TWENTY SECOND REPORT

STANDING COMMITTEE ON ENERGY (1995-96)

(TENTH LOK SABHA)

MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

DEMANDS FOR GRANTS (1995-96)

Presented to Lok Sabha on .....3 MAY 1995

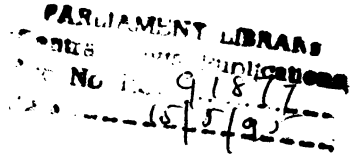
Laid in Rajya Sabha on .....

LOK SABHA SECRETARIAT
NEW DELHI

April, 1995 / Vaisakha, 1917 (Saka)

C.E. No. 031

Price : Rs. 13.00



Published under Rule 382 of the Rules of Procedure and Conduct of Business in Lok Sabha (Seventh Edition) and Printed by National Printers, 20/3, West Patel Nagar, New Delhi - 110008.

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INTRODUCTION

I, the Chariman of the Standing Committee on Energy having been authorised by the Committee to present the Report on their behalf, present this Twenty-Second Report on the Demands for Grants (1995-96) relating to the Ministry of Non-Conventional Energy Sources.

2. The Committee considered and adopted the Report at their sitting held on 17th April, 1995 and also held discussion with the officials of the Ministry of Non-Conventional Energy Sources on 18th April, 1995.

3. The replies furnished by the Ministry of Non-Conventional Energy Sources on the points contained in this report and also on the points raised by the Committee during their discussion with the representatives of Ministry of Non-Conventional Energy Sources on 18th April, 1995 have been appended to the Report.

4. A copy of verbatim proceedings of the discussion held by the Committee with the officials of the Ministry of Non-Conventional Energy Sources on 18th April, 1995 is also laid in the House alongwith the Report.

5. The Committee wish to thank the representatives of the Ministry of Non-Conventional Energy Sources who appeared before the Committee and placed their considered views. They also wish to thank the Ministry for furnishing the replies on the points raised by the Committee.

JASWANT SINGH,
Chairman,
Standing Committee on Energy.

NEW DELHI;
24th April, 1995
Vaisakha 4, 1917 (Saka)

CHAPTER I

INTRODUCTORY

1. The Ministry of Non-Conventional Energy Sources is implementing a wide ranging set of programmes which cover the entire gamut of renewable energy sources and technologies including improved chulha, biogas, biomass, solar energy, wind energy, small hydel, co-generation, hydrogen energy, ocean energy among others. In addition, the Integrated Rural Energy Programme, earlier implemented by Planning Commission has been transferred to Ministry of Non-Conventional Energy Sources with effect from 1st April, 1994. The focus of the Ministry is towards market orientation and commercialisation of NRSE technologies.

2. The observations of the Committee on the basis of the Scrutiny of Demands for Grants of the Ministry for the year 1995-96 are brought out in succeeding Chapter.

3. The Committee are constrained to record its displeasure on the Ministry's delay in furnishing copies of Performance Budget to the Committee. The copies of performance Budget (1995-96) of the Ministry were not received until draft of the report was finalised on 13th April, 1995. As a result, the Committee had to rely on draft version of Performance Budget, one copy of which was provided by the Ministry for scrutiny. The Committee require that the Ministry should ensure in future that copies of Performance Budget, Annual Report and Budget notes are made available to the Committee alongwith copies of Demand for Grants well in time.

CHAPTER II

ANALYSIS OF DEMANDS FOR GRANTS OF THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (1995-96)

4. The Ministry of Non-Conventional Energy Sources have presented Demands for Grants of Rs. 248.38 crores for the year 1995-96 as against Rs. 204.20 crores (actual) in 1993-94 and Rs. 249.38 crores (R.E.) in 1994-95. The details regarding the Demands for Grants are shown in Appendix-I. The total budget allocations for the last three years has been as under :

(In crores of Rs.)

Actual 1993-94	B.E. 1994-95	R.E. 1994-95	B.E. 1995-96
204.20	226.38	249.38	248.38

The plan outlay of the Ministry for 1995-96 is Rs. 246.13

Solar water heating systems

5. To give market orientation to the programme subsidy on solar water heating systems was withdrawn with effect from 1.7.1993. It is observed from the draft Performance Budget of the Ministry that the actual collector area installed during 1994-95 (till 15.11.1994) was as little as 1848 sq. m. against an indicative goal of 35,000 sq. m. In respect of solar cooker for which the Central subsidy was withdrawn from 1.4.1994, the results of commercialisation during the year has not been given. The Committee would like to be informed whether the Ministry undertook any review of the programmes which were given market orientation with a view to assessing their success or otherwise of commercialisation. The Committee would like to know the outcome of such review, if undertaken.

6. It is observed that the 8th Five Year Plan target for the low grade solar thermal devices programme is to install 2.75 lakh sq. mtrs. of collector area.

The targets and achievement during the last three years and target for 1995-96 in respect of solar thermal systems are shown below :

	Target	Achievement
1992-93	66,000 M^2	24,595 M^2
1993-94	55,000 M^2	40,198 M^2
1994-95	35,000 M^2	1,848 M^2 (Upto 15th Nov., 94)
1995-96	25,000 M^2	-

7. It can be observed from the above, that installation of solar water heating systems during the first three years of the 8th plan (Upto 15 Nov. 94) was around 66.6 thousand sq. m. as against a target of 2.75 lakh sq.m. during the 8th plan. The target in this regard has been steadily brought down year after year. If the trend is of any indication, the Committee have grave doubts whether the target of 2.75 M^2 collector area set for 8th Plan period would be achieved. The Committee would like to know how the Ministry proposes to achieve the 8th Plan target.

