.                                           | Capacity building, training, awareness and visits to project sites and manufacturer's works.                                                                   | LS        | 100000                     |
| 14.                                           | Social Engineering/Community mobilization                                                                                                                      | LS        | 100000                     |
| <b>Sub Total [B]</b>                          |                                                                                                                                                                |           | <b>200000</b>              |
| <b>GRAND TOTAL [A] + [B]</b>                  |                                                                                                                                                                |           | <b>5120000*</b>            |
| <b>Part C- Execution and Operational Cost</b> |                                                                                                                                                                |           |                            |
| 15.                                           | Professional Charges to the Implementing Agency (10% of the Part A)                                                                                            |           | 492000                     |
| 16.                                           | Charges to State Nodal Agency for coordination and monitoring (5% of the Part A)                                                                               |           | 246000                     |
| 17.                                           | Operation and Maintenance Charges to the Implementing Agency for initial period of 2 years (10 % of the Part A)                                                |           | 492000                     |
| <b>Sub Total [C]</b>                          |                                                                                                                                                                |           | <b>1230000<sup>+</sup></b> |
| <b>GRAND TOTAL [A+B+C]</b>                    |                                                                                                                                                                |           | <b>6350000</b>             |

\* Original 100% producer gas engine / genset.

1 - Depending on Village layout and number of households.

2 - Depending on resource availability and demand.

# - Estimates for 250 households.

\* - Cost sharing on 90:10 basis between the Ministry and SNA/Implementing Agencies/beneficiary.

+ 100% support from the Ministry.

20% higher project cost will be allowed in special category states, namely, North-Eastern States (including Sikkim);

Himachal Pradesh; Uttarakhand; and, Jammu & Kashmir.

**BIOFUEL ENGINE BASED MODULE  
(Package II- for 101-250 Households)**

| S.No.                                         | Items                                                                                                                                                          | Qty./Nos. | Estimated cost (Rs.)      |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------|
| <b>Part A- Fixed Cost</b>                     |                                                                                                                                                                |           |                           |
| 1.                                            | Biofuel engine with alternator including all accessories (based on 100% Biofuel / SVO) with 5 years Annual Maintenance Contract including two year's warrantee | 2X10 kW   | 400000                    |
| 2.                                            | Civil foundation & shed including storage shed for seeds.                                                                                                      | LS        | 300000                    |
| 3.                                            | Biofuel engine room lights<br>@ Rs.500/- per light                                                                                                             | 5         | 2500                      |
| 4.                                            | Atta Chakki / Rice Huller including connection and all equipments (Load development such as Dona Patta making machine etc.)                                    | 1         | 20000                     |
| 5.                                            | Oil Expeller with filter press and heater<br>(100 kg/hour)                                                                                                     | 1         | 175000                    |
| <b>SUB TOTAL (fixed cost)</b>                 |                                                                                                                                                                |           | <b>897500</b>             |
| <b>Part A- Variable Cost<sup>1</sup></b>      |                                                                                                                                                                |           |                           |
| 6.                                            | Plantation for oil-seed bearing trees<br>@ Rs.30,000/- per ha                                                                                                  | 10 ha     | 300000                    |
| 7.                                            | Distribution line<br>for 3 km (@ Rs.1,50,000/km<br>(As per SEB norms)                                                                                          | LS        | 450000                    |
| 8.                                            | Service line (@ Rs.1500/- per HH)<br>with 2 light points and one 5 Amp. socket point per HH (As per SEB norms)                                                 | 250       | 375000                    |
| 9.                                            | Battery back-up with Inverter to be charged by electricity generating unit.                                                                                    | 1 X10 kW  | 700000                    |
| 10.                                           | Street Lighting<br>@ Rs.2,500/- per light                                                                                                                      | 25        | 62500                     |
| 11.                                           | Dung based biogas plants inclusive all accessories & Civil Works for 25 HH @ 2 CuM per HH @ Rs.5000/- per CuM                                                  | 120 CuM   | 600000                    |
| 12.                                           | Improved Chulha fixed type / Portable or Turbo Portable Chulha (maximum Subsidy @ Rs.500/- per chulha)                                                         | 250       | 125000                    |
| <b>SUB TOTAL (variable cost)<sup>2</sup></b>  |                                                                                                                                                                |           | <b>2612500</b>            |
| <b>Sub Total [A]</b>                          |                                                                                                                                                                |           | <b>3510000</b>            |
| <b>Part B- Capacity building</b>              |                                                                                                                                                                |           |                           |
| 14.                                           | Capacity building, training, awareness and visits to project sites and manufacturer's works.                                                                   | LS        | 100000                    |
| 14.                                           | Social Engineering/Community mobilization                                                                                                                      | LS        | 100000                    |
| <b>Sub Total [B]</b>                          |                                                                                                                                                                |           | <b>200000</b>             |
| <b>GRAND TOTAL [A] + [B]</b>                  |                                                                                                                                                                |           | <b>3710000*</b>           |
| <b>Part C- Execution and Operational Cost</b> |                                                                                                                                                                |           |                           |
| 15.                                           | Professional Charges to the Implementing Agency (10% of the Part A & B)                                                                                        |           | 351000                    |
| 16.                                           | Service Charges to State Nodal Agency (5% of the Part A & B)                                                                                                   |           | 175500                    |
| 17.                                           | Operation and Maintenance Charges to the Implementing Agency (10 % of the Part A & B)                                                                          |           | 351000                    |
| <b>Sub Total [C]</b>                          |                                                                                                                                                                |           | <b>877500<sup>+</sup></b> |
| <b>GRAND TOTAL [A+B+C]</b>                    |                                                                                                                                                                |           | <b>4587500</b>            |

1 - Depending on Village layout and number of households.

