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STANDING COMMITTEE ON ENERGY
(2001)
THIRTEENTH LOK SABHA

MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

DEMANDS FOR GRANTS
(2001-2002)

FIFTEENTH REPORT



Presented to Lok Sabha on 19.4.2001
Laid in Rajya Sabha on 19.4.2001

LOK SABHA SECRETARIAT
NEW DELHI

April, 2001 / Chaitra, 1923 (Saka)

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COMPOSITION OF THE STANDING COMMITTEE ON
ENERGY (2001)

Shri Sontosh Mohan Dev - Chairman

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| 3. | Shri R.S. Kambo | - | Under Secretary |
| 4. | Shri P.C. Tripathy | - | Committee Officer |

INTRODUCTION

I, the Chairman, Standing Committee on Energy having been authorised by the Committee to present the Report on their behalf, present this Fifteenth Report (Thirteenth Lok Sabha) on Demands for Grants (2001-02) 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 29th March , 2001.

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 Department 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 12th April, 2001.

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;
April 16, 2001
Chaitra 26, 1923 (Saka)

SONTOSH MOHAN DEV
Chairman
Standing Committee on Energy

PART I

CHAPTER I

Introductory

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 and waste generation such as ash 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 (UNFCCC) 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 The World Bank in one of its reviews (1996) on rural energy and role of renewables concluded that:-

- The basic technologies are fully proven, work well and are no longer experimental.
- The potential for further development and cost reduction is considerable and will be facilitated by further investment, research and development.
- * Developing countries are increasingly becoming interested in the wider use of renewables and the investment in renewables will benefit from the enabling conditions in these countries.

1.3 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. 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.

1.4 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 a 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 photovoltaic, 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.

1.5 In this context, a draft renewable energy policy statement has been drawn up outlining 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 achievements by 2012. These include coverage of 30 million households with improved chulha, installation of an additional 3 million family size biogas plants, deployment of 5 million solar lanterns and two million solar home lighting systems, provision of electricity to at least 25% of the 18,000 unelectrified villages, deployment of solar water heating systems in one million homes and achieving a 10% share for renewables in the new power capacity addition projected upto 2012.

1.6 Industrial and commercial growth is linked to market development, both local and overseas. Hence the Ministry launched a new scheme to underpin the growth of economic activity in this sector. Under this, the Ministry has launched a scheme of Business Meets in collaboration with the Confederation of Indian Industry (CII) to facilitate industry-Government interaction. The Indian Institute of Foreign Trade has been entrusted with the tasks of preparing a Handbook for exporters to serve as a ready-reckoner of the procedures involved in, and the facilities provided for, exports in the area of renewable energy. The Ministry proposes to bring out an Export Market Study and a Compendium of the Indian Renewable Energy Industry.

1.7 Despite major advances in the renewable energy sector, several technologies have not been able to attract adequate industrial investment because of the perceived risks involved. To catalyse investments in this area, the ministry has also created a Fund, which will primarily support commercialization of indigenous or imported technologies through equity, loan, etc. or a suitable mix of these. This support will be linked to financing through Financial Institutions (FIs)

including IREDA. Proposals under this scheme would be evaluated and approved for funding by the Non-Conventional Energy Technology Commercialization Fund (NETCOF) Committee, which consists of technical and financial experts and is headed by the Secretary of the Ministry. The Fund has been set up with an initial corpus of Rs. 2.00 crore. The Project Review and Monitoring Committee (PRMC) will monitor the projects sanctioned under this scheme.

1.8 It is expected that in the coming years a large quantum of international funds would be available from UNDP, World Bank, ADB and other multilateral and bilateral sources. A scheme has been formulated for providing financial assistance for the preparation of project proposals. The objective is to prepare a shelf-of-projects, which can be posed to various agencies for funding. The Ministry would also create an information pool on the sources of international funds, which can be tapped by the Indian renewable energy sector.

1.9 Information Technology (IT) has started occupying the centre-stage in many spheres of human life. This follows the growing realization that the emerging challenges of the 21st century can be met only if a knowledge-based society is ushered in. Against this backdrop, and based on the recommendations of the National Task Force on Information Technology and Software Development set up by the Prime Minister, the MNES also set up the 'Technology Information Forecasting, Assessment and Data Bank (TIFAD)' Division for widespread use of IT in the sphere of renewable sources of energy.

1.10 As part of special initiative to develop the North-Eastern Region, the Ministry has earmarked 10% of its domestic budgetary support for the North-East States including Sikkim in its major programmes. It has also approved a scheme for providing Central financial assistance to set up and strengthen the State nodal agencies.

1.11 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-electrified 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 year 2001-2002, it is proposed to initiate pilot schemes for electrification of such villages under the Village Electrification Programme and Rs. 20.00 crore has also been earmarked for the purpose.

1.12 The 9th Plan proposals of the Ministry lay emphasis on meeting minimum energy needs for cooking, lighting and other decentralized village energy

requirements. It proposes to consolidate and further accelerate the development and commercialization of technologies for grid quality power generation. The Plan focuses on capability and capacity building in technical institutions, industries, SEBS, State Nodal Agencies, NGOs and on encouraging the development of entrepreneurship. It provides for suitable policy and institutional framework alongwith adequate resources mobilisation for wider diffusion of non-conventional energy in the country's energy scenario.

1.13 The Demands for Grants of the Ministry of Non-Conventional Energy Sources were laid on the Table of Lok Sabha on 20.3.2001. Demands for Grants No.59 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 2001-2002. It contains the following figures.-

	(Rs. in crore)		
	Plan	Non-Plan	Total
Revenue Section	414.80	5.32	420.12
Capital	167.45	-----	167.45
Total	582.25	5.32	587.57

A detailed statement showing the actual Revenue and Capital expenditure for the year 1999-2000, Budget Estimates, Revised Estimates for 2000-2001 and Budget Estimates for 2001-2002 are given at Appendix 1.

1.14 Out of the total Demands for Rs. 587.57 crore the major Heads are: (i) M.H. 2810 relating to expenditure on Non-Conventional Energy Sources (Rs. 373.99 crore) (ii) M.H. 3601 relating to grants for Centrally- Sponsored Plan Schemes to States/UTs (Rs. 29.95 crore and Rs. 4.76 crore respectively), (iii) M.H. 4810 relating to capital outlay on Non- Conventional Energy Sources (Rs. 27.05 crore) and (iv) M.H. 6810 relating to loans and advances (Rs. 140.40 crore)

1.15 The Committee have scrutinised the detailed Demands for Grants of the Ministry for the year 2001-2002 and approve them, subject to their observations and recommendations which have been brought out in succeeding Chapter.

CHAPTER II

A. Central Plan Outlay

The Central Plan Outlay of the Ministry of Non-Conventional Energy Sources (MNES) during the year 2000-2001 was Rs. 947.40 crore at BE stage. It was reduced to Rs. 858.76 crore at RE stage. Now, a budgetary provision of Rs. 1039.71 crore has been made for the year 2001-2002. The details of Central Plan Outlay for the years 1999-2000, 2000-2001 and 2001-2002 are given below:-

Year	1999-2000		2000-01		(Rs. in crores)	
	BE	RE	Actual	BE	RE	2001-02
Central Plan Outlay	766.11	814.92	749.64	947.40	858.76	1039.71

2.2 Explaining the reasons for variations between BE and RE during the year 2000-2001, the Ministry in a note furnished to the Committee stated:-

"The Ministry of Finance imposed a cut on plan budget for the year 2000-2001 at the RE stage without considering the fact that the Ministry had utilized about 40% of the GBS by end of September, 2000, which was quite satisfactory. The total expenditure booked is Rs. 248.34 crore by end of 15.3.2001 against the RE of Rs. 353.52 crore (which is about 70%). It is expected that the entire, funds allocated under RE would be fully utilised by the end of the financial year 2000-2001."

2.3 When the Committee pointed out how is it possible to utilize the rest 30% i.e. Rs.105.18 crore within the last 15 days of the ensuring financial year 2000-2001, the Ministry in a post evidence reply stated as under:-

"The utilization of expenditure by end of 15.3.2001 was low because of the fact that the Ministry could not release bulk amounts of Rs. 34.26 crore meant for equity and IDA loan to IREDA which was deferred till March 2001 on advice of the Ministry of Finance. Similarly an amount of Rs. 22.40 crore has been ea--marked for NE programmes. Further Rs. 48.52 crore towards various programmes was also under process in the Ministry. However, the entire expenditure is being utilized except for some saving under North- East, if any, by the end of 31.3.2001".

2.4 On the point of imposing a cut by Ministry of Finance on plan budget for the year 2000-2001 at the RE stage the Ministry stated as under:- "The reason for imposing a cut by Ministry of Finance on plan budget for the year 2000-2001 at the RE stage is not known even though the expenditure incurred by the Ministry by end of September, 2000 was about 40% of the GBS which is relatively high among various Ministries. The pace of expenditure at that time was considered quite satisfactory and commensurate with quarterly financial targets fixed for the year.'

2.5 Elaborating further, the Secretary, MNES during evidence deposed as under:-

"But the fact is that the Finance Ministry did not allow us to give the entire equity that was meant for IREDA. I do not understand the logic behind this stipulation. Even then with 40 per cent, we were perhaps amongst the first Ministries in the Government of India in respect of expenditure. But in spite of that, the Finance Ministry and the Planning Commission cut down our outlay"

2.6 When asked about the plans/programmes/schemes envisaged earlier which could not be completed due to reduction of plan outlay at RE stage during 2000-2001 as compared to BE, the Ministry replied:

"About 20% reduction in the Plan Budget for 2000-2001, at RE stage, would affect the pace of progress under various renewable energy programmes. However, the physical target allocated to the States/Agencies under various programmes have not been revised in the middle of the year and committed liabilities, if any, for 2000-2001 would be carried over to the next financial year"

2.7 justifying the hike in Central Plan Outlay for the year 2001-2002, the Ministry furnished the following details:-

"During 2001-2002 the total central plan outlay (including non-plan) of Rs.1039.71 crore has been allocated. The details of plan outlay for 2000-2001 and 2001-2002 are as follows:

Items	2000-01		(Rs. in crores)
	BE	RE	2001-02 BE
DBS	353.66	265.02	339.25
EAP	88.50	88.50	243.75
GBS	441.16	353.52	583.00
IEBR	505.24	505.24	456.71
Total Outlay	946.40	858.76	1039.71

It may be seen from the above table that there is no hike in the DBS as compared to BE of 2000-2001. In fact there is a reduction in the DBS at BE levels. The major hike in Central Outlay is mainly due to enhancement in allocation for Externally Added Projects (EAP) during 2001-2002 on account of the following reasons:-

- (i) Work on the prestigious 140 MW ISCC power project at Mathania, Rajasthan (project cost of Rs. 871.40 crore) with Rs. 50.0 crore as MNES share will be started during 2001-2002, for which Rs. 20.00 crore has been proposed during 2001-2002. In addition, Rs. 92.00 crore has been earmarked towards counter part funding for externally aided projects.
- (ii) The increase in the budgetary support from Rs. 84.50 crore to Rs. 140.40 crore is on account of increase in IDA allocation under the World Bank first and second line of credit which consist of IDA-I amounting to Rs. 86.70 crore and IDA-II amounting to Rs. 53.70 crore."

2.8 The Plan, Non-Plan and Actual expenditure during the year 1999-2000, 2000-2001 and 2001-2002 are given below:-

	(Rs. in crores)					
	1999-2000			2000-2001		2001-2002
	BE	RE	Actual	BE	RE	BE
Non-Plan	4.82	4.97	4.73	5.30	5.15	5.32
Plan	353.50	314.50	311.34	441.16	353.52	582.25
Total	358.32	319.47	316.07	446.46	358.67	587.57

From above it is clear that Non-Plan expenditure increased from Rs. 4.82 crore (BE) to Rs. 4.97 crore (RE) during the year 1999-2000, and the Government had justified the higher allocation at RE stage on the ground of increase in DA and more expenditure on LTC, increase in airfare and telephone tariff. But now, the actual expenditure during the above year *i.e.* 1999-2000 was only Rs. 4.73 crore which is not only less than the increased RE but also from the BE *i.e.* from Rs. 4.82 crore.

2.9 When asked about the reasons for such anomalies in budgetary allocation at the BE, RE, and Actual stage of the Non-Plan expenditure during the year 1999-2000, the Ministry replied as Under:-

"Increase in the RE 1999-2000 over BE 1999-2000 amounted Rs. 15 lakh which was only marginal. However, due to strict economy instruction by Ministry of Finance, Department of Expenditure to contain the Non-Plan expenditure, there was some saving in Non-Plan expenditure in the allocation of RE. Thus, the actual expenditure of the Ministry in 1999-2000 was restricted to Rs. 4.73 crore."

2.10 Justifying the rise in non-plan expenditure, MNES in a note furnished to the Committee stated:-

“Increase in the provision in BE 2001-2002 is because the Minister’s Office is now fully functional. The Scientific cadre of the Ministry is covered under Flexible Complementing Scheme. Scientific officers are being promoted in-situ to higher pay scale periodically and some posts in the Ministry are therefore getting upgraded. Also, several posts were upgraded under ACP (Assured Career Progression Scheme) as per the recent guidelines of Deptt. of Personnel & Training. Thus higher outlay has been provided against the salary sub-head, where the major increase has taken place and in respect of the other sub-heads where the increase is only marginal ... The Ministry is following the economy instructions on control of non-plan expenditure in a strict manner. Strict control on non-plan expenditure will be kept in the future also in order to reduce it wherever possible ... The Ministry will continue to ensure that officers travel only by the entitled class except in very rare and exceptional cases, each of which will be with the prior approval of Secretary”.

Internal and Extra Budgetary Resources (IEBR)

2.11 The sector-wise details of IEBR for IREDA for the last three years, current year and proposed allocation for the 2001-2002 are given below:

Particulars	(Rs. in crores)												
	1997-98			1998-99			1999-2000			2000-2001		2001-2002	
	BE	RE	Actuals	BE	RE	Actuals	BE	RE	Actuals	BE	RE	Likely	BE
1	2	3	4	5	6	7	8	9	10	11	12	13	14
External Aid received Direct	50.00	33.90	80.17	39.50	0.00	3.22	72.70	131.33	102.00	157.53	157.53	160.64	173.30
(i) ADB Loan	50.00	33.90	78.83	39.50	0.00	0.00	57.00	105.58	90.62	123.45	123.45	120.00	116.00
(ii) GEF Grant	0.00	0.00	1.34	0.00	0.00	3.22	15.70	25.75	11.38	0.00	0.00	9.89	0.00
(iii) KFW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.08	34.08	30.75	47.50
(iv) IBRD													9.80
Other IEBR	243.54	239.98	282.18	287.66	294.12	264.57	338.41	369.09	334.77	347.71	347.71	336.88	364.12
(i) Internal Accruals	13.50	13.00	16.41	49.88	49.88	26.54	63.81	27.59	25.24	58.26	58.26	41.37	29.83

1	2	3	4	5	6	7	8	9	10	11	12	13	14
(ii) Tax Free Bonds	100.00	100.00	100.00	100.00	SO.OO	90.00	100.00	100.00	SO.OO	100.00	100.00	SO.OO	100.00
(iii) Carry Forward	70.04	66.98	69.39	76.33	59.24	59.24	67.60	142.80	142.80	54.29	54.29	96.37	115.40
Surplus													
(iv) Repayment of Loan 60.00		60.00	96.38	61.45	60.00	88.79	82.00	98.70	116.73	110.16	110.16	U4.14	118.9
(v) Banks/Pls Loans	0.00	0.00	0.00	0.00	75.00	0.00	25.00	0.00	0.00	25.00	25.00	25.00	0.00
(vi) Others	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total IEBR	293.54	273.88	362.35	327.16	294.12	267.79	411.11	500.42	436.77	505.14	505.24	497.52	537.42
Less:													
Repayment of:													
(a) IDA-MNES Loan													30.71
(b) Tax Free Bonds													SO.OO
Total:	293.54	273.88	362.35	327.16	294.12	267.79	411.11	500.42	436.77	505.24	505.24	497.52	456.71

2.12 On being inquired about the reasons for variations between the projected IEBR and actuals alongwith the steps taken to ensure realistic estimate of IEBR, the MNES in a written note furnished the following reasons for variations between the projected IEBR and actuals during various years:-

1997-98

- The reasons for variations between BE / RE and Actuals during 1997-98 was largely on account of higher amount (Rs. 78.83 crore) actually utilized from ADB loan against the BE of Rs. 50 crore and RE of Rs. 33.90 crore. This higher amount was drawn based on actual requirement of funds by IREDA.
- In addition actual Repayment of Loan came to Rs. 96.38 crore against the BE/RE estimate of Rs. 60.00 crore because of prepayment of loans by some borrowers.

