

**F.No.11/1/2007-ST
Government of India
Ministry of New and Renewable Energy
Solar Thermal Division**

**Block No.14, CGO Complex,
Lodi Road, New Delhi – 110 003.**

Dated: April 26, 2007

To

State Nodal Agencies

Subject: Sanction of continuation of the Solar Thermal Energy Demonstration Programme during 2007-08.

Sir,

Sanction of the President is hereby conveyed for continuation of the Solar Thermal Energy Demonstration Programme of the Ministry of New and Renewable Energy during 2007-08.

2. The above programme will be implemented during 2007-08 as per the same funding norms / guidelines and other provisions applicable during 2006-07 as announced vide sanction order no. 11/1/2006-ST dated 26/10/2006 and until such time the same is superseded by fresh / new programmes / schemes which are required to be formulated in alignment with 11th Plan proposals.

3. Release of subsidy / CFA sanctioned during 2007-08 on the basis of provisions of programmes / schemes of 2006-07 will continue to be governed by the said provisions even after the same are superseded by fresh / new programmes / schemes. Some of these schemes are likely to be replaced by new programmes / schemes during the course of the year to be implemented during the 11th Plan period. As and when such new schemes are approved and conveyed, the old schemes would be replaced and the new norms would apply. Till such time, the existing schemes would continue to be implemented.

4. All SNAs are requested to take up schemes for implementation as per the guidelines of 2006-07 till further communication.

5. This issues with the approval of the Minister(NRE).

**(R.P. Goswami)
Scientist 'D'**

Copy to :

1. **SS&FA**
2. **Pr. Adviser & Spl. Secretary**
3. **Jt. Secretary**
4. **All Advisers**
5. **MD, IREDA**
6. **All Directors**
7. **Director(Finance)**
8. **Dy. CA**
9. **PAO**
10. **All MNRE Regional Offices**
11. **Sr. PPS to Secretary**
12. **PS to Minister**
13. **Cash Section**
14. **IFD, MNRE**
15. **Sanction Folder**

**(R.P. Goswami)
Scientist 'D'**

No.11/1/2006-ST
Government of India
Ministry of New and Renewable Energy
[Solar Thermal Group]

Block No. 14, CGO Complex
Lodi Road, New Delhi - 110 003

Date: 26.10.2006

To

**Heads,
State Nodal Agencies**

Sub: Implementation of Solar Thermal Energy Demonstration Programme during the financial year 2006-07.

Sir,

I am directed to convey sanction of the President for implementation of the Solar Thermal Energy Demonstration Programme during the Financial Year 2006-07 as per the following details:

2.0 Objectives

The objective of the programme is to promote solar thermal technologies to meet cooking energy requirements, with a view to demonstrate their effectiveness and potential in reducing dependence on traditional biomass and fossil fuels. Special projects would also be supported under the programme to cover other solar thermal applications such as solar drying, purification of water etc. having potential for future growth. The component related to solar buildings, aims at to promote energy efficient designs based on the principles of solar architecture for rural buildings including the institutional/community buildings with a view to create more comfortable indoor environment for the people.

3.0 Solar Thermal Energy Programme

The solar thermal energy programme will have the following components:

3.1 Solar Cooking

a) Concentrating Solar Cookers

The following types of concentrating solar cookers will be supported under the Programme:

- Dish solar cookers for faster outdoor cooking for about 10-15 people
- Community solar cookers for indoor cooking for about 40-50 people.

The minimum technical specifications for the concentrating solar cookers eligible for MNRE support are given in **Appendix-I**.

b) Promotion of sale of Box Type Solar Cookers

It will cover

- Providing incentives to the promotion of sales of box-type solar cookers

- Financial support to organize various promotional activities to increase sale of solar cookers
- Financial support to the manufacturers of solar cookers for obtaining BIS approval.

3.2 Special Demonstration and Pilot Projects

Support will be provided for solar dryers (direct type and indirect type) and solar distillation systems for producing pure water (single basin type solar stills, high efficiency solar stills) in villages which are electrified or to be electrified through conventional grid.

3.3 Demonstration Scheme for North-East, Islands, J&K and Sikkim

Support will be provided for solar water heating systems at sites of high visibility in the States/ UTs of the North-East, the Islands, Sikkim and Jammu & Kashmir.

3.4 Solar Buildings Programme

Support will be provided to promote energy efficient building designs based on the principles of solar architecture for rural houses through training and education, demonstration and promotional activities in the villages, which are electrified or to be electrified through conventional grid.

4.0 Targets

A target of 20,000 nos. of different type solar cookers has been set to be achieved through various incentives and financial support as detailed in the Programme for this year.

5.0 Implementation Arrangement

The Programme will be implemented through State Nodal Agencies (SNAs), Government & Semi-Government organizations, Public Sector Enterprises, recognized Universities & Institutions, Professional bodies and reputed NGOs. The detailed guidelines for implementation of the solar thermal energy demonstration programme and the financial provisions available from the Ministry are given in **Appendix-II**. For 'Special Demonstration & Pilot Projects' and 'Solar Buildings Programme', the implementing agencies will certify that the areas where programme is being implemented are the villages, which are electrified or to be electrified through conventional grid.