2 - Estimates for 250 households.

\* - Cost sharing on 90:10 basis between the Ministry and SNA/Implementing Agencies/beneficiary.

+ 100% support from the Ministry.

*20% higher project cost will be allowed in special category states, namely, North-Eastern States (including Sikkim); Himachal Pradesh; Uttarakhand; and, Jammu & Kashmir.*

**BIOGAS BASED MODULE**  
**(Package I- for 101-250 Households)**

| S.No.                                         | Items                                                                                                                                                                                  | Qty./Nos.        | Estimated cost (Rs.)       |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------|
| <b>Part A- Fixed Cost</b>                     |                                                                                                                                                                                        |                  |                            |
| 1.                                            | Biogas Plants (2X85 CuM & 1X35 CuM) with 100% gas based engine <sup>§</sup> / genset including all accessories with 5 years Annual Maintenance Contract including two year's warrantee | 2X8 kW<br>1X4 kW | 1550000<br>425000          |
| 2.                                            | Civil foundation & shed for housing biogas engine/genset and water tank.                                                                                                               | LS               | 350000                     |
| 3.                                            | Biogas engine room lights@ Rs.500/- per light                                                                                                                                          | 5                | 2500                       |
| 4.                                            | Atta Chakki / Rice Huller including connection and all equipments (Load development such as Dona Patta making machine etc.)                                                            | 1                | 20000                      |
| <b>SUB TOTAL (fixed cost)</b>                 |                                                                                                                                                                                        |                  | <b>2347500</b>             |
| <b>Variable Cost<sup>1</sup></b>              |                                                                                                                                                                                        |                  |                            |
| 5.                                            | Distribution line for 3 km @ Rs.1,50,000/km (As per SEB norms)                                                                                                                         | LS               | 450000                     |
| 6.                                            | Service line (@ Rs.1500/- per HH) with 2 light points and one 5 Amp. socket point per HH (As per SEB norms)                                                                            | 250              | 375000                     |
| 7.                                            | Battery back-up with Inverter to be charged by electricity generating unit.                                                                                                            | 1 X10 kW         | 700000                     |
| 8.                                            | Street Lighting @ Rs.2,500/- per light                                                                                                                                                 | 25               | 62500                      |
| 9.                                            | Dung based biogas plants inclusive all accessories & Civil Works for 25 HH @ 2 CuM per HH @ Rs.5000/- per CuM                                                                          | 120 CuM          | 600000                     |
| 10.                                           | Improved Chulha fixed type / Portable or Turbo Portable Chulha (maximum Subsidy @ Rs.500/- per chulha)                                                                                 | 250              | 125000                     |
| <b>SUB TOTAL (variable cost)<sup>#</sup></b>  |                                                                                                                                                                                        |                  | <b>2312500</b>             |
| <b>Optional Cost</b>                          |                                                                                                                                                                                        |                  |                            |
| 11.                                           | Oil Expeller with filter press and heater (50 kg/hour)                                                                                                                                 | 1                | 135000                     |
| 12.                                           | Plantation for oil-seed bearing trees @ Rs.30,000/- per ha                                                                                                                             | 5 ha             | 150000                     |
| <b>SUB TOTAL (Optional Cost)<sup>2</sup></b>  |                                                                                                                                                                                        |                  | <b>285000</b>              |
| <b>Sub Total [A]</b>                          |                                                                                                                                                                                        |                  | <b>4945000</b>             |
| <b>Part B- Capacity building</b>              |                                                                                                                                                                                        |                  |                            |
| 13.                                           | Capacity building, training, awareness and visits to project sites and manufacturer's works.                                                                                           | LS               | 100000                     |
| 14.                                           | Social Engineering/Community mobilization                                                                                                                                              | LS               | 100000                     |
| <b>Sub Total [B]</b>                          |                                                                                                                                                                                        |                  | <b>200000</b>              |
| <b>GRAND TOTAL [A] + [B]</b>                  |                                                                                                                                                                                        |                  | <b>5145000*</b>            |
| <b>Part C- Execution and Operational Cost</b> |                                                                                                                                                                                        |                  |                            |
| 15.                                           | Professional Charges to the Implementing Agency (10% of the Part A)                                                                                                                    |                  | 494500                     |
| 16.                                           | Charges to State Nodal Agency for coordination and monitoring (5% of the Part A)                                                                                                       |                  | 247250                     |
| 17.                                           | Operation and Maintenance Charges to the Implementing Agency for initial period of 2 years (10 % of the Part A)                                                                        |                  | 494500                     |
| <b>Sub Total [C]</b>                          |                                                                                                                                                                                        |                  | <b>1236250<sup>+</sup></b> |
| <b>GRAND TOTAL [A+B+C]</b>                    |                                                                                                                                                                                        |                  | <b>6381250</b>             |

1 - Depending on Village layout and number of households.

2 - Depending on resource availability and demand.

# - Estimates for 250 households.

\* - Cost sharing on 90:10 basis between the Ministry and SNA/Implementing Agencies/beneficiary.

+ 100% support from the Ministry.

§ Wherever feasible, dual fuel engine/genset running on biofuel and biogas may be considered for which the cost will be lower than the 100% gas engine and will be accordingly worked out.

20% higher project cost will be allowed in special category states, namely, North-Eastern States (including Sikkim); Himachal Pradesh; Uttarakhand; and, Jammu & Kashmir.