

39

STANDING COMMITTEE ON ENERGY

(2003)

THIRTEENTH LOK SABHA

MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

DEMANDS FOR GRANTS
(2003-2004)

THIRTY NINTH REPORT

LOK SABHA SECRETARIAT
NEW DELHI
March, 2003/ Chaitra, 1925 (Saka)

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COMPOSITION OF THE STANDING COMMITTEE
ON ENERGY (2003)

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28. Shri B. Venkateswarlu
29. Prof. Ummareddy Venkateswarlu
- 30*. Prof. Rita Verma

* Nominated to the Committee w.e.f. 21.2.2003 vice Shri Harpal Singh Sathi, M.P.

RAJYA SABHA

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- 33#. Shri S.M.Laljan Basha
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40. Shri Gaya Singh
41. Shri Veer Singh
42. Shri D.P.Yadav
43. Vacant
44. Vacant
45. Vacant

SECRETARIAT

1. Shri John Joseph - Additional Secretary
2. Shri P.K.Bhandari - Director
3. Shri R.S.Kambo - Under Secretary
4. Shri N.K. Jha - Sr. Committee Assistant

Ceased to be a Member of the Committee w.e.f. 14.3.2003 consequent upon his nomination to the Committee on External Affairs

INTRODUCTION

I, the Chairman, Standing Committee on Energy having been authorised by the Committee to present the Report on their behalf, present this 39th Report (Thirteenth Lok Sabha) on Demands for Grants (2003-2004) relating to the Ministry of Non-Conventional Energy Sources.

2. The Committee took evidence of the representatives of the Ministry of Non-Conventional Energy Sources on 13th March, 2003.
3. 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.
4. The Report was considered and adopted by the Committee at their sitting held on 28th March, 2003.
5. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in the body of the Report.

NEW DELHI;
28th March, 2003
7 Chaitra, 1925 (Saka)

SONTOSH MOHAN DEV,
Chairman,
Standing Committee on Energy.

PART I

CHAPTER I

Introductory

Energy security has come to be viewed as a factor of immense strategic importance in ensuring all-round economic development of a nation. The reasons are not far to see. Energy is a basic input for almost all the economic activities. In fact one of the indicators of economic growth has all along been the per capita consumption of energy. Fossil fuels such as coal and petroleum, and biofuels like wood, have been the energy sources of the world for centuries. However, as the 20th century drew to a close, ushering in the third millennium, there has been a growing recognition, for more than one reasons, of the dangers inherent in continuing with the model of economic development based on excessive consumption of fossil fuels. Of late, world opinion has been a growing in favour of looking for alternatives to fossil fuels that would ensure eco-friendly and sustainable development on the one hand and energy security on the other. There was a surge of interest, commitment and funding for developing and disseminating renewable energy technologies and strategies in the aftermath of the first oil crisis during the seventies. Subsequently, this interest declined due to the fall in oil prices during the nineties. However, local and regional environmental concerns such as air pollution, water pollution, land degradation, waste generation and global environmental concerns such as the growth in atmospheric concentration of the Green House Gases (GHGs) leading to climate change have again brought renewable energy to the centre stage. The broad goals of the Government of India under “Energy for All” concept assumes an increasing role for renewables, particularly for meeting the energy needs of rural areas and for environmental conservation. Under the influence of programmes of the UN Framework Convention on Climate Change (FCCC) and the Kyoto Protocol and the need for promoting sustainable development, renewable energy technology development and transfer and large scale funding are projected for the future.

1.2 India is a large country with a population of around one billion in the year 2000. Its population is expected to grow at a rate of about 1.6 per cent annually and GDP growth rate is estimated to grow at over 6 per cent over the next 10 years, requiring an

energy growth rate of 9 per cent. At present, there is estimated peaking shortage of 13% and energy shortage is about 7.8%. The electricity demand is growing @ 8% annually in the country. The shortage is much greater in rural areas. The present per capita energy consumption in India is little over 400 kwh, which is already on a lower side and most of the consumption is in the urban areas. Consumption of coal and petroleum fuels is projected to nearly double by 2010. India is also projected to become an imported petroleum fuel dependent economy. Conditions are thus compelling for India to attempt to meet its growing energy needs in a self-reliant manner, through renewable energy.

1.3 Recognising the relevance of renewable energy sources, the Government of India set up in 1981 a Commission for Additional Sources of Energy (CASE), on the lines of the Space Commission and the Atomic Energy Commission in the Department of Science and Technology. A year later, a separate Department of Non-Conventional Energy Sources was created in the Ministry of Energy. Ten years later, this was upgraded to the level of an independent Ministry. India has thus earned the distinction of possibly being the only country in the world to have an exclusive Ministry for Non-Conventional Energy Sources (MNES) which has been implementing one of the world's largest programmes on renewable energy, like biogas, small hydro projects, wind, geothermal energy, solar photovoltaics, etc. spanning the entire spectrum of technologies targeted towards all sections of the society. The two-fold objectives of the Ministry are (i) to increase the role of renewables in the energy sector and (ii) to reduce and mitigate the pollution caused by conventional fossil fuels. To subserve these objectives the Ministry functions as a catalyst, bringing into fruition the project proposals in the renewable energy sector through a range of policies and programmes.

1.4 Following are the functions assigned to MNES:-

- Research and development of biogas and programmes relating to biogas units;
- Commission for Additional Sources of Energy (CASE);
- Solar energy including Solar Photovoltaic (SPV) devices and their development, production and applications;

- All matters relating to small / mini / micro hydel projects of, and below, 25 MW capacity;
- Programme relating to improved chulhas and research and development thereof;
- Indian Renewable Energy Development Agency;
- Research and development of other non-conventional / renewable sources of energy and programmes relating thereto;
- Tidal energy;
- Integrated Rural Energy Programme (IREP);
- Geothermal energy.

1.5 The power generation from renewable sources has been increasing. Renewable presently contribute about 37,00 MW which represents about 3.5% of the total installed capacity from all sources but there is still a long way to go to achieve the full potential of 1,00,000 MW from the renewable sources. The estimated potential and the extent of exploitation so far is given below:-

NRSE POTENTIAL & ACHIEVEMENT		
	Potential	Achievement as on 28.02.2003
Biogas Plants	120 lakh	34.60 lakh
Improved Chulhas	1,200 lakh	352 lakh
Wind	45,000 MW	1736.00 MW
Small Hydro	15,000 MW	1475.51 MW
Biomass Power / Co-generation	19,500 MW*	477.93 MW
Biomass Gasifiers	-	53.17 MW
Waste-to-Energy	2500 MW	24.50 Mwe
Energy Parks	-	278 Nos.
IREP	-	860 Nos.
SPV Power Plants	-	1188 Kwp
Solar PV pumps	-	5113 Nos.
Solar PV	20 MW / sq. km	107 MW **

* including Biomass Gasifiers.

** of this 46 MW, SPV products have been exported.

1.6 A draft renewable energy policy statement which is under preparation attempts to outline the policy and programme interventions required to achieve the goals of meeting the minimum rural energy needs, providing decentralized off-grid energy supply for certain applications and generating grid quality power based on renewables. The draft also sets the medium term goals for achievement by 2012. This include electrification of 18,000 remote villages and achieving a minimum share of 10% or 10,000 MW from renewable energy in the power generation capacity to be added by 2012 A.D.

1.7 As a part of special initiative to develop the North-Eastern Region, the Ministry has earmarked 10% of its Domestic Budgetary Support for the North-Eastern States, including Sikkim, in its major programmes. Against a 9th Plan allocation of Rs.90.38 crore an expenditure Rs.128.39 crore was incurred. Special emphasise has been made to take up the electrification of remote villages in this region.

1.8 Since renewable energy can be produced in a decentralized manner, it can help to overcome the problems of distribution associated with conventional sources of energy, especially in remote rural areas. The significance of this is to be seen in the light of the fact that as many as 80,000 villages in the country are un-electricfied and 18,000 of these villages are considered economically non-viable for grid connected power. Moreover, de-electrified villages which had lost their faith in conventional grid power could find a ray of hope through non-conventional grid quality power. It has been proposed to electrify all of these 18,000 villages through locally available renewable energy options like solar photovoltaics (SPV), small hydro and biomass within the next two Plan periods i.e. by the year 2012. During the 10th Plan period about 5000 unelectrified census villages are proposed to be electrified through the Non-Conventional Energy Sources.

1.9 The detailed Demands for Grants of the Ministry of Non-Conventional Energy Sources were laid on the Table of Lok Sabha on 13.3.2003 'Demand No.64 of the Ministry under which provision has been made for Plan and Non-Plan expenditure,

consists of two parts', viz. Revenue Section and Capital Section for the year 2003-2004. It contains the following figures:-

(Rs. in crore)

	Plan	Non-Plan	Total
Revenue Section	499.76	5.35	505.11
Capital Section	125.04	-	125.04
Total	624.80	5.35	630.15

1.10 A detailed statement showing the actual Revenue and Capital expenditure for the year 2001-2002, Budget Estimates, Revised Estimates for 2002-2003 and Budget Estimates for 2003-2004 are given at Appendix I.

1.11 The Committee have scrutinized the detailed Demands for Grants of the Ministry of Non-Conventional Energy Sources for the year 2003-2004 and approve the same, subject to their observations and recommendations which are contained in the succeeding Chapter.

CHAPTER II

A. Budgetary Allocation

The details of Central Plan Outlay indicating BE, RE, Actual expenditure and savings during 1999-2000, 2000-2001, 2001-2002 and 2002-03 are given below:-

(Rs. In crore)

Item	1999-2000				2000-2001			
	BE	RE	Actual	Saving*	BE	RE	Actual	Saving*
Domestic Budgetary Support (DBS)	300.00	266.24	264.64	1.60	353.66	265.02	252.34	12.68
Gross Budgetary Support (GBS)	355.00	314.50	312.87	1.63	442.16	353.52	340.84	12.68
IEBR	411.11	500.42	436.77	63.65	505.24	505.24	429.28	75.96
Total Outlay	766.11	814.92	749.64	66.77	947.40	858.76	770.12	88.64

Item	2001-02				2002-03		
	BE	RE	Actual	Saving*	BE	RE	Actual 28.2.2003
Domestic budgetary support (DBS)	339.25	342.92	322.40	20.52	475.25	370.29	162.94
Gross Budgetary Support (GBS)	583.00	494.16	498.27	4.11	624.25	468.29	224.24
IEBR	456.71	362.37	435.18	(+) 72.81)	476.48	419.98	438.60
Total Outlay	1039.71	856.53	933.45	(+) 76.92	1100.73	888.27	662.84

* Saving = RE minus Actual

2.2 When asked about the reasons for variations between BE, RE and Actuals during the years 1999-2000, 2000-2001, 2001-2002 and 2002-2003, the Ministry in a written note stated:-

“The main reason for the variation between BE, RE and actual utilization during 1999-2000 and 2000-2001 has been on account of a cut imposed by the Ministry of Finance at the RE stage. The funds provided at RE stage were almost fully utilized during these two years. The marginal saving in GBS of Rs.12.68 crore during 2000-01 was mainly on account of the fact that the proposal for re-appropriation of a grant under the Minor Head ‘Lump Sum Provision for NE including Sikkim’ was not approved by the Ministry of Finance. The reduction at RE stage during 2001-02 has been mainly on account of non-utilization of Rs.112.00 crore earmarked for the 140 MW Integrated Solar Combined Cycle (ISCC) power project at Mathania, Jodhpur, Rajasthan which could not initiated because of change in the feedstock from naphtha to gas for the conventional component of the project. The main reason for the variation of Rs.155.96 crore between BE and RE during 2002-03 is due to a thorough review of on going programmes / schemes which was considered necessary and carried out on account of the fact that 2002-03 happened to be the first year of the 10th Plan. This involved: (I) Brainstorming exercises with concerned State Departments / implementing agencies / NGOs that were held followed by presentations on all on going programme / schemes to MOS (NES) and Secretary, which was completed only in July 2002. Thereafter the programmes / schemes were accordingly modified with a view to streamlining and rationalizing them. The programme-wise changes were placed before CASE for which three meetings of CASE were convened in August, 2002. Administrative sanctions for the implementation of the programmes / schemes could be issued only by September, 2002. (ii) The aforesaid lead to a major reassessment of funds required during 2002-03 at the RE stage. (iii) No major deviations are expected in so far as achievement of physical targets under the power generation and village electrification programmes are concerned. A short fall in achievement of physical targets will occur in the areas of biogas plants and solar energy systems. (iv) Funds were surrendered for solar thermal power programme during 2001-02 and 2002-03 as Rajasthan Renewable Energy Corporation Ltd. could not finalize the turnkey contract for the 140 MW ISCC power project at Mathania, Jodhpur, Rajasthan”.