Solar Photovoltaic Programme

8. It is observed from the Performance Budget that the actual expenditure under this programme was Rs. 13.65 crores as against a provision of Rs. 15.50 crores during 1993-94. The Committee expect the Ministry to explain the reasons for shortfall in utilisation of budgetary provision during 1993-94.

9. The physical achievements with respect to the Solar Photovoltaic Programme during 1993-94 and 1994-95 (as on 31.12.94) were as given below :

	1993-94		1994-95	
	Target	Actual	Target	Actual as on 31.12.94
(i) Street Lighting Systems (Nos.)	400	1,240	-	285
(ii) Domestic Lighting Systems	1,000	6,399	500	3,641
(iii) Solar Lanterns (Nos.)	10,000	11,248	60,000	11,668
(iv) SPV Power Plants	200	122	100	39

10. It can be observed from the above table that the achievement with regard to solar lantern as on 31.12.1994 during 1994-95 fell too short of target. The Committee express apprehension about the achievability of the target of 60,000 lanterns during 1994-95 considering that the materialisation till 31st December, 1994 was just 11,668 lanterns. The Committee in this connection note that during 1995-96, 10,000 Nos. solar lanterns will be taken up through budgetary resources and in addition 90,000 solar lanterns are proposed to be taken up through additional resources mobilisation. Similarly, in the case of SPV power plants, the achievement fell short of target in 1993-94 and also in 1994-95 (as on 31st December, 1994). The Committee are anxious to know how resources will be mobilised for taking up one lakh solar lanterns during 1995-96, considering the likely shortfall in performance in 1994-95.

Solar Thermal Power Generation

11. It has been stated in the Performance Budget that a 35 MW solar thermal power generation proposal has been submitted under the investment category of GEF for support. Grant assistance of US $ 30 million has been sought from Global Environment Facility for implementation of this Power Project in Jodhpur District of Rajasthan. Total cost has been projected at US $ 100 million. The Committee in their 5th report had observed that this project which had been conceived 15 years ago was still at the stage of preparation of project report. A detailed project report for this project has now been prepared by Bharat Heavy Electricals Limited in collaboration with M/s Solel Solar Systems of Israel. The Committee trust that there will be no further delay in implementation of the project.

Research and Development

12. The budgetary provisions for R & D of new and renewable energy sources programmes during 1994-95 and 1995-96 are as under :

(Rs. in lakhs)

Research & Development	1994-95		1995-96
	B.E.	R.E.	B.E.
Solar Thermal Energy	150	150	55
Photovoltaic	165	165	100
Amorphous Silicon Programme	275	275	50
Solar Thermal Power Generation	100	100	50
Small Hydro Power	1700	1700	25

13. It can be observed from above that there is steep reduction in budgetary provisions of 1995-96 as compared to 1994-95 for R&D of various non-conventional energy sources programmes. The Committee would like to know whether the R&D programmes undertaken during 1994-95 have yielded desired results. The Committee feel that vigorous R&D efforts are required to bring down the cost of solar photovoltaic systems to bring them within the reach of consumers. In this context, considerable reduction in budgetary provision for R & D is a matter of concern. The committee would like to be informed of the reasons for reduction in budgetary outlay for R&D during 1995-96 and alternatives that are thought of to accelerate R&D effort.

Energy Conservation

14. Energy conservation programme has been identified as one of the major thrust areas in the 8th Five Year Plan. The objectives of energy conservation are to identify various fields where conventional energy can be substitued by Renewable Energy Devices; to make the industry aware of major conserving schemes and financial benefits/incentives, soft loan etc. offered by the Government and financial institutions; and to substitutes conventional fuels by alternate fuels. The Ministry of Non-conventional Energy Sources initiate activities on energy conservation in the areas of renewable sources of energy by way of substitution/retrofitting from 1993-94.

15. The budgetary provision for energy conservation during the last three years was as under :

(Rs. in lakh)

1993-94	1994-95		1995-96
Actual	B.E.	R.E.	B.E.
20	30	30	1

16. The Committee find that budget provision for energy conservation programme has been rduced from Rs. 30 lakh in 1994-95 to Rs. 1 lakh in 1995-96. The Committee would like to know whether the programme has achieved the desired results during 1994-95. It appears that the programme is being side lined with a nominal provision of Rs. 1 lakh in 1995-96. The Committee would like to know the reasons for such a drastic reduction in budgetary provision for this programme.

NEW DELHI;
24th April, 1995
Vaisakha 4, 1917 (Saka)

JASWANT SINGH,
Chairman,
Standing Committee on Energy.