1998-99

- During 1998-99 the variations between BE / RE and Actuals was largely on account of non-utilization of ADB Loan against the BE of Rs. 39.50 crore.
- Further Bank Loans, which were pegged at Rs 75 crore was not availed at RE stage.
- The tax-free bonds projected at Rs. 100 crore in BE came down to Rs. 50 crore in RE because that was the amount allocated by Minis" of Finance. However, because of persistent effort, Ministry of Finance increased the allocation to Rs. 90 crore only at the end of financial year.

1999-2000

- During 1999-2000 the variation between BE / RE and Actuals against ADB loan is largely on account of actual utilization of Rs. 90.62 crores against the BE of Rs. 57 crores and RE of Rs. 107.58 crores due to non receipt of documents from borrowers, in time, for filing withdrawal claims.
- The carry forward surplus which was estimated at a BE of Rs. 67.60 crores rose sharply to Rs. 142.80 crores on actuals mainly because the tax-free bonds issued and subscribed towards the end of the previous financial year could not be utilized in that year.

- On the other hand the tax-free bands allocated to IREDA by Ministry of Finance were only Rs. 50 crores against the BE / RE of Rs. 100 crores.
- Similarly Bank Loans which were estimated at Rs. 25 crores at BE stage were not availed by IREDA.
- The Internal Accruals which were estimated at Rs. 63.81 crores at BE stage reduced to actuals of Rs. 25.24 crores because the modified Subsidy loan agreement sought to be entered into by IREDA has not matured.

2000-2001

- During 2000-2001 the variation between BE / RE and actuals is on account of delay in receipt of documents from borrowers for filing claims against ADB and KFW loans.
- The tax-free bonds allocated to IREDA by Ministry of Finance were only Rs. 50 crores against the BE/RE of Rs. 100 crores.
- Bank Loans which were estimated at Rs. 25 crores at BE stage were not availed by IREDA.
- The carry forward surplus which was estimated at a BE/ RE of Rs. 54.29 crores expected to rise to Rs. 96.37 crores due to increase in higher repayment of loan including pre- payment and interest subsidy grants from MNES.

2.13 IREDA has been making efforts to ensure projections of realistic IEBR, which include obtaining of cash flow projections from the borrowers for estimating disbursement, quarterly projections for disbursement in respect of projects being funded under international lines of credit, providing incentives for timely utilisation of international lines of credit and for timely completion of projects. However, on account of circumstances beyond the control of IREDA, as utilisation of international line of credit is contingent upon drawal of funds by its borrowers and further on account of non allocation of Tax Free Bonds at the projection level though already recommended by the Planning Commission are not approved by the Ministry of Finance and also prepayment of loans by borrowers, thus resulting in variations in the IEBR projections and actuals.

2.14 When asked about the reasons for increasing Budgetary Support of IREDA, during the year 2001-02 as compared to the year 2000-01, the Ministry in a written reply, furnished as under:-

“The increase in budgetary support from Rs. 113.50 crore during 2000-01 to Rs. 167.40 crore during 2001-02 is on account of increase I IDA allocation from Rs. 84.50 crore to Rs. 140.40 crore, which consists of first line of credit of Rs. 86.70 crore and second line of credit of Rs. 53.70 crore from World Bank and also allocation towards SDC grant of Rs. 7.35 crore for SPV projects under World Bank first line of credit which extended upto 31st December, 2001”.

2.15 Elaborating further, MNES in a post evidence reply stated as under:-

“IEBR broadly consists of directly received external aid, Internal accruals, Tax Free Bonds, Carry Forward Surplus, Repayment of Loans. The mis-match between the projected IEBR and actual mobilization is mainly attributed to difference between proposals for tax free bonds and actual allocation from Ministry of Finance. Further bank loans are projected for meeting requirements on account of reduction mainly in tax free bonds. The matter for getting full allocation of Tax Free Bonds for IREDA has been taken up from time to time with the ministry of Finance. As a result of remedial measures the variation between projected IEBR and actual mobilization has been reduced during the year 2000-01. A proposal for broad basing the IREDA Board by inducting more professional persons is under consideration.

The major steps taken up for realistic estimates of IEBR are as follows:-

- (a) Obtaining of cash flow projections from the borrowers for estimating disbursement.
- (b) Periodic review of utilization of international line by IREDA, MNES and by International lenders.
- (c) Obtaining of quarterly projections regarding disbursement from IREDA including in respect of projects being funded out of international line of credits;
- (d) IREDA appoints the Concurrent Engineers / Auditors for high value projects to monitor physical and financial progress of the projects. Detailed projections in t regard to progress of work as well as disbursements are also obtained from Concurrent Engineers / auditors, wherever applicable;
- (e) Incentives for timely utilization of international line of credits”

2.16 When the Committee pointed out that there is continuous decline in the percentage recovery rate in IREDA. For instance, from 95.77% recovery rate recorded in 1990-91 it has slipped to 62.26% in the year 1999-2000. Asked about the reasons and IREDA proposed to ensure that NPA do not rise abnormally, the Ministry replied as under:-

“The decline in the recovery rate is mainly due to general recession in the economy, adaptation problems related to new technology, higher rate of obsolescence, shortage to working capital and changes in the wheeling and banking policies of the State Electricity Boards.”

2.17 The major steps taken by IREDA to improve its recovery rate and to minimize NPAs include:-

- I Strengthening of recovery mechanism by introducing a manual on recovery of dues, creation of recovery cell, implementation of policy on reschedulement, introduction of compromise and write off policy, ballooning type repayment schedule and close interaction with co-financing institutions.
- II. The monitoring mechanism has been strengthened appointing a General Manager for planning monitoring evaluation services Consultants/ nominee Directors, in some cases, wherever considered necessary, have been appointed to monitor the progress of the project implementation.
- III. Collection of post-dated cheques form borrowers for repayment of loans and Interests and 10% Bank Guarantee of value of the loan has been introduced for security of loans.
- IV. In addition, various other measures have also been taken such as identification of potential NPAs on a quarterly basis to take timely action to recover IREDA's overdues, appointment of legal auditors to examine all sanctions, documentation, disbursements, recovery cases and court cases and submit reports on a quarterly basis, appointment of consultant to undertake study and to analyze the causes of NPA in IREDA and suggest various remedial measures to contain the same.
- V It is proposed to take a few more steps to improve the rate of recovery and to minimize the NPAs such as intensive monitoring of no line account of the borrower, Industry survey before sanctioning of the loan, review exposure limits/promoter's contribution and review of debt equity ratio, examination/scrutiny of balance sheet of the borrower to monitor the financial health for symptoms of sickness and introduction of differential interest rate to attract serious and credit worthy customers based on the credit rating.

IREDA follows RBI guidelines for Financial Institutions in respect of NPAs for provisioning, income recognition and asset classification as amended from time to time with the approval of competent authority."

2.18 It was brought to the notice of the Committee that IREDA does not provide working capital but only capital cost, for Non- Conventional Energy Sources (NCES) projects. Detailing the steps taken in this regard, the MNES stated that in view of the difficulties faced by the entrepreneurs for getting working capital under various renewable energy projects from the

banks. The Ministry has taken up the matter with Ministry of Finance and Reserve Bank of India with the following suggestions:

- (i) To declare renewable energy based projects as infrastructure projects (whether or not for power generation) so that they can enjoy the priority sector lending norms from the banks and financial institutions.
- (ii) To advise all the commercial banks, FIs, SFCs. etc. to provide working capital for such projects including biomass-based projects, on merit.
- (iii) Norms applicable to seasonal agro industries in rural areas be made applicable while funding biomass-based projects.
- (iv) All concessions as applicable to the agro sector industries be made available to biomass-based projects.

Reserve Bank of India had informed that (i) under RBI guidelines, bank advances towards renewable energy based projects are already treated as priority sector advances (ii) all commercial banks had been advised to accord priority for assisting the manufacturer and user of equipments based on new and renewable sources of energy such as solar power generating system, biogas plants and biogas engines, agricultural and municipal waste conversion devices producing energy, etc. and (iii) as far as concessions are concerned, interest rates, margin money and security norms, etc. as applicable to agro-sector industries, are available to biomass based projects. Facility for soft loans is also available to borrowers wherever eligible under the concerned IDBI scheme.

Project Authority Certificate

2.19 There are many renewable projects suffering due to failure to issue Projects Authority Certificate for availing customs/excise duty exemptions for World Bank/ADB funded projects. In the absence of such certificate the entrepreneurs are not in a position to claim loans from international market. Furnishing the details of the scheme, MNES in a note state:-

“The issue regarding Project Authority Certificate refer to the excise and customs exemption notifications No. 4199-C. Ex dated 11th February 1999 and No. 85199-Customs dated 6th July 1999 that provide for exemption of custom and excise duties to the projects funded (whether by loan or grant) by international organization like World Bank/ADB etc. This exemption is made available to the suppliers of the goods on production of a certificate issued by the Chief Executive of the project implementing authority countersigned by an officer not below the rank of joint Secretary in the concerned line Ministry, that the said goods are required for the execution of the said project and the said project has been duly approved by the Government of India. In the above context, it is observed that the World Bank/ADB lines of credit being implemented by IREDA are approved by the Government of India as projects. The World Bank line is termed as India Renewable Resource Development Project (IRRDP) and that of ADB is

termed as Renewable Energy Development Project. The sub projects approved by IREDA for which IREDA provides loans from these lines are however not approved by Government of India. The exemption certificates (Project Authority Certificate) were thus required to be issued for the projects approved by IREDA and not by the Government of India. The matter was taken up with the Department of Economics Affairs (DEA) and Department of Revenue for amending the notification to cover such situations. After a persuasion of about one year since the middle of 1999, DEA recommended the need for amending the notification to the Department of Revenue in August 2000 which was declined in October 2000 by Department of Revenue stating that the exemptions are for the goods supplied to a project approved by Government of India and not to the credit lines. The matter was further taken up with the DEA and Department of Revenue and extensive discussions took place in a meeting taken by Addl. Secretary (Fund Bank) which decided that the Department of Revenue may consider necessary modifications/clarifications in the matter. Minis" is seized of the matter."

2.20 Further elucidating, a representative of the Ministry during evidence deposed as under:-

"The problem arose out of the two notifications issued by the Central Board of Excise and Customs giving excise and customs exemptions to projects funded by the World Bank and ADB loans. Under those notifications a certificate is required to be issued saying that the project is approved by the Government of India and secondly, that the goods are required for the execution of that project. In September 1999, that is when the first query was raised by the excise authorities they wanted certain clarifications on the certificates issued by the Ministry. We then examined the whole issue and came to know, it was the fact that the projects for which exemptions were sought did not have the approval of the Government of India. Government of India's approval means certain things. There are certain powers which are delegated to the Ministries, joint Secretaries and certain powers go to the Planning Commission, the PIB, etc. for giving the Government of India's approval. None of the projects were approved in the Government of India. So, we found that this was the technical flaw. We moved to the Department of Revenue through the Department of Economic Affairs asking them to modify the notifications so that we do not issue certificates which are not correct. Prior to September, 1999 we had been issuing those certificates but the projects were not approved by the Government of India, therefore, it should not have been countersigned. Now, we have got the clarification and we are starting to issue certificates ... Within a week's time we can start issuing certificate".

Allocation to Non-Conventional Energy Sources (NCES) *vis-à-vis* Conventional Energy Sources

2.21 Within the budgetary framework, the Government apportioned A significant percentage of total outlay for the energy sector from the 6th Plan to the 9th Five Year Plan which is as follows:-

Five Year Plan (period)	Total Plan Outlay (Rs. in crores)	Energy Sector Outlay (Rs. in crores)	Percentage share in the total Plan allocation				Total%
			Power	Oil/gas	Coal	Renewable	
Sixth (1980-85)	109,290	30,751	16.7	7.8	3.5	0.1	28.1
Seventh (1985-90)	220,220	61,689	17.4	7.3	3.2	0.3	28.2
Eighth (1992-97)	434,100	1,15,561	18.4	5.5	2.4	0.2	26.5
Ninth (1997-02)	8,59,200	2,19,915	14.5	8.6	2.04	0.44	25.58

Source: 9th Five Year Plan 1997-2002, (Vol-I) Planning Commission, New Delhi.

2.22 From the above it is clear that the percentage share of renewables out of total energy sector outlays during the 6th, 7th, 8th and 9th Plans were 0.1, 0.3 (0.2) and 0.4 percent respectively which were very insignificant. Now, the Government have resolved to add 10,000 MWs from renewables over the next 12 years, and also increase the share to 10 per cent capacity addition programme. On being asked what will be the estimated investment required for attaining the goal of adding 10,000 MW from renewables over the next 12 years and how the fund would be mobilized for the purpose, the Ministry stated as under:-

“The Ministry of Non-Conventional Energy Sources has formulated a Draft Renewable Energy Policy Statement. Among the goals envisaged in the draft Policy Statement for 2012 is to increase the share of non-conventional energy in the additional installed capacity to 10%, or 10,000 MW in the next 12 years. About Rs. 50,000 crore is likely to be the investment required for setting up such capacity. Funding will mainly be met through private investments along with adequate budgetary allocations in the Central and State Plans. Financing through financial institutions and banks, and international funding are also envisaged. A detailed Action Plan including the requirement of funds and means of financing will be prepared after approval of the Policy Statement”.

2.23 To meet resource gap, MPLAD funds offers an excellent opportunity. When asked whether Government have chalked out any plan to utilize the resources available under MPLAD funds the Ministry in their reply stated:-

"The Ministry encourages the utilization of the other sources of funds including MPLAD scheme for the promotion and use of Solar Photovoltaic technology and Biogas Projects. The following two projects have been sanctioned by the Ministry, in which part of the funds are to be met from the MPLAD scheme:

- (i) Installation of the 416 street lighting systems in District Muzaffarpur in Bihar.
- (ii) Installation of a 50 kWp SPV power plant at Mousani Island, Namkhana Block of South Parganas District in West Bengal,

Some more such proposals are under consideration.

A few State nodal departments and agencies, such as Maharashtra Energy Development Agency and Madhya Pradesh Urja Vikas Nigam are setting up community toilet linked biogas plants under Community, Institutional & Night-soil based Biogas Plants (CBP / IBP / NBP) Programme availing financial support of MPLAD scheme also. Other States and UTs have been advised to emulate this example."

2.24 When asked how will the Government be able to enhance the share of renewable sources in the additional energy generation i.e. upto 10,000 MW during the next 12 years, the Ministry replied as under:-

"The Ministry has proposed incorporation of suitable enabling provisions in the draft Electricity Bill to enhance the share of renewable energy based power generation. It has been suggested that the legislation should explicitly provide for a minimum quantity of energy to be generated from renewable sources. It should also provide for 'preferential' prices for renewables on account of environmental costs and other externalities associated with fossil-fuel-based generation of electricity. Promotional measures such as wheeling, banking and third party sale for grid connected power projects should be incorporated. Decentralised/off-grid generation and distribution of electricity should not get constrained by licensing, etc. The fiscal regime will have to be supportive of the renewable energy sector and new and appropriate methods would have to be evolved for financing. The institutional mechanism in the States will need to be strengthened to accelerate the development, clearance and implementation of these projects. Adequate infrastructure, including land, access, and power evacuation facilities would need to be developed to support these projects".

2.25 On being enquired about how Government propose to tackle the problems relating to high installation and operational costs of the wind, small hydro and biomass systems besides the institutional problems, the Ministry stated as under:-

“The installation costs of non-conventional energy systems are in certain cases higher than the cost of conventional power projects. The operation costs, however, particularly of wind and small hydro projects are lower as there is no fuel cost. On the other hand, the capacity utilisation of these projects, particularly wind power, is low. Further, there are direct and indirect subsidies for non-conventional energy and distortions in energy pricing. In order to support the development of non-conventional energy by creating a level playing field, a preferential tariff has been proposed for power generation projects. On the institutional side, the State Nodal Agencies would need to be strengthened and empowered with suitable statutory powers for development and diffusion of non-conventional energy in the States. IREDA would need to be strengthened for meeting the credit requirements of the sector. Specialised institutions and centres would need to be developed for research and development, product development, technology development and upgradation. The cost of installation and operation of SHP projects is quite comparable to the conventional power generating projects. With the increase in volume of equipment required to set up SHP projects, the costs are expected to come down further”.