6.0 Monitoring Mechanism

The implementing agencies will be responsible for setting up arrangements to closely monitor implementation of the programme as per guidelines outlined in this administrative approval. The Regional Offices of the Ministry, Solar Energy Centre, and the Regional Test Centres established by the Ministry for solar thermal systems/devices would be associated with monitoring, as and when required.

7.0 Expenditure

The expenditure for undertaking the above-mentioned programmes during the current financial year would be met from the overall allocated budget provision under solar thermal energy programme, given under:

		Allocated Budget (Rs in crores)
Demand No.: 64		
Major Head: 2810	Non-conventional Sources of Energy	
02	Solar (Sub Major Head)	
02.101	Solar Thermal Energy programme (Minor Head)	
03	Demonstration, Technology Utilization & Market Development	
03.00.31	Grants in aid	3.35
04	Solar Passive Architecture	
04.00.31	Grants in aid	1.00
06	Other Items	
06.00.31	Other charges	0.01
Major Head: 3601	Grants in aid to State Governments	
03.216	Solar-Solar Thermal Energy Programme (Minor Head)	
01	Demonstration, Technology and Market Development	
01.00.31	Grants in aid	0.04
Major Head: 3602	Grants in aid to UT Governments	
03.215	Solar-Solar Thermal Energy Programme (Minor Head)	
01	Demonstration, Technology and Market Development	
00.00.31	Grants in aid	0.03

8.0 This issues in exercise of the power delegated to the Ministry and with the approval of Secretary, MNRE and concurrence of IFD vide SAN. No. IFD/SAN/107/431/2006-07 dated 19/10/06.

(Dr R. P. Goswami)
Scientist 'D'
Ph. No. 24360707 (Extn. 1905)

Copy for information and necessary action to:

- i) The Director of Audit, Scientific Audit-II, DACR Building, I. P. Estate, New Delhi.
- ii) Adviser (RE), Planning Commission.
- iii) PPS to Secretary, MNRE.
- iv) Principal Advisor & Special Secretary, MNRE
- v) Joint Secretary, MNRE
- vi) All Advisers, MNRE
- vii) Dir (AK)/ Dir (P&C)/PSO (RPG)
- viii) Dir (F)/ AO (F)/ PAO
- ix) Managing Director, IREDA
- x) Solar Energy Centre
- xi) Regional Offices, MNRE / Regional Test Centres of MNRE
- xii) Known Manufacturers of Solar Cookers
- xiii) Cash Section, MNRE
- xiv) Sanction folder / Guard file

(Dr R. P. Goswami)
Scientist 'D'
Ph. No. 24360707 (Extn. 1905)

CONCENTRATING SOLAR COOKERS
MINIMUM TECHNICAL SPECIFICATIONS & OTHER REQUIREMENTS

1. DISH SOLAR COOKER

Paraboloid Dish	
Configuration	Paraboloid dish, made of single reflector, or by joining smaller pieces of reflector, fixed firmly to a rigid frame. Size and shape of the dish shall be such that when exposed to sun in the normal direction, a point focus would be formed.
Dish diameter	1.4 m, minimum
Reflector material	<ul style="list-style-type: none"> ▪ Bright anodized aluminum sheets of thickness 0.4 mm, or ▪ Glass mirrors, thickness about 3 mm, with suitable protective layer on back to minimize degradation of the reflective coating due to weathering.
Reflectivity	> 80%, minimum
Useful Life	5 Years, minimum
Focal Point	When dish is exposed to sun's rays at normal incidence, the size of the point where reflected rays get focused would be less or equal to the size of base area of the cooking pot.
Supporting Frame of the dish	<ul style="list-style-type: none"> ▪ Made either of MS rings supported by MS strips, FRP material, or thick MS wire-mesh structure. ▪ Rigid enough to resist any deformation of the dish shape due to wind pressure or manual handling. ▪ The MS structure will have epoxy/anti-rust coating.
Stand for the dish	<ul style="list-style-type: none"> ▪ Made of MS with epoxy/powder coating. ▪ Equipped with an arrangement to hold cooking pot of different sizes. ▪ Having a suitable provision to secure the cooker to the ground.
Tracking Mechanism	<ul style="list-style-type: none"> ▪ Manual or automatic, allowing unrestricted rotation of the dish along its horizontal and vertical axes enabling its adjustment in the normal direction to the sun's rays. ▪ Provision of locking arrangement to hold/fix the dish at a desired position. ▪ Equipped with an arrangement (may be in the form of a vertical pointer) to enable users to position the dish in a direction normal to the sun's rays.
Cooking vessel (Optional)	<ul style="list-style-type: none"> ▪ For dish of about 1.4 m dia, a pressure cooker of 5 l capacity with ISI mark may be provided. ▪ For other sizes, proportionately higher capacity of pressure cooker is to be provided. ▪ High temperature resistant black powder coating at the bottom to be provided.
Other requirements	<ul style="list-style-type: none"> ▪ The entire structure should be able to withstand wind pressure up to a speed of 60 km per hour without damage. ▪ All parts/components should be weather resistant and able to withstand degradation due to climatic conditions for a period of 15 years (except for reflecting mirrors which may require replacement early). ▪ Accessories, like cap, hand gloves, goggles, manual for its installation and proper use, and tool kit for installation will also be supplied. ▪ One-year warranty for the whole system with free service for repair/replacement of parts.