STATEMENT OF CONCLUSION/RECOMMENDATIONS OF THE STANDING COMMITTEE ON ENERGY CONTAINED IN THE REPORT

Sl. No.	Reference Para of the Report	Conclusion/Recommedations
1	2	3
1.	3	The Committe are constrained to record its displeasure on the Ministry's delay in furnishing copies of Performance Budget to the Committee. The copies of Performance Budget (1995-96) of the Ministry were not received until draft of the report was finalised on 13th April, 1995. As a result, the Committee had to rely on draft version of Performance Budget, one copy of which was provided by the Ministry for scrutiny. The Committee require that the Ministry should ensure in future that copies of Performance Budget, Annual Report and Budget notes are made available to the Committee along with copies of Demand for Grants well in time.
2.	5	To give market orientation to the programme subsidy on solar water heating systems was withdrawn with effect from 1.7.1993. It is observed from the draft Performance Budget of the Ministry that the actual collector area installed during 1994-95 (till 15.11.1994) was as little as 1848 sq. m. against an indicative goal of 35,000 sq. m.. In respect of solar cookers for which the central subsidy was withdrawn from 1.4.1994, the results of commercialisation during the year has not been given. The Committee would like to be informed whether the Ministry undertook any review of the programmes which were given market orientation with a view to assessing their success or otherwise of commercialisation. The Committee would like to know the outcome of such review, if undertaken.

1	2	3
3.	6	It is observed that the 8th Five Year Plan target for the low grade solar thermal devices programme is to install 2.75 lakh sq. Mtrs. of collector area. The targets and achievement during the last three years and target for 1995-96 in respect of solar thermal systems are shown below :

	Target	Achievement
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1994-95	35,000 M^2	1,848 M^2 (Upto 15th Nov. 94)
1995-96	25,000 M^2	

	7	It can be observed from the above, that installation of solar water heating systems during the first three years of the 8th Plan (upto 15 Nov. 94) was around 66.6 thousands sq.m. as against a target of 2.75 lakh sq.m. during the 8th Plan. The target in this regard has been steadily brought down year after year. If the trend is of any indication, the Committee have grave doubts whether the target of 2.75 M^2 collector area set for 8th Plan period would be achieved. The Committee would like to know how the Ministry proposes to achieve the 8th Plan target.
4.	8	It is observed from the performance Budget that the actual expenditure under this programme was Rs. 13.65 crores as against a provision of Rs. 15.50 crores during 1993-94. The Committee expect the Ministry to explain the reasons for shortfall in utilisation of budgetary provision during 1993-94.
5.	9	The physical achievements with respect to the Solar Photovolatic Programme during

1	2	3

1993-94 and 1994-95 (as on 31.12.94) were as given below:

	1993-94		1994-95	
	Target	Actual	Target	Actual as on 31.12.94
	1	2	3	4
(i) Street Lighting Systems (Nos.)	400	1240	-	285
(ii) Domestic Lighting Systems (Nos.)	1,000	6,399	500	3,641
(iii) Solar Lanterns (Nos.)	10,000	11,248	60,000	11,668
(iv) SPV Power Plants	200	122	100	39

10 It can be observed from the above table that the achievement with regard to solar lantern as on 31.12.91 during 1994-95 fell too short of target. The Committee express apprehension about the achievability of the target of 60,000 lanterns during 1994-95 considering that the materialisation till 31st December, 1994 was just 11,668 lanterns. The Committee in this connection note that during 1995-96, 10,000 Nos. solar lanterns will be taken through budgetary resources and in addition 90,000 solar lanterns are proposed to be taken up through additional resources mobilisation. Similarly, in the case of SPV power plants, the achievment fell short of target in 1993-94 and also in 1994-95 (as on 31st December, 1994). The Committee are anxious to know how resources will be mobilised for taking up one lakh solar lanterns during 1995-96, considering the likely shortfall in performance in 1994-95.

6. 11 It has been stated in the Performance Budget that a 35 MW solar thermal power generation proposal has been submitted under the investment category of GEF for support. Grant assistance of US $ 30 million has been sought from Global Environment

1	2	3
		Facility for implementation of this Power Project in Jodhpur District of Rajasthan. Total cost has been projected at US$ 100 million. The Committee in their 5th report had observed that this project which had been conceived 15 years ago was still at the stage of preparation of project report. A detailed project report for this project has now been prepared by Bharat Heavy Electricals Limited in collaboration with M/s Solel Solar Systems of Israel. The Committee trust that there will be no further delay in implementation of the project.
7.	12	The budgetary provisions for R & D of new and renewable energy sources programmes during 1994-95 and 1995-96 are as under :-

(Rs. in lakhs)

Research & Development	1994-95		1995-96
	B.E.	R.E.	B.E.
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1	2	3
8.	16	The Committe find that budget provision for energy conservation programme has been reduced form Rs. 30 lakh in 1994-95 to Rs. 1 lakh in 1995-96. The Committee would like to know whether the programme has achieved the desired results during 1994-95. It appears that the programme is being side lined with a nominal provision of Rs. 1 lakh in 1995-96. The Committee would like to know the reasons for such a drastic reduction in budgetary provision for this programme.