2.3 When asked whether Ministry of Finance (MoF) have imposed any cut on the Plan / Non-Plan programmes of the Ministry during the last two years i.e. 2001-2002 and 2002-2003, the Ministry in a written note stated:-

“In 2001-02, an economy cut under non-plan budget was imposed by the Ministry of Finance in non-salary component at the RE stage. However, no cut under non-plan budget has been imposed during 2002-03”

2.4 The detailed breakup of proposed Demands for Grants of Rs.630.15 crore during 2003-04 as against the BE of Rs.629.52 crore and RE of Rs.473.56 crore during 2002-03 are as follows:

	2002-03		2003-04
	BE	RE	BE
Revenue			
Plan	494.20	338.24	499.76
Non-Plan	5.27	5.27	5.35
Sub-Total (Revenue)	499.47	343.51	505.11
Capital			
SEC (minor Works)	0.05	0.05	0.04
Equity to IREDA	35.00	35.00	40.00
IDA-I	95.00	95.00	-
IDA-II	-	-	85.00
Sub-Total (Capital)	130.05	130.05	125.04
Total	629.52	473.56	630.15

2.5 When asked about the reasons for allocation of Rs.630.15 crore during the year 2003-2004 against the RE of Rs.473.56 crore during 2002-2003, the Ministry in a note stated:-

“The main reasons for the allocation of Rs.630.15 crore during 2003-04 against the RE of Rs.473.56 crore during 2002-03 are as follows:- (i) In order to achieve the physical targets commensurate with the 10th Plan, appropriate physical targets with corresponding budgetary allocations have been proposed during 2003-04. (ii) A target for capacity addition of 470.75 MW in power generation from renewables has been proposed during 2003-04 against the target of 400.75 MW during 2002-03 and electrification of 1000 remote villages during 2003-04 against the target of 500 villages during 2002-03. (iii) Similarly, in order to achieve targets for decentralised systems the corresponding funds requirement have been proposed. (iv) A higher allocation has also been proposed for New Technology and other R&D Programmes”.

2.6 As per direction of Ministry of Finance, all the Departments / Ministry are required to ensure that expenditure is evenly spread in all the 4 quarters of a year. Detailing the position, MNES in a note furnished to the Committee stated as under:-

Quarter-wise BE/RE and actual expenditure during the year 2001-02 and 2002-03 are as follows:-

	(Rs. in crore)	
	2001-02	2002-03
B.E.	583.00	624.25
R.E.	494.16	468.29
1st Quarter Expenditure	59.23	0.00
2 nd Quarter Expenditure.	151.64	75.12
3rd Quarter Expenditure.	59.54	51.12
Jan.-Feb. Expenditure	48.79	98.00
Expenditure upto 28.2.2002	319.20	224.24
March	179.07	130.00*
Expenditure	498.27	350.46

* Likely Expenditure during March 2003

2.7 Explaining the reasons for uneven in expenditure in each quarter, the Ministry stated:-

“It would be seen that the utilization of funds during the 1st quarter of 2002-03 was ‘nil’. Even during the 2nd quarter the utilization was only one-half that of the previous year, i.e., 2001-02. In the 3rd quarter the utilization levels for the two years were about the same. For the two months January-February, the utilization level during the current year was twice the level of the previous year. This is mainly on account of the delay in issuing scheme sanction this year”.

Mobilisation of Resources

2.8 The details of Internal and Extra Budgetary Resources (IEBR) – BE, RE and Actuals for the last couple of years in respect of IREDA are given below:-

SECTORWISE DETAILS OF IEBR OF IREDA WITH ACTUAL

	[Rs. In Crores]												
	1999-2000			2000-01			2001-02			2002-03			2003-04
	BE	RE	Actual	BE	RE	Actual	BE	RE	Actual	BE	RE	Likel y Actua l	BE
IEBR													
1. External Aid Received Direct	72.70	131.33	102.00	157.53	157.53	162.22	173.30	145.00	151.03	225.00	285.00	255.60	155.00
2. Other IEBR	338.41	369.08	334.77	347.71	347.71	317.64	364.12	302.09	368.87	330.49	424.91	300.75	449.50
GROSS IEBR	411.11	500.41	436.77	505.24	505.24	479.86	537.42	447.09	519.90	555.49	709.91	556.35	604.50
Less: Repayment of loans	-	-	-	-	-	50.58	80.71	84.72	84.72	79.01	289.93	78.79	146.35
<u>NET IEBR...A</u>	411.11	500.41	436.77	505.24	505.24	429.28	456.71	362.37	435.18	476.48	419.98	477.56	458.15
<u>Deployment of Resources</u>													
<u>Disbursement Sector wise</u>													
Wind	105.00	105.00	166.00	100.00	100.00	153.49	105.00	160.50	231.87	130.00	146.00	53.82	168.00
Small Hydro	80.08	80.00	85.02	73.00	70.00	87.87	91.00	31.00	63.21	96.00	100.00	63.00	140.00
Biomass	75.00	84.80	122.10	85.00	140.00	242.41	132.00	158.93	232.21	184.00	179.00	159.46	143.00

Solar	56.92	60.20	27.08	96.00	60.00	65.96	81.00	60.57	69.51	61.00	45.00	40.41	48.00
Others	48.00	35.00	29.06	46.00	45.00	27.34	46.00	44.00	10.90	49.00	30.00	23.91	51.00
Total Disbursement ... B	365.00	365.00	429.26	400.00	415.00	577.07	455.00	455.00	607.70	520.00	500.00	340.60	550.00
Balance after Disbursement [(A-B)]... (C)	46.11	135.41	7.51	105.24	90.24	(147.79)	1.71	(92.63)	(172.52)	(43.52)	(80.02)	136.96	(91.85)
Net Budgetary Support... [D]	99.00	90.76	89.26	113.50	111.5	113.18	174.75	174.75	171.00	130.00	130.00	130.00	125.00
Other Receipt which are not included in above (E)	0.00	0.00	26.18	0.00	0.00	46.80	0.00	0.00	40.54	0.00	0.00	0.00	0.00
BALANCE AVAILABLE (C+D+E)	145.11	226.17	122.95	218.74	201.74	12.19	176.46	82.12	39.02	86.48	49.98	266.96	33.15

2.9 Explaining the reasons for variations in BE and RE of Internal Extra Budgetary Resources (IEBR) during the years 2002-2003 and 2003-2004, the Ministry stated:-

“The net IEBR has decreased in RE against BE for 2002-03 by Rs.56.50 crore. The decrease in IEBR is mainly on account of higher repayment of loans consisting of part prepayment of higher interest ADB loan estimated in RE stage. The net IEBR has increased in 2003-04 (BE) as against 2002-03 (RE) as no prepayment of loans assumed and direct external aid received has been assumed to be reduced since ADB line of credit is already closed”.

2.10 MNES informed that following steps have been taken by them to project a realistic IEBR target:-

- “* To obtain cash flow projections from the borrowers for estimated disbursement;
- * To obtain quarterly projections regarding disbursement including in respect of Projects being funded out of international line of credit;
- * Concurrent engineers/auditors for high value projects to monitor physical and financial progress of the projects and projections regarding disbursement have

been appointed by IREDA besides periodic inspection of projects by IREDA officials which also helps in estimating the quantum of disbursement;

- * An additional incentive for timely completion of the projects is provided, i.e., grid connected power projects financed under Project financing category if completed ahead of schedule as originally agreed/stipulated in the loan sanction letter without any cost overrun are sanctioned one time Performance Reward equivalent to 0.25% of total loan disbursed;
- * 0.5% reduction in interest rate for projects to be funded out of international lines of credit are provided which helps in timely utilisation of international lines matching with the estimates of disbursements projected;
- * Periodic reviews are undertaken by IREDA and the Ministry and also by international lenders for the projects funded through international lines of credit;
- * IREDA does not, as a matter of policy, finance cost over runs in the projects. This is to press borrowers to complete their projects in time and adhere to the projections given by them.

It may, however, be noted that the projects are being set up in the Renewable Energy and Energy Efficiency Sectors by project promoters in the private sector. The utilisation of funds under IEBR are, therefore, directly dependent on the progress of project implementation by these promoters.

The project promoters during the implementation of the project have to obtain various approvals from Government agencies, such as

- Signing of PPAs,
- Obtaining requisite land for the project,
- NOCs for mortgage of Government land,
- Pollution Control clearances,
- Environmental clearances, etc.

Any delay in these approvals results in delay in signing of the Loan Agreements with IREDA and commencement of the project implementation by the project promoters. This has an impact on the disbursement projections and hence on IEBR.

The time overrun in the project implementation also changes the drawal plan of the project promoters which, in turn, affects IEBR projections. Due to these constraints, the IEBR projections vary. It may be appreciated that in spite of all these constraints, the variation in IEBR projections at RE and Actual is normally within 5-10%.

However, the board of directors of IREDA will review the IEBR position in its meetings in order to minimize variations in IEBR”.

2.11 The details of total plan outlay of IREDA in the year 2002-03 at RE stage as compared to BE and its variation is tabulated below:-

TOTAL PLAN OUTLAY –BE/RE

(Rs. in crore)

	2002-03		
	BE	RE	Variation
A. Budgetary Support			
1. Net Budgetary Support	35.00	35.00	0.00
2. External Aid through Budget	95.00	95.00	0.00
SUB-TOTAL	130.00	130.00	0.00
B. IEBR			
1. External Aid Received Direct	225.00	285.00	(+) 60.00
2. Other IEBR	330.49	424.91	(+) 94.42
GROSS IEBR	555.49	709.91	(+) 154.42
Less: Repayment of loan	79.01	289.93	(+) 210.92
NET IEBR	476.48	419.98	(-) 56.50
GRAND TOTAL (A+B)	606.48	549.98	(-) 56.50

2.12 Explaining the reasons for reduction in total plan outlay of IREDA in the year 2002-2003 at RE stage as compared to BE stage, the Ministry stated:-

“There is an overall reduction of Rs.56.50 crore in total Plan Outlay. However, there is no variation in the Budgetary Support. The total reduction in plan outlay is attributable to decrease in net IEBR. It may, however, be noted from the above table that gross IEBR at RE stage has increased as compared to BE mainly because of increase in external aid as per requirement of funds by project promoters and increase in other IEBR due to increase in bank borrowings to meet additional disbursement requirements. However, net IEBR decreased which was mainly on account of higher repayment of loans by IREDA including part prepayment of ADB loan estimated at RE stage since the said loan bears a higher rate of interest, which is not competitive in the present regime of lower interest rates”.

