

NON-CONVENTIONAL SOURCE OF ENERGY

The Pondicherry Experimental Solar Pond power project is a joint venture of Pondicherry Engineering college and Electricity Department of Government of Pondicherry, funded by Government of India, under National solar pond development programme. The aim of the project is to install a power station to generate electric power of the order of 360 KW per day using organic Rankin cycle coupled with salt Gradient solar pond. At present, it has been proposed to extract 6 KW power from this pilot phase 500 sqm. Salt gradient solar pond by constructing an organic Rankine Cycle Engine at National Aero Space laboratories, and to couple it with the solar pond. For design, fabrication and installation of Organic Rankine Cycle Engine, a memorandum of understanding has been executed between the Chairman, Pondicherry Experimental solar pond power project society and the Director, National Aero Space Laboratory, Bangalore. The work of construction of 500 sqm. Solar pond is in advanced stage. The pond has been restructured and maintained at 75^o C throughout the year. It is proposed to take up the following works during the Tenth Plan:

- i) Construction works for 3 nos. of 2000 sqm. Pond.
- ii) Construction of Condenser water storage tank.
- iii) Sinking of new Bore-well/Construction of pump house.
- iv) Purchase of pond site machinery's and control heat Exchanger.
- v) Procurement of 30 KW ORC Power Pack.
- vi) Providing controls and electricity distribution system.
- vii) Construction of buildings, quarters and turbine rooms.

OUTLAY AT A GLANCE

Sector : NON-CONVENTIONAL SOURCES OF ENERGY
Department : ELECTRICITY

No. of Schemes : 1

(Rs. in lakhs)

Ninth Five Year Plan 1997-02 Approved Outlay	250.00
Annual Plan 1997-2000 Actual Expenditure	288.45
Annual Plan 2000-01 Actual Expenditure	22.13
Annual Plan 2001-02 Approved Outlay	12.14
Annual Plan 2001-02 Revised Outlay	12.14
Tenth Five Year Plan 2002-07 Proposed Outlay	100.00
Annual Plan 2002-03 Proposed Outlay	15.00

(Rs. in lakhs)

Sl. No	Name of the Scheme	2000-01	2001-02		2002-07	2002-03
		Actual Expenditure	Approved Outlay	Revised Outlay	Proposed Outlay	Proposed Outlay
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Development of non-conventional sources of energy	12.13	12.14	12.14	100.00	15.00
2.	New Sources of Energy	10.00	-	-	-	-
Total		22.13	12.14	12.14	100.00	15.00

Sector : NON CONVENTIONAL
SOURCES OF ENERGYImplementing
Department : ELECTRICITY

1. **Name of the Scheme** : Development of Non-Conventional Sources of energy.
2. **Objective of the Scheme** :

The objective of the scheme is to promote the use of new and renewable sources of energy and to conduct research and Development on renewable sources of energy. Setting up of pond for Production of Thermal and Electrical energy.

3. Ninth Plan 1997-2002	(Rs. in lakhs)	:	
a. 1997-2000 (Actual expenditure)		:	149.95
b. 2000-2001 (Actual expenditure)		:	12.13
c. 2001-2002 (Revised Outlay)		:	12.14

d. Actual Physical Achievement (1997-2000) :

- (i) Establishment of Three different zones at 75' C. Carrying out the works related to phase-II for development, fabrication, installation and commissioning of 6 KW organic rankine in connection with 500 Sqmt solar pond. The construction works of power room for the installation of organic rankine cycle has already been commenced.
- (ii) Failure of the liners has been detected and action has been initiated for rectifying the defects.
- (iii) Strengthening of pond with revised lining works had been carried out for arresting seepage of hot line and the pond was established.
- (iv) Payment made to PESPS to meet the expenses for development, fabrication, installation, commissioning of KW organic Rankine Cycle Power Plant.

e. Actual Physical Achievement (2000-01) :

Under the experimental Project on generations of Electricity using solar energy, a 500 Sqmt. Solar Pond has been restructured and the temperature monitorised at 75' C throughout the year. The special engine with necessary heat exchangers for conversion of this heat energy into Electrical energy has been designed by M/S National Aero Space Laboratory, Bangalore and the fabrication work was under progress.

f. Anticipated Physical Achievement (2001-02) :

Installation of Generator and Trial run.

4. **Proposed Outlay for the Tenth Plan 2002-07** : 100.00
Proposed Outlay for the Annual Plan 2002-03 : 15.00

5. **Programme envisaged for the Tenth Plan (2002 – 2007) :**

The following works are proposed :

- (i) Construction works for 3 Nos. of 2000 Sqm.
- (ii) Construction of 2000 Sqm. Condenser water tank.
- (iii) Striking of new Bore-well/Construction of Pump House instruments.
- (iv) Purchase of pond site machinery's and control heat Exchanger.
- (v) Procurement of 30 KW ORC Power Pack.
- (vi) Providing controls and electricity distribution system.
- (vii) Construction of buildings quarters turbine rooms.
- (viii) Purchase of jeep/motor cycle.

6. **Programme envisaged for the Annual Plan (2002 –2003) :**

- (i) Constructions of 2000 Sqm. Pond.
- (ii) Providing infrastructure facilities.

7. **Remarks** : Continuing scheme.