2. COMMUNITY SOLAR COOKER FOR INDOOR COOKING (SCHEFFLER)

Configuration	Concentrating type having a secondary reflector to enable cooking of food inside the kitchen
Primary Reflector	
Shape & make	Elliptical dish, made up of multiple pieces of reflecting mirrors supported with a rigid frame / structure to form Scheffler reflector.
Aperture area	7.0 sq. m, minimum (= $\pi/4$ x product of lengths of major & minor axes of the ellipse)
Material	<ul style="list-style-type: none"> ▪ Bright anodized aluminum sheets of thickness 0.4 mm, or ▪ Glass mirrors, of thickness about 3 mm and having suitable protective layer on back to minimize degradation of the reflective coating due to weathering
Reflectivity	> 80%, minimum
Useful life	5 years, minimum
Focal point	When exposed to sun's rays at normal incidence, shape of the focal point should nearly be circular with a diameter of 350 to 400 mm formed on the opening of kitchen wall to reach the secondary reflector
Frame & support structure	<ul style="list-style-type: none"> ▪ Rigid enough to resist deformation of the dish shape due to wind pressure or manual handling. ▪ Made of anodized aluminum/mild steel with epoxy/powder coating
Tracking mechanism	<ul style="list-style-type: none"> ▪ Automatic, mechanical clock – work arrangement ▪ Designed for E-W tracking of the reflector along its polar axis to align it in the direction normal to the sun's rays. ▪ Having a provision for seasonal adjustment manually for the tilt angle.
Secondary Reflector	<ul style="list-style-type: none"> ▪ Bright anodized aluminum sheet with minimum reflectivity of 80% fixed on a curved metallic structure. ▪ Size & curvature of the structure is such that the reflected rays get focused on to the bottom of the cooking pot of about 300 mm diameter.
Other Requirements	<ul style="list-style-type: none"> ▪ The entire structure should be able to withstand wind pressure up to a speed of 60 km per hour without any damage. ▪ All parts/components should be weather resistant and able to withstand degradation due to climatic conditions for a period of 15 years (except for reflecting mirrors which may require replacement early). ▪ The cooker shall be installed and commissioned at the site by the supplier. Necessary training will be imparted to the beneficiary regarding operation, maintenance and trouble shooting of the cooker. ▪ Two years warranty shall be given by the supplier for the whole system with free service for repair / replacement of parts.

GUIDELINES FOR IMPLEMENTATING SOLAR THERMAL ENERGY DEMONSTRATION PROGRAMME AND FINANCIAL PROVISIONS

To implement the Solar Thermal Energy Demonstration Programme, the following guidelines will be adopted by the implementing agencies. A list of known manufacturers of different types of solar cookers will be made available from time to time. The contact details of the Solar Energy Centre and Regional Test Centers of the Ministry are given at **Appendix-XIII**.

1.0 SOLAR COOKING

A. Concentrating Solar Cookers

Dish Solar Cookers for outdoor cooking:

The proposals for sale of Dish solar cookers will be submitted by the SNAs to MNRE in the format given at **Appendix-III**. MNRE will assign targets and release 80% of the total eligible financial support to the SNAs based on their proposals, past performance and availability of funds. The cookers will either be sold/ distributed by the concerned SNA through their own network or could be directly sold by the manufacturers as per the modalities decided by the SNAs. Only those manufacturers would be eligible for supply of Dish Solar Cookers under this programme whose product confirms to MNRE specifications and has been tested at SEC/RTCs. The manufacturers / suppliers will be selected following a transparent procedure and shall be responsible for after sales service and providing guarantee for a minimum period of one year.

Further release of MNRE support / final settlement of accounts will be made after receipt of i) District-wise complete list of beneficiaries with their contribution and feedback report as per **Appendix-IV** ii) SNAs certification that 100% verification of the cookers has been made by them. iii) Audited UC towards MNRE support & service charges (**Appendix-VIII**).

Community Solar Cookers for Indoor Cooking

The project proposals for installation of community solar cookers for indoor cooking will be got developed by the SNAs in close cooperation with the beneficiaries, and will be submitted to the Ministry in the required format as given at **Appendix-V** along with all the required documents/information. The project cost would cover one-year on-site warrantee by the supplier. In addition, there would be a provision for five years annual maintenance from the beneficiary side.

MNRE will release 80% of CFA in advance alongwith the sanction order. The supplier shall be made responsible for after sales services and providing guarantee for a minimum period of one year.

Further release of money to SNAs will be made on the basis of progress of the installation of the system and utilization of funds released earlier. A joint

inspection report by the representative of the SNA and the Regional Office of MNRE will be required for further release of the money. For final settlement of accounts, performance report of the system for a period of one month (**Appendix-VI**) will also be included in the report submitted to MNRE alongwith audited UCs, copy of the work order placed to the supplier and the SOE indicating the date of commissioning, total expenditure incurred and the beneficiary's contribution.