2.13 The details of total plan outlay in the year 2002-03 at RE as compared to BE 2003-04 and its variation are tabulated below:-

TOTAL PLAN OUTLAY –RE 2002-03 and BE 2003-04

(Rs. in crore)

	2002-03 RE	2003-04 BE	Variation (RE) 2002- 03 & 2003-04 (BE)
A. Budgetary Support			
1. Net Budgetary Support	35.00	40.00	(+) 5.00
2. External Aid through Budget	95.00	85.00	(-) 10.00
SUB-TOTAL	130.00	125.00	(-) 5.00
B. IEBR			
1. External Aid Received Direct	285.00	155.00	(-) 130.00
2. Other IEBR	424.91	449.50	(+) 24.59
GROSS IEBR	709.91	604.50	(-) 105.41
Less: Repayment of loan	289.93	146.35	(-) 143.58
<u>NET IEBR</u>	419.98	458.15	(+) 38.17
<u>GRAND TOTAL (A+B)</u>	549.98	583.15	(+) 33.17

2.14 Explaining further the reasons for enhancing the allocations in the year 2003-2004, the Ministry stated:-

“In BE 2003-04, the net IEBR appears to have increased since no prepayment of ADB loan has been envisaged and direct external aid has also been decreased since ADB line of credit has already been closed. However, it may be noted from the above table that gross IEBR at BE 2003-04 has, in fact, decreased as compared to RE 2002-03. This was mainly on account of higher repayment of loans by IREDA including part prepayment of ADB loan estimated at RE stage since the said loan bears a higher rate of interest, which is not competitive in the present regime of lower interest rates”.

2.15 The interest rates charged by IREDA range between 0-14%. The Gokak’s Committee has also suggested that as in the regime of falling interest rates, a downward revision of the interest rates charged by IREDA be considered. Moreover, as IREDA has access to international funds with repayment period of 30 years, IREDA may consider increasing the period of repayment of its loans also. To this the Ministry stated:-

“MNES and IREDA are constantly reviewing technology and cost trends. Changes in the schemes are introduced and new schemes are also developed whenever necessary. IREDA’s interest rates have been declining over the years in accordance with the prevailing market conditions. The weighted average rate of interest charged has come down from 12.05% in 2001-2002 to 11.99% in 2002-2003 and is expected to further come down to 11.32% during 2003-2004. The repayment period for a project funded by IREDA is determined on the basis of cash flow projections and viability of the project. Hence, the period of repayment cannot be related to the period of the international lines of credit availed by IREDA”.

2.16 When asked about average cost of acquisition of funds **vis-a-vis** lending rate, in IREDA, MNES stated as under:-

“The rates of borrowing by IREDA from International Agencies are given in the following Table:

Sl. No.	International Lending Agency	Rate of borrowing
1	IDA loan – I	13.71%
2	IDA loan – II	5.75%
3	IBRD loan	12.98%
4	ADB loan	15.35%
5	KFW	11.38%

The average cost of acquisition of funds for 2002-2003 to IREDA is 9.55% against the average lending rate of 11.99%, giving a margin of 2.44%. The average lending rate during 2003-2004 is expected to come down by 67 basis points to 11.32%.

The paid up share capital of IREDA is Rs.285.35 crores against an authorized share capital of Rs. 400 crores. During 2003-04, a further infusion of equity amounting to Rs 40 crores, in keeping with the size and operation of the company is being proposed.

It will kindly be appreciated that this proposed amount of Rs.40 crore contributes around 10% of the Domestic Budgetary Support (DBS) and further it is more by Rs.5 crore than what was sanctioned during 2002-2003.

In so far as interest on foreign lines of credit routed through MNES is concerned, this is being charged to IREDA in keeping with the policy of the Ministry of Finance, which is uniform across all sectors. Although the interest rate payable by the Ministry of Finance on foreign loans may appear to be lower, it is in effect not so when the exchange rate fluctuations are factored in. However, the matter of providing special dispensation to IREDA in view of its specialised operations has already been taken up with the Ministry of Finance.

Under several of its programmes MNES provides interest subsidy to soften the burden of interest on developers.

IREDA's NPAs have come down from 14.94% in 2000-2001 to 11.47% 2001-2002".

2.17 IREDA is the premier institutions meant for funding the renewable energy sectors. The Rural Electrification Corporation also had sanctioned 23 small/ mini / macro hydel generation projects of 69 MW capacity and 6 wind energy projects. The corporation funds need to be utilized for financing projects based on renewable energy. There does not appear to be any difficulty in doing so as the executive order of the Government of India which permitted it to take up only schemes below 25 MW and restrict itself to towns with a population of 1.5 lakhs has been withdrawn. It can, therefore, function like any other power finance corporation. A new pattern of relationship between IREDA and the Rural Electrification Corporation is necessary. When asked about the steps taken to utilize funds from REC, the Ministry stated:-

“The REC has recently introduced a soft loan scheme for financing village electrification projects which opens an additional window for the programme. REC funds are most welcome. State Governments will be advised to avail of the facility”.

Private Sectors participation

2.18 Private sector is not enthusiastic to invest in renewable energy sector commenting upon steps taken to promote private sector participation. MNES in a note stated as under:-

“Commercial development and private sector participation is sought to be encouraged through the following measures:- (i) Creation of a conducive policy and regulatory environment. (ii) Introduction of fiscal and promotional incentives, private investments in the renewable sector, both in manufacturing and end-use. (iii) Attracting foreign direct investment, and mobilization of resources through international funding, including the Climate Change Mechanisms such as CDM. (iv) Provision of Central Financial Assistance to strengthen resource assessment and research & development, as well as for capacity building, institutional development and creation of awareness.”

2.19 When asked about the impact of MAT on the private sectors participation in the promotion and development of various NCES programmes, the Ministry stated:-

“Private sector participation in the non-conventional energy sector has been stimulated by various fiscal incentives, including accelerated depreciation. Minimum Alternate Tax (MAT), which was introduced in 1996-97, affected project viability and reduced the attractiveness of investments by existing companies in this sector. The reduction in the rate of MAT to 7.5% has provided some relief. Exemption from MAT would further stimulate investment in this sector.”

Major bottlenecks and constraints in Implementation of NCES

2.20 The pace of the implementation of the renewable energy programme is faced with various constraints, the major ones of which are:-

a) Inadequate Budgetary Support:- The Central as well as State Governments are not providing adequate budgetary support for the renewable energy programme. When asked about the various reasons for not providing adequate budgetary support by the State Governments, the Ministry stated:-

“There have been some difficulties in making provision of matching funds from State Governments in solar energy and IREP programmes. In order to overcome this difficulty, MNES has requested the State Governments for greater access to MPLAD funds in order to meet the matching share of funds. In addition, efforts have been made to utilize funds under various other programmes/schemes of the Centre/State Government Ministries/Departments”.

b) Uncertainty in Policies: The economics of renewable energy projects is heavily dependent on Government policies towards interest rates, accelerated depreciation, tax credits, etc. Uncertainty with regard to them affects the economics of the projects and adds to the hesitation on the part of the financial institutions to finance various renewable energy projects. When asked about the views of the Government and the steps taken to ensure that the State Governments follow the policies consistently over the years, the Ministry stated:-

“In view of current direct and indirect subsidies to conventional energy and distortions in its pricing, it is necessary to create a level playing field in the energy sector by providing fiscal incentives for the accelerated utilisation of renewable energy. A fiscal regime which is supportive of the renewable energy sector has been introduced which is reviewed from time to time. This includes concessional customs duty, exemption from excise duty, sales tax relief, and accelerated depreciation. In addition, Central Financial Assistance in the form of capital and interest subsidy is available under various schemes. The States are being constantly persuaded to introduce investor-friendly Power Purchase policies for non-conventional energy projects as per the Ministry’s Guidelines. In those States where Power Purchase policies have been announced but are in variance with the Guidelines, the States are being further persuaded to modify the policies in accordance with the recommendations. 15 States have so far announced Power Purchase policies. It is expected that policy interventions when approved, would help in bringing about a long-term consistent policy regime for the accelerated development of renewable energy”.

c) Demand: Since the price per unit of consumer renewable energy technology such as solar cooker, biogas, solar lanterns are high, it has not been possible to generate sufficient demand for these items. This is further compounded by the fact that the perceived reliability of these products in the eyes of the consumer is low. When asked about the reasons for changes in prices during 1990 and 2000 and the steps taken to increase the demand, the Ministry furnished information, showing a comparison of approximate prices of the systems between 1990 and 2000 alongwith the reasons for variation which is given below:-

Sl. No.	NCES Items	Approximate Prices (in Rs.)		Reasons for change in prices
		1990	2000	
1.	Biogas Plant (average size 2 cu. meter)	5,500 – 6,500	8,500 – 11,000	Increase in input prices.
2.	Improved Chulha with Chimney (one pot)	90 - 120	200 - 275	Increase in input prices.
3.	Solar Water Heater (100 litre capacity)	12,000	16,000 – 18,000	Improvement in quality and range of products.
4.	Solar Cookers (Box Type)	1,000	(a) 1,500 Box Type with-out Electrical back-up (b) 1,800 Box Type with electrical back-up	Improvement in quality
5.	PV Modules	225 per watt.	165-175 per watt	- Increase in production. - Improvement in quality - Reduction in duty on silicon wafers.

As regards to steps taken to generate more demand and increase perceived reliability these are: (i) Organisation of publicity and awareness on benefits of renewable energy systems at different levels, including one-day women users courses (ii) wide distribution of information booklets/leaflets, etc. in local languages by State Governments (iii) increasing involvement of large number of non-governmental organisations and entrepreneurs (iv) fiscal and financial incentives (v) produce upgradation and cost reduction through R&D; and; (vi) Aditya Solar Shops for sale, repair and maintenance.