APPENDIX I

STATEMENT SHOWING THE DEMANDS FOR GRANTS OF THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

Sl. No.	Major Head	Programmes/ Schemes	1993-94 Actuals		1994-95 B.E.		1994-95 R. E.		1995-96 B. E.		Remarks
			Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	
1	2	3	4	5	6	7	8	9	10	11	12
1.	2810 (i) C1	Bio-energy	81.76	-	66.83	-	66.83	-	49.78	-	The Programme include National Projects on Bio-gas. Development construction of CBP & IBP and R&D in Bio-gas.
	C1 4 (ii)	Bio-mass	2.98	-	17.90	-	17.90	-	23.80	-	It includes R&D in Bio-mass, Energy plantation, Demonstration & Technology utilisation of Biomass Briquetting, National Animal Energy Programme, R&D, Demonstration and Technology Utilisation Activities, Biomass Gasifiers for stand alone applications, Bio-mass Gasifiers for stand alone

1	2	3	4	5	6	7	8	9	10	11	12
											applications, National Bio-energy Board activities, R&D in Biomass cogeneration, Demonstration & Technology, Utilisation of Biomass congeneation Demonstration & Technology Utilisation of Grid connected Biomass Gasifiers, other expenditure, Grants in-aid to State Govt. Grants-in-aid to Union Territory.
2.	2810 (i) C 4 (i)	Improved Chullah	16.40	-	20.85	-	20.85	-	14.80	-	Grants-in-aid/Central Assistance, other expenditure. Grants-in-aid to State Govt. and Union Territory.
3.	2810 (i) C 1 (1)	Solar Thermal Energy Programme	13.27	-	15.06	-	15.06	-	8.88	-	R&D Demonstration & Technology Utilisation of Solar Thermal System for Rural Applications, Demonstration & Techno-

1	2	3	4	5	6	7	8	9	10	11	12
											logy utilisation of Solar Thermal Systems for Urban Applications, Demonstrations and Technology utilisation of Solar Passive Architecture Grants-in-aid to State and UTs, other expenditure regional technical back-up units and Training Programme. Solar Thermal Power Generation programme Project, Solar Energy Centre.
4.	2810 (ii) C 2 (2)	Solar Photovoltaic Programme	41.13	-	44.35	-	44.35	-	41.00	-	This programme includes Demonstration & Technology Utilisation for Rural Energy Applications, Demonstration & Technology Utilisation for Grid Connected Power, R&D, Amorphous Silicon Programme, P.V. Test

1	2	3	4	5	6	7	8	9	10	11	12
											Facility, photovoltaic, other expenditure, Programme of SPV pumps. Training Repair & Maintenance Capital and other expenditure.
5.	2810 C3	Wind Energy	16.51	-	15.68	-	15.63	-	12.63	-	The Wind Energy Programme includes wind resource assessment R&D for wind power, R&D for wind pumps & other systems, Demonstration & Technology utilisation of wind power projects, Demonstration & Technology utilisation of wind pumps and other systems. Other expenditure Grants-in aid to States and Union Territories.
6.	2810 C4 (3)(1) (1)	Small Hydro Power	18.00	-	20.00	-	20.00	-	30.00	-	The programme proposed to install projects of an

1	2	3	4	5	6	7	8	9	10	11	12
											aggregate capacity of about 25 MW during 1995-96.
7.	2810 C4 (3) (2)	Chemical Sources of Energy	0.11	-	0.50	-	0.50	-	0.80	-	To expand chemical Sources of Energy.
8.	2810 C4 (3) (4)	Hydrogen Energy	0.09	-	0.45	-	0.45	-	0.49	-	To expand areas of hydrogen energy.
9.	2810 C4 (3) (3)	Alternative fuel Surface Transport	0.83	-	2.00	-	2.00	-	5.00	-	R&D and Demonstration Projects in the area of alternate fuels/ fuel systems.
10.	2810 C4 (4) (1)	Urjagram Project & Surveys	0.25	-	0.25	-	0.25	-	0.25	-	This programme proposes to set up 25 Urjagram projects and 100 energy surveys during 1995-96. At least two district level rural energy planning studies and the social economic impact assessment study.
11.	2810 C4 (3) (5)	Geo Thermal Energy	0.07	-	0.20	-	0.20	-	0.20	-	It includes various R&D projects on geo thermal energy.

1	2	3	4	5	6	7	8	9	10	11	12
12.	2810 C4 (3) (6)	Ocean Energy	-	-	0.10	-	0.10	-	0.20	-	The taking up of surveys and, investigations in the Gulf of Cambay & Sunderbans area.
13.	4810 AA (1)	IREDA	6.20	-	14.15	-	37.15	-	24.00	-	To promote and develop technologies relating to New & Renewable sources of Energy through soft term fincncial assistance.
14.	2810 B1	Integrated Rural Energy Planning Programme	-	-	-	-	-	-	10.00	-	It provides comprehensive framework for macro level planning of energy requirement of rural areas.
15.	2810 C4(2)	Energy from Urban and Agriculture Waste	1.59	-	-	-	-	-	11.00	-	It included feasibility studies and 40 demonstration projects.
16.	2810 C4(4) (3)	Energy Conservation	0.0002	-	0.03	-	0.03	-	0.001	-	It includes programme to save the conven-tional energy by way of energy substitution through renewable energy

APPENDIX II

REPLIES TO THE POINTS CONTAINED IN THE COMMITTEE'S REPORT FURNISHED BY THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

Para Nos. 5 and 7

Solar Water Heating Systems

To give market orientation to the programme, subsidy on solar water heating systems was withdrawn with effect from 1.7.1993. It is observed from the draft performance budget of the Ministry that the actual collector area installed during 1994-95 (till 15.11.1994) was as little as 1848 sq. m. against an indicative goal of 35,000 sq. m. In respect of solar cookers for which the Central subsidy was withdrawn from 1.4.1994, the results of commercialization during the year has not been given. The Committee would like to be informed whether the ministry undertook any review of the programmes which were given market orientation with a view to assessing their success or otherwise of commercialization. The Committee would like to know the outcome of such review, if undertaken.