2.26 The Committee have noted that the Central Plan Outlay for MNES during the ensuing financial year 2001-2002 is Rs. 1039.71 crore as against actual expenditure of Rs. 749.64 crore during the year 1999-2000. The Budgetary allocation of Rs.947.40 crore at BE stage was reduced to Rs. 858.76 crores at RE stage during the year 2000- 2001. On the one hand there is mis-match between the Revised Estimates and on other hand, Ministry of Finance have imposed a financial cut, in spite of 40% utilization of GBS by the end of September, 2000, which was relatively higher among the various Ministries. The Committee are surprised to note that the utilisation of expenditure by the end of 15.3.2001 was low since MNES were unable to release bulk amount of Rs. 34.26 crore meant for equity and IDA loan to IREDA which was deferred till March, 2001, on the advice of the Ministry of Finance. The Committee do not approve the action on the part of Ministry of Finance and Planning Commission, in imposing arbitrary financial cuts, especially in Plan schemes, when the MNES schemes/programmes are near the targets. The Committee have reminded the Ministry of Finance, time and again, not to resort to such unhealthy practice, but to no avail. The Committee reiterate their earlier recommendation and desire that the Ministry of Finance should desist from such practices as financial allocations for a Ministry/Department are approved by the Parliament with reference to their commitment to achieve certain set targets. When later on cuts are imposed by the Ministry of Finance, it adversely affects the achievement of those targets. The Committee have noted that the percentage share of renewables out of total energy sector outlays during the 6th, 7th, 8th and 9th Five 'Year Plans were 0.1, 0.3, 0.2 and 0.4 per cent respectively. It would be impossible to achieve the target of 10,000 MW as envisaged in the draft policy statement which mandate enhancement of the share of non-conventional energy in the additional installed capacity to 10% or 10,000 MW in the next 12 years entailing an investment of Rs. 50,000 crore. The Committee recommend that the Ministry of Finance/Planning Commission should proportionately increase budgetary allocation to the MNES, so that the targets could be achieved by the year 2012. Ministry should also draft their own plan to utilize the fund and achieve their target and Committee be apprised of the same.

2.27 The Committee feel constrained to note that there is always a mis-match between the projected IEBR and actual mobilisation since 1998-1999 in spite of the Committee cautioning the Ministry to project only achievable IEBR. During the year 1998-1999, Rs. 267.79 crore only could be realised against BE of Rs. 327.16 crore and RE of Rs. 294.12 crore. Similarly, Rs. 436.77 crore could be realised during the year 1999-2000 against the BE of Rs. 411.11 crore which rose to Rs. 500.42 crore at RE stage. The Committee have observed that the reasons attributed for such mismatches are not beyond the control of MNES and IREDA. This has led to an imperative need to review the working of budgetary mechanism in MNES and IREDA, in particular. The Committee desire that Government should undertake such an exercise without fail and they be apprised of its outcome.

2.28 The Committee have observed the rise in the Non-Plan Expenditure over the years. The Non-Plan Expenditure was raised from Rs. 4.82 crore (BE) to Rs. 4.97 crore (RE) during the year 1999- 2000 reportedly an account of increase in DA and more expenditure on LTC and increase in airfare and telephone tariff. But now, the actual expenditure during the above mentioned year was only Rs. 4.73 crore which is not only less than the increased RE but also from the BE i.e. from Rs. 4.82 crore. Similarly, Rs. 5.32 crore has been allocated during the year 2001-2002 in spite of reduction in the Non-Plan expenditure from Rs. 5.30 crore (BE) to Rs. 5.15 crore (RE) during the year 2000-2001. Thus, the Ministry have not been able to make a realistic assessment of their requirement of Non-Plan funds. The Committee desire that Government should take concrete and result oriented action to contain such mismatches and expenditure. Air/MI travels, within the country and outside, should be restricted and undertaken only as per one's entitled class.

2.29 The Committee have noted that IREDA, as a developing financial institution, provide term financing. Commercial Banks have been advised by the RBI, to provide working capital to the entrepreneurs. However, Commercial Banks, for reasons best known to them, do not evince adequate interest in advancing working capital. Consequently, the pace of various MNES programmes / schemes are affected. The Committee recommend that MNES should take up this matter and any other finance related problems with the Ministry of Finance/RBI, to see as to what best can be done for the NCES sector. The Committee may be apprised of the outcome. The Committee are further constrained to note the decline in the recovery rate in IREDA over the years leading to shrinkage in cash flow and thereby limiting the financial exposure. The steps proposed to improve recovery is routine in nature, the same as are followed by all Commercial Banks. The Committee would like to suggest that IREDA should interact with PFC- whose recovery rate is more than 98% and accordingly re-orient their strategies, so as to improve recovery rate. The Committee desire that IREDA should also encourage Municipalities for producing power from Municipal wastes by providing them funds at not more than 4% rate of interest. The same rate of interest should also be extended to Biomass project.

2.30 The Committee have observed that the question of issuing Project Authority Certificate for sub-projects to avail Customs and Excise Duty exemptions for World Bank/ADB funded projects had been delayed considerably because of turf wars among

various agencies/Ministries causing avoidable hardship to the entrepreneurs, who in the hope of getting clearances/certification, had imported capital goods and incurred heavy losses. The Committee desire that Government should identify such of the importers and compensate them for the loss so incurred on account of lack of coordination between two Departments of the Government of India.

B. Wind Power Programme

2.31 Among the different renewable energy sources wind has been making a significant contribution to the installed capacity of power generation and has emerged as a viable and cost-effective option for grid connected power generation. India's wind power potential was initially assessed at around 20,000 MW but, on a re-assessment, the figure has since been scaled up to 45,000 MW, assuming 1% of land availability for wind power generation in potential areas. The Technical, potential is estimated at about 10,000 MW, assuming 20% grid penetration, which will go up with the augmentation of grid capacity in the potential States. According to one estimates, wind power potential could provide 20 per cent or more of the world's electricity by the middle of the next century, displacing at least one third of today's fossil fuel powered power plants. In our country, the major developments are expected from public sector undertakings and public utilities in setting up of commercial wind power projects. Bulk of capacity addition during 2001-2002 MW be from the commercial / private sector. It is expected that a capacity addition of about 200 MW will be made by private sector projects to the grid during 2001-2002. Four demonstration projects are likely to be taken up in neighbouring and other developing countries. The financial requirement would be Rs.4.87 crore during 2001-2002 for on-going projects and to make initial releases for new demonstration projects. The testing of two wind turbines would be taken up in the windy season at the Wind Turbine Test Station. Besides this, field testing of two turbines would also be taken up at the C-WET. A provision of Rs. 2.13 crore has been provided for the above mentioned activities. A total budgetary support of Rs. 7 crore has been proposed for 2001-2002.

2.32 The year-wise BE, RE and actuals alongwith physical and financial target and achievements under the wind power programme for the 9th Five Year Plan is given below:-

Year	Financial (Rs. in crores)			Physical (MW)	
	BE	RE	Exp.	Target	Achievement
1997-98	4.85	2.50	3.08	150	67
1998-99	4.82	4.10	4.38	150	56
1999-2000	8.00	7.80	7.79	100	143
2000-2001	12.00	8.00	7.78	200	106
			(upto 5.03.01)		(upto 28.2.01)

The total achievement during the 9th Plan is expected to be about 650 MW against the Plan Target of 1000 MW. The lower achievement can be attributed to slow down of general economic and industrial activities which has curbed private investments; inadequate power evacuation facilities and delays in major potential areas; delays in land allotment, forestry

clearance and State-level approvals; and, changes in policies in the potential States pertaining to wheeling, banking, third party sale and tariff for wind power projects. Moreover, Gujarat, which is a major potential State, has not announced a policy after 31st March, 1998. As the capacity additions are mainly achieved from commercial projects through private investments, the physical targets and achievements for wind power generation do not, therefore, have a direct correlation with budgetary allocations.

2.33 On being asked about reasons of variation between BE and RE during the year 2000-2001, the MNES in a written note replied as under:-

“The budgetary allocation was reduced from Rs. 12 crore to Rs. 8 crore in view of the general cut imposed by the Ministry of Finance at RE stage during 2000-2001.

2.34 Explaining the financial cut imposed by the Ministry of Finance, the Ministry in a post evidence reply stated that "the reasons for imposing a cut by Ministry of Finance on plan budget for the year 2000-2001 at the RE stage were not known.

2.35 A notable feature of the Wind Power Programme (WPP) is the interest among private investors/developers in setting up of commercial wind powers projects. In order to encourage the investment, a package of incentives is available which includes various fiscal and financial incentives such as accelerated depreciation, soft loans and custom and excise duty, etc. In addition to above, Ministry has also declared a policy for the participation of private sectors to expedite wind power programme. Some States have also declared their policy for the private sector's participation.

2.36 When asked about the details of the fiscal and financial incentives/package that have been declared by the Ministry and the impact thereon, the Ministry in their written reply stated as under:-

“Fiscal incentives such as 100% accelerated depreciation, tax holiday, concessional custom duty on specified wind turbine components, excise duty and sales tax exemption, are available for wind power projects. In addition, soft loans are provided by IREDA. These incentives have helped to attract private sector investments for commercial projects”.

2.37 When enquired about the number of States having been persuaded to declare conducive policy for the promotion of the wind power programme in their States, the Ministry in their written reply informed.

“Potential sites for wind power projects have been identified in 13 States. Seven of these States, namely, Andhra Pradesh, Tamil Nadu, Karnataka, West Bengal, Madhya Pradesh, Maharashtra and Rajasthan have announced policies for wind power projects. However, on account of restructuring of the power sector in progress in some of the States, these policies are now being reviewed. Gujarat and Kerala are in the process of finalizing their

policies. Other States are being persuaded to declare conducive policies for wind power development”.

2.38 Regarding the response of the private developers in the States having declared policies for private sectors participation, the Ministry replied as under:-

“Commercial development has been good in certain States where conducive policies had been announced. Maharashtra, for example, which had a conducive policy for wind power generation, had performed well during the last two years. However, recent review of the policies by SERCs, SEBs and the State Governments and the resulting changes now being made, are discouraging private investors / developers for taking up wind power projects”.

2.39 As already stated earlier, out of the 13 States, having identified potential sites for Wind Power projects, only 7 have declared policies for private sectors participation. Two States Gujarat and Kerala are in the process of finalizing their policies. However, recent reviews of State policies by SERCs and consequent changes made in the State policies are discouraging investors. When asked, specify the policies declared by some of the States having deleterious impact on private investors in the States and the steps taken to remove these drawbacks, the Ministry in their written reply stated:-

“The changes in policies brought about in various States are given below:-

Tamil Nadu: The earlier policy announced by Tamil Nadu Electricity Board (TNEB) for private sector participation for wind power projects was to be reviewed at the end of the 30th November, 2000. They have announced a very unattractive interim policy upto 31.3.2001. The policy for new projects from next year is under their consideration. TNEB have already withdrawn the facility of 3rd party sale.

Gujarat: The earlier policy announced by Gujarat for private sector expired on 31st March, 1998. The State Government are yet to re-introduce a policy.

Karnataka: The Karnataka Government had announced a conducive policy for wind power projects based on MNES guidelines. However, the Karnataka Power Transmission Corporation Limited (KPTCL) have raised the wheeling charges to 20% from 2% w.e.f. 1st September, 2000, and also levy of a banking fee @ 2% of on the balance of the energy at each month end. This has seriously affected the viability of wind power projects.

Andhra Pradesh: Andhra Pradesh had announced a policy as per MNES guidelines. However, APTRANSCO have withdrawn the facility of 3rd party sale for wind power projects.

Madhya Pradesh: The policy for private sector participation in wind power projects, announced by Madhya Pradesh Government, has expired in July, 2000. The earlier policy

did not provide for banking and annual escalation of 5%. They are yet to re-introduce a policy.

These issues were discussed in the Annual Conference with State Governments and State Nodal Agencies held in May, 2000. They have also continuously been followed up with States at various levels, including the Chief Ministers and Chairmen of State Electricity Boards. In case of Tamil Nadu, Minister of State for Non-Conventional Energy Sources had also met the Chief Minister and apprised him of the negative impact of the changes brought about in the Policy by the Electricity Board.'

2.40 In this context, the Secretary, MNES deposed during

“In Tamil Nadu, 700 MW of wind power is produced. Out of that, 420 MW is produced only at one place. We have been told by all the State Electricity Boards including Tamil Nadu that there should be a certain price. In Tamil Nadu case, it comes to Rs. 3.01 per unit of wind power. But it is regrettable that the Tamil Nadu Electricity Boards has gone back on everything and they have not even paid them for the last six months. This has acted as a big setback and that is why, I have said that wind power has taken a beating in the last one year. In the field of wind power, private investment was coming in large measure, but because of the present position, they are hesitating now. Our Minister met - the Chief Minister of Tamil Nadu also in this regard, but the results are yet to come. Since this is happening in Tamil Nadu, which is the major wind power producing State, the private sector people are hesitating to make their investment in this field now”

2.41 Elaborating further the other representative of MNES stated during evidence as under:-

“.....The reasons why the Secretary has mentioned that we took a slight beating in this field in recent years is because of this changing scenario in the States, with regard to policies. As per the guidelines circulated by the Ministry for buy-back and other things, they were following -them. The guidelines circulated by the ~try has served us well for the last seven or eight years. Now, the States are reviewing their policies with the coming up of SERCS. So we feel that we should make it mandatory for these States to buy-back power including wheeling and banking. The Ministry has written to the Power Minister for making suitable enabling provisions in the Electricity Bill. As far as capital cost on wind power is concerned, it comes to Rs. 4 to Rs. 4.50 crore per MW. It is quite comparable with the capital cost on conventional power projects, but we suffer a little bit on account of low capacity utilization in wind unlike thermal power where there is 60 per cent to 70 per cent capacity utilisation. On account of this, we need certain incentives, if you want to set up these projects because they are environmentally benign. So, we want some preferential tariff which we would like to put into the bill.”

Water Pumping Wind Mills, Small Acrogenerators and Hybrid System

2.42 These systems are useful for deployment in several rural and remote areas of the country which are un electrified or have intermittent electricity supply. The objectives of the programme

include research & Development to improve the designs and efficiency and to support field testing, demonstration, strengthening of the manufacturing base and awareness campaign for water pumping windmills, small aerogenerator and hybrid systems. During 2001-2002 the field demonstration, research and development, training and awareness activities on windmills, aerogenerators and Hybrid systems will continue. The existing pattern of subsidy on windmills (about 50% of the cost) and small aerogenerator systems for use in Hybrid systems and battery charging system (about 50% & 80% of the cost) will continue. A budget provision of Rs. 125 lakh has been envisaged for these activities during 2001-2002.

2.43 The details of physical and financial target and achieve made since 1997-1998 to 2001-2002 are given below:

Financial Targets and Achievements

1997-98		1998-99		1999-2000		2000-2001		2001-2002	
T	A	T	A	T	A	T	A	T	
0.95	0.46	0.80	0.49	1.00	0.92	0.80	0.27	1.25	
Physical Targets and Achievements									
Component of the programme	1997-98		1998-99		1999-2000		2000-2001		2001-02
	T	A	T	A	T	A	T	A+	T
Water pumping windmills (nos.)	100	205	200	62	200	68	200	52	200
Hybrid and aerogenerator systems (KW)	25	24	40	8	40	37	60	16.5	125

T – Target

A – Achievement

+ - As on 28.2.2001

2.44 From above table it is clear that there is no co-relation between the expenditure incurred and physical targets achieved. For example during 1997-98, against BE of Rs.0.95 crore actual expenditure was only Rs.0.46 crores where as the targets achieved were more than double in one segment and 100% achievement in other segment. Thus, with half of the budgeted amount the more than 100% targets were achieved. But in the year 1998-99, the amount spent was more than the amount spent in 1997-1999. But the physical targets achieved were not even the half of what were achieved in 1997-1998. Similarly, during 1999-2000, the actual amount spent was almost double the amount spent during 1997-1998 but the physical targets achieved were not even the half of the targets achieved in 1997-1998.

2.45 When asked to explain why there was so much difference in achieving the physical targets in different years of 9th Plan when in one year higher achievements could be made with much lesser expenditure the Ministry in their supplementary note replied as under:-

“During 1993-94 MNES introduced a modified programme on water pumping wind mills and small aerogenerators. Under the modified scheme the state agencies are required to identify suitable sites before hand and submit specific proposals to MNES. No state-wise targets are allocated by the Ministry. Specific projects are received during last six months of the year. Under the scheme time duration of nine months is allowed for installation of the wind pumps and achievements pill over to the next financial year. The release of funds to the state agencies is also done in two steps. Initial release of funds is at the time of sanctioning of the project. The second installment is released after commissioning of the wind pump and its verification by the state agency. Usually this also spills over. Therefore, there may not be correlation between particular achievement reported and expenditure incurred during a particular financial year. Efforts are made to make the targets realistic. Generally, the annual physical targets for the programme are fixed on the basis of the informal assessment made by the state agencies about the likely number of projects assessment made by the state agencies about the likely number of projects to be taken up by them. Sometimes the state agencies experience difficulties in identification of beneficiaries and appropriate sites, as well as in the collection of user’s share and, therefore, are unable to submit firm proposals to MNES as envisaged. These factors lead to variations between the physical and financial targets and the corresponding achievements”.