The pattern of financial support available from MNRE for concentrating type solar cookers is as follows:

Type of Solar Cooker	Support to Users	Service Charges to SNAs for Implementation & Monitoring
Dish solar cooker (Diameter 1.4 m, minimum)	30% of total cost, limited to Rs.1500/- per cooker.	Rs. 250 per cooker
Community solar cooker for indoor cooking (Aperture area 7 sq. m., minimum)	30% of eligible capital cost, limited to Rs.15000/- per cooker	Rs. 2,500 per cooker

B. Promotion of Sale of Box Type Solar Cookers

The proposed targets for the sale of box type solar cookers including cardboard solar cookers will be submitted by the SNAs to MNRE in the prescribed format (**Appendix-III**) along with tentative plan/ methodology to achieve these. MNRE will fix targets based on their proposals, performance during past 3 years and, availability of funds. 80% of the corresponding incentive amount will be released by MNRE in advance. Further release, if any, will be made at the time of settlement of accounts on receipt of audited SoE and the details of solar cookers sold (**Appendix-VII**) and UCs (**Appendix-VIII**).

The box type solar cookers including the cardboard designs will be sold through outlets of SNAs as well as Akshay Urja Shops and private establishments/ NGOs/ Cooker Manufacturers/ Women Welfare Organizations/ Self Help Groups/ Institutions/ Petrol Pumps / LPG agencies etc. The outlets other than those of SNAs will be called as associated promoters of SNAs. The incentive to the promoters will be disbursed after verification of the sale made and the performance seen by the SNAs. The incentive will be applicable on sale of box type solar cookers only, procured from the manufacturers (1) who have obtained BIS certificate, or have applied to BIS for approval and whose samples have been sent for testing by the BIS (2) who have obtained test report from SEC/RTCs after March 2003 and have been approved. The solar cookers covered under the scheme will be provided guarantee against manufacturing defects for a minimum period of one year.

SNAs will be responsible for further release of funds to SEWs, NGOs and other promoters. Funds retained by the SNAs may be used to meet expenses on publicity and promotional activities, and some overhead charges of the SNAs. The publicity and promotional activities could be organized through (i) advertisements, cooking demonstrations/ competitions (ii) training programmes for SEWs for sale

promotion and after sales repair services (iii) development of network for sale & services of solar cookers (including Akshay Urja Shops, other State Govt. bodies/ SEWs/ Women organizations/ NGOs, etc. (iv) free distribution of solar cookers to govt. recognized institutions e.g. Schools, Colleges, Universities, Anganwadis, etc. for awareness creation, if required (v) overall monitoring of implementation of the programme in the State/ Performance evaluation studies on solar cookers, and (vi) any other associated activity as may be considered necessary for promotion of solar cookers in the eligible areas of the State. SNAs will ensure that sufficient stock of solar cookers is available at the outlets before giving any advertisements though print/ electronic media in respect of such outlets. The advertisements will indicate the addresses/phone Nos. of the outlets. Various promotional activities to increase the sale of box type solar cookers may also be organized by reputed NGOs, universities, institutions, RTCs etc.

The State agencies will encourage solar cooker manufacturers to obtain BIS approval. In this regard, the following Indian standards are available from BIS, which may be referred to by the manufacturers to initiate action to obtain BIS approval on their product:

- IS 13429 (Part1-Requirements): 2000 Solar Cooker – Box Type – Specification;
- IS 13429 (Part2-Components): 2000 Solar Cooker – Box Type – Specification;
- IS 13429 (Part3-Test Methods): 2000 Solar Cooker – Box Type – Specification.

The pattern of financial support available for promotional scheme on solar cookers is as follows:

- a) Incentives to State Nodal Agencies (SNAs) and associated promoters for sale of solar cookers:

Types of solar cooker sold	Incentive per cooker to SNAs if the sale is made through their own outlets	Incentive per cooker if the sale made by SNAs is through their associated promoters	
		SNAs	Associated promoters
ISI marked box solar cooker	Rs. 200	Rs. 100	Rs. 100
Non-ISI box solar cooker but approved by SEC/RTCs	Rs. 100	Rs. 50	Rs. 50

- b) Support to undertake promotional activities to increase sale of solar cookers

Support may be provided to reputed NGOs, Universities, Institutions, Regional Test Centres, etc. up to a maximum of Rs.1.50 lakhs, towards **organization of promotional activities like publicity, cooking demonstrations/competitions, seminars/ workshops, evaluation studies,**

development of improved models, etc. on solar cookers based on specific proposal received from them in the prescribed format (**Appendix – IX**).

c) Support to manufacturers for taking BIS approval

Reimbursement of BIS fee (including application and marking fee and test charges) may be made directly by MNRE on 50% basis during the year on submission of approval certificate and copies of necessary bills/receipts issued by BIS.

C) Physical Verification/ Monitoring of the Sale & Quality/ Reporting of Usage/ Performance of Solar Cookers

The State Nodal Agencies shall keep records of sale of box solar cookers & Dish solar cookers in two permanent registers, one each for Box type solar cookers and Dish type solar cookers. The sale and quality of the cookers would be verified personally by SNAs and data on usage / performance of solar cookers would be obtained for submission to the Ministry. SNAs will ensure that there is no duplicity in the list of beneficiaries. In case of any discrepancy, suitable corrective action would be taken by the SNAs under intimation to MNRE before settlement of accounts. They will submit report on sale/ installation of different types of solar cookers to the Ministry at the time of final settlement of accounts.