2.21 As regards the status of proposals for direct and indirect taxes for the year 2003-2004 and impact thereon, the Ministry informed:-

**Status of Proposals for Direct and Indirect Taxes for the
Budget 2003-04 and their Impact**

S.No.	Item	Proposal	Status	Impact/remarks
	Customs Duty	Duty Rate		
1	Consumables used in manufacture of silicon wafers	5% duty	Accepted	This will help in reduction of prices of silicon wafers
2.	Inverters of 90% efficiency and above for manufacture of PV systems	15%	Not accepted. Item may have multiple end-use.	No Change
3.	Toughened glass of 91% and above transmissivity for manufacture of solar thermal collectors	5%	Accepted (No. 26/2003 item No. 421)	This should help in reduction of the cost of manufacture and also improve the quality of products
4.	Anodised high reflection Al sheet for manufacture of solar cookers	5%	Not accepted. Item may have multiple end-use.	No Change
5.	Engine sets of 1 MW and above which operate exclusively on Biogas	Full exemption from duty	Not Accepted	No Change
6.	Components of Electric Vehicles	5%	Not accepted. Item may have multiple end-use.	No Change
7.	Removal from concessional duty list of four parts required for manufacture of wind generators		Accepted	This should help domestic industry
8.	Removal of 4% SAD		Not accepted	No Change
9.	Removal of		Not accepted	No Change

	additional duty			
	Excise Duty			
10.	Reduction in duty on Battery operated road vehicles	8%	Accepted	This should result in reduction in the sale price of vehicles
	Direct Taxes			
11.	Accelerated depreciation for items related to SHP		Not accepted. Inclusion of SHP needs to be discussed further.	No Change
12.	Exemption from MAT		Not accepted	No Change
13.	Classification of non-conventional energy as infrastructure sector		Non-conventional energy based power generation projects by new companies are already eligible	No Change
14.	Inclusion of bonds issued by IREDA as long term specified asset		Not accepted	No Change
15.	Restoration of tax exemption to IREDA's Exchange Risk administration Trust	Amendment to section 10 (23E)	Accepted Clarification issued regarding Exchange Risk Administration Fund.	This should help IREDA

2.22 The Ministry of Non-Conventional Energy Sources (MNES) have presented Demands for Grants of Rs.630.15 crore for the year 2003-2004 against the Budget Estimate (BE) of Rs.629.52 crore and Revised Estimate (RE) of Rs.473.56 crore during the year 2002-2003. MNES has been assigned a target of capacity addition to the tune of 470.75MW of power from renewables during 2003-2004 as against the target of 400.75 MW during the year 2002-2003. Electrification of 1,000 remote villages have also been proposed during 2003-2004 as against the target of 500 villages during 2002-2003. The Committee are, however, in doubt whether such targets would be achieved during 2003-04, taking into consideration their past track record. For instance, MNES could spent just Rs. 322.40 crore as Domestic Budgetary Support out of Rs. 339.25 crore, during the year 2001-02. The performance of MNES during 2002-03, is nothing short of dismal, as it could utilise only Rs. 162.94 crore(as on 28/2/2003) of total allocation of Rs. 475.25 crore of Domestic Budgetary Support. Sadly, the utilization, during first quarter of 2002-03 was zero. During the 2nd and 3rd quarter of the year 2002-2003, it was Rs.75.12 crore and Rs.51.12 crore against Rs.151.64 crore and Rs.59.54 crore respectively during the year 2001-2002. Thus, Rs.270.41 crore out of Rs.494.16 crore (RE) and Rs.126.24 crore out of Rs.468.29 crore were spent during the first three quarters of the years 2001-2002 and 2002-2003 respectively. For the two months January-February, the utilization level during the year 2002-2003 was twice the level of the previous year. The major reasons attributed for uneven utilization of funds in each quarter is the delay in issuing scheme sanction during the year 2002-2003. The Committee are of the view that this unhealthy trend of not spending any amount during first quarter of a financial year and rushing through major expenditure in the last quarters, especially in the months of February and March, is against the financial rules of the Government of India. The Committee are of the considered opinion that there has been system failure on a large scale, in such cases. The Committee recommend that MNES should take proactive steps and hold extensive discussion with the Ministry of Finance and Planning Commission for finding ways and means to eliminate such aberration in budgetary mechanism. The Committee would like to be apprised of the action taken by the Government in this regard.

2.23 The Committee note that the average cost of acquisition of funds by IREDA during 2002-03, was 9.55%, against average lending rate of 11.99%, giving a margin of 2.44%. As per assessment made by IREDA, the average lending rate during 2003-04 is expected to come down by 67 basic points to 11.32% and the average

borrowing rate by 86 basic points to 8.69%, giving a margin of 2.63%. The Committee find that in such an event, the margin of earning is going to increase from 2.44% to 2.63%. The Committee have observed that inspite of being a developmental agency, the lending rates of IREDA is more than commercial financial institutions, which charges anything between 9% to 9.5% as against IREDA lending rate of 11.32%. Even REC lend at 9.2%. As a result, an entrepreneur is tempted to approach commercial FIs for obtaining loans rather than to IREDA. This raises a question of very existence of developmental agency like IREDA, which is totally dedicated to the cause of renewable energy. The Committee, therefore, feel that the difference between the cost of acquisition and lending of funds should not in anyway exceed 2%. The Committee are of the view that IREDA has now become a commercial financial institution, rather than a development promoting agency. The Committee view this seriously and recommend that ways and means should be found out to correct this imbalance, lest the goal to source 10% power by 2012 will remain a distant dream. It is in this context, the Committee recommend that the Government should reduce the rate of interest through mobilisation of low cost funds like Equity, Tax Free Bonds, Infrastructure and Capital Gains Bonds, etc.

2.24 The Committee also recommend that the present equity base of IREDA which is Rs. 35 crore is too meagre and the proposal of Government to infuse additional Rs. 5 crore as equity, may not help to tide over the situation. Considering that some of PSUs like HUDCO is having a large equity base of as much as Rs.1000 crore, there is no justification of pegging it at Rs.40 crore for IREDA, especially when renewable sources have to be promoted. The Committee, therefore, recommend that equity of IREDA should be increased to at least Rs. 300 crore within three years and bonds issued by IREDA be specified as long term assets. At the same time, the Committee recommend that IREDA should not only reduce their non-performing assets but also improve their recovery rate.

2.25 The Committee have observed that the Ministry / IREDA could not succeed in projecting realistic Internal and Extra Budgetary Resources (IEBR) targets. For instance, during 2000-2001 as against the target of Rs.505.24 crore, only Rs.429.28 crore was realised. During 2001-2002, the actual realisation was increased from Rs.362.37 crore (RE) to Rs.435.18 crore. The Committee have further observed that the net IEBR has decreased from Rs.476.48 crore (BE) to Rs.419.98 crore (RE) during the 2002-2003 on account of higher repayment of loans consisting of part prepayment of higher interest Asian Development Bank (ADB) loan in RE stage which could not take place due to incompleteness of procedural formalities. There is also decrease in external aid from Rs.285.00 crore (RE) to Rs.255.60 crore and in other IEBR from Rs.424.91 crore(RE) to Rs.300.75 crore during 2002-2003. The reasons adduced for such variations are inability of project promoters to complete the required documentation before the end of financial year. The Committee feel that the IREDA is unable to facilitate the speedier implementation of the projects in the private sector. The Committee, therefore, recommend that the MNES / IREDA should take effective steps to simplify the procedure for obtaining loan and help the project developers in completing the required documentation within the shortest time so that realistic and achievable targets are not only projected but also achieved by MNES / IREDA. At the same time the Committee desire that IREDA should review their procedure, so as to streamline the system.

2.26 The Committee observe that the renewable energy systems are new emerging field of technology to meet the ever growing requirement of energy to the millions of people living across the globe. But these systems suffer with various barriers. High initial cost is a serious barrier for SPV, Solar Water Heater and Biogas. Back-up or storage systems are expensive and therefore a barrier to SPV. The Committee are perturbed to note that the cost of Biogas Plant (average size 2 cu meters) have increased from Rs.5,500 – 6,500 during 1990 to Rs.8,500 – 11,000 during 2000. Similarly, there has been rise in cost of Solar Water Heater (100 litre capacity) which increased from Rs.12,000 during 1990 to Rs.16,000 – 18,000 during 2000. Also the cost of Solar Cooker(box type) risen from Rs.1000 to Rs.1500 without electric

back-ups during the same period. The Committee are at a loss to understand the rise in prices of various systems of renewable energy, inspite of heavy subsidy being offered for the purpose. In the opinion of the Committee, the subsidy regime is turning out to be infructuous, when the systems have become out of reach of common masses. The Committee feel that there is a pressing need for identifying and immediate addressing of technology – specific barriers, etc. which can be removed through research and development, capacity building and awareness building programmes. The Committee recommend that Government should reassess the reasons, for rise in prices of commonly used system and take corrective actions, so that these systems are affordable by consumers.

2.27 The Committee observe that Customs Duty exemption on some of the items like inverters of 90% efficiency and above for manufacture of PV systems, anodised high reflection A1 sheet for manufacture of solar cookers, components of electric vehicles, etc, have not been accepted by the Government on account of their multiple end-use. The Committee feel that it is improper to deny Customs Duty exemption on the above mentioned items solely because the items have multiple end-use. The Committee desire that Government should find ways and means so as to ensure that equipments and gadgets, used for renewal sectors, are exempted from customs duties. The Committee also find that in some of the cases, Renewable Systems are exempted from Customs Duty but the spares are subjected to such levies. The Committee do not approve this and recommend that Customs Duty exemption or reduction should be allowed not only for the renewable energy systems as a whole and but also for spares.

2.28 In regard to the participation of private sectors in the field of promotion and development of the renewable energy sector, the Committee observe that there is a realisation in India, as well as elsewhere that for the large scale spread of renewable energy technologies, private sector participation is a must. It will happen only if (i) the potential market size is large so that there are ample potentialities of making profit, (ii) the risk involved is marginal and, preferably, some insurance cover for

risk is provided and most importantly, (iii) there are minimal Government regulations and procedures. The Committee observe that there are renewable energy technologies such as solar cookers, improved chulhas, community biogas, etc, which may not be profitable to the private sector, particularly, rural entrepreneurs, in all locations. The Committee desire that in such situations, the Governments have to take the initiatives to directly support the spread of technologies which have a useful social impact. When the Government is not able to meet with much success, NGOs and through them the rural entrepreneurs should be motivated as an alternative approach. In order to offset the inadequacy of funds provided for harnessing of different NCES potentialities, the different promotional incentive schemes should be reoriented and highlighted through powerful awareness and education programme amongst the potential users to create demand for renewable systems. The Committee have also observed that the Government have played a role of facilitator in the Wind Energy Sector, while the field of manufacturing, marketing, sales, maintenance and servicing of the Wind Energy Sectors have been left for the private developers. In fact, it is this sector which is an example of successful private sector participation in the dissemination of renewable energy system in the country. The Committee are of the opinion that there are different levels at which the private sector participation is necessary from technology development to marketing to servicing. Big-Corporate Houses should be encouraged and involved in capital intensive industry for manufacture of wind turbines, SPV modules, solar water heater for big industries and rural entrepreneurs for servicing and maintaining SPV, solar water heaters and gasifiers in the field. The Committee recommend that the strategies for promoting renewables have to be worked out separately for each technology depending upon the state of maturity of technology, the risk involved and their profitability. The Government should also consider providing adequate insurance cover for risks involved in private sector participation in promoting emerging technologies. There is need to classify non-conventional energy sector, as infrastructure sector, for the promotion of renewable energy. The Committee desire that Government should formulate an action plan in this regard and they be apprised of the outcome thereof.