2.46 As regards, the impediments noticed in the implementation of the programme and the corrective actions undertaken, the Ministry in their reply stated:-

“The programme is implemented in a limited number of states due to availability of favourable wind conditions. Some of the other constraints experienced in the implementation of the programme include time taken by the agencies in identification of the beneficiaries and collection of the user share. The high initial cost and limited water output of wind pumps, when compared with the conventional electric and diesel pumps, is a major reasons for this delay. This also results in lower volumes. There is a need for training of users in sue and routine maintenance of wind pumps.

To overcome some of the barriers, the implementation is allowed through the state agencies as well as the manufacturers. Subsidy is routed through the state agency. The agencies are being advised to develop projects in clusters and submit to MNES well in advance. The state agencies of Gujarat, Rajasthan and Kerala have been active during the last few years. The state agencies along with the participating manufacturers are engaged in training of the beneficiaries. New designs of wind pumps which can deliver more water at the same price have been developed and field trials are to be taken up. In addition, the Ministry has supported a project on development of wind electric water pumping systems which would also help in improving the water output thus reducing the

effective cost of system. The results of these new designs would be seen in the coming years”.

2.47 When asked what steps MNES have taken to reduce cost, the high initial cost of Rs.2,35,000/- and popularize the use of wind mills, the Ministry in their supplementary note informed as Under:-

“The average price of a wind pump is in the range of Rs. 40,000/- Rs. 1,30,000 depending upon the model, where as the price of a solar pump with 900 watt PV array capacity is about Rs. 2,35,000. To reduce the cost of water pumping wind mills MNES has supported development of improved designs of wind pumps. The domestic manufacture of wind pumps is exempted from Excise duty. There is no sales tax in many states. In addition, the Ministry also provides a subsidy in the range of Rs. 20,000 - Rs. 45,000 depending upon the model of the wind pump. To popularise the use of wind pumps information is disseminated through radio sponsored programmes and printed material. MNES is also supporting training cum awareness programmes through the state agencies for the existing and prospective users of windmills. Some of the agencies are also bringing out newsletters and brochures about the benefits and features of the wind pumps”.

2.48 When asked to furnish details of MNES supported and promoted project on development of improved design, and efficacy of the present wind mills, the Ministry in their supplementary note informed as under.-

“MNES has been encouraging development of water pumping wind mills capable of giving more water output. A project on design and development of wind electric pumping is in progress at the Osmania University, Hyderabad. Under the project a small aerogenerator is being integrated with a motor pump set to optimise the performance and draw water from depths upto 30 meters. This is expected to result in a high water discharge water pumping system. The project is likely to be completed during 2001-2002. Further, MNES has supported a project on "Development of Cost Effective medium size Water Pumping Wind mills for wind speed in the range of 3-5 M/s" by the centre for Scientific Research (CSR), Auroville. The prototype has been tested for 12 months by CSR and some design modifications were carried out in the prototype by CSR. It is proposed to evaluate the field performance of this model of wind pump in different site conditions for shallow well and deep well applications. This study is likely to be taken up during 2001-2002”.

2.49 When asked to furnish the details of financial assistance/ subsidy provided under the programme and the steps taken by the Government to ensure that such assistance actually reach the targeted beneficiaries only, the Ministry in their reply stated as under:-

“The details of financial assistance/subsidy provided by the Ministry during 2000-2001 is given below:

Water Pumping Windmills:

Direct Drive Windmills	
(i) Modified 12 PU 500	Rs. 20,000
(ii) AV 55 Geared	Rs. 45,000
Geared Type Windmills	
(i) Gear Type	Rs. 30,000
Small acrogenerators and hybrid systems:	
Community Applications Direct use by Central/State Govt., Defence and Para- military forces	80% of ex-works cost subject to a maximum of Rs. 2.0 lakh per kW
R&D, academic institutions, individual and Industrial Users	50% of ex-works cost subject to a maximum of Rs. 1.25 lakh per kW

In addition, an amount of Rs. 15,000 is provided for monitoring the field performance for one year. There is also provision for giving support of Rs. 10,000 for preparation of feasibility report on approval of the project by MNES.

Under the scheme, targets are sanctioned on the basis of specific proposals. The State nodal agencies are required to furnish a list of beneficiaries and location of the proposed installation, ex-works cost, etc. The MNES subsidy is released in installments. The first installment is released after placement of purchase order by the state agency and the balance funds are released after installation and physical verification of water pumping windmills by the State nodal agency. For small aerogenerator and hybrid systems also similar procedure is followed. It is thus ensured that the benefit of subsidy reaches the targeted beneficiaries.

Wind Power Industry

State-of-art technologies are now available in the country for manufacturing wind turbines of up to 750 KWp capacity. Over a dozen firms are engaged in the manufacture of wind turbines. The establishment of the Centre for Wind Energy Technology (C-WET) has given a boost to Indian Wind Turbines equipment industry. So far the indigenisation upto 70 per cent has been achieved. The import content is higher in the higher capacity machines because vendor development for higher capacity machines will take some time. Special efforts have been made to indigenise the gearbox and controller. Indian wind turbine equipment has a good export market. The annual production capacity of wind turbines has reached 500 MW and depending on the demand trend the capacity can be expanded to 750 MW. During the current year up to December, 2000 equipment valued Rs. 16 crore has been exported to Germany.

2.50 On being asked about the indigenous demands for different systems/equipments like wind electric generators, wind turbines, controllers, etc. and the percentage of demands met through indigenous manufacturers and imports, the Minis" in their reply stated as under:-

“Wind turbines, or wind electric generators, are being manufactured in the country on the basis of raw-material, parts and components sourced from abroad or indigenously. Average indigenous content in machines in the 225-350 KW range is upto 70%, though even higher indigenisation has been achieved by a few manufacturers. Efforts are being made by the manufacturers to increase the indigenous content in a phased manner. Indigenous capability has, in general, been developed for manufacture of all major sub- assemblies of a wind turbine such as tower, rotor blades, generator, gearbox, controller, with only few critical parts and components being imported”

2.51 When enquired about the R&D efforts undertaken to make the system cost effective and competitive in the international market, the Ministry in their reply as stated as under:-

“Centre for Wind Energy Technology (C-WET) has been established as an autonomous institution of the, Ministry at Chennai, with a Wind Turbine Test Station at Kayathar in Tamil Nadu. The Centre serves as the technical focal point for wind power development in the country, and coordinates all R&D activities in this sector. One of the goals set for C-WET is to help the Indian industry in development of wind turbines suitable for local wind regimes, grid and climatic conditions. This is expected to lead to cost reduction and better performance. The Indian industry is already fairly competitive in the international market as certain parts and components are now being exported.”

2.52 As regards the export-import policy when asked if the present export-import policy of the Government is conducive for the development of wind power industry in the country, the Ministry replied as under:-

“The present export-import policy and indirect tax structure are considered appropriate for development of wind power industry. They are constantly being reviewed and are suitably modified to meet the needs of wind power development in the country”.

2.53 The Committee observed that out of the total technically assessed wind potential of 10,000 MW assuming 20% grid. penetration, 1267 MW have been harnessed. What is more heartening to note is that 95.5 per cent i.e. about 1210 AM, has come from commercial projects involving private investment. As of now, the wind power programme has become fully commercial. The Committee also observe that out of 13 States having identified potential sites for wind power projects, only Seven States, namely Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra and Rajasthan have declared policies for private sector participation. Two States, namely Gujarat and Kerala are in the process of finalising their policies. The Committee are perturbed to find that consequent upon intransigent wind power policies for private sector participation declared by some States, the programme has literally been derailed. For instance, Andhra Pradesh and Tamil Nadu have withdrawn the facility of third party sale. In Karnataka, wheeling charges have been raised from 2% to 20% w.e.f. 1.9.2000 and is also levying a banking fee @ 2% on the balance of the energy at month end. All these policies have seriously affected the viability of wind power projects. The Committee find the actions on the part of these State Governments quiet disturbing. The Committee would like to recommend that MNES

should convene a meeting of State Ministers-in –charge of NCES so as to find ways and means for evolving a national policy, acceptable to all. At the same, the Committee would like to emphasise that MENS should re-orient their strategies and take a proactive role in motivating/ enthusing the non-traditional States, which have not pursued wind energy programmes to undertake such a programme in a big way. Demonstration projects in such States should also be set up. The Committee also desire that preferential tariff should be extended for all NCES power generated programmes, including wind. The Government should impress upon the State Government the desirability of making timely payment to entrepreneurs for the power supplied to the grid.

2.54 The Committee have noted that prohibitive cost of wind pumps, small aerogenerators and hybrid system as compared to conventional products have hybrid system as compared to conventional products had prevented the penetration of such systems , in far and inaccessible rural areas, in a big way . This has been clearly demonstrated by the lack of interest shown by rural masses and therefore, the targets set forth for them both physical and financial. The Committee desire that Government should take concerted efforts such as improvement in design, efficiency, after-sale service, reduction in excise / customs duties, exemption in sales / local taxes and enchancement of subsidy / concessions, so as to reduce production cost and thereby popularize these products. The Committee would like to be apprised of the action taken in this regard. The Committee understand that Engineers India Limited (E.I.L) under Ministry of Petroleum have set up a new division for developing different products for Non-Conventional Energy Sources. The Committee desire that all technical aspects relating to use of gear and non-gear technology in wind turbine should be examined by this Committee so that the final cost may be brought down.

2.55 The Committee observe that India has established a large manufacturing base, having an annual production capacity of 500 MW which can be expanded on demand upto 700 MW for wind turbines. Indigenisation upto 80 per cent has been achieved. Indigenous capabilities has been developed for manufacture of all major sub-assemblies of a wind turbine such as tower, motor blades, generator, gearbox, controller, etc. However, the Committee note that the Government have imposed higher excise duties for raw materials to manufacture (wind turbine) blades than finished product. The Committee feel that to encourage indigenous industry, excise duty should be reduced to 4%. Wind power, which provides less than 1 per cent of world electricity, is already a 2 billion – a year industry and is expanding at a rate of 25 per cent. According to one estimate wind power could provide 20 per cent or more of the world’s electricity by the year 2050 displacing at least one-third of todays fossil fuel powered power plants. Thus, there is a promising international market in which India also can be a major partner. The Committee are happy to learn that India has already made a beginning in the international wind power industry by exporting 5 wind turbines of 600 KW capacity to Sri Lanka. The Committee desire that MNES should further explore the possibilities of exporting plants and machines, connected with Wind Power Programme to the promising international market. In this regard, developing countries should be motivated and enthused to set up environmentally benign wind power generators.

C. Solar Power Programme

2.56 Our country is endowed with abundant sunlight for most part of the year and as such tapping the solar energy for power generation assumes importance in any effort to promote renewable energy projects. The Solar Programme launched by the ministry aims at producing grid quality power using solar Photovoltaic and DC Power, which is converted into grid quality AC power using inverter and other electronics. Solar thermal concentrating systems increase the temperature of a working fluid to above 300°C, which runs a conventional turbine. The grid interactive solar photovoltaic power projects are taken up for three niche applications viz, voltage support at the rural section of the grid and peak load shaving in urban centres and diesel saver in Islands/ remote locations. 21 grid interactive and nine SPV power projects of aggregate capacity 1.6 MW have so far been commissioned in nine States and two UTs and 5 projects of 250 KWp capacity are under installation in three States and one Union Territory. 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 through collector technology and a combined cycle power plant of 105 MW capacity based on naphtha. Budget provision of Rs. 6 crore and Rs. 20 crore are proposed for SPV and Solar Thermal Power Programmes respectively during the year 2001-2002.

2.57 The Financial targets and achievements of the Solar Photovoltaic Power Programme and Solar Thermal Power Programme for the years 1999-2000, 2000-2001 and 2001-2002 are given as under:-

		(Rs. in crore)						
		1999-2000			2000-2001			2001-2002
		BE	RE	Actual	BE	RE	Actual	BE
SPV	Power	4.90	3.55	2.41	7.75	3.25	-	6.00
Programme								
Solar	Thermal	1.00	0.10	0.10	0.25	0.10	-	20.00
Power								
Programme								

2.58 From above it is clear that Rs. 6.00 crore have been allocated for SPY Power Programme during the year 2001-2002 despite of under utilisation of allocated budget during the year 1999-2000 and reduction of allocation from Rs. 7.75 crores (BE) to Rs. 3.25 crore (RE) during 2000-2001. Similarly, Rs. 20.00 crore have been allocated for Solar Thermal Power Programme during 2001-2002, while the actual expenditure during the year 1999-2000 was much less i.e. Rs. 10 lakh only and the reduction of allocated fund from Rs. 0.25 crore to Rs. 0.10 crore i.e. at the previous level actual, during the year 2000-2001.

2.59 When asked about the rationale of allocating higher allocation for Solar PV Power and Solar Thermal Power Programme during the year 2001-2002 when the actual expenditure during the previous years were much less, the Ministry in their written reply stated:-

“BE of Rs. 7.75 crore was provided for the solar PV power programme for the current year. This has been reduced to Rs. 3.25 crore on account of the general budget cut imposed by the Ministry of Finance. A BE of Rs. 6.00 crore has been proposed for 2001- 2002 to meet the previous committed liabilities for the current year and the requirement for new projects, including those to be undertaken in Lakshadweep Islands. A target of 300 kWp has been proposed for next year. There was no outgo under the solar thermal power programme during the current year as funds were provided by International agencies only towards preparatory works for the Mathania project. However, a provision of Rs. 20 crore has been made for 2001-2002 out of the total approved Central Financial Assistance of Rs. 50 crores, as the project is likely to be initiated next year”.

2.60 Explaining the details of activities to be undertaken and the targets fixed for spending the higher allocation on these programmes. the MNES is stated as under:-

“A physical target of 300 kWp has been proposed for grid connected SPV power projects during 2001-2002. For solar thermal power programme, no physical target has been set. During 1999-2000 against a physical target of 200 kWp, 225 kWp was achieved. During 2000-2001, projects aggregating to 200 kWp capacity have been set up against a target of 200 kWp capacity”.

2.61 There are institutional, financial, technical and policy barriers in the implementation of SPV Power Programme. Asked whether any R&D measures which have been initiated to overcome these difficulties, MNES informed that the high capital cost of SPV power projects and lack of budgetary allocations at the State level are the main impediments in the implementation of the grid-interactive solar PV power projects. There is also lack of appreciation and awareness among the State Electricity Boards about their role on demand side management and improvement of tail-end grid conditions. R&D is being supported in solar photovoltaics by the Ministry to reduce the capital costs and improve performance and reliability. For grid-interactive projects, R&D on indigenous development of a power conditioning unit with inverter is also being supported.

2.62 Similarly, the explaining the steps taken to overcome barriers in Solar Thermal Power Projects, the MNES stated:-

“High capital cost of solar thermal power projects is a major impediment. There is also lack of indigenous capability and capacity for the design and production of critical parts and components required for these projects. These barriers are expected to be overcome through technical and financial assistance being provided for the first project in Rajasthan by Global Environment Facility (GEF), World Bank and KfW of Germany”.

2.63 Following measures have been undertaken to improve the maintenance infrastructure:-

“For the grid-interactive solar PV power projects, the suppliers have been asked to maintain the projects for a period upto 10 years. Under the Mathania project, the EPC contractor will be required to operate and maintain the project for a period of 5 years after commissioning”.

2.64 Under the Solar Thermal Power Programme, Cabinet Committee on Economic Affairs accorded the approval to 140 MW Integrated Solar Combined Cycle (ISCC) power project at Mathania, Jodhpur, Rajasthan at a total cost of Rs. 871.14 crore. Furnishing, a detailed note on the ISCC power project showing the present status and future prospects of the power plant, the MNES in their written reply stated as under:-

“A high level Steering Committee under the Chairmanship of Secretary, MNES with Chief Secretary, Government of Rajasthan as its co-Chairman has been set up to monitor the progress of the project. Various preparatory activities such as appointment of consultants for water carriage system, waste water disposal and environmental assessment studies; preparation of Requests for Qualification (RfQ), Request for Proposals (RfP) documents, and, the Fuel Supply Agreement have been completed during the current year. A draft Business Plan has been prepared for Rajasthan State Power Corporation Limited (RSPCL). RfQ was issued and three companies have been short-listed for RfP. The EPC contractor is likely to be selected by the middle of 2001. Efforts will be made for indigenous production of various parts and components for future projects. Feasibility of undertaking further projects is proposed to be undertaken, particularly in areas of high solar insulation where natural gas is available as the conventional back- up fuel”.