It is observed that the 8th Five Year Plan target for the low grade solar thermal devices programme is to install 2.75 lakh sq. mtrs. of collector area. The targets and achievement during the last three years and target for 1995-96 in respect of solar thermal systems are shown below :

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1995-96	25,000 M^2	—

It can be observed from the above, that installation of solar water heating systems during the first three years of the 8th Plan (Upto 15 Nov. 94) was around 66 thousands sq. m. as against a target of 2.75 lakh sq. m. during the 8th Plan. The target in this regard has been steadily brought down year

after year. If the trend is of any indication, the Committee are not reassured that the target of 2.75 M^2 collector area set for 8th Plan period would be achieved. The Committee would like to know how the Ministry proposes to achieve the 8th Plan target.

Reply

Ministry of Non-Conventional Energy Sources has given market orientation to the Solar Thermal Programme. The subsidies on Solar Water Heating Systems was gradually reduced and finally withdrawn as it was felt that it is becoming a limiting factor for the growth of the programme and its removal may bring competition among the manufacturers, reduction in cost, improvement in technology and more business like relationship between the supplier of the customer. While the subsidies on Solar Water Heating Systems were withdrawn w.e.f. 1st July, 1993 and the installation of these systems were left to market forces, a soft loan scheme through IREDA was introduced w.e.f. 1st September, 1993.

With the commercialisation of the technology, Ministry is getting regular information on the Collector Area installed only through IREDA soft loan scheme. There is no mechanism established for getting the data on the solar water heating systems installed by the user directly either by using their own resources or through commercial loans. However, put together it is estimated that about 15,000 sq. mtr. collector areas have been installed during the year 1994-95.

The Ministry is constantly monitoring the progress of commercialization of soar water heating systems. There may be some shortfalls during the transition period from subsidy to commercialization. Efforts are being made to give publicity, create mass awareness, organise business meets to further popularise solar water heating systems and it is expected that commercialisation of these systems would pick up.

Paras Nos. 8 and 10

Solar Photovoltaic Programme

It is observed from the Performance Budget that the actual expenditure under this programme was Rs. 13.65 crores as against a provision of Rs. 15.50 crores during 1993-94. The Committee expect the Ministry to explain the reasons for shortfall in utilisation of budgetary provision during 1993-94.

The physical achievements with respect to the Solar Photovoltaic Programme during 1993-94 and 1994-95 (as on 31.12.94) were as given below :

	1993-94		1994-95	
	Target	Actual	Target	Actual as on 31.12.94
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(ii) Domestic Lighting Systems (Nos.)	1,000	6,399	500	3,641
(iii) Solar Lanterns	10,000	11,248	60,000	11,668
(iv) SPV Power Plants	200	122	100	39

It can be observed from the above table that the achievement with regard to solar lantern as on 31.12.94 during 1994-95 fell too short of target. The Committee wonder whether it would be really possible to achieve the target of 60,000 lanterns during 1994-95 considering that the materialisation till 31st December, 1994 was just 11,668 lanterns. The Committee in this connection note that during 1995-96, 10,000 Nos. solar lanterns will be taken up through budgetary resources and in addition 90,000 solar lanterns are propose to be taken up through additional resources mobilisation. Similarly, in case of SPV power plants, the achievement fell short of target in 1993-94 and also in 1994-95 (as on 31st December, 1994). The Committee are anxious to know how resources will be mobilised for taking up one lakh solar lanterns during 1995-96, considering the likely shortfall in performance in 1994-95.

Reply

The original target was 10,000 for the year 1994-95 and accordingly budget provision was made. In the expectation of better performance by the State Governments and the State Nodal Agencies, internally, a higher target of 60,000 was fixed. However actually till end February 1995, about 17,222 lanterns were distributed.

The target for 1995-96 is fixed at 10,000 with the present level of budgetary allocation. The Ministry is hopeful to get some additional funds at the stage of supplementary grants. If additional funds are made available it is proposed to extend the targets to 1,00,000 lanterns.

The shortfall in expenditure 1993-94 was mainly on the Research and Development component of the programme. The Ministry was in the process of formulating new R&D policy and hence no new proposals were taken up.

Para No. 11

Solar Thermal Power Generation

It has been stated in the Performance Budget that a 35 MW solar thermal power generation proposal has been submitted under the investment category of GEF for support. Grant assistance of US $ 30 million has been sought from Global Environment Facility for implementation of this power project in Jodhpur district of Rajasthan. Total cost has been projected at US $ 100 million. The Committee in their 5th report had observed that this project which had been conceived 15 years back was still at the stage of preparation of project report. A detailed project report for this project has now been prepared by Bharat Heavy Electricals Limited in collaboration with M/s Solel Solar Systems of Israel. The Committee trust that there will be no further delay in implementation of the project.