2.29 The Committee have observed that the economic of renewable energy projects / systems is heavily dependent on Government's policies towards interest rates, accelerated depreciating, tax credits, etc. Any delay or uncertainty or disuniformity amongst the policies declared by various State / Union Territory Governments do not augur well for the development of this sector as it causes reluctancy on the part of the financial institutions to take risk and invest in this sector. The Committee have further observed that the Power Finance Corporation (PFC) and the Rural Electrification Corporation (REC) are coming forward with their policies and programmes to support the emerging Non-Conventional Energy sector. But their involvement in this sector have so far been modest. The Committee recommend that the Ministry should try to encourage their participation in this renewable energy sector also. The Committee also desire that a new pattern of relationship amongst the IREDA, a repository of all wisdoms and expertise with regards to renewable energy systems, the PFC and the REC and also with other Financial Institutions (FIs) should be developed for the promotion and the development of this sector.

B. Solar Power Programme

The Solar Power Programme of the Ministry includes grid interactive solar photovoltaic power programme and solar thermal power programme. The grid interactive solar photovoltaic power projects are taken up for two niche applications viz, voltage support at the rural section of the grid and peak load shaving in urban centers and diesel saver in islands/remote locations. 31 grid interactive SPV power projects of aggregate capacity 2.5 MW have so far been commissioned in ten States and three UTs and 17 projects of 550 Kw capacity are under installation in two States and three Union Territories. Under the Solar Thermal Power Programme, Ministry proposes to set up a 140 MW Integrated Solar Combined Cycle (ISCC) Power Project at Mathania, Jodhpur, Rajasthan as a Centrally assisted project through Rajasthan State Power Corporation Limited. This project will have a solar thermal component of 35 MW capacity based on

parabolic trough collector technology and a combined cycle power plant of 105 MW capacity based on naphtha as the fuel. It has now changed the fuel to re-gasified – liquified natural gas due to sharp increase in the price of naphtha and its volatility. The potential for generating grid quality power from solar photovoltaic and solar thermal technologies has been estimated at 20 MW / sq.km and 35 MW /sq.km. respectively.

2.31 The financial targets and achievements of the Solar Photovoltaic Power Programme and Solar Thermal Power Programme for the years 2000-2001, 2001-2002 and 2002-2003 and financial targets for the year 2003-2004 are given as under: -

(Rs. in crore)

	2000-2001			2001-2002			2002-2003		2003-2004
	BE	RE	Actual	BE	RE	Actual	BE	RE	BE
SPV Power Programme	7.75	3.25	2.35	6.00	10.00	10.40	8	8	6.00
Solar Thermal Power	0.25	0.10	0.00	20.00	0.10	0.00	10	0.10	5.00

2.32 From above, it is clear that Rs.6.00 crore only have been allocated for SPV power programme during the year 2003-2004 despite over utilization of allocated budget during the year 2001-2002 and higher allocation to the tune of Rs.8.00 crore (BE / RE) during the year 2002-2003. On the other hand, Rs.5.00 crore have, however, been allocated for Solar Thermal Power Programme during the year 2003-2004 despite its non-utilization during the years 2000-2001 and 2001-2002 and allocation of Rs.10 lakh (RE) only against the initial allocation of Rs.10.00 crore (BE) during the year 2002-2003.

2.33 When asked about the rationale for lower allocation of funds i.e. Rs.6.00 crore only for SPV Power Programme during the year 2003-2004 as against the over utilization of fund i.e. Rs. 10.40 crore during the year 2001-2002, the Ministry in their written reply stated:-

“An expenditure of Rs.10.40 crore was incurred during 2001-02 under the SPV Power Programme. The provision of Rs.8 crore during 2002-03 is likely to be fully utilized. Bulk of the releases under the programme being undertaken in Lakshadweep islands would be made during the current year. The lower provision of Rs.6.0 crore for the next year would, therefore, be sufficient to meet the requirements for releases to be made for the other on-going projects, as well as new projects to be taken up next year. A programme is being developed for A&N Islands also, and if it gets finalised next year, additional funds would be sought at the RE stage.

2.34 When further asked about the rationale for higher allocation of fund to the tune of Rs.5.00 crore for Solar Thermal Power Programme during the year 2003-2004 as against the non-utilization of fund during the years 2000-2001 and 2001-2002, the Ministry further stated:-

“The allocations made under the Solar Thermal Power Programme during 2000-01 and 2001-02 pertained to the 140 MW ISCC Mathania Solar Power project, and could not be utilized on account of delay in completion of preparatory activities and placing of the contract for the project by RRECL. As indicated by the project authorities, the contract is likely to be awarded by September 2003. An allocation of Rs.5 crore has, therefore, been made at the request of the State Government towards the MNES grant for the project”.

2.35 Physical and financial targets of SPV power programme for 2000-2001, 2001-2002, 2002-2003 and 2003-2004, are given in the Table below :-

Year	Physical (kWp)	Financial (Rs./crore)
------	----------------	-----------------------

	Target	Achievement	R.E.	Achievement
2000-01	300	375	3.25	3.75
2001-02	300	375	10.00	10.15
2002-03	750	500*	8.00	5.26*
2003-04	750	--	6.00	--

* As on 28.02.2003

2.36 When asked about the additional / new schemes proposed under the Solar Power Programme during the year 2003-2004, the Minisry stated:-

“No additional or new schemes have been proposed under the Solar Power Programme for the year 2003-04”.

2.37 The physical targets and proposed outlays for the SPV Power Programme during 10th Plan are given below:-

Item	2002-03	2003-04	2004-05	2005-06	2006-07	Total
Physical Target (KW)	750	750	1000	1000	1500	5000
Proposed Outlays (Rs./crore)	8.0	6.0	20.0	20.0	21.0	75.0

2.38 The physical targets and proposed outlays for the Solar Thermal Power Programme during 10th Plan are given below:-

Item	2002-03	2003-04	2004-05	2005-06	2006-07	Total
Physical Target (MW)	-	-	-	140	-	140
Proposed Outlay (Rs./crore)	--	5.0	15.0	15.0	15.0	50.0
Counterpart Funding for GEF grant of US \$ 45 million (Rs./crore)	--	90.0	55.0	55.0	-	200.0

2.39 When asked about the thrust areas which have been identified in the area of power generation from solar system for 10th Plan and the strategies to be adopted to implement them the Ministry stated:-

“The SPV Power Programme during the 10th Plan is aimed at projects covering applications such as voltage support at tail-end grid sections; power shaving in urban centers; diesel saving projects in islands or other remote areas; and, captive power projects in industry. Under the Solar Thermal Power Programme, thrust will be on the implementation of the 140 MW Integrated Solar Combined Cycle Power Project at Mathania in Jodhpur, Rajasthan”.

2.40 Informing about the institutional, financial, technical and policy barriers in the implementation of SPV and Solar Thermal Power Programme and R&D measures initiated to overcome these barriers, the Ministry stated:-

“On account of the current high costs of solar power generation, the utilities in the States have not shown much interest in grid interactive solar power projects. The State Electricity Boards are also reluctant to enter into Power Purchase Agreements for these projects. There have been difficulties in timely and adequate State allocations for meeting the State share. Technical problems have been encountered in certain areas where grids are weak or unstable. R&D in solar photovoltaics is being undertaken on several fronts to improve the efficiency and reliability, and to reduce costs. R&D has also been initiated on indigenous development of high efficiency inverters and power conditioning units suited for grid integration”.

2.41 When asked about the average cost per MW of energy generated through different solar systems, the Ministry informed:-

“The average cost per MW of setting up a grid connected solar PV plant is estimated at Rs.28 – Rs.35 crores. For a stand-alone power plant this cost is expected at around Rs.360 per watt of PV capacity. The cost of generation

of electricity from a SPV power plant is estimated at around Rs.18 – 20 per kWh. The average cost per MW of setting up a solar thermal power project based on parabolic trough technology is about Rs.12 crore, and the cost of generation of electricity from such a power plant is estimated at around Rs.8 – 10 per kWh. During the period 1997-98 to 2001-02, the prices of PV modules were in the range of Rs. 200 to Rs. 165 per watt. The reduction in the PV module prices have been achieved through improvements in the production levels due to increasing demand, improvements in efficiency etc. The reduction in the prices of PV modules has helped in the general reduction in the prices of various PV systems. In addition, Government has allowed duty-free import of silicon wafers, which are also exempted from excise duty”.

2.42 As regards after sale services of different renewable systems, following measures have been undertaken by the Ministry to improve the maintenance infrastructure:-

“Award of Annual Maintenance Contract for a period of 10 years has been built into the Scheme so as to take care of all O&M requirements during this period. Training programmes are organized periodically for the O&M personnel, and supply of critical spare parts is also provided for”.

SPV Water Pumping System for Agriculture and Related Uses

2.43 The programme support the deployment of photovoltaic pumping systems for agriculture and related uses such as irrigation, horticulture and drinking water supply, etc.

2.44 The Budgetary Allocation and Actual Utilization of budgeted amount, physical and financial targets and achievements during the years 2000-2001, 2001-2002 and 2002-2003 is given below:-

Rs. in crore

S. No.	Budget / Expenditure	2000-01	2001-02	2002-03
1	BE	9.50	10.00	24.00
2	RE	8.00	22.00	24.00
3	Actual	8.29	22.00	18.04*

* upto 28.02.2003

Physical

	2000-01		2001-02		2002-03 (28.2.03)	
	T	A	T	A	T	A
No	700	833	800	344	1200	613

T : Target A : Achievement

2.45 When asked about the reasons for variations in BEs and REs during the years 2000-2001, 2001-2002 and 2002-2003, the Ministry in a written reply stated as under:-

“During 2000-2001 the budget was reduced at the RE stage. In 2001-02 higher allocations at the RE stage was to meet the requirement of funds for deployment of higher capacity solar pumps and also to meet the commitments of the previous year and the actual expenditure was also Rs. 22.0 crore. During 2002-03 against the BE of Rs. 24 crore an amount of Rs. 18.04 has been spent upto 28.02.2003. There in no change at the RE stage and the entire amount of Rs.24.00 crore is likely to be utilized by 31st March, 2003”.

2.46 Furnishing about the details of activities likely to be undertaken for the programme during the year 2003-2004 , the Ministry informed:-

“The solar photovoltaic water pumping programme envisages installation of 1600 PV water pumping systems during 2003-2004. The programme

will be implemented through IREDA and state agencies. The existing arrangement of subsidy and soft loan will be continued. A higher rate of subsidy will be provided to the state agencies who directly procure the pumping systems and also provide some subsidy from the state budget. It is proposed to continue with the training and awareness campaigns among the farmers and other users of the PV water pumping systems. MNES will also support publicity and awareness promotion activities in different states. Publicity support to manufacturers will also continue. A budget provision of Rs. 31 crore is envisaged during 2003-2004 for all these activities”.

2.47 Detailing the quantum of subsidy and loan provided to the consumers, the Ministry informed that the Programme is being implemented through IREDA where the manufacturers / intermediaries are allowed to directly market the pumping systems. They are eligible to get loan from IREDA which also passes on the subsidy to the users. In case of the state nodal agencies the pumping systems are directly procured by the agency. A higher level of subsidy is provided by MNES, if the State Government also provides some subsidy to the users. At present no other agency is involved in the implementation of the Programme. The details of subsidy rates and soft loan are as given below:-

“Subsidy: The subsidy rate is Rs.110 per watt of the photovoltaic array used with the pumping system subject to a maximum of Rs. 2.50 lakhs per system. For direct implementation by the States the subsidy rate is Rs. 135 per watt.