2.65 It has been stated that high cost of Solar Thermal Power project is a major impediment. There is also lack of indigenous capabilities and capacities for design and production of critical parts and components required for the projects. When asked how do these barriers are expected to be overcome after the successful installation of ISCC project of Rajasthan, the MNES in a supplementary note replied as under:-

“The successful implementation of the Solar Thermal Power project at Mathania in Rajasthan is expected to lead to development of further projects in Rajasthan and other parts of the country. In particular, they could be retrofitted to gas based power plants, along the gas grid in solar resource-rich areas. Close involvement of technical and research institutions, power sector equipment manufacturers and State Electricity Boards will help to augment local capability and capacity for design and indigenous productions for future projects. Indigenous capabilities and capacities are likely to get developed with 'hands on' experience in the design, operation and management of the Solar Thermal Power project under actual field conditions in Rajasthan. The Solar Thermal Power project comprises mainly of a solar field and a conventional power block. The solar field will be imported for the first project, but there are good possibilities of phased local production for future projects. The power block equipment

will be sourced almost entirely indigenously. Therefore, a cost reduction is likely on account of a number of projects and the possibility of local production”.

2.66 When asked whether MNES propose to re-orient their programmes and policies and promote solar based power plants, instead of distributing Solar Lanterns the MNES is informed as under:-

“Power plants and solar lanterns serve two different purposes. PV power plants are a means of electrification, where power is supplied for domestic and street lighting, television, water pumping and other needs. Solar lanterns, on the other hand are useful portable light sources, which can be used both indoors and outdoors. The solar lantern is a substitute for hurricane lantern, and saves kerosene. It has proved to be a very popular device and there are long waiting lists of users registered by the programme implementing agencies. All types of photovoltaic devices such as home lighting systems, street lights, lanterns, water pumps and power plants have a useful role in rural areas and will be promoted by the Ministry, as per demand”.

2.67 The major constraints for SPV technology are (a) high initial cost and; (b) on the points of reducing capital cost and maintenance of batteries in SPV programme, MNES informed the following:-

“The Government has supported several R&D projects to develop thin films solar cells based on amorphous silicon, Silicon thin films, Cadmium Telluride and Copper Indium Diselenide materials, which are likely to offer a relatively lower cost option to the existing crystalline silicon solar cell technology. In the area of amorphous silicon solar cell technology, a project on design and development of prototype equipment for deposition of 30 cm. x 30 cm. size double junction modules is under progress at the Indian Association for Cultivation of Science, Jadavpur. Another project on development of laboratory scale Copper Indium Diselenide thin film solar cells is progressing at the Indian Institute of Science, Bangalore. In addition, the PV industry is also actively engaged in up-gradation of the crystalline silicon solar cell technology presently in commercial use. During the last few years the PV module prices have come down from about Rs. 200 per watt to about Rs. 160-180 per watt”.

2.68 While efforts are being made to strengthen the maintenance network and encourage the implementing agencies to enter into annual maintenance contracts the Ministry is also reviewing the technical specifications from time to time to improve the reliability of the PV systems. The Ministry is encouraging manufacturers and state agencies to organise programmes for the training of maintenance technicians. Further, to minimize the battery failure related problems in a PV system, use of sealed maintenance free batteries and low maintenance tabular plate batteries is allowed. To study the suitability of batteries for use in a solar PV system, a battery testing facility has recently been set up at the Solar Energy Centre of the Ministry.

Subsidy Schemes

2.69 The present installed capacity for manufacture of silicon wafers is about 2 million wafers per annum, which can meet the demand of wafers for 2MW capacity of Solar Cells. By April, 2001, it would be able to meet the requirement of wafers for production of about 4 MW capacity of Solar Cells. The total installed capacity for manufacture of Solar Cells is estimated to be about 27 MW per annum. Near about 80% of the silicon wafers required for production of solar cells are imported. In view of the importance of this material for the photovoltaic industry, it is desirable to set up additional silicon wafer manufacturing facilities. There is also a need to set up large production facilities and introduce new technologies for the production of solar cells in order to reduce costs. Therefore a new scheme for subsidy on interest on loan for setting up Manufacturing Facilities for solar cells and silicon ingots/wafers was introduced in 1999-2000. Under this scheme, the maximum amount of loan will be limited to a maximum of 75% of the approved cost of the project. IREDA will provide soft loan at 7.5% annual interest rate (exclusive of interest tax) for approved projects. The loan amount can be repaid over a maximum duration of 8 years including the moratorium period of 2 years. Further, silicon material and wafers have been exempted from customs and Excise Duty.

Solar Water Heating System (SWHS)

2.70 Widespread utilization of solar water heaters can meet a significant portion of the energy needed for heating water in homes, factories and other commercial and institutional establishments, which is currently met by conventional sources of energy. Solar Water Heaters (SWHS) of 100-300 litres capacity are suited for domestic application. Large systems can be used in restaurants, canteens, guest houses, hotels, hospitals etc. It makes hot-water available at 60-80°C. It costs about Rs. 18,000 for a 100 litres capacity. The average span of life is about 15-20 years. As on December 31, 2000 as many as 5,50,000 sqm. collector area has been installed, which represents an addition of 50,000 sqm. since December, 1999. To promote Solar Water Heating Systems in view buildings, model amendments to building by-laws have been prepared and issued for adoption by State Governments.

2.71 Interest subsidy scheme for Solar Water Heating Systems is implemented by MNES through IREDA. The rate of interest charged falls under domestic/non-domestic categories as indicated below.-

- (i) For domestic sectors i.e. for system up to 2000 litres/day capacity (systems having maximum of 20 solar collectors), the interest rate charged is 2.5% per annum to the intermediaries and end users are being provided at maximum of 5% interest rate per annum.
- (ii) For non-domestic sectors i.e. for systems having capacity of more than 2000 litres/day capacity, the interest rate charged is 5% per annum for the institutions (non profit making i.e. not claiming 100% depreciation) and 8.3% for industrial/ institutional systems (profit making and claiming 100%

depreciation). However, under the intermediary schemes, the intermediaries are permitted to charge additional spread of 4% over and above the interest rate indicated.

2.72 The Committee pointed out that the present interest regime acts as a disadvantage to large housing complexes which are although the end user belonging to the domestic sector, get excluded from the domestic sector have to pay more than 5% per annum interest rate. When asked whether the Government proposed to charge 5% interest for all domestic sectors including the large housing complex instead of 8.3%, the Ministry submitted as under:-

“A meeting taken in the Ministry has recently recommended that a lower interest rate of 5% instead of 8.3% may be charged for larger solar water heating systems (larger than 2000 litres capacity) installed by a housing complex or a housing society since the application is essentially domestic. However, in that case the borrower will have to give an undertaking that they will not be taking the benefit of accelerated depreciation allowance in income tax arising out of this investment”.

2.73 Elaborating further a representative of the MNES during evidence stated:-

“The position is that the house holders living in any complex are eligible for soft loans and other benefits under the scheme. For the group housing complexes, the only issue that came up sometime ago was that some of these complexes are promoted by commercial enterprises. Normally, when the commercial enterprises seek loan from the IREDA, the applicable rate of interest is higher because they are also entitled to 100 per cent depreciation. Further, it was brought to the notice of the Ministry that this is causing a little inconvenience. The benefits are not really available to the end users. Through internal consultations between the Ministry and the IREDA, it has been provisionally decided. that these benefits will also be made available to all group housing societies at the same interest rate as applicable to individual house owners. We will have to work in the early part of the next financial year to go in for necessary approval process and convey their approval to IREDA. Then, it will become available.”

2.74 When asked if any formal orders have been issued on the subject, the Ministry, informed as under:-

“The recommendation emerged from a meeting held in the Ministry to review the implementation of the interest subsidy programme for solar water heating systems by IREDA. The meeting recommended that a lower rate of interest of 5% may be charged instead of 8.3% for systems installed by a housing complex or a housing society. The recommendations will now be processed for approval by the competent authority. Formal orders have not yet been issued. After issue of orders, the decision will be circulated to borrowers, intermediaries and business development associates of IREDA and also to banks participating in the Soft Loan Scheme of MNES.

2.75 On mandatory use of Solar Water Heating System especially in new domestic and the commercial and industrial sector, the MNES stated that a model regulation/building bye-laws on the installation of solar assisted water heating systems in certain types of buildings has already been drafted by the Ministry of Urban Development (MUD) and circulated to all States and Union Territory Governments. The model regulation, when incorporated by the local bodies in their existing building bye-laws, will make it mandatory for several categories of buildings, including residential flats of certain minimum plinth area, to have solar water heating systems. As a result of an earlier initiative in 1994 taken by MNES and MUD, the Governments of Andhra Pradesh, Haryana, Himachal Pradesh, Madhya Pradesh, Punjab, Rajasthan and the Union Territory of Dadra and Nagar Haveli have made installation of solar water heaters mandatory in functional building built by the State Government.

Sagar Island, the first Solar Island

2.76 Sagar Island, situated in the Sunderban region of West Bengal, has now obtained the distinction of being the first Solar Island in the country. It has an area of about 300 sq. Kms. and a population of about 1.60 lakhs, spread over 32 villages. Ministry of Non-Conventional Energy Sources have recognised the Sagar Island and the Sunderban Region in West Bengal as one of the High Focus Areas under the SPV programme during 1996. In February, 1996, the first 26 Kwp power plant was commissioned at Kamalpur village with only 19 consumers. Since then, the Island never stopped their journey towards solarisation. Today, near about 50% of the total electricity consumed on the island is met through solar generated electricity. Presently, about 1400 families on this island are being benefited from the community solar photovoltaic power plants and individual family-owned solar home lighting systems through the aggregate SPV capacity of 250 Kwp. The local rural co-operatives under the aegies of WBREDA operate it on a commercial basis. An initial contribution of Rs. 1000 is required for obtaining a connection from the power plant. The power is available for 5 hours daily on a nominal tariff ranging from Rs. 120 for a 100 W connected load to Rs. 1200 for 1,000 W load.

2.77 When asked what steps have been taken by MNES to replicate the experiment of Sagar Island in other areas of the country, the Ministry in their reply stated as under:-

"The Ministry has brought the Sagar Island experiment to the notice of all States. Booklets and other forms of publicity have been supported. The project in Sagar Island has been successful because of the compact nature of the villages, dense population and the paying capacity of the villagers. The Sagar experiment can be replicated in other areas, where similar conditions prevail. Soft loan arrangements are available in addition to the grant support from MNES."

2.78 Elaborating further, the Secretary MNES replied during evidence as under:-

"It is a model for the entire country. We are going to replicate it wherever possible, they have also evolved a system of maintenance. We are also going to do the same thing; wherever it is possible and wherever there are clusters of villages, we are going to do the same thing. We also have evolved a system of maintenance first by the manufacturer

himself, at least, for five years; and secondly, during this time, we will have the involvement of local people, give them the expertise. It will be their responsibility to maintain. We would also have a corpus fund which would be used as a revolving fund..."

2.79. The Committee observe that SPY is still an emerging technology which is in the demonstration phase with a large subsidy from the Government. It suffers from certain key technology barriers like high first cost, regular battery maintenance and lack of servicing for repairs. There is also lack of indigenous capability and capacity for design and production of critical parts and components required for these projects. The Committee would like to emphasise that Government should set up the solar based power and thermal projects in the Central and State Governments sector and their agencies. There is also a need to overcome various barriers coming in the way of these programmes. The Committee would like to emphasise that reduction in cost and expansion of R&D is a key for accelerating the growth of solar based power programme. The Committee would also like to stress that 'stand alone' or hybrid system based on solar should be the long term goal for realising the potential. The Committee, therefore, desire that Government should find ways to reduce the cost of SPY systems so that it can spread to other remote areas also.

2.80 The Committee have observed that some entrepreneurs have developed submersible solar pumps useful for the agriculture and other related uses. The Committee desire that the use of such pumps should be encouraged by exempting them from excise duty etc. and by putting up these pumps for demonstrations purposes.

2.81 The Committee appreciate that 140 MW Integrated Solar Combined Cycle (ISCC) power project is being set up in Rajasthan. The Committee hope and ~t that with the commissioning of this project, the solar movement will get a much needed boost. The Committee desire that Government should explore the possibilities of setting up such plants in various parts of the country.

2.82 The Committee have noticed that MPLAD fund scheme offers an excellent opportunity for the promotion of NCES. Equally important is the task to harness the available potential in NCES sector. The Committee desire that MNES should undertake formulation of various viable projects based on NCES. They should take a proactive role by interacting with States, their agencies and MPs, so that MPLADS funds can be made available for such schemes. The Committee also desire that a specialised cell in MNES be set up to guide, advise and supervise the NCES projects funded from MPLADS.

2.83 The Committee have observed that the Solar Water Heating Technologies have moved from the stage of technology development, demonstration and dissemination to the commercialization phase. The Ministry of Non-Conventional Energy Sources (MNES) is implementing interest subsidy scheme for this system. The scheme is being implemented through IREDA and some nationalized Banks, the rate of interest charged falls under two categories (i) 5 per cent per annum interest rate is charged for domestic sector i.e. for systems having a maximum of 20 solar collectors or upto 2000 liters per day capacity; and (ii) 8.3% per annum for non-domestic sector i.e. for systems having capacity of more than

2000 liters per day. However, there are some shortcomings, the concessional interest rate is not available to the residents for group housing societies or large housing complexes. The Committee, therefore, strongly recommend that the lower interest rate of 5% per annum instead of 8.3% per annum may be charged for solar water heating systems installed by Housing societies, where the beneficiaries are individual households.

2.84 The Committee were highly impressed by the performance of MNES and the dedicated officials of WBREDA in making available power to the inhabitants of Sagar and Sunderban Islands. With an area of about 300 sq. kms and a population of about 1.60 lakh spread over 32 villages, Sagar Island is situated in the Sunderban region of West Bengal. It has achieved the distinction of being the first Solar Island in the country. Today nearly 50% of the total electricity consumed on the Island is met through solar energy. The power is available for 5 hours daily on an initial contribution of Rs. 1000 for obtaining connection from power plant on a nominal tariff of Rs. 120 for 100 W connected load. Not only this, they have evolved their own system of maintenance. The Committee acknowledge that it is model for the entire country and recommend that it should be replicated throughout the country. The Committee have observed that power plants based on biomass is under implementation. The Committee desire that other NCES should also be exploited in these areas.

2.85 The Committee are aware that Island clusters like Andaman and Nicobar and Lakshadweep are largely dependent upon diesel operated generate. Beside causing pollution in ecologically fragile regions, it is cost prohibitive. The Committee desire that Sunderban type of experiments should be first tried in those and other high focus areas. The Committee, therefore, desire that an action plan be drawn up for providing power to these Islands and other high focus areas.

2.86 The Committee have observed that although places like Sagar Island, Sunderbans, Andaman & Nicobar Islands, Lakshadweep, Laddakh and High Focus Areas are as difficult as the North- Eastern States. The funding Pattern in the North-East is 90 per cent grants and 10 per cent loan. Mover over, North-East enjoys assistance from the non-lapsable pool. The Committee desire that parity should be brought about in the matter of financial assistance/ subsidy / grants /loan, etc. to these areas. Moreover a separate non-lapsable pool account on the lines of North-East be made available to them.

D. Village Electrification Programme

2.87 Out of the 80,000 villages to be electrified, it has been estimated that about 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	No. of remote villages
1.	Arunachal Pradesh	788
2.	Assam	330
3.	Bihar	2,000
4.	Jammu & Kashmir	203
5.	Madhya 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

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

2.89 According to statistics compiled by the Central Electricity Authority, the status of village electrification in the country as on 31st January, 2001 is as follows:

Total no. of villages according to 1991 census	5,87,258
Total no. of villages electrified	5,07,521
Percentage of electrified villages	86.4%
Balance villages to be electrified	79,737 say 80,000

2.90 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 photovoltaic 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 has been implementing programmes based on photovoltaic, biomass and small hydro power technologies in these areas. Over 1000 villages and hamlets have been covered over the last decade.