Reply

The detailed project report for the 35 MW solar thermal power generation project proposed for Mathania, near Jodhpur, Rajasthan has been submitted by the Ministry to the World Bank. The World Bank fielded Project Identification Mission in March, 1995 and a 'fast track' programme for processing of the proposal has been prepared. According to this programme, after the pre-appraisal of the project in July, 95, the detailed appraisal is likely to take place in January, 96 followed by approval by World Bank/GEF in June, 96.

As per requirements of the World Bank and GEF, a detailed project report by EIL and an Environmental Impact Assessment Report by the National Institute of Environmental Engineering Research Institute (NEERI) are being got prepared and will be ready by the time World Bank/GEF take decisions with regard to funding of the project.

Simultaneously, steps have been taken to get various approvals. The State Govt. has already taken necessary preparatory steps. Land has been allotted and fenced at the project site. Arrangements for supply of water from Rajasthan canal are being firmed up. A separate company has been established by the State Government which will own, operate and maintain the project.

After approval of the project by World Bank and GEF in June, 96 and mobilisation adequate financial resources for implementation of the project, construction work could be initiated in July, 96. The Ministry is working simultaneously on various fronts to facilitate early implementation.

Para No. 13

Research and Development

The budgetary provisions for R & D of new and renewable energy sources programmes during 1994-95 and 1995-96 are as under :

(Rs. in lakhs)

Research & Development	1994-95		1995-96
	B.E.	R.E.	B.E.
Solar Thermal Energy	150	150	55
Photovoltainc	165	165	100
Amorphous Silicon	275	275	50
Solar Thermal Power	100	100	50
Small Hydro Power	1700	1700	25

It can be observed from above that there is steep reduction in budgetary provisions of 1995-96 as compared to 1994-95 for R & D of various Non-Conventional Energy Sources programmes. The Committee would like to know whether the R&D programmes undertaken during 1994-95 have yielded desired results. The Committee feel that vigorous R & D efforts are required to bring down the cost of solar photovoltaic systems to bring them within the reach of consumers. In this context, considerable reduction in budgetary provision for R & D is a matter of concern. The Committee would like to be informed of the reasons for reduction in budgetary outlay for R&D during 1995-96 and alternatives that are thought of to accelerate R&D effort.

Reply

Ministry of Non-Conventional Energy Sources, since its inception, is giving high priority to the Research and Development in the field of Non-Conventional Energy Sources. As a result of the R&D efforts new technologies and their applications have been developed indigenously. In almost all renewable energy areas research is undertaken in the country to improve existing technologies and to develop new technologies. Many technologies have also been commercialised and have taken the shape of large programmes on renewable energy in the country.

Recently the Ministry has reviewed its R&D approach and formulated a new strategy for R&D efforts in this direction. Now the R&D efforts are driven from the objectives of various programmes and are directed towards specific tasks for achieving improvement in efficiency, cost reduction, enhancement of reliability etc. The involvement of indistry is kept from the very beginning in all applied R&D projects so that technology transfer takes place most expeditiously. Specific areas of R&D have been identified in each renewable technology area.

The programme-wise actual expenditure, during last two years and the B.E for 1995-96, on Research and Development is given in Table - I. It may be seen from the Table that the actual overall expenditure on R&D in renewable energy area has increased from Rs. 5.33 crores to Rs. 11.21 crores in last two years. The Budget Estimate for 1995-96 for R&D is Rs. 20.43 crores.

The actual expenditure on R&D of Solar Thermal during 1994-95 was Rs. 29.92 lakhs as against a budget of Rs. 150.00 lakhs. This is mainly due to shift in R&D policy and market orientation given to the programme. The B.E. for R&D of this programme is kept at Rs. 55.00 lakhs.

A provision of Rs. 100 lakhs for the research activities in Solar Photovoltaics was kept for 1994-95, which was fully utilised. The same provision is made for the year 1995-96. The remaining 65 lakhs, reflected in the Table referred by the Committee, was for training and other related activities. The provision for this activity is now made in the budget of Solar Energy Centre.

During 1995-96, the budget provision of Rs. 50 lakhs is for Amorphous Silicon programme as against Rs. 275 lakhs in 1994-95. This is considered adequate to support the research activity in the amorphous silicon technology. The pilot plant facility is proposed to be operated on a regular basis either by BHEL or other manufacturing unit.

The research budget of Solar Thermal Power Generation was Rs. 100 lakhs during 1994-95. A provision of Rs. 50 lakhs is kept for this programme as the main work in the project is expected to start only in June/July, 96. This amount is expected to be utilised towards the partial cost of the studies required by the world Bank.

For the R&D in the Small Hydro Power area, a budget provision of Rs. 125 lakhs is kept for 1995-96 which includes Rs 100 lakhs for UNDP technical assistance project. Upto 1994-95, the provision for SHP programme was made under a single head and covered all aspects including subsidy based demonstration projects.