Loan to the Users: Beneficiaries are expected to put in 10% of the unsubsidized portion of the cost of the pumping system. They are entitled to a soft loan at the rate of 5% per annum for the remaining 90% of the unsubsidized portion of the cost of the pumping system. The loan is to be repaid in 10 equal installments. Soft loan is not permitted when a higher rate of subsidy is allowed.

Loan to intermediaries: IREDA provides soft loan to the intermediaries at an interest rate of 2.5%. Intermediaries cannot supply systems to the state agencies or beneficiaries where a higher rate of subsidy is provided.

Interest Subsidy to IREDA

To provide soft loans to the users and intermediaries, MNES provides interest subsidy to IREDA. During 2002-03, the rate of interest subsidy for the loans extended to the users and intermediaries is a maximum of 8.5% and 11.0% respectively.

Funding Pattern for North - Eastern States and Sikkim

MNES provides financial assistance to the users of the SPV water pumping systems up to a maximum of 90% of the approved ex-works cost of the SPV water pumping system provided the implementation of the scheme is directly undertaken by the State Nodal Agency. This includes subsidy by the State Government, if any. SPV water pumping systems installed by the manufacturers and financial intermediaries claiming subsidy and loan through IREDA are not eligible for the enhanced rate of financial assistance. The suppliers of the SPV water pumping systems are responsible to provide after sales service. Under the scheme, the SPV water pumping systems are to be procured from any of the IREDA empanelled manufacturers. IREDA and the state agencies have been advised to organize annual maintenance contracts for a period of at least 3 - 5 years at the time of procurement of the pumping systems. For every 100 systems installed (on cumulative basis) by a manufacturer in adjacent blocks/ districts at least one service centre is to be opened by that manufacturer. The Administrative Staff College of India (ASCI), Hyderabad has submitted a report in October, 2002 on field performance evaluation of solar pumps installed in Punjab under the programme on PV water pumping systems for agriculture and related uses. According to the report, about 92% of the systems were found to be functional. The study has reported that the present method of providing maintenance through a common AMC for a period of four year to all beneficiaries, administered through PEDDA is found to be effective and economical to the users".

2.48 When asked about the technology and finance – specific barriers in the implementation of SPV water pumping system for agriculture and related use and the steps taken to improve the maintenance and monitoring infrastructure, the Ministry in a note stated:-

“The high initial cost of the SPV water pumping systems is one of the major barriers for large-scale introduction for agriculture and related uses. After the programme was launched in 1993-94, a majority of the systems were installed under the lease financing arrangement. Over the years the reducing bank interest rates, some difficulties experienced in claiming accelerated depreciation benefit by the leasing companies and the limited capacity of the companies to borrow from IREDA has made the lease financing route less attractive. While formulating the scheme for 2002-03 the financing pattern was examined in the Ministry and it was decided to provide additional subsidy to the state agencies, who are willing to provide some subsidy from the state budget and also procure systems directly. In addition to the subsidy of Rs. 110 per watt, the provision of additional subsidy of Rs. 25 per watt and bulk procurement by the state agencies enabled the manufacturers to reduce the price of the pumping system by about 20%. As a result during 2002-03 the average price of a 2 hp SPV water pumping system has come down from Rs. 4.3 lakhs to Rs. 3.4 lakhs. With a view to strengthen the maintenance network, the Administrative Staff College of India (ASCI), Hyderabad conducted a study in Punjab during March 2002 - October, 2002 determining the after sales arrangements. The study has reported that the present method of providing maintenance through a common AMC for a period of four years to all beneficiaries, administered through PEDDA, is found to be effective and economical to the users. As per the study, 92% systems were found to be functional. Remaining 8% systems required routine maintenance to rectify some common faults. During 2002-2003, the scheme was reviewed and on the basis of inputs received from ASCI. A new provision for setting up after sales service centers has been introduced. For every 100 systems installed (on cumulative basis) by a manufacturer in adjacent blocks/ districts, at least one service centre is to be opened by that manufacturer. Service centres have been opened in Punjab and Haryana”.

2.49 The Government have made a resolve to provide safe drinking water to all the villages. When asked about the numbers of villages which have no adequate facilities for safe drinking water and to what extent the Government is able to meet the need of providing safe drinking water to them through SPV Water Pumping System and upto which year, the Ministry stated:-

“The Department of Drinking Water Supply in the Ministry of Rural Development is responsible for the schemes relating to drinking water supply to villages. Solar photovoltaic water pumping systems have been installed under some projects of that Department. Information about the number of villages which do not have access to safe drinking water and the number of SPV water pumping systems installed in the country by the Department of Drinking Water Supply is being obtained. The scheme of MNES for deployment of SPV water pumping systems is focused on agriculture and related uses. The scheme also has provision for supporting installation of SPV water pumping systems for community drinking water supply. During 2002-2003, a total of 21 systems have been sanctioned for providing drinking water in Uttar Pradesh and 1 system in Rajasthan”.

2.50 **The Committee feel constrained to note that there has been a mis-match between the targets and achievements of Solar Power Programme since the year 2000-2001 in spite of the Committee’s cautioning the Ministry to project only achievable targets. During the year 2000-2001, Rs.7.75 crore was allocated for SPV Power Programme at the Budget Estimate (BE) stage which was reduced to Rs.3.25 crore at Revised Estimate (RE) stage but the actual amount spent during the year was further reduced to Rs.2.35 crore. During the year 2001-2002, the amount was increased from Rs.6.00 crore to Rs.10.00 crore but the actual expenditure had surpassed even this too and it was Rs.10.40 crore. This shows that the Ministry have failed to estimate their financial requirement even at the stage of Revised Estimate. What is more irrational is that the physical targets were over achieved even during the year 2000-2001 though the budget were reduced from Rs.7.75 crore to Rs.3.25 crore and the actual amount spent was further dipped to Rs.2.35 crore. Furthermore, Rs.6.00 crore has been allocated during the year 2003-2004 against Rs.8.00 crore (RE) during the year 2002-2003 though the physical targets for both the year is 750 KW and the**

Ministry have assured the Committee that the reduced amount of Rs.6.00 crore allocated for the year 2003-2004 would be required for new projects to be taken during the year. But the Committee are not convinced with this argument as it has been informed to the Committee that no additional or new schemes have been proposed under the Solar Power Programme for the year 2003-2004. Estimates based on such fallacies is bound to fail certainly. It is further informed to the Committee that the allocations made under the Solar Thermal Power Programme during the year 2000-2001 and 2001-2002 pertained to the 140 MW ISCC Mathania Solar Power Project could not be utilised on account of delay in completion of preparatory activities and placing of contract by the Rajasthan Renewable Energy Corporation Ltd. (RRECL). Taking into consideration of the above-mentioned facts, the Committee are of the firm opinion that the reasons attributed for mis-matches in targets and achievements relating to Solar Power Programme are not beyond the control of the Ministry of Non-Conventional Energy Sources (MNES). The Committee desire that there is a need to overhaul the entire system of the budgetary mechanism in the Ministry and, therefore, recommend that Government should take appropriate action in this regard and inform the Committee accordingly.

2.51 The Committee are happy to learn that the Government have made a resolve to provide safe drinking water to all the villages and find that some of the SPV water pumping systems have been installed under some projects of the Department of Drinking Water Supply in the Ministry of Rural Development who is responsible for the schemes for providing safe drinking water to all the villages. The Committee find that the features of SPV water pumping technologies which is characterised by small scale capacities for decentralised applications and modular nature of the technologies are ideal for meeting the rural needs of water. But the Committee find that the list of the number of villages having no access to safe drinking water are yet to receive from Ministry of Rural Development. The Committee find that the focus of the SPV Water Pumping Programme is on agriculture and not on providing drinking water to the rural masses. The Committee desire that one of the prime focus of the SPV Water Pumping Systems should also be on providing safe drinking water in the remote / inaccessible areas. The Committee can not but deplore the way the Government have initiated a programme like SPV Water

Pumping Programme without having a list of the number of villages / hamlets which do not have access to safe drinking water. The Committee, therefore, recommend that the Ministry of Non-Conventional Energy Sources together with the Ministry of Rural Development should first identify the villages having no safe drinking water facilities and should chalk out a time-bound Plan of Action to provide safe drinking water including all the inaccessible and remote areas. The Ministry should also initiate this programme in 18,000 unelectrified villages / hamlets situated in remote areas which are planned to be electrified by decentralised generation through non-conventional sources by the year 2012 AD under the Village Electrification Programme of the Ministry of Non-Conventional Energy Sources.

2.52 The Committee are constrained to note that no Solar Thermal Power Project has so far been established in the country. The first project of 140 MW Integrated Solar Combined Cycle Power Project which includes a 35 MW thermal component using solar energy and a combined plant of 105 MW capacity based on Naptha, which is now planned to be changed to re-gasified liquified natural gas, is planned for implementation at Mathania in Rajasthan. The Committee find that this too has landed in deep trouble. Funds were surrendered during 2001-2002 and 2002-2003 as Rajasthan Renewable Energy Corporation Ltd. (RRCL) could not finalise the turnkey contract for the project. Rs.112.00 crore earmarked for the project has been surrendered. The Committee also found that the Ministry failed to properly analyse the utility of fuel like Naptha which is being discarded world over. Moreover, it is characterised by high volatility sharp price fluctuation in international market. Now, it has been decided to change from Naptha to gas for the conventional component of the project. The Committee hope that the project will be completed during 10th Five Year Plan. The Committee desire that the feasibility studies for the projects based on the same technology configuration should be carried out in the light of the experience gained / to be gained in this project and such project should be established in various other parts of the country.

2.53 The Committee observe that Solar Photovoltaic and Solar Thermal Power Projects have a high initial cost but low fuel, operational and maintenance costs. Further, life-cycle cost analysis may show that they are already cost effective. Given the scarce capital and high interest rates, entrepreneurs and end-users are unlikely to invest in such high first cost technologies. The situation has further worsened by the change in the policy guidelines by the Government in mid-way and also due to unattractive policy guidelines for the private sectors participation in the installation of Solar Power Projects. So far only 5 grid interactive SPV power projects aggregating to 670 Kwp have been installed through private sector participation. There is also lack of indigenous capability to meet domestic demands for the critical parts and components required to install and maintain them. The Committee would like to empahsise that the Ministry should adopt two pronged approach to promote the Solar Power Programme. At one end, the Ministry should provide adequate Research and Development (R&D) support to improve the efficiency, reliability and to reduce costs and on the other, the Ministry should declare long term consumer friendly policy guidelines also for the participation of private sectors in the installation of the solar power projects and promotion of indigenous solar industry to provide consumables and other items for their maintenance and installation. The Committee, therefore, desire that Ministry should devise a way to reduce the high first cost and encourage the participation of private sectors in the field of installation, maintenance and manufacturing of different parts and components of solar system.

2.54 Solar Photovoltaic (SPV) water pumping systems are technically proven and are considered to have the potential or replacing diesel pumping system, commonly used in unelectrified locations for lifting water from both shallow and deep wells. The PV pumping system can cut down the need for extending the distribution grids in dispersed rural areas and the resultant losses in transmission. The pump can also bring the benefits of irrigation and drinking water supply in backward areas not served by the existing grid and where supply of diesel is a problem. But the Committee note with serious concern that the programmes have not picked up.