2.91 The most common method has been based on electrification through solar photovoltaic systems. This in turn is based on two approaches installation of a PV power plant in the village with supply to all households through a local distribution line, or, installation of individual

lighting systems in the homes of the householders. Under the present scheme, the Ministry provides a subsidy of Rs. 6,000 or 50% of the cost of the home lighting system, whichever is less. In case of power plants, the subsidy is Rs. 2 lakh per KW or 50% of the cost of the plant, whichever is less. A higher level of subsidy is provided in the case of North Eastern States.

2.92 Among the States where village electrification projects have been implemented are Rajasthan, Uttaranchal, West Bengal and Meghalaya. In the current year, a project for electrification of 300 villages in West Bengal and another for the electrification of about 120 tribal hamlets in Kerala have been sanctioned.

2.93 Asked to list the issues concerning electrification of villages in remote and difficult areas, the Ministry stated as under:-

- (i) Clear definition of remote villages which would be suitable for electrification through non-conventional energy sources.
- (ii) Identification and listing of villages based on the above definition and established criteria.
- (iii) Survey of the villages to establish the most appropriate technology for electrification village-wise.
- (iv) Estimation of the overall costs of electrification and determination of the cost sharing arrangements between central Government, State Governments and /or beneficiaries. Establishing appropriate institutional arrangements for actual implementation of the electrification programmes; this would include determining the role of NGOs, corporate bodies, panchayats, etc.
- (v) Development of micro credit arrangements wherever necessary.
- (vi) Development of servicing and maintenance arrangements and training of local personnel.

2.94 Separately, a Group of Ministers serviced by the Ministry of Power is also examining several aspects of rural electrification including the electrification of the 18,000 remote villages. MNES proposes to start a formal scheme for this purpose in 2001-2002 for which an allocation of Rs. 20 crore has been made by the Planning Commission. A meeting of various concerned organisations is being held in April, 2001 to prepare a plan of action to electrify all such villages by 2012.

2.95 As regards the definition of an electrified village, the Secretary, MNES deposed during evidence:-

“The accepted definition as on date is 'a village will be deemed to be electrified if electricity is used in the inhabited locality within the revenue boundary of the village

for any purpose whatsoever'. This means, if there is one electricity point in the inhabited portion of a village, it is deemed as electrified. We, in this Ministry, are not accepting this definition. It might be good for statistics. We would say that a village would be deemed as electrified if at least 60 per cent of the houses are provided with lighting.”

2.96 Detailing the extent of the investment required for RE, the Ministry, stated:-

“The MNES has estimated an average investment of over Rs. 20 lakh per village for basic lighting service in at least 60% of the households and for pumping of water for drinking water and/ or irrigation. This is based on the use of the solar photovoltaic systems. The investment would be higher if full electricity is to be supplied for commercial and other economic activities. It has been proposed that the programme may be taken up on the basis of a 90% grant from Central Government. Since it may not be possible for users in these remote and backwards areas to pay even 10% of the cost of the systems in one installment, it is proposed to develop soft loan arrangements to be implemented by bodies such as IREDA and REC, working through state nodal agencies, NGOs, corporate bodies, entrepreneurs, etc. While APDP funds may not be applicable in this case, details regarding the use of PMGY funds are awaited”.

2.97 When asked to furnish the present status of villages which have been covered and electrified through photovoltaic, biomass and small hydro power during the last decade, the Ministry in a post evidence reply stated:-

“Though the Ministry has so far not taken up a formal programme of village electrification, a large number of photovoltaic home lighting systems as well as small power plants based on solar, biomass and small hydro power have been installed in the rural areas of several states. It is estimated that over 1000 previously unelectrified villages have been covered in this manner during the last decade. The bulk of the villages have been covered by solar photovoltaic systems. It is believed that most of the systems are functioning although there were reports of temporary problems with some power plants and home systems. It is likely that many of the villages covered are not 'census villages' but hamlets of other villages. While launching a new scheme for village electrification, an effort will be made to update the information on the villages already covered by the previous schemes”.

2.98 The Renewable Energy Programme envisages 90% grant and 10% loan. When asked if MNES has taken up the matter with State agencies requesting them to provide 10% amount, the Ministry in a post evidence reply stated as under.-

“The Ministry has not yet taken up the issue of contributing the 10% amount with state agencies. This will be one of the issues to be discussed in the meeting on 11th April, 2001.”

2.99 As regards the help sought from other Ministries, NGOs and Planning Commission, etc., the Secretary during evidence deposed:-

“Instead of doing all by ourselves, we have contacted the Ministry of Tribal Affairs. They have voluntarily come forward with money and any other help possible. In fact, this is going to be our policy now. Everybody used to think that electrification is the sole concern of this Ministry. No, it is not so. The Rural Development, Tribal Affairs and other Ministries are there. We are going to involve all of them in this, apart from the State Governments. As regard to non-cooperative attitude of State Electricity Boards, we have suggested to the Ministry of Power to amend the Electricity Bill to include a provision that a certain percentage, perhaps 10 per cent, of the total power requirement should be met from renewable energy, apart from giving a mandatory preferential tariff. If this comes into force, there will have no alternative but to cooperate. Apart from that, I personally met the Deputy Chairman, Planning Commission and requested him that performance in the renewable energy sector should be one of the criteria to determine Plan allocation to the States.”

2.100 The Committee are unhappy that despite planned economic development over the year, there are as many as 80,000 villages awaiting electrification. Of these 80,000 odd villages, 18,000 are those villages which cannot be connected to the grid and the only means available to them is electrification through non-conventional sources of energy.- Considering this, the role of MNES becomes all the more important. It is a matter of relief that MNES has already made a humble beginning and assisted various agencies in electrification of 1,000 villages/hamlets.

2.101 The Committee have been informed that a working group has been set up in the Planning Commission to suggest policy approach and examine the need for a separate agency for electrifying the remaining 18,000 villages. The Committee will like to be apprised of the recommendations of the working group and the follow-up action taken thereon. The Committee, would however, like to emphasise that considering the gigantic task of electrifying 18,000 villages, there should be separate agency for the purpose, which should functioning close liaison with MNES, REC and other concerned Ministries/ Departments.

2.102 The Committee feel that the funding pattern at present is inadequate. The Committee desire that to mobilize additional resources, funds from different programmes like Rural Infrastructure Development Fund (RIDF), Pradhan Mantri Gramodaya Yojana (PMGY), Accelerated Power Development Programme (APDP) and NABARD should be made available at subsidized rates, to the States and agencies, undertaking rural electrification through non-conventional sources of energy. The Committee also desire that possibility of providing cent per cent grants for rural electrification by NCS should also be explored.

2.103. The Committee fully endorse the definition of electrified village, followed by MNES, whereunder “a village would be deemed to be electrified if at least 60% of the houses are

provided with the lighting”. The Committee recommend that the definition evolved and practised by MNES should be accepted universally by the Planning Commission and the Ministries of Power and Finance.

E. Biomass Power / Cogeneration

2.104. The national Programme on Biomass Power/ Co-generation is aimed at establishing techno-commercial feasibility and viability of power generation from biomass materials. The Programme, which was revised during 1999-2000, continued during the year with minor modifications. The programme includes interest subsidy for biomass power / co-generation projects, support to limited co-generation projects in co-generation projects, support to limited co-generation projects in co-operative and public sector sugar mills through joint venture of IPP mode and National Biomass Resources Assessment Programme. Thirty-four based co-generation projects aggregating to 210 MW capacity have been commissioned and 26 projects, aggregating to 236 MW, are under implementation. Some of these are likely to be commissioned by the end of next year. It has been estimated that more than 16,000 MW of power can be generated from biomass materials and 3,500 MW from cogeneration based on bagasse in sugar mills. Against this potential Biomass-based power generation capacity totaling 273 MW is already in operation in the country and projects of a total capacity about 370 MW are under implementation. Rs. 15 crore have been earmarked for the programme during the year 2001-2002.

2.105 The BE , RE and actual expenditure from the year 1997-98, year-wise is as under:-

Year	(Rs. in crore)		
	BE	RE	Expenditure
1997-98	7.00	1.00	6.56
1998-99	7.50	7.00	7.06
1999-2000	18.00	18.00	22.58
2000-01	34.80	16.00	14.10
			(upto 15.3.2001)

2.106 The physical targets and the achievements from the year 1997-98, year-wise, are given below:-

Year	Targets(MW)	Achievements (MW)
1997-98	45	41.50
1998-99	40	43.50
1999-2000	40	51.00
2000-01	60	68.30
		(upto 15.3.2001)

2.107 Asked about the reasons for under utilization of the earmarked budget, the MNES in a note furnished to the Committee stated:-

“Allocation for 1997-98 was restored to BE level i.e. Rs. 7.00 crore, against which an expenditure of Rs. 6.56 crore was incurred. The slight difference between BE and RE in the year 1999-2000 exceeded the BE/ RE. During 2000-01 allocations were reduced on account of budgetary cut imposed by Ministry of Finance. The physical achievements have generally being higher than the targets, except for 1997-98, when it was slightly lower”.

2.108 The incentives for the promotion of Biomass Power and Cogeneration projects, is as under:-

“Interest Subsidy for Biomass Power Projects (Commercial Projects) (subject to net rate of interest, after the interest subsidy, not being less than 11%)

Category	Reduction of Interest Rate on Term Loan
(a) Forestry based & Agro-based Industrial residues	2%
(b) Energy Plantation; Forestry & Agro Residues	3%

2.109 Additional 2% interest subsidy is provided for projects in North-Eastern States and Sikkim.

(b) Interest Subsidy for Bagasse/Biomass Cogeneration Projects (Commercial Projects) (subject to net rate of interest, after the interest subsidy, not being less than 11%)

Category	Reduction of Interest Rate on Term Loan
40 bar and above	1%
60 bar an above	2%
80 bar and above	3%

2.110 Additional 2% interest subsidy is provided for projects in public sector/cooperative sugar mills.

(c) Capital Subsidy for Co-generation Projects in Cooperative/ public sector sugar mills through Joint Venture (V) companies to be set-up by State Governments or IPP mode projects; for JV companies in only four States and four IPP projects (on first come-first served basis).

Demonstration Projects	Minimum Exportable Power	Minimum Configuration	Capital Subsidy (Interest subsidy not applicable)
In Group of Mills; through Joint Venture Company (JVC), set-up by the State Government / Agency, with a fresh equity contribution [of not less than Rs. 10 lakh /MW of surplus power] in the JVC	45 MW	60 bar & above 80 bar & above	Rs. 35 lakhs/MW of surplus power (Max Rs. 3150 crores/Project) Rs. 45 lakhs/MW of surplus power (Max Rs. 40.50 crores/Project)
Single Mill, through IPP Mode	9 MW	60 bar & above 80 bar & above	Rs. 35 lakhs/MW of surplus power (Max Rs. 6.30 crores/Project) Rs. 45 lakhs/MW of surplus power (Max Rs. 8.10 crores/Project)

(d) other Incentives for Biomass Power/Co-Generation Projects

To SNA's	Biomass Power /Co-Generation Projects Rs. 0.50 lakh/MW; Max. 10.00 Lakhs/project
DPR Consultancy Firms	50% Max. 5.00 Lakhs depending on boiler pressure Rs. 2.5 Lakhs/Project (Max)
Biomass Banks/Depots	Interest Subsidy @ 5% (Max)

2.111 Explaining the procedure for clearing Biomass project, a representative of the Ministry during evidence stated:

“For Biomass power projects we do not really have any State-wise quota. Ministry has to give subsidy on the basis of claims raised by the financial institution including IREDA. If they sanction a term loan for a Biomass power project they become eligible to a subsidy from the Ministry. So, depending upon the claim as and when received from IREDA or any other financial institution for any Biomass power project in any State, the Ministry is examining it and sanctioning it. There is no delay on the part of the Ministry”.

2.112 When the Committee pointed out whether IREDA has also sanctioned the term loan, MD, IREDA quipped:-

“We received the eligible projects and sanction them on the term loan and for interest subsidy, it is, referred to the Ministry. It take less than one month to sanction a project”.

2.113 When asked whether the Government/Ministry propose to sanction over from interest subsidy to capital subsidy a representatives of the Ministry during evidence replied:-

“After examining the viability of the biomass power projects, the Ministry has felt that there may not really be need for a capital subsidy because there is quite a lot of interest for these projects. They are viable with a term loan from the financial institutions alongwith the interest subsidy from the Ministry.’

2.114 When further asked, whether the Ministry is going to continue the existing subsidy for biomass power or bagasse cogeneration, the representative of the Ministry replied:-

“We provide interest subsidy for bagasse cogeneration as well as Biomass power projects. We do not propose to withdraw the interest subsidy in the near term but for bagasse cogeneration projects, particularly private sector projects are doing quite well. As a result of six or seven years support that the Government has given, they are now picking up quite well. Next Plan we have still not finalised our view what we will be doing. They are still under discussion in the various sub-groups. But next year there is no withdrawal of any existing subsidy either biomass power or bagasse cogeneration.’

2.115 On being asked whether the Capital subsidy is being offered for Biomass Power Cogeneration projects, the Ministry replied as under:-

“Capital subsidy is only being provided for certain categories of bagasse co-generation projects in cooperative/public sector sugar mills. No capital subsidy is available for biomass power projects, no projects have been sanctioned during the current financial year for capital subsidy on bagasse co-generation projects. The policy for capital subsidy for such projects undertaken in JV / IPP mode in cooperative/public sector sugar mills is proposed to be continued in the next financial year”.

2.116 As regards, the guidelines issued for Working Capital by the banks for Cogeneration and Biomass Power Projects, the Ministry replied as under.-

“The Ministry had requested Ministry of Finance and Reserve Bank of India to advise all the commercial banks to provide working capital for biomass based projects, on merit. The Ministry is, however, not aware of any specific guidelines issued by RBI for working capital by the Banks for biomass power/co-generation projects in India”.

2.117 The National Programme on Biomass Power/Cogeneration is yet another programme for improving the quality of life of rural India. The Committee are not satisfied with the performance of the programme. Against an estimated potential of 16,000 MW of power which can be generated from biomass materials and 3,500 MW power from bagasse, only 273 " and 210 MW power could be harnessed from Biomass and Cogeneration respectively. With this rate, it may take many decades to exploit the potential fully. The Committee have noted that lack of coordination between MNES and IREDA and cumbersome procedures, have often delayed payment of term loan and interest subsidy admissible to an entrepreneur, for setting up of Biomass based power plants. The Committee, therefore, recommend that procedures should be made transparent and simple, so that Biomass projects could be cleared expeditiously. In the opinion of the Committee, the pace of Biomass programme has slowed down consequent upon to migration to interest subsidy regime from capital subsidy scheme. The Committee recommend that Government should review the change-over and revert to the old system. The Committee also observe that private sector participation in Biomass and Cogeneration is almost negligible. Government should take concrete and result oriented steps to promote their involvement, so that the targets set forth could be realised. The Committee have noted that Central Financial Assistance and other incentives are available only upto 9th Plan and the continuance of such assistance beyond 9th Plan is still under consideration. The Committee recommend that these should be admissible beyond 9th Plan, so that an entrepreneur is able to take long term planning decision now itself.

F. Kalpong Hydro Electric Project

2.118 Presently, the entire power requirement of Andaman and Nicobar Island is being met through diesel generation, which is quite costly in view of high cost of transportation of diesel involved over a distance of 1200 km. The cost of generation of diesel power in approx. Rs. 6.50 per unit. Total installed capacity of the island at present is 34.00 MW based on diesel, out of which North Andaman is having capacity of 0.48 MW only. However, demand for power in North Andaman is projected to be 2.8 MW by 1999-2000. Keeping in view the growing demand of power and high cost of generation through diesel generating sets. Andaman and Nicobar authorities have prepared schemes for generation of hydro power which is cheaper and environmentally clean. The first scheme being implement in Andaman and Nicobar Island is Kalpong HE project (5.25 MW) and it is being done through NHPC. The sale rate at bus bar amounts to 258.70 paise per unit at January 98 price level at Detailed Project Report (DPR) cost of the project Rs. 9.37 crore. An agreement has been signed between Andaman and Nicobar Administration and NHPC on 15th July, 1998 on the basis of the revised cost estimate, to complete the project within 51 months from the date of signing the agreement. The project accordingly is scheduled to be commissioned by October, 2002. However, NHPC has targeted to commission the project by June, 2001, which is 16th months of the schedule. The cost of Kalpong H.E. Project (5.25 MW) is stated to be Rs. 67 crore. With this, the average cost/ MW works out to be more than Rs. 12 crore. On the other hand, the average cost/NM in the mainland is Rs. 3 to 4 crore only.