TABLE I

PROGRAMME-WISE DETAILS OF R&D EXPENDITURE AND B.E. FOR 1995-96

(Rs. in lakhs)

S. No.	Programme	Expenditure 1993-94	Expenditure 1994-95	B. E. 1995-96
1.	Biogas Programme	27.00	30.00	30.00
2.	Improved Chulha Programme	31.03	25.16	30.00
3.	Biomass Programme	95.23	132.71	50.00
4.	Animal Energy Programme	9.35	5.60	5.00
5.	Solar Thermal Systems	35.56	29.92	55.00
	a. Solar Thermal Power	14.00	68.00	50.00
6.	Solar Photovoltaics Programme			
	a. SPV others	29.60	100.00	100.00
	b. SPV Amorphous Silicon	240.88	250.00	50.00
	.c. SPV Power	—	35.00	—
7.	Solar Energy Centre	90.51	202.98	413.00
8.	Wind Pumps	—	10.00	5.00
9.	Wind Farms	130.00	50.00	210.00
10.	Mini-Micro Hydro	—	—	125.00
11.	Biomass based cogeneration of power	—	—	100.00
12.	Energy from Urban & Ind. Wastes	120.00	55.00	150.00
13.	Energy Conservation	0.25	2.45	1.00
14.	Hydrogen Energy	9.00	20.00	49.00
15.	Chemical Sources of Energy	11.00	67.00	80.00
16.	Geo-thermal Energy	7.00	1.00	20.00
17.	Alternate Fuels for Surface Transportation	83.00	27.00	500
18.	Ocean Energy	—	10.00	20.00
	Total	533.41	1121.82	2043.00

Para No. 16

Energy Conservation

The Committee find that budget provision for energy conservation programme has been reduced from Rs. 30 lakh in 1994-95 to Rs. 1 lakh in 1995-96. The Committee would like to know whether the programme has achieved the desired results during 1994-95. It appears that the programme is being side-lined with a nominal provision of Rs. 1 lakh in 1995-96. The Committee would like to know the reasons for such a steep reduction in budgetary provision for this programme.

Reply

The subject of Energy Conservation is with Ministry of Power. For this activity, a budget provision of Rs. 12.30 crores have been made for 1995-96 as against Rs. 6.33 crores in 1994-95 by the Ministry of Power.

Ministry of Non-Conventional Energy Sources have sponsored, during last two years, a few studies to identify areas where renewable energy sources can be used as means of energy conservation. In view of the inescapable link between renewable energy and energy conservation, a proposal was made to the transfer of energy conservation subject from Ministry of Power to Ministry of Non-Conventional Energy Sources. In view of this, a token provision of only Rs. 1.00 lakh in 1995-96 has been made by the Ministry of Non-Conventional Energy Sources.

APPENDIX III

REPLIES TO THE POINTS RAISED BY THE COMMITTEE DURING THE DISCUSSION HELD WITH THE REPRESENTATIVES OF MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES ON THE 18TH APRIL, 1995

The Committee desire to know the progress made in the Wind Power Projects.

Reply

The Wind Power Programme has generally done well and a total capacity of about 340 MW has been reached on 31st March, 1995. Out of this, a capacity of about 225 MW has been added during 1994-95 itself. Tamil Nadu leads the other States by having an installed capacity of 260 MW. By the end of 1995-96, the total capacity in the country is likely to be nearly doubled and is expected to reach about 600 MW, against the revised goal of 500 MW for the 8th Plan. By the end of the 8th Plan, India is likely to have the third highest wind power capacity in the world.

The Programme has been able to attract consideratble private sector investments, perhaps on account of the liberal fiscal and promotional incentives being offered by the Central Government, mainly 100% accelerated depreciation during the first year itself, and the facilities being offered in the potential States for buy-back of the electricity generated, wheeling, banking and third-party sale. MNES had issued guidelines to the various States in September, 1993 which have been acccepted to varying degrees by about 10 States. In the Chief Ministers' and State Ministers' Conference held in September, 1994, the States were again requested to introduce conducive policies and facilities for power generation projects based on non-conventional energy.

MNES is continuously following up with the State Governments and the Electricity Boards to give high priority to this sector.

The Committee desire to know about the potential and status of Co-generation Projects.

Reply

There is a potential of about 3500 MW for surplus power generation through bagasse cogeneration. The Minsitry has prepared a National Programme to encourage the sugar industry to adopt optimum cogeneration. Even though it is fairly competitive, the sugar industry has been hesitant on account of several factors to go in for surplus power generation for the grid, which is possible through use of efficient high pressure boilers. The National Programme consists of a demonstration scheme for a limited number of projects to be taken up in the potential States to demonstrate the techno-economic viability of optimum cogeneration. Another scheme has been formulated under the National Programme to promote cogeneration by providing soft loans for implementation of these projects by the sugar industry.

The National Programme was announced in early 1994. A goal of 300 MW has been set for Eighth Plan under the Strategy & Action Plan of the Ministry. More than 15 projects aggregating to a capacity of about 250 MW are presently being prepared by sugar mills in the potential States. It is expected that by the end of the Eighth Plan the target capacity of 300 MW will be at various stages of implementation, provided conducive policies are introduced by the concerned States and Electricity Boards for acceptance of the power on their grids. Tamil Nadu, Maharashtra, Uttar Pradesh and Karnataka amongst the potential States have taken some steps in this direction.

The cost of the cogeneration projects comes to Rs. 2.5-3.0 crores per MW and it is thus quite attractive in comparision with other sources. Under the demonstration scheme, the Ministry has announced a subsidy of Rs. 70 lakhs per MW of surplus power generation to the grid. The Ministry has also requested the Food Ministry for inclusion of bagasse cogeneration under the modernisation scheme of Sugar Development Fund so as to encourage the sugar mills to go in for optimum cogeneration.

APPENDIX IV

EXTRACTS OF MINUTES OF FIRST SITTING OF STANDING COMMITTEE ON ENERGY (1995-96) HELD ON MONDAY, THE 17TH APRIL, 1995

The Committee sat from 11.00 hrs to 13.00 hrs.

PRESENT

Shri Shiv Charan Mathur – *In the Chair*

2. Smt. Lovely Anand
3. Shri Anil Basu
4. Smt. Dil Kumari Bhandari
5. Shri Dalbir Singh
6. Shri Keshari Lal
7. Shri Rajesh Kumar
8. Shri Venkateswara D. Rao
9. Shri K. P. Reddiah Yadav
10. Shri Haradhan Roy
11. Shri Khelsai Singh
12. Shri Laxminarain Tripathi
13. Shri Shankersinh Vaghela
14. Prof. Rita Verma
15. Shri Virender Singh
16. Shri Vijay Kumar Yadav
17. Shri Parmeshwar Kumar Agarwalla
18. Shri M. M. Hashim
19. Shri Bhubneswar Kalita
20. Shri Dipankar Mukherjee
21. Smt. Ila Panda
22. Shri J. S. Raju
23. Shri T. Venkatram Reddy
24. Shri Viren J. Shah

SECRETARIAT

1.	Shri G. R. Juneja	-	*Deputy Secretary*
2.	Shri A. Louis Martin	-	*Under Secretary*

2. In the absence of Chairman, the Committee chose Shri Shiv Charan Mathur to act as Chairman for the sitting under Rule 258(3) of the Rules of Procedure and Conduct of Business in Lok Sabha.

3. * * * * * * * * * * * * * * * *

4. * * * * * * * * * * * * * * * *

5. * * * * * * * * * * * * * * * *

6. Thereafter, the Committee took up for consideration the following draft reports on Demands for Grants :-

i) * * * * * * * * * * * * * * * *

ii) Draft report on Demands for Grants (1995-96) of Ministry of Non-Conventional Energy Sources.

The Committee after brief discussion adopted the above reports. * * * * * The Committee further authorised the Chairman to finalise the reports after discussion with the representatives of respective Ministries.

The Committee then adjourned.

** Paras 3, 4, 5 and 6(i) of the Minutes relating ot Procedural Matter, consideration of four Action Taken Reports and Draft Report on Demands for Grants of Ministry of Coal are not included.

APPENDIX V

EXTRACTS OF MINUTES OF THE THIRD SITTING OF STANDING COMMITTEE ON ENERGY HELD ON 18TH APRIL, 1995

The Committee sat from 11.00 hrs. to 13.30 hrs.

PRESENT

Shri Viren J. Shah -- *In the Chair*

MEMBERS

2. Smt. Lovely Anand
3. Shri Anil Basu
4. Shri Chitta Basu
5. Shri Parasram Bhardwaj
6. Shri P. C. Chacko
7. Shri Dalbir Singh
8. Shri Murli Deora
9. Shri Khelan Ram Jangde
10. Shri Keshari Lal
11. Shri Shiv Charan Mathur
12. Shri Haradhan Roy
13. Shri Khelsai Singh
14. Shri S. Thota Subba Rao
15. Shri Laxminarain Tripathi
16. Shri Bhawani Lal Verma

17. Prof. Rita Verma
18. Shri Virender Singh
19. Shri Arjun Singh Yadav
20. Shri Vijay Kumar Yadav
21. Shri Parmeshwar Kumar Agarwalla
22. Shri M. M. Hashim
23. Shri Bhubneswar Kalita
24. Shri Dipankar Mukherjee
25. Shri M. Rajasekara Murthy
26. Smt. Ila Panda
27. Shri J. S. Raju
28. Smt. Kamla Sinha

SECRETARIAT

1. Shri G. R. Juneja -- *Deputy Secretary*
2. Shri A. Louis Martin -- *Under Secretary*

In the absence of Chairman, the Committee elected Sh. Viren J. Shah to act as Chairman for the sitting under Rule 258(3) of the Rules of Procedure and Conduct of Business in Lok Sabha.

2. * * * * * * * * * * * * * * * *

3. * * * * * * * * * * * * * * * *

4. Then, the representatives of Ministry of Non-Conventional Energy Sources were called in and the Committee held discussion with them on the draft report on Demands for Grants (1995-96) of the Ministry. A list of representatives of the Ministry of Non-Conventional Energy Sources who were present during discussion is given in Annexure. A copy of verbatim proceedings is kept on record.

The Committee then adjourned.

** Paras 2 and 3 of Minutes relating to consideration of draft report on the Demands for Grants of the Ministry of Power and discussion with the representatives of Ministry of Power.

Annexure to Minutes

LIST OF REPRESENTATIVES OF THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

Sl. No.	*Name*		*Designation*
1.	Shri B. R. Prabhakara	-	Secretary, MNES
2.	Dr. S. K. Chopra	-	Sr. Adviser
3.	Dr. E. V. R. Sastry	-	Adviser
4.	Dr. K. C. Khandelwal	-	Adviser
5.	Shri S. W. Oak	-	Jt. Secy. & Financial Adviser
6.	Shri U. N. Panjir	-	Jt. Secretary
7.	Shri S. Ranganathan	-	Jt. Secretary
8.	Shri V. Bhaktavatsalam	-	M.D., IREDA