For community solar cookers for indoor cooking, the beneficiary will record performance data on the system on daily basis in a register named '**Community Solar Cooker Register**', after installation and commissioning of the system. The register would be available to the MNRE officials or any other agency authorized by the Ministry.

2.0 SPECIAL DEMONSTRATION AND PILOT PROJECTS

The basic objective of providing support under this component of the programme is to facilitate installation of solar dryers for drying of food products for its preservation over sufficient period of time without spoilage and solar stills with a view to purify water for drinking and other applications. Direct and indirect type models of solar dryers and single basic model and high efficient models of solar stills would be eligible for support under the programme.

The project proposals for these projects would be developed based on the assessment of requirements of heat energy of the users in the format given at **Appendix-X**. The proposals will include design details and major technical specifications, layout drawings (wherever necessary) and the cost details of the solar system. In case, similar systems are proposed to be provided to a number of individuals, a consolidated project proposal enclosing detailed list of users and the locations of installations may be submitted.

The proposals will be screened through an Expert Committee, and the implementing organization may be requested to make a presentation before the Committee. To undertake these projects, approval of the Secretary, MNRE will be solicited based on the recommendations of the Expert Committee. For these

projects, the MNRE share will be restricted to 50% of the cost of the system. The MNRE may get these projects monitored / evaluated by a suitable organization including RTCs / SEC through a separate grant. MNRE will release 80% of its share in advance alongwith the sanction order.

The maintenance of the systems will be the responsibility of the users and the users must enter into an Annual Maintenance Contract (AMC) for the systems at least for a period of 5 years as a pre-condition for MNRE financial assistance. MNRE will release 80% of its share in advance alongwith the sanction order. The installation / commissioning report in the format given at **Appendix-XI** will be submitted to the Ministry alongwith audited UC (**Appendix-VIII**), SoE and other relevant papers for final release of the sanctioned amount.

3.0 DEMONSTRATION SCHEME FOR NORTH-EAST, ISLANDS, J&K AND SIKKIM

The basic objective of this component of the programme is to popularize solar hot water systems in North-East, Islands, J&K and Sikkim by supporting installation of these systems at places of high visibility. The eligible design configuration for solar water heating systems under this programme will be based on flat plate collectors or evacuated tube collector technologies. The manufacturers / supplies of systems with flat plate collectors will have approval from BIS and those of evacuated tube collectors from the Ministry based on the test reports from Regional Test Centres / Solar Energy Centre and other criterion fixed in this regard from time to time.

The sites chosen for installation of solar water heating systems would be of high visibility where large number of people may visit and get opportunity to see the systems. Such sites may include institutions, hostels, hospitals, guesthouses etc.

The MNRE will provide support up to the extent of Rs. 4,000 per sq. m. of the installed collector area for Islands and J&K. The quantum of financial assistance for solar water heating systems for the states of North-East & Sikkim will be to the maximum extent of Rs.6000 per sq.m. The rest of the cost of the system will be borne by the beneficiary through his contribution, loans or state contribution. The contribution of the Ministry will be restricted to 50% of the cost of the system.

The maintenance of the systems will be the responsibility of the users and the users must enter into an Annual Maintenance Contract (AMC) for the systems at least for a period of 5 years as a pre-condition for MNRE financial assistance. MNRE will release 80% of its share in advance alongwith the sanction order. The installation / commissioning report in the format given at **Appendix-XI** will be submitted to the Ministry alongwith audited UC (**Appendix-VIII**), SoE and other relevant papers for final release of the sanctioned amount.

4.0 SOLAR BUILDINGS PROGRAMME

The objective of the Solar Buildings Programme is to promote energy efficient building designs based on the principles of solar architecture for rural houses to create more comfortable indoor environment for the occupants of the buildings. The scope of the programme will cover training & education, and demonstration activities as per the following details

4.1 Training & Education

Training and education by organizing **Workshops and Seminars** will be supported covering villages which are electrified or to be electrified through conventional grid for creating awareness, generating public interest and providing inputs about the technology to engineers, academicians, scientists, planners, builders, students, consultants, housing financing organizations and potential house owners. Focus may be given to provide support for training of local people/masons etc. to promote the efficient building designing. Support will also be provided to organize **Orientation Courses** for architects and builders with a view to motivate them to design rural buildings based on the concepts of solar passive architecture for efficient building design.

The pattern of financial assistance for these activities will be as follows.

National / Model workshop / orientation course	Rs. 2,00,000
Seminar / workshop of one day duration	Rs.40,000
Workshop / orientation course of 2 day duration	Rs.65,000
Refresher / orientation course of 3 day duration	Rs.80,000
A session in a major conference	Rs.50,000

First installment of 80% of eligible financial assistance would be released in advance by MNRE on receiving request with confirmed date(s) and venue from the state nodal agencies and other organizations as per format given at **Appendix -IX**. The balance release of 20% of the eligible financial assistance would be made after completion of the event and on the receipt of completion report. The report will include details regarding the programme, participants, and technical contents of the programme, along with Utilization Certificate as per the format attached at **Appendix -VIII** and head wise audited statement of accounts. A hard / soft copy of the presentations will also be enclosed in the report.

4.2 Demonstration Programme

With a view to promote construction of new buildings based on the principles of solar passive architecture, the Ministry will provide partial financial assistance to government and semi-government organizations including village panchayats through State Nodal Agencies to i) support preparation of detailed project reports (DPRs), and ii) construction of such buildings. The non-governmental institutional buildings, which would be able to serve the purpose of demonstration effectively, may also be supported under this programme. However,

commercial undertakings will not be eligible for assistance. Buildings with BIPV (Building Integrated Photovoltaics) alongwith solar passive features will be eligible under the demonstration programme. In such cases, total cost of the building plus the integrated system(s) will be taken as the cost of the building for the purpose of DPR. For the purpose of assistance for building construction, the cost of the building will be considered without cost of PV/SWH/SAH components.

The pattern of financial assistance will be as outlined under.

(a) Preparation of Detailed Project Reports (DPRs)

50% of the cost of DPR for a building designed on the basis of the principles of solar passive architecture or 1.5% of the estimated cost of the building with a maximum of Rs.1,00,000 for each project.

First installment of 80% of eligible financial assistance including service charges will be released to the organization on receipt of the proposal to prepare DPR as per broad guidelines given at **Appendix - XII**. The final installment of 20% of eligible financial assistance including service charges will be released after receipt of two copies of the DPR, Utilization Certificate as per **Appendix – VIII**, and the audited statement of expenditure. The DPR will clearly bring out use of concepts of solar architecture alongwith expected influence by them on the overall building performance.

(b) Construction of Solar Buildings

Support will be limited to 10% of the cost of the building with a maximum of Rs. 10.0 lakh for each project. First installment of 80% of eligible financial assistance and service charges would be released in advance after the receipt of the proposal from the state nodal / implementing agencies and other organizations containing a copy of DPR for the building to be constructed based on the principles of solar passive architecture and a commitment from the user that the building will be constructed as per the DPR.

The second installment of 20% of the eligible financial assistance and service charges would be released on the receipt of Utilization Certificate (**Appendix - VIII**) of the previous amount released, audited SoE, a receipt from the user for the amount released by the State Nodal Agency, a certificate from the user that the building has been constructed as per the DPR and an undertaking from the user that solar architecture features incorporated in the construction of the building will not be altered.

4.3 Promotional Programmes

MNRE will provide financial assistance to suitable organizations/institutions for compiling and publishing documents on solar buildings, which include popular literature, books and manuals for architects and designers, promotional materials in different languages etc. Financial assistance will also be provided for an award competition for energy efficient buildings to be organized by a professional organization.

Financial assistance upto Rs.1,00,000 will be provided to housing development organizations/institutions/village panchayats for enabling them to formulate guidelines for energy efficient buildings under the local climatic conditions through expert consultation, preparation of manuals, information brochures, design guidelines etc. for energy efficient buildings to be implemented in their housing projects. The assistance will be provided through SNAs. The activities pertaining to setting up database, review of building codes, development of suitable curriculum for students of architecture etc. may also be supported.

First installment of 80% of the eligible financial assistance would be released as advance along with the sanction. The second installment of 20% of the eligible financial assistance would be released after the receipt of required number of copies of the document as per the requirement of this Ministry along with the audited statement of expenditure and Utilization Certificate (**Appendix-VIII**).

5.0 Service Charges

For carrying out the above projects/activities, the SNAs / implementing organizations will be eligible for service charges amounting to 10% of the CFA being routed through them wherever no specific provision is indicated in this administrative approval in this regard.

Proposed Targets for Sale of Solar Cookers

1. Implementing agency :
2. Year of implementation :

A. Promotional Scheme on Solar Cookers

Proposed target for box solar cookers (No.)

- | | | |
|----|--------------------|---|
| a) | ISI marked cookers | : |
| b) | Non-ISI cookers | : |

Total

Tentative plan/methodology to achieve targets :

Proposed target for cardboard solar cookers, if any :

State subsidy to be provided, if any

- | | | |
|----|------------------------|---|
| a) | Box solar cooker | : |
| b) | Cardboard solar cooker | : |

iv) MNRE support/incentive required for :

- | | | |
|-------|-----------------------------------|---|
| ----- | No. of ISI marked box cookers | : |
| ----- | No. of non-ISI marked box cookers | : |

Total :

B. Sale/ Installation of Dish Solar Cookers

(Information may be given for dish solar cookers and community solar cookers, separately)

Proposed target :

(district-wise break up to be enclosed)

Tentative plan/methodology to achieve targets :

State subsidy to be provided, if any :

Tentative ex-factory cost of Dish solar cooker :

Total cost for ----- cookers :

MNRE support for ----- cookers @ Rs. ----- /- :

(50% of the cost subject to a max. of Rs. 2500/-)

vii) Service charges for ----- cookers @ Rs. 250/- :

Total : _____

C. Status of Funds available with the Agency:

- i) Funds made available during :
2005-2006 including that
carried forward from
previous years
- ii) Promotional activities :
- iii) Concentrating solar cookers :
- iv) Total :
- v) Total expenditure incurred in :
2005-2006
- vi) Balance funds available :
(iv) – (v)
- vii) Reasons for less expenditure :

D. Progress on Sale/Installation of Solar Cookers

S. No.	Type of solar cooker	2003-04	2004-05	2005-06
i)	Box solar cooker			
ii)	Dish solar cooker			
iii)	Cardboard solar cooker			
iv)	Concentrating cookers for indoor cooking			
v)	Solar steam cooking system			

3. The audited accounts and the progress report for the year 2005-06 are enclosed. (The audited accounts / progress reports for earlier years may also be enclosed, if not submitted earlier.)

**Signature of Head of the
Organization with Office seal**

Note: Sale of Cardboard solar cookers will not qualify for any incentive from MNRE

Information required for the release of final installment of MNRE share for dish and community solar cookers

1. Name of State / UT
2. Name of implementing organization
3. MNRE sanction no. and date
4. Targets allocated for FY 2006-07
5. Cumulative Numbers distributed prior to 2006-07
6. Total numbers distributed / installed during FY 2006-07
7. District wise distribution / installation of dish/community solar cookers

Sl.No.	Name of district	Nos. distributed / installed during FY 2006-07	Cumulative nos. distributed / installed
TOTAL			

8. Cost sharing pattern (per system)

MNRE share:

State share:

Beneficiary share:

Total cost

Certified that

- (i) 100% verification has been made by the SNA for supply of solar cookers to the beneficiaries and solar cookers found performing satisfactorily.
- (ii) Complete beneficiary wise record of solar cookers distributed / installed alongwith date have been compiled and maintained at the headquarters of this organization. The records will be readily provided to MNRE or any agency designated by MNRE for the purpose of inspection and verification.
- (iii) There is no duplication in the list. Every beneficiary has been properly verified by the concerned project incharge / head of the organization.

**Signature of project
Head
Incharge
organization
with office seal**

**Signature of Accounts
Officer
with office seal**

**Signature of
of the
with office seal**

**Format for Project Proposals for Installation of Community Solar Cookers
for Indoor Cooking**

1. Name of the Establishment:
2. Complete postal address, telephone and fax number:
3. Details of Solar Cookers/NRSE systems already installed:
4. Type and Size of Solar Concentrating Cooking System proposed to be installed:
5. Proposed site for installation of the Solar Concentrating Cooking System:
 - Latitude & Longitude:
 - Availability of shadow free area for the proposed installation (9 A.M. to 5 P.M.)
 - Site plan for system installation (to be attached):
6. Solar radiation available at site
 - Daily solar radiation in summer/winter separately:
 - Approximate No. of sunshine days in a year :
7. Present cooking arrangement (Direct cooking/steam cooking or both):
8. Number of persons for whom food is cooked on average:
 - Persons per day:
 - Persons per month:
 - Persons per year:
9. Type and average quantity of food cooked per day:

Type of food cooked	Quantity (kg.)			Total
	Breakfast	Lunch	Dinner	

10. Present pattern of fuel(s) consumption for cooking :

Type of Fuel used	Consumption			Existing Fuel price	Annual expenditure
	Per day	Per month	Per year		
Wood					
Kerosene					
Biogas					
LPG					
Electricity					
Steam					
Any other					

11. System details and cost estimates:
 Details of the system to be enclosed if there is any deviation from MNRE specifications
 Cost estimates based on quotations received from manufacturers/suppliers with break up
12. Proposed means of financing:
 - Own contribution:
 - State Govt. subsidy:
 - MNRE support (requested):
 - Term loans, if any, with complete address of FI:

Total:
13. Cost benefit analysis:
 - O&M costs
 - Estimated saving of conventional fuels
 - Payback period/IRR
14. Commitments from beneficiary

We will bear the balance cost of the system as per details in para 12 above.
 We will not dismantle the system at any stage without prior written permission of MNRE
 We will regularly use and properly maintain the system and submit performance report for a period of one year from the date of installation.
 We will take Annual Maintenance contract for a period of at least 5 years after completion of the warranty period from manufacturers.
 We will get our people trained in operation, maintenance and trouble shooting of the system and take responsibility to run it for a minimum period of 5 years.

Date

**Signature and Seal of
Head of Establishment**

Facts examined and verified.

**Signature with Official Seal
Head of State Nodal Agency**

**Proforma for the Performance Report of Community Solar Cookers
for Indoor Cooking**

1. Beneficiary details :
(Complete postal address, telephone & fax No.,
e-mail address, etc.)
2. Type and size with lay-out plan of the :
system installed
3. Date of installation and commissioning :
4. Performance Report

Sl. No.	Month	No. of days system operated	Types of food cooked	Approximate Qty. of food cooked per day	Amount & type of fuel saved	Remarks on system performance/ cooking time etc.*
1.						
2.						

More details if required may be given on a separate sheet
Please attach a good quality photograph of the system.

Date -----

**Signature & Seal of
Head of Establishment**

Facts examined & verified from the 'Community Solar Cooker register'
maintained by the beneficiary.

**Signature
Authorized Officer of the State Nodal Agency**

Appendix-VII

Statement of Expenditure & Progress Report for Sale of Box Type Solar Cookers

(Manufacturer-wise no. of solar cookers sold to be enclosed)

ISI Marked Solar Cookers

Through SNAs

No. sold	Unit Cost (Rs/per cooker)	State Contribution per cooker, if any

Total No. sold =

Total incentive @ Rs. 200 per cooker =

Through Associated Promoters

No. sold	Unit Cost (Rs/per cooker)	State Contribution per cooker, if any

Total No. sold =

Total incentive @ Rs. 200 per cooker =

B) Non-ISI Marked Solar Cookers

a) Through SNAs

No. sold	Unit Cost (Rs/per cooker)	State Contribution per cooker, if any

Total No. sold =

Total incentive @ Rs. 100 per cooker =

b) Through Associated Promoters

No. sold	Unit Cost (Rs/per cooker)	State Contribution per cooker, if any

Total No. sold =

Total incentive @ Rs. 100 per cooker =

C) Certificate

Certified that the sale of the solar cookers has been physically verified, and the detailed list of beneficiaries has been maintained by the Agency as per the guidelines of MNRE. There is no duplicity in the sale. Incentives to SEWs, manufacturers, NGOs and other associated promoters have been paid at the prescribed rates of MNRE. The lists of manufacturer-wise number of solar cookers sold have also been enclosed.

**Signature with
Official Seal
Project In-charge
Organization**

**Signature with
Official Seal
Accounts Officer**

**Signature with
Official Seal
Head of the**

UTILIZATION CERTIFICATE

To be sent in duplicate to the Ministry of New and Renewable Energy
for the financial year from _____ to _____ .

1. Title of the Project/Scheme :
2. Name of the organization :
3. Ministry of New and Renewable Energy letter :
No. and date of sanctioning the project
4. Amount brought forward from the previous financial year :
5. Amount received from Ministry of New and Renewable Energy :
Sources during the financial year
(Please give letter No. & date of sanctions showing the amount paid)
6. Total amount available for expenditure to complete targets allocated:
(Including commitment incurred during the financial year
(Sr. No. 4 + 5):
7. Actual expenditure (Excluding commitments) incurred during :
the financial year for achievement
8. Unspent balance refunded, if any. :
(please give details of cheque no. etc.)
9. Unspent amount available at the end of the financial year :
10. Amount allowed to be carried forward to the next :
financial year vide letter no. and date

Certified that the expenditure of Rs. _____ (Rupees _____
mentioned against Column was actually incurred on the Project / Scheme for the
purpose for which it was sanctioned and balance amount of Rs. _____ is
available on _____.

**Signature with
Official Seal
Project In-charge
Organization**

**Signature with
Official Seal
Accounts Officer**

**Signature with
Official Seal
Head of the**

Format for Submission of Proposals for Organizing Workshops/ Seminars/ Training Programmes

1. Title of the project :
2. Organizing Institution/Agency :
3. Objectives :
4. Proposed duration :
5. Venue :
6. Methodology for organizing :
7. Type of participation expected :
8. Expected number of participants :
9. Detailed break up of budget required :
10. Expected outcome :

**Signature & Seal of the
Head of the Organization**

Format for Project Proposals

Title of the project/system

Objectives

User (Individual/Organization)

Name & Address of the User

Project Location

Capacity of the system

System configuration

Viz. Solar Dryers (Direct/indirect), Solar Stills (single basin/high efficiency), Solar Water Heating System (FPC / ETC based, thermosyphon / forced convection, with heat exchanger / without heat exchanger etc.)

Application/purpose

Total estimated cost of the project with break-up

Estimated MNRE share

Arrangement to meet the balance balance cost, including State share, if any
(Letters of firm commitment may be enclosed)

Name of consultant/designer, if any

Implementation arrangements

Estimated time for completion of the project

Monitoring organization, if any.

**Signature
Head of Organization**

**Signature with
Official Seal
Head, State Nodal Agency**

Format for Installation / Commissioning Report

Title of the project/system

User (Individual/Organization)

User's Name & Address

Capacity of the system

Date of placement of work order

Manufacturer/supplier

Date of installation & commissioning

System size and configuration

Application/purpose

Total cost of the project

MNRE share as sanctioned

Name of consultant/designer, if any

Implementation arrangements

Monitoring organization

Amount already released by MNRE

Amount to be released by MNRE

It is certified that the above project/system sanctioned vide letter No. _____ dated _____ has been installed and commissioned as per the specifications laid down in the agreement and no defect has been noticed in the quality of the material. The system is delivering the rated capacity.

The system has been handed over to _____ (user organization). The satisfactory performance report for each system has been received from the user and kept in record along with the joint (nodal agency, manufacturer and user) inspection report.

Certificate to be provided for Special Demonstration & Pilot Projects

It is further certified that the proposed site of installation is located in the villages, which are electrified or to be electrified through conventional grid.

**Signature
Head, State Nodal Agency**

**Broad Guidelines for the Contents of the Detailed Project Report
(DPR)
for a Solar Building**

Format for preparation of Details Project Report (DPR) of building using concepts of solar architecture will be as per following:

- Climatic Data,
- Climatic Classification,
- Climatic Analysis,
- Strategies of planning and design,
- Specific architectural features for using solar energy with necessary details, drawings etc.

Estimated cost of the building, specialized solar architectural features, and additional solar devices proposed for integration into the building design.

- Financial resources for construction of proposed building

**Contact Details of Solar Energy Centre and Regional Test Centres of
the Ministry for Solar Thermal Devices and Systems**

1. Dr. B. Bandyopadhyay
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Devi Ahilya Vishwavidyalaya,
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3. Dr. Subhasis Neogi,
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Principal Investigator
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