2.119 Justifying, the cost estimates, NHPC in a note stated as under:-

“The cost estimate at January, 1998 price level was prepared by NHPC for a total value of Rs. 49.37 crore and the same was submitted to the concerned Ministries. After signing the agreement with the Administration, the work of the project was taken up. All the major works were awarded based on press tender invited in National Daily's. A revised estimate at January, 2000 price level was prepared for Rs. 67.10 crore based on awarded rates and submitted to Andaman and Nicobar Administration. The Andaman and Nicobar Administration forwarded a copy of the revised cost estimate to MNES. A comparative abstract of cost at January, 1998 P.L. and January, 2000 P.L. has been prepared and enclosed as Annexure-I. From the above it would be seen that the total variation in the works comes to Rs. 533.05 lakh, which is 10.8% of total value of the work. The above variation is on account of increase in scope of work as enumerated below:-

The approach road upto concrete dam site was. to be constructed by Andaman PWD. During the execution work, Andaman and Nicobar Administration requested NHPC to take up this work as part of project work as well. The estimate of Rs. 17 crore against this work of approach road was submitted to administration and hence the cost of this work was included in the revised project cost (January, 2000 price level).

Development of Botanical Garden with the project was one of the preconditions laid down by the Ministry of Environment and Forest (MOE&F) while according clearance of the project. The estimate of Rs. 86 lakh prepared by Botanical Survey of India, Calcutta was submitted to MOE&F. The MOE&F approved the above estimate and accordingly this cost was included in the revised cost estimate (January, 2000 price level).

The project area of Kalpong HE project, mostly consists of ultra basic rocks. The ultra basics are highly faulted crushed and weathered. During the execution of work, the slope failure was noticed and hence flatter slope with elaborate slope protection works in link channel, approach channel and power house area was undertaken. The tunnel also negotiated sheared rock mass all through which required steel rib supports through out its length.

Due to the above reasons the cost of work increased from Rs. 4,797.18 lakh (January, 1998) price level against Rs. 5,330.3 lakh at (January, 1998) price level. This variation is hardly 10.8% of the total value of work.

Since the project is in isolated place and remotely located, the provision of establishment charges has been enhanced from earlier provision of 6% to 15% of works. This is in line with the CWC guidelines for preparation of estimate for river valley projects. However, actual expenditure incurred on this account will be charged.

NHPC has taken up this work on deposit work basis on behalf of Andaman and Nicobar Administration and hence shall be charging 10% administrative charges for doing this work. This is as per agreement signed with the Andaman and Nicobar Administration. Therefore, though the actual cost of work is Rs. 61.72 crore but adding the agency charge at 10% which works out to Rs. 5.38 crore and thus the total project cost is Rs. 67.10 crore only.

The Kalpong HE project was accorded techno-economic clearance by the Central Electricity Authority (CEA) for a total value of Rs. 27.79 crore at (September, 1990 price level). If this cost is updated as per normal escalation based on Consumer Price Index (CPI) and Wholesale Price Index (WPI) the project cost works out to Rs. 57.98 crore. It is further to add that the value of work goes up 20% to 30% during detailed engineering and during execution of work from the estimated cost arrived during the preparation of feasibility report stage. In this case the total cost of works is Rs. 61.72 crore which is hardly an increase 6.45% of over the projected cost of Rs. 57.98 crore as per the updated cost of the project based on feasibility reports as cleared by CEA.

Normally a project of such capacity does not require large diversion structures. The power plant of such capacity are always of run-of- the river type where small diversion weir/trench weir is found sufficient to divert the river discharge for power generation. The Kalpong project is designed as storage scheme which involves construction of 34 metre high concrete dam at the left work river and 27 metre high rock fill dam on right fork river together with 4 smaller dykes. The projects also includes 300 metre long link channel to connect the reservoirs; 256 metre length of approach channel and a tunnel 133 metre long together with 650 metre length of penstock pipe which trifurcates near the power house.

In view of above the project cost may not be considered to be high. It may be mentioned here that the Kalpong project shall be able to save about Rs. 10 crore annually only on account of diesel and shall be able to recover the project cost in 6 years time.

There is no time over run, on the other hand, the project is scheduled for commissioning by June, 2001, which is 16th month ahead of schedule. A revised estimated has been prepared which is due to escalation, etc. has been submitted to MNES for a revised estimated cost of Rs. 67.10, crores (January, PIL). Government sanction is required for the revised cost”

2.120 Explaining the reason for cost and time overrun, MNES stated that:-

“Kalpong, H.E. project was initially conceived and surveyed for a capacity of 5.25 MW using both left and right fork of Kalpong river. The detailed project report was submitted to Central Electricity Authority (CEA) in 1989 for examination and techno- economic clearance. The proposal was cleared by CEA from techno- economic angle with a total capacity of 5.25 MW at an estimated cost of Rs. 31.95 crores at September, 1990 price level on 19th November, 1991. However, MOEF accorded environmental clearance

restricting the construction of dam across only the left fork of the river in July, 1993. Keeping this in view the project was again studied by NHPC and it was decided to execute the project with a reduced capacity of 2.25 MW, with a provision of extension. The estimated cost for the 2.25 MW project was worked out to Rs. 22.17 crores at January, 1994 price level (i.e. Rs. 9.85 crores/MW).

Since in 1994 MNES was the administrative Ministry for SHP projects up to 3 MW, the proposal was submitted to MNES for approval. It was felt that the cost of the project was relatively high. After detailed discussions with A&N Administration and NHPC, the costs were reduced to Rs. 15.23 crores (i.e. Rs. 6.77 crores/MW) and the proposal was approved by Commission for Additional Sources of Energy (CASE) for implementation. The reduction in costs was on account of civil work estimates, building, miscellaneous, special T&P, communication and reduction in agency charges from 5% to 2% etc.

The execution of Kalpong SHP project (2.25 MW) was started in 1995 by NHPC. Simultaneously, the matter was followed up with MOEF for providing environmental clearance of the enhanced capacity by utilising the waters of the right fork also. Clearance from MOEF was given for the full project including utilisation of flow of the right fork on 12th January, 1998. It was then decided by A&N Administration to implement the project with the original capacity of 5.25 MW and they requested MNES to approve the revised capacity and revised cost estimates. Since the mandate of MNES was only up to 3 MW at that time, A&N Administration was requested to approach the Ministry of Power for necessary approvals. While the project was under consideration of the Ministry of Power, it was decided by the Government to transfer the subject of small hydro from 3 to 25 MW from Ministry of Power to MNES. In view of these developments, the matter had been kept pending in the Ministry of Power. However, Ministry of Power had specifically conveyed to A&N Administration and NHPC that the work on the project may continue in order to avoid time and cost overrun, till a formal notification regarding transfer of subject was issued. As such MNES again became involved in the higher capacity project only after November 1999 when a major portion of the work had already been finalised by NHPC and the orders etc. placed by them.

The revised cost estimates for the project with 5.25 MW capacity were prepared by NHPC in February, 1998 a total cost of Rs. 49.37 crores which were submitted to the A&N Administration. Since the subject of SHP up to 25 MW was transferred to MNES in November, 1999, the matter was referred to MNES in January, 2000. The estimates were again revised by NHPC in January, 2000 to Rs. 67.1 crores, which were submitted to MNES for approval.

The main reasons for the high cost of Kalpong project were:

- (i) Abnormal escalation in the cost and scope of civil works.
- (ii) Inclusion of large amounts on buildings, miscellaneous works, establishment, environment, roads and communication etc.

(iii) Enhancement of agency charges to NHPC from 2% to 10% of the cost estimates.

The matter was taken up by the NINES with A&N Administration and NHPC. The cost estimates were examined and reduced in July 2000 to Rs. 47.31 crores by reducing various costs and deleting certain items not directly connected with the project and also reducing the agency charges.

With these cost estimates of Rs. 47.31 crores for 5.25 MW SHP project, the cost per MW is now expected to be Rs. 9 crores per MW. While this cost per MW is higher in comparison to the projects on main land, but is considered reasonable keeping in view type of the project and its remote location. This would also help in avoiding the use of diesel for power generation in the A&N Islands which is to be shipped over long distances, resulting into environmental hazardous”.

2.121 When asked whether the Ministry have examined the reasons for escalation of the cost of the project thoroughly, the Ministry replied as under.-

“MNES came into the picture for the higher capacity project of 5.25 MW only after November 1999 when the subject matter of 3-25 MW was transferred to MNES. By that time, NHPC had already finalised the tenders and placed the work order etc. for the project during the period when the controlling Ministry was the Ministry of Power.

The Detailed Project Report Kalpong (5.25 MW) H.E. project was first examined by Central Electricity Authority (CEA), Ministry of Power in 1989, when the proposal was submitted for techno-economic clearance. The proposal was cleared by CEA from techno-economic angle with a total capacity of 5.25 MW at an estimated cost of Rs. 31.95 crores including Interest During Construction (IDC) of Rs. 4.16 crores at September, 1990 price level on 19th November, 1991. The estimates were revised in February, 1998 to Rs. 49.37 crores and again in January, 2000 to Rs. 67.1 crores by NHPC.

Ministry of Non-conventional Energy Sources had also examined the revised cost estimates of Rs. 67.1 crores for Kalpong project prepared by NHPC in January 2000 when the subject was transferred to MNES. The examination was done by the Ministry in consultation with A&N Administration and the following reductions were made in the estimates.

The overall estimate for the civil works was reduced from Rs. 53.18 crores to 39.20 crores. The rates taken by NHPC for various items of civil works were based on the market rates and had considerable scope of reduction. They had also made a provision of price escalation @9% and have further added 2% on account of work charged establishment. These were not accepted. Some reduction was also made in the expenditure proposed for power plant, civil works and buildings. The miscellaneous expenditure was also curtailed. Some savings were also expected in the special category of Tools & Plants and Communication. The cost of power plant and electrical

system also included provision of escalation and establishment charges, which were reduced. The environment works included establishment of a botanical garden with cost estimates of Rs. 87.00 lakhs. It was proposed that this expenditure may be directly made by the A&N Administration rather than booking it to the project cost. With these reductions the total estimated cost for the direct charges came to Rs. 45.7 crores.

The establishment charges proposed by NHPC were 15%. These have been reduced to 5%, as these were the charges approved by Government of India at the time of approving the smaller Kalpong project of 2.25MW capacity. Over and above this, NHPC had calculated 10% of agency charges, which were reduced to 2%. Taking into consideration all these aspects, the total cost of project was restricted to Rs. 47.31 crore.

These estimates were approved by the Commission for Additional Sources of Energy (CASE) in its 62nd meeting held on 24th July, 2000. This cost has the civil works components of Rs. 39.20 crore and E&M component of Rs. 7.245 crore. The agency charges has been kept @ 2% amounting to Rs. 0.86 crore.

2.122 The Committee have gone through the reasoning advanced by the Ministry of Non-Conventional Energy Sources and National Hydro-Electric Power Corporation (NHPC) in regard to cost estimates and time and cost overrun of the Kalpong Hydel project. NHPC have projected a revised cost estimates of Rs. 67.00 crores, which works out to be more than Rs. 12.50 crore per MW. However, MNES is of the view that the cost estimate should not exceed more than Rs. 47.31 crore. The Committee are at a loss to understand the huge difference between cost estimates determined by MNES and NHPC. The Committee do not share the contention of NHPC that the cost of the project had escalated due to its location in difficult area and compression of working season. The objective of Kalpong project to off-set the subsidy incurred on the transportation of diesel from main land would be defeated, if the project is so highly priced. The Committee are of the firm view that a very high cost estimates for the project has been projected both by NHPC and MNES when compared with other hydel projects.

2.123 The Committee find that with the indifferent and lackadaisical attitude of the Government, the project shuttled between MNES and Ministry of Power leading to huge time and cost overrun. The Committee take a serious view of the matter and recommend that CEA should probe the matter and re-assess the cost estimates afresh, so that a rational costing could be undertaken. The Committee also desire that Government/CEA should also explore the possibilities of uprating the capacity of Kalpong project from the present level of 5.25 11W. The Committee would like to be apprised of the final outcome of these matters within a period of 3 months.

NEW DELHI;
April 16, 2001
Chaitra 26, 1923 (Saka)

SONTOSH MOHAN DEV
Chairman
Standing Committee on Energy

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

Sl.No.	Reference Para No. of the Report	Conclusions / Recommendations
1	2	3
1.	2.26	<p>The Committee have noted that the Central Plan Outlay for MNES during the ensuing financial year 2001-2002 is Rs. 1039.71 crore as against actual expenditure of Rs. 749.64 crore during the year 1999-2000. The Budgetary allocation of Rs. 947.40 crore at BE stage was reduced to Rs. 858.76 crore at RE stage during the year 2000-2001. On the one hand there is mismatch between the Revised Estimates and on other hand, Ministry of Finance have imposed a financial cut, in spite of 40% utilization of GBS by the end of September, 2000, which was relatively higher among the various Ministries. The Committee are surprised to note that the utilisation of expenditure by the end of 15.3.2001 was low since MNES were unable to release bulk amount of Rs. 34.26 crore meant for equity and IDA loan to IREDA which was deferred till March, 2001, on the advice of the Ministry of Finance. The Committee do not approve the action on the part of Ministry of Finance and Planning Commission, in imposing arbitrary financial cuts, especially in Plan schemes, when the MNES schemes/programmes are near the targets. The Committee have reminded the Ministry of Finance, time and again, not to resort to such unhealthy practice, but to no avail. The Committee reiterate their earlier recommendation and desire that the</p>

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		<p>Ministry of Finance should desist from such practices as financial allocations for a Ministry/ Department are approved by the Parliament with reference to their commitment to achieve certain set targets. When later on cuts are imposed by the Ministry of Finance, it adversely affects the achievement of those targets. The Committee have noted that the percentage share of renewables out of total energy sector outlays during the 6th, 7th, 8th and 9th Five Year Plans were 0.1, 0.3, 0.2 and 0.4 per cent respectively. It would be impossible to achieve the target of 10,000 MW as envisaged in the draft policy statement which mandate enhancement of the share of non-conventional energy in the additional installed capacity to 10% or 10,000 MW in the next 12 years entailing an investment of Rs. 50,000 crore. The Committee recommend that the Ministry of Finance/Planning Commission should proportionately increase budgetary allocation to the MNES, so that the targets could be achieved by the year 2012. Ministry should also draft their own plan to utilize the fund and achieve their target and Committee be apprised of the same.</p>
2.	2.27	<p>The Committee feel constrained to note that there is always a mis-match between the projected IEBR and actual mobilisation since 1998-1999 in spite of the Committee cautioning the Ministry to project only achievable IEBR. During the year 1998-1999, Rs. 267.79 crore only could be realised against BE of Rs. 327.16 crore and RE of Rs. 294.12 crore. Similarly, Rs. 436.77 crore could be realised during the year 1999-2000 against the BE of Rs. 411.11 crore which rose to Rs. 500.42 crore at RE stage. The Committee have observed that the reasons attributed for such mis-matches are not beyond the control of MNES and IREDA. This has led to an imperative need to review the working of budgetary mechanism in MNES and IREDA, in particular. The Committee desire that Government should undertake such an exercise without fail and they be apprised of its outcome.</p>
3.	2.28	<p>The Committee have observed the rise in the Non-Plan Expenditure over the years. The Non- Plan Expenditure was raised from Rs. 4.82 crore (BE) to Rs. 4.97 crore (RE) during the year 1999- 2000 reportedly on account of increase in DA and more expenditure on LTC and increase in airfare and telephone tariff. But now, the actual expenditure during the above mentioned year was only Rs. 4.73 crore which is not only less than the increased RE but also from the BE i.e. from Rs. 4.82 crore. Similarly, Rs. 5.32 crore has been allocated during the year 2001-2002 in spite of reduction in the Non-Plan expenditure from Rs. 5.30 crore (BE) to Rs. 5.15 crore (RE) during the year 2000-2001. Thus, the Ministry have not been able to snake a realistic assessment of their requirement of Non-Plan funds. The Committee desire that Government should take concrete and result oriented action to contain such mismatches and expenditure. Air/Rail travels, within the country and outside, should be restricted and undertaken only as per one's entitled class.</p>
4.	2.29	<p>The Committee have noted that IREDA, as a developing financial institution, 'provide term financing. Commercial Banks have been advised by the RBI, to provide working capital to the entrepreneurs. However, Commercial Banks, for</p>

reasons best known to them, do not evince adequate interest in advancing working capital. Consequently, the pace of various MNES programmes/schemes are affected. The Committee recommend that MNES should take up this matter and any other finance related problems with the Ministry of Finance/RBI, to see as to what best can be done for the NCES sector. The Committee may be apprised of the outcome. The Committee are further constrained to note the decline in the recovery rate in IREDA over the years leading to shrinkage in cash flow and thereby limiting the financial exposure. The steps proposed to improve recovery is routine in nature, the same as are followed by all Commercial Banks. The Committee would like to suggest that IREDA should interact with PFC whose recovery rate is more than 98% and accordingly re-orient their strategies, so as to improve recovery rate. The Committee desire that IREDA should also encourage Municipalities for producing power from Municipal wastes by providing them funds at not more than 4% rate of interest. The same rate of interest should also be extended to Biomass project.