During the year 2001-2002, only 344 water pumping system could be installed as against the target of 800. During 2002-2003 out of the target of 1200, only 613 could be achieved by 28.2.2003. Now a target of 1600 PV water pumping system during the year 2003-2004 has fixed. The Committee is sceptical about the target fixed by the Ministry during the year 2003-2004. The Committee desire that the Government should take effective steps to implement the programme so that the annual targets fixed for the programme could be achieved. The Committee observe that inspite of additional subsidy provided by the Government. The average sale price of a 2 HP SPV water pumping system has come down from Rs.4.3 lakh to Rs.3.4 lakh during the year 2002-2003. A cumulative total of 5113 SPV water pumping system could only be installed within a span of 10 years. The Committee are of the view that it is still beyond the purchasing capacity of common Indian farmers. The Committee, therefore, desire that ways and means should be formed to reduce the cost of the SPV water pumping system through appropriate R&D efforts. There is also a need to increase demand of the system by spreading it over the entire length and breadth of the country particularly in the remote backward areas of the country. The Committee appreciate that 92% of the system are functional and trust that with the new stipulation of setting up of after sale services for every 100 systems, installed, the functionality level may go up.

C. Village Electrification through SPV Programme

Out of the 80,000 villages to be electrified, it has been estimated that 18,000 villages are in remote and far flung areas and which cannot be electrified in the conventional manner by extending the grid. This is based on data compiled by the Rural Electrification Corporation at the start of the 9th Plan. The difficult locations include forests, islands, deserts and hilly areas. Most of these villages are believed to have population less than 500.

Sl.No.	State	Number of remote villages
1.	Arunachal Pradesh	788

2.	Assam	330
3.	Bihar	2,000
4.	Jammu & Kashmir	203
5.	Madha Pradesh	1,300
6.	Manipur	166
7.	Meghalaya	2,490
8.	Mizoram	72
9.	Orissa	3,390
10.	Rajasthan	3,000
11.	Tripura	97
12.	Uttar Pradesh	3,600
13.	West Bengal	550
	Total	17,986
	Say	18,000

2.56 It has now been decided by the Government to electrify all of these 18,000 remote villages through decentralized generation through techno economically viable renewable energy options like Solar Photovoltaic (SPV), small hydro and biomass, within the next two plan periods i.e. by the year 2012.

2.57 An analysis of the relative economics of electrification of such villages through the conventional and solar energy options shows that it may be cheaper to provide basic electrification for lighting purposes through solar photovolatic systems in cases of villages located beyond 3 km in tribal and North-Eastern areas and beyond 7 km in the plains. Considering the need to bring the benefits to such remote areas, the Ministry of Non-Conventional Energy Sources have been implementing programmes based on photovoltaic, biomass and small hydro power technologies in these areas. Over 2400 villages and hamlets have been electrified through SPV systems.

2.58 Under the SPV programme of the Ministry, projects on electrification of villages and hamlets have been carried out for several years. More than 2400 villages and hamlets

have been electrified so far with SPV system, in the sense that at least 50% of the households in each of these villages have been provided with a solar home lighting system or power plant that has been installed in the village. Out of 5000 villages which are proposed to be taken up during 10th Plan, 4000 villages are proposed to be electrified through solar PV route. A budget of Rs.1080 crore has been proposed for the 10th Plan period.

2.59 The year-wise details of the physical and financial targets and achievements are given below:-

Sl. No.	Year	Physical		Financial (Rs. in crores)	
		Target	Achievements	Target (RE)	Achievements
1	2000-01	Nil	Projects for 429 villages and 129 hamlets were sanctioned	-	6.22 released from the SPV Programme
2.	2001-02	400 villages	391 villages and 129 hamlets (completed)	20.00 (*)	18.23 (15.93 from the VE Budget Head through SPV and 2.30 from SPV Prog. Budget Head)
3.	2002-03 (as on 10.3.2003)	400 villages	406 villages and 41 hamlets (completed)	60.00 (*)	4.05

(*) - including provision for Village Electrification projects through SHP and Biomass Gasification project.

2.60 As regards the financial expenditure required for the electrification of 2400 villages through SPV programme, the Ministry in a note stated:-

“The 2,400 villages, mentioned above, were electrified under the SPV programme over the last many years. But during the last three years, i.e., 2000-01, 2001-02 and 2002-03, about 1,000 villages have been taken up for the electrification through SPV. The estimated MNES share for these projects is about Rs.45 crores. The total expenditure under these projects is expected to be around Rs.100 crores. Field surveys and inspections show high functionality of the SPV systems installed”.

2.61 When asked how the Government would be able to meet the additional amount of Rs.120 crore (Rs.1200 crore - Rs.1080 crore) to lit up 4000 villages under Village Electrification Programme during 10th Plan, the Ministry stated:-

“The total requirement of funds for the electrification of 5000 villages during the Tenth Plan is estimated at Rs.1000 crores at the rate of Rs.20 lakhs per village. The maximum liability for the Central Government on the basis of 90% financing would be Rs.900 crores. An amount of Rs.710 crores has been provided in the outlay for the Tenth Plan for this purpose (with a separate provision of Rs.25 crores towards surveys etc.) The gap is proposed to be met through the use of funds available for tribal welfare and other sources. There is also the possibility of increase in the outlay at the stage of mid-term appraisal”.

2.62 In order to improve the quality of life of rural masses, it is desirable to improve the penetration of SPV programme. The following suggestions have been brought to the notice of the Committee:-

- A Planning
 - (a) Enhanced budgetary allocation
 - (b) Mandate to / for all SEBs/ utilities
 - (c) Creation of Renewable Energy Enabling Fund
 - (d) Massive Solar Diesel Hybrid Programme

- I Fiscal
- B Policies
 - (a) Import / Excise Duties revision
 - (b) Priority Lending Sector status, so that matching working capital could be provided.
 - (c) 100% depreciation
 - (d) Harnessing of external grant funds.

- II MNES Subsidies

- (a) Subsidies directly to the manufacturer
- (b) Subsidy payments within 3 months
- (c) Cost monitoring to review

2.63 The Ministry have expressed their reactions on the above suggestions as under:-

“The MNES for quite sometime has been working on creating a favourable policy and fiscal environment which will help expand the use of photovoltaic technology in the country. The Ministry has worked out an expanded programme for the 10th Plan involving an outlay of about Rs.1100 crores for various schemes involving photovoltaic technology. This should help expand the market significantly. It may, however, not be feasible to mandate all SEBs and utilities to generate solar photovoltaic power. SPV diesel hybrid systems can be set up in specific cases where there is proper justification for the same keeping in mind environmental concerns. The fiscal measures suggested would be helpful and have been pursued with the Ministry of Finance. The suggestion regarding subsidies directly to manufacturers has been considered in the past and has not been adopted due to some practical difficulties envisaged”.

2.64 **The Committee are happy to learn that all the 18,000 villages which are believed to be in remote and difficult areas and which can not be electrified through extension of the conventional grid will be electrified through the Village Electrification Programme of the MNES. Out of the 5,000 villages which are proposed to be taken up during 10th Plan, 4,000 villages are proposed to be electrified through Solar Photovoltaic route. A budget of Rs.1080 crore has been proposed for electrifying 4,000 villages through SPV systems during 10th Plan. It is estimated that on average a village may require about 7.5 KW capacity PV power plant or equivalent capacity PV system. The average cost of electrifying a village is about Rs.30 lakh. Thus, it will require Rs.4000x30 lakh = Rs.1200 crore for lighting up these villages during 10th Plan. Thus, there will be a gap of Rs.120 crore (Rs.1200 – Rs.1080 crore). The Committee was informed that the gap will be met through the use of fund available for tribal welfare and other sources. The Committee, therefore, desire that the Ministry should try to harness all the possible sources of fundings meant for various schemes / programmes relating to the welfare of rural**

masses, Ministries of Rural Development, Tribal welfare, Department of Woman and Child Development, MPLAD / MLALAD fund, etc. It is also learnt that more than 2400 villages / hamlets have been electrified so far with the SPV system in the sense that at least 50% of the households in each of the villages may be electrified as against the recommendation of the 15th Report of the Standing Committee on Energy (2001) [13th Lok Sabha, DFG (2001-2002)], whereunder “a village would be deemed to be electrified if at least 60% of the houses are provided with the lighting”. The Committee, therefore, re-emphasised that the Ministry should strictly adhered to this definition of the Committee for declaring a village to be electrified through various Non-Conventional Energy systems including the SPV system.

D. Special Area Demonstration Programme (SADP)

Under the ‘Special Area Demonstration Programme’ (SADP) a scheme named ‘Renewable Energy Parks’ (REP) was launched during 1994-95 at different educational institutions and the institutions, where there is a large inflow of public. The main aim of the scheme is to create awareness and give publicity among the students, teachers, rural and urban people about the use of various renewable energy system and devices. The scheme was expanded in 2000-2001 to include large energy parks to be set up at least one each State / Union Territory for wide publicity and awareness of renewable energy systems applications. Out of a total of 278 district level energy park projects which have been sanctioned, 126 district level energy park projects have been completed and procurement of sanctioned systems being made by the concerned State Nodal Agencies and institutions. A target of 60 district level Energy Parks and at least 5 State level renewable energy awareness/education parks is proposed for 2003-2004 with a budget estimate of Rs. 10.50 crore.

2.66 The Budget Estimates (BEs), Revised Estimates (REs) and Actuals vis-à-vis corresponding targets and achievements for the year 1999-2000 onwards are as under :-

(Rs. in crore)

Year	Central Plan Outlay provided	Actuals	Physical
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	BE	RE		Targets	Achievements
1999-2000	1.50	1.50	1.00	36	36
2000-2001	1.50	1.25	1.25	36	46
2001-2002	2.00*	5.65*	5.315	38 district level park atleast 2 state level park	46 8
2002-2003	13.30	10.00	-	60 district level park atleast 5 state level park	-

* this includes Rs.0.50 crore for North Eastern States.

2.67 The variation in BE & RE, and actuals were due to the actual requirements of funds. The physical targets, however, were over achieved during 2000-2001 and 2001-2002.

2.68 The average cost of a District level Renewable Energy Park is about Rs.3.50 lakh and for a State level Energy Park it is about Rs.80 lakh. As per the provisions of the Energy Park Scheme, a maximum of 2 years is given for the completion of the State/ District level Renewable Energy Park. When asked about the funding mechanism and pattern for the REPs in various States/Union Territory, the Ministry stated:-

“For District level Renewable Energy Parks, 50% of the procurement and installation cost of energy systems and devices is being provided by the Ministry and the remaining 50% is met by the institution concerned. For the State level Renewable Energy Parks, the total cost of energy systems and devices and exhibits is met by the Ministry on 100% basis limited to a maximum of Rs. 1.00 crore and the State concerned meets the entire expenditure for the infrastructural development such as civil works etc”.

2.69 When asked about the financial incentives/subsidy available to the users, the Ministry informed:-

“The Energy Parks are being set up to demonstrate the energy systems and devices and create awareness about the use and benefits of renewable energy systems. The salient features of the existing guidelines of the Energy Parks are : (i) district level Renewable Energy Parks are to be set up at the rate of one per district (ii) the procurement and installation cost of energy systems and devices sanctioned for District level Parks is shared between MNES and the institution concerned on a 50:50 cost sharing basis and the total cost of the District Park ranges from Rs.1.00 lakh for a small institution and Rs. 10.00 lakh for a major institution (iii) State level Renewable Energy parks set up at the rate of one per State by the State Nodal Agencies (iv) MNES provides 100% cost of renewable energy systems/devices and exhibits sanctioned for State level Energy Parks limited a maximum of Rs. 1.00 crore”.

2.70 When asked about the functionality of REPs, the Ministry stated:-

“Out of sanctioned 278 District level Renewable Energy Parks, 126 District level Renewable Energy Parks were operational till 2001-2002. A total of 162 District level Renewable Energy Parks are reported operational upto February, 2003. The Evaluation Study conducted through 4 independent agencies during 2001-2002 has revealed that the Energy Parks have created awareness of renewables among students, teachers and public in majority of the 12 States covered under the study”.

2.71 When asked whether the MNES propose to give priority to remote, inaccessible unelectrified areas like Sagar Islands, Sunderbans Islands, Lakshadweep Islands, Andaman & Nicobar Islands, Leh, Laddakh, Lahul, Spiti areas where the supply of electricity through conventional grid power is very difficult or impossible, the Ministry stated:-

“MNES is implementing the village electrification programme under which non-conventional energy systems are being installed to electrify villages in remote and difficult areas. The entire Ladakh region is now considered as 100% electrified and this has been made possible by the recent electrification of 57 villages

through solar photovoltaic systems. Photovoltaic systems are also being used extensively in Lakshadweep, A&N Islands and the Sunderbans region, including Sagar Island. 1 MW capacity in the wind farm demonstration project at Frazergunj and 100 kW capacity in the wind-diesel hybrid project at Sagar Island, have already been commissioned. The second phase of 1MW capacity of the demonstration wind farm project, and the second phase of 400 kW wind-diesel hybrid project have been sanctioned during the year. A project for installation of a biomass gasifier system coupled with a 100% producer gas engine of 2X120 kW capacity has also been sanctioned to supplement the existing 500 kW biomass gasifier system at Gosaba Island in Sunderbans. Two grid interactive SPV power projects have been commissioned at Kadamat (150kW) and Kavaratti(100 kW) islands in Lakshadweep. A solar power project of 50 kW was also commissioned at Neil island in Andaman & Nicobar Island”.

2.72 The Committee observe that the generic barriers to renewable energy systems are characterised by lack of information, low confidence levels, perceived low performance, inadequate demonstration of field performance, etc. With a view to removing such barriers, the Renewable Energy Parks under Special Area Demonstration Programme (SADP) are being set up to demonstrate the functioning of various non-conventional energy systems and devices and create awareness among the students, teachers, rural and urban people about the use and benefits of renewable energy systems. It is further observed that out of sanctioned 278 district level REPs, 162 are reported operational till February, 2003. The number of un-operational system is, therefore, stand at 116 which, is fairly large. The Committee are of the view that success of the REPs is a must, as the people go back to the traditional systems with a vengeance, if such projects fail. The Committee, therefore, desire that the demonstration projects should be taken very carefully after assessing the suitability of various renewable systems and the attitude and ability of the institutions where REPs are to be installed and also recommend that after installation, the management of the REPs should be strengthened and all the unoperational REPs should be made operational within a specified time period. In view of the crucial role that such projects have to play in the economic development of the country, the Committee suggest that Government should consider the question of giving the status of a technology mission for the entire exercise of all the

demonstration projects relating to the use of various Non-Conventional Energy systems and devices of the Ministry of Non-Conventional Energy Sources.

E. Lumpsum Provision for North-Eastern Region including Sikkim

Government of India have decided to spend 10% of the Direct Budgetary Support for the development works in North-Eastern Region including Sikkim. Rs.54.00 crore, out of the total DBS of Rs.454.65 crore has been earmarked under this head, during 2003-2004.

2.74 When asked about the programme-wise and year-wise physical targets and achievements along with reasons for under or over achievements since the year 2000-01 onwards, the Ministry in a note stated:-

“The Ministry is implementing various programmes/schemes for promotion, development and utilization of non-conventional energy sources to meet energy requirements for cooking, heating, lighting and electricity in the North Eastern Region. These programmes include biogas, improved chulha, small hydro power, solar photovoltaic, biomass gasifiers, integrated rural energy programme and energy parks. The physical targets are fixed only for biogas, improved chulha and SPV demonstration programmes and the achievements made under these programmes, year-wise since 2000-2001 are given below:

Sl. No.	Programme	2000-2001		2001-2002		2002-03*	
		Target	Ach.	Target	Ach.	Target	Ach.
1.	Biogas Plants (Nos.)	10,000	8,301	5,800	5,450	7300	3600
2.	SPV Demonstration programme						
	i. Solar Lanterns (Nos.)	11,200	6,924	8,000	8,688	-	3,000
	ii Home Lighting System (Nos.)	2,350	506	1,066	1,670	10,250	555
	iii Street Lighting System (Nos.)	130	120	470	300	650	-
3.	Improved Chulha (Nos.)	1,00,000	86,104	1,05,800	33,000	15000	4860

* Achievements as on 31.01.2003

2.75 The achievement made under other major programmes in North Eastern Region are given below:

Sl. No.	Programmes	2000-2001	2001-2002	2002-2003*
1	Biomass Gasifier (kW)	270	1830	1000**
2	Integrated Rural Energy Programme (No. of blocks)	112	112	112
3	Special Area Demonstration Programme (No. of	17	3	-

	energy parks)			
4	Small Hydro Power (MW)	3.00	18.35	4.35
5	SPV Power Plant (kW)	-	4.50	19.20

*** Upto 28.02.2003**

**** Commissioned**

2.76 Commenting upon the reasons for variations in achievements, the Ministry informed that they are mainly on account of higher cost and time delays due to logistic issues, weak private sector investment, unwillingness / inability of States to provide matching funds and due to the low absorptive capacity of the region.

2.77 When asked about the benefits accrued as a result of these schemes, the Ministry in a note stated:-

“As a result of implementing various schemes of Non-conventional Energy Sources, a total of 153.02 MW of power from small hydro power, 50,000 nos. of solar photovoltaic systems, 94 nos. of SPV pumps, 1303 kW of biomass gasifiers, 9.8 lakhs of improved chulhas, 70,300 nos. of biogas plants, 53 nos. of energy parks and 112 nos of blocks have been set up upto 28.02.2003. These systems have been helpful in meeting the energy requirements of cooking, heating, lighting and electricity in the North Eastern States. In addition, programmes on mass awareness and publicity are also being taken up to involve the people in utilization of non-conventional energy systems/devices for meeting their daily energy needs. Electrification of villages will not only provide employment opportunities but also help in promoting income-generating activities besides providing energy for domestic, social and community activities”.

2.78 Enquired about the new schemes and plans which have been planned through the enhanced budget outlay of Rs.54 crore during the year 2003-04, the Ministry stated:-

“A special emphasis is being laid on the village electrification programme, SPV water pumping and solar thermal programmes during 2003-04. In addition, the other programmes such as small hydro, biogas, biomass gasification, SPV demonstration for solar lighting systems, energy parks, IREP blocks etc. are being continued. State Nodal Agencies have been set up/strengthened in all North Eastern States for the exclusive implementation of all non-conventional energy programmes. These agencies are being involved to take appropriate steps to achieve the targets set for 2003-04. The publicity and mass awareness through electronic and print media and exhibitions is also being enhanced for involvement of the people in utilization of renewable energy systems and devices. All North

Eastern States are being persuaded to announce investment friendly policies for power generation projects”.

2.79 Detailing about the major bottlenecks the Government face in the North-East Region States including Sikkim while implementing various NCES schemes and programmes and the steps taken to overcome them, the Ministry stated:-

“Many problems in North Eastern region States including Sikkim are on account of logistic support to not only higher costs construction, but also more time required to complete project which in turn retard the growth of renewable energy programmes in this region.

Major bottlenecks in implementation of NCES Schemes and Programmes

Problems

- Higher cost and time delays on account of logistic issues.
- weak private sector investment.
- States unwilling or unable to provide matching funds.
- Law and order situation.
- On account of the aforesaid, the absorptive capacity is low in the region.

Major initiatives taken by the Ministry

- Model guidelines to prepare policies for renewable energy power generation projects have been provided to the North Eastern States including Sikkim. these States are being persuaded to set the provisions contained in the model guidelines with such modifications as to suit local conditions.
- Ministry has allocated 10% of Gross Budgetary Support for the development of the North Eastern States, including Sikkim.
- State Nodal Agencies have been set up in all the North Eastern States with financial assistance provided by MNES.
- Higher central financial assistance at 90% of the cost of Biogas Plants, Improved chulha and Solar Photovoltaic systems and 90:10 cost sharing basis for Biomass gasifier and Small Hydro Power Projects is being provided to more than offset the higher initial cost of renewable energy systems/devices.

- Aditya solar shops in every State are being made operational to provide facilities for the sale, repair and maintenance of renewable energy systems and devices.
- Special package has been formulated by IREDA with concessions on the incentives such as rebate of 1.00% p.a. in interest rate, exemption from payment of registration fee and other charges, concession of 5% p.a. in Promoter's Contribution, financial support upto 50% of the total cost of preparation of DPRs, subject to a maximum of Rs.3.00 lakhs.
- Special emphasis on remote village electrification programme”.

2.80 The Committee are happy to learn that the Ministry has allocated 10% of GBS for the development of the North-Eastern States including Sikkim. Higher Central financial assistance @ 90% grant and 10% loan for all renewable energy is admissible in North-Eastern Region. It is also learnt that special package has been formulated by Indian Renewable Energy Development Agency (IREDA) with concessions on the incentives such as rebate of 1% per annum in interest rate, exemption from payment of registration fee and other charges, concessions of 5% per annum in promoters contribution, financial support upto 50% of the total cost of the preparation for Detailed Project Reports (DPRs), subject to a maximum of Rs.3.00 lakhs. But the Committee are very perturbed to note that none of the Renewable Energy Programmes except a very few have been able to achieve their targets, since 2000-2001. Some of the reasons attributed for these under achievements are higher cost and time delays on account of logistic issues, weak private sector investments, States unwilling or unable to provide matching funds, law and order problems and due to the low absorptive capacity of the region. The Committee, therefore, desire that the Government should take concerted efforts to remove such bottlenecks through the programmes such as mass awareness and publicity to motivate people to use various Non-Conventional Energy Sources (NCES) systems for their daily energy needs and also that all the States of the region

should be cajoled to give top priority to these programmes and accorded matching funds for their installations.

2.81 The Committee appreciate the role performed by West Bengal Renewable Energy Development Agency (WBREDA) in ensuring the electricity to the far-flung areas like Sundarbans through non-conventional energy systems. Considering the backwardness and remoteness of Sundarbans area, the Committee desire that all the non-conventional sources projects should be provided 90% grant and 10% loan and also desire that Sundarbans type of experiment should be replicated throughout the country. The Committee note that in spite of this Committees earlier recommendation to clear the Durgaduani Tidal project (3.0 MW) at Sundarbans in West Bengal, it is still pending with the Government. The Committee desire that the project should be cleared without any further delay. The Committee also recommend that the project should be provided with cent-per-cent grant by the Union Government.

NEW DELHI;
28th March, 2003
7 Chaitra, 1925(Saka)

SONTOSH MOHAN DEV,
Chairman,
Standing Committee on Energy.