5. 2.30 The Committee have observed that the question of issuing Project Authority Certificate for sub- projects to avail Customs and Excise Duty exemptions for World Bank/ADB funded projects had been delayed considerably because of turf wars among various agencies/Ministries causing avoidable hardship to the entrepreneurs, who in the hope of getting clearances/certification, had imported capital goods and incurred heavy losses. The Committee desire that Government should identify such of the importers and compensate them for the loss so incurred on account of lack of coordination between two Departments of the Government of India.

6. 2.53 The Committee observed that out of the total technically assessed wind potential of 10,000 MW assuming 20% grid penetration, 1267 MW have been harnessed. What is more heartening to note is that 95.5 per cent i.e. about 1210 MW, has come from commercial projects involving private investment. As of now, the wind power programme has become fully commercial. The Committee also observe that out of 13 States having identified potential sites for wind power projects, only Seven States, namely Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra and Rajasthan have declared policies for private sector participation. Two States, namely Gujarat and Kerala are in the process of finalising their policies. The Committee are perturbed to find that consequent upon intransigent wind power policies for private sector participation declared by some States, the programme has literally been derailed. For instance, Andhra Pradesh and Tamil Nadu have withdrawn the facility of third party sale. In Karnataka, wheeling charges have been raised from 2% to 20% w.e.f. 1.9.2000 and is also levying a banking fee @ 2% on the balance of the energy at month end. All these policies have seriously affected the viability of wind power projects. The Committee find the actions on the part of these State Governments quiet disturbing. The Committee would like to recommend that MNES should convene a meeting of State Ministers-In-charge of NCES, so as to find ways

and means for evolving a national policy, acceptable to all. At the same, the Committee would like to emphasise that ~S should re-orient their strategies and take a proactive role in motivating/enthusing the non-traditional States, which have not pursued wind energy programmes to undertake such a programme in a big way. Demonstration projects in such States should also be set up. The Committee also desire that preferential tariff should be extended for all NCES power generated programmes, including wind. The Government should impress upon the State Governments the desirability of making timely payments to entrepreneurs for the power supplied to the grid.

7. 2.54 The Committee have noted that prohibitive cost of wind pumps, small aerogenerators and hybrid system as compared to conventional products had prevented the penetration of such systems in far and inaccessible rural areas, in a big way. This has been clearly demonstrated by the lack of interest shown by rural masses and therefore, the actual achievements for various activities, are nowhere near the targets set forth for them, both physical and financial. The Committee desire that Government should take concerted efforts such as improvement in design, efficiency, after-sale service, reduction in excise/customs duties, exemption in sales/ local taxes and enhancement of subsidy/ concessions, so as to reduce production cost and thereby popularise these products. The Committee would like to be apprised of the action taken in this regard. The Committee understand that Engineers India Limited (E.I.L) under Ministry of Petroleum have set up a new division for developing different products for Non-Conventional Energy Sources. The Committee desire that all technical aspects relating to use of gear and non-gear technology in wind turbine should be examined by this Committee so that the final cost may be brought down.
8. 2.55 The Committee observe that India has established a large manufacturing base, having an annual production capacity of 500 MW which can be expanded on demand upto 700 MW for wind turbines. Indigenisation upto 80 per cent has been achieved. Indigenous capabilities has been developed for manufacture of all major sub-assemblies of a wind turbine such as tower, motor blades, generator, gearbox, controller, etc. However, the Committee note that the Government have imposed higher excise duties for raw materials to manufacture (wind turbine) blades than finished product. The Committee feel that to encourage indigenous industry, excise duty should be reduced to 4%. Wind power, which provides less than 1 per cent of world electricity, is already a 2 billion-a-year industry and is expanding at a rate of 25 per cent. According to one estimate Wind power could provide 20 per cent or more of the World's electricity by the year 2050 displacing at least one-third of todays fossil fuel powered power plants. Thus, there is a promising international market in which India also can be a major partner. The Committee are happy to learn that India has already made a beginning in the international wind power industry by exporting 5 wind turbines of 600 KW capacity to Sri Lanka. The Committee desire that MNES

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		<p>should further explore the possibilities of exporting plants and machines, connected with Wind Power Programme to the promising international market. In this regard, developing countries should be motivated and enthused to set up environmentally benign wind power generators.</p>
9.	2.79	<p>The Committee observe that SPV is still an emerging technology which is in the demonstration phase with a large subsidy from the Government. It suffers from certain key technology barriers like high first cost, regular battery maintenance and lack of servicing for repairs. There is also lack of indigenous capability and capacity for design and production of critical parts and components required for these projects. The Committee would like to emphasise that Government should set up the solar based power and thermal projects in the Central and State Governments sector and their agencies. There is also a need to overcome various barriers coming in the way of these programmes. The Committee would like to emphasise that reduction in cost and expansion of R&D is a key for accelerating the growth of solar based power programme. The Committee would also like to stress that 'stand alone' or hybrid system based on solar should be the long term goal for realising the potential. The Committee, therefore, desire that Government should find ways to reduce the cost of SPV systems so that it can spread to other remote areas also.</p>
10.	2.80	<p>The Committee have observed that some entrepreneurs have developed submersible solar pumps useful for the agriculture and other related uses. The Committee desire that the use of such pumps should be encouraged by exempting them from excise duty etc. and by putting up these pumps for demonstrations purposes.</p>
11.	2.81	<p>The Committee appreciate that 140 MW Integrated Solar Combined Cycle (ISCC) power project is being set up in Rajasthan. The Committee hope and trust that with the commissioning of this project, the solar movement will get a much needed boost. The Committee desire that Government should explore the possibilities of setting up such plants in various parts of the country.</p>
12.	2.82	<p>The Committee have noticed that MPLAD fund scheme offers an excellent opportunity for the promotion of NCES. Equally important is the task to harness the available potential in NCES sector. The Committee desire that NINES should undertake formulation of various viable projects based on NCES. They should take a proactive role by interacting with States, their agencies and MPs, so that MPLADS funds can be made available for such schemes. The Committee also desire that a specialised cell in NINES be set up to guide, advise and supervise the NCES projects funded from MPLADS.</p>
13.	2.83	<p>The Committee have observed that the Solar Water Heating Technologies have moved from the stage of technology development, demonstration and dissemination to the commercialization phase. The Ministry of Non-Conventional Energy Sources (MNES) is implementing interest subsidy scheme for this system. The scheme is being implemented through IREDA and some nationalised Banks, the rate of interest charged falls under two</p>

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		<p>categories (i) 5 per cent per annum interest rate is charged for domestic sector i.e. for systems having a maximum of 20 solar collectors or upto 2000 litres per day capacity; and (ii) 8.3/o per annum, for non-domestic sector i.e. for systems having capacity of more than 2000 litres per day. However, there are some shortcomings, the concessional interest rate is not available to the residents of group housing societies or large housing complexes. The Committee, therefore, strongly recommend that the lower interest rate of 5% per annum instead of 8.3% per annum may be charged for solar water heating systems installed by Housing societies, where the beneficiaries are individual households.</p>
14.	2.84	<p>The Committee, were highly impressed by the performance of MNES and the dedicated officials @ of WBREDA in making available power to the inhabitants of Sagar and Sunderban Islands. With an area of about 300 sq. kms and a population of about 1.60 lakh spread over 32 villages, Sagar Island is situated in the Sunderban region of West Bengal. It has achieved the distinction of being of first Solar Island in the country. Today, nearly 50% of the total electricity consumed on the Island is met through solar energy. The power is available for 5 hours daily on an initial contribution of Rs. 1000 for obtaining connection from power plant on a nominal tariff of Rs. 120 for 100 W connected load. Not only this, they have evolved their own system of maintenance. The Committee acknowledge that it is a model for the entire country and recommend that it should be replicated through out the country. The Committee have observed that power plants based on biomass is under implementation. The Committee desire that other NCES should also be exploited in these areas.</p>
15.	2.85	<p>The Committee are aware that Island clusters like Andaman and Nicobar and Lakshadweep are largely dependent upon diesel operated gensets. Reside causing pollution in ecologically fragile regions, it is cost prohibitive. The Committee desire that Sunderban type of experiment should be first tried in those and other high focus areas.</p>
16.	2.86	<p>The Committee, therefore, desire that an action plan be drawn up for providing power to these Islands and other high focus areas. The Committee have observed that although places like Sagar Island, Sunderbans, Andaman & Nicobar Islands, Lakshadweep, Laddakh and High Focus Areas are as difficult as the North- Eastern States, yet treated financially differently not at par with the North-Eastern States. The funding pattern in the North-East is 90 per cent grants and 10 per cent loan. Moreover, North- East enjoys assistance from the non-lapsable pool. The Committee desire that parity should be brought about in the matter of financial assistance/subsidy/grants/loan, etc. to these areas. Moreover, a separate non-lapsable pool account on the lines of North-East be made available to them.</p>
17.	2.100	<p>The Committee are unhappy that despite planned economic development over the year, there are as many as 80,000 villages awaiting electrification. Of these 80,000 odd villages, 18,000 are those villages which cannot be connected to the grid and the only means available to them is electrification through non- conventional sources of energy. Considering this, the role of MNES becomes all the more important. It is a matter of relief that MNES has already made a humble beginning and assisted various agencies in electrification of 1,000 villages/hamlets.</p>

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18.	2.101	<p>The Committee have been informed that a working group has been set up in the Planning Commission to suggest policy approach and examine the need for a separate agency for electrifying the remaining 18,000 villages. The Committee will like to be apprised of the recommendations of the working group and the follow-up action taken thereon. The Committee, would however, like to emphasise that considering the gigantic task of electrifying 18,000 villages, there should be a separate agency for the purpose, which should function in close liaison with MNES, REC and other concerned Ministries/Departments.</p>
19.	2.102	<p>The Committee feel that the funding pattern at present is inadequate. The Committee desire that to mobilise additional resources, funds from different programmes like Rural Infrastructure Development Fund (RIDF), Pradhan Mantri Gramodaya Yojana (PMGY), Accelerated Power Development Programme (APDP) and NABARD should be made available at subsidised rates, to the States and agencies, undertaking rural electrification through non-conventional sources of energy. The Committee also desire that possibility of providing cent per cent grants for rural electrification by NCES should also be explored.</p>
20.	2.103	<p>The Committee fully endorse the definition of electrified village, followed by MNES, whereunder "a village would be deemed to be electrified if at least 60% of the houses are provided with the lighting'. The Committee recommend that the definition evolved and practised by MNES should be accepted universally by the Planning Commission and the Ministries of Power and Finance.</p>
21.	2.117	<p>The National Programme on Biomass Power/ Cogeneration is yet another programme for improving the quality of life of rural India. The Committee are not satisfied with the performance of the programme. Against an estimated potential of 16,000 MW of power which can be generated from biomass materials and 3,500 MW power from bagasse, only 273 MW and 210 MW power could be harnessed from Biomass and Cogeneration respectively. With this rate, it may take many decades to exploit the potential fully. The Committee have noted that lack of coordination between MNES and IREDA and cumbersome procedures, have often delayed payment of term loan and interest subsidy admissible to an entrepreneur, for setting up of Biomass based power plants. The Committee, therefore, recommend that procedures should be in transparent and simple, so that Biomass projects could be cleared expeditiously. In the opinion of the Committee, the pace of Biomass programme has slowed down consequent upon migration to interest subsidy regime from capital subsidy scheme. The Committee recommend that Government should review the change-over and revert to the old system. The Committee also observe that private sector participation in Biomass and Cogeneration is almost negligible. Government should take concrete and result oriented steps to promote their involvement, so that the targets set forth could be realised. The Committee have noted that Central Financial Assistance and other incentives are available only upto 9th Plan and the continuance of such assistance beyond 9th Plan is still under consideration. The Committee recommend that these should be admissible beyond 9th Plan, so that an entrepreneur is able to take long term planning decision now itself.</p>

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22.	2.122	<p>The Committee have gone through the reasoning advanced by the Ministry of Non- Conventional Energy Sources and National Hydro-Electric Power Corporation (NHPC) in regard to cost estimates and time and cost overrun of the Kalpong Hydel project. NHPC have projected a revised cost estimates of Rs. 67.00 crores, which works out to be more than Rs. 12.50 crore per MW. However, MNES is of the view that the cost estimate should not exceed more than Rs. 47.31 crore. The Committee are at a loss to understand the huge difference between cost estimates determined by MNES and NHPC. The Committee do not share the contention of NHPC that the cost of the project had escalated due to its location in difficult area and compression of working season. The objective of Kalpong project to off- set the subsidy incurred on the transportation of diesel from main land would be defeated, if the project is so highly priced. The Committee are of the firm view that a very high cost estimates for the project has been projected both by NHPC and NINES when compared with other hydel projects.</p>
23.	2.123	<p>The Committee find that with the indifferent and lackadaisical attitude of the Government, the project shuttled between MNES and Ministry of Power leading to huge time and cost overrun. The Committee take a serious view of the matter and recommend that CF-A should probe the matter and re-assess the cost estimates afresh, so that a rational costing could be undertaken. The Committee also desire that Government/CEA should also explore the possibilities of uprating the capacity of Kalpong project from the present level of 5.25 MW. The Committee would like to be apprised of the final outcome of these matters within a period of 3 months.</p>

PART II

APPENDIX

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

(DEMAND NO. 59)

(Vide Para 1.13 of the Report)

Sl. No.	Major Heads	Programme Scheme	1999-2000		2000-2001				2001-2002		Remarks
			Actual Plan	Non-Plan	BE Plan	N-Plan	RE Plan	N-Plan	BE Plan	N-Plan	
1.	2	3	4	5	5	7	8	9	10	11	12
1.	3451	Secretariat Economic Services	3.79	4.73	4.96	5.30	4.97	5.15	5.35	5.32	This Head comprises wages, O.T.A., Domestic & Foreign Travel Expenses, Office Expenses, Rent, Rates & Taxes, Publications, other Administrative Expenses, Advertising & Publicity, Professional Services, Commission for Additional Sources of Energy, Regional Offices.
2.	2501	Special Programmes for Rural Development	5.99	-	1.00	-	0.40	-	0.75	-	This Programme includes IREP Programme, Grants-in-aids for National & Regional Training Centre.
3.	2810	Non-Conventional Sources of Energy	187.73	-	279.84	-	203.64	-	373.99	-	This Head comprises R&D in Non-Conventional Energy Sources, Bio-Energy, assistance to Biomass Programme, National Programme for Biogas Energy from Urban / Municipal Waste, Energy from Industrial Waste, Small Hydro Power Development, SHP Promotion Programme, UNDP /GEF Hilly Hydro Projects, Chemical Sources of Energy, Alternative Fuel for Surface Transportation. Hydrogen Energy, Ocean Energy National Institute of Renewable Energy Special Area Demonstration Project, North-Eastern States/State Nodal Agencies, Dutch/ SDC Grants to IREDA Lumpsum Provision for North-Eastern States including Sikkim, UNDP Rural

1.	2	3	4	5	5	7	8	9	10	11	12
											Energy Support Programme, Rural Energy Entrepreneurship Institutional Development, Technology Commercialisation Fund, Village Electrification Programme, TIFAC Date Management System, Information and Publicity Programme, International Cooperation
4.	3601	Grants-in-aid to State Government	30.10	-	37.21	-	29.71	-	29.95	-	This Head includes Grants-in-aids to State Governments for Small Hydro Power Programme, Wind Energy, Grants for Centrally Sponsored Plan Schemes for Bio Energy. Development, Advertising & Publicity Community and Institutional Biogas Development. Biomass Briquette, Energy Plantation, Biomass Gasified for Stand Alone Application, National Bio-energy Board, Biomass Cogeneration and Combustion, Grid Connection Gasified, Animal Energy Programme, Solar Passive Architecture, Regional Technical
											Back-up Units & Training Programme, Solar Energy Centre, Inter-active Research with other Institutions / Organisations, Professional Service, Spy Pump Programme, Solar Thermal Power Generation, Grid connected Spy Power Projects, GEF grants for ISCC project, assistance to Wind Power Generation Programme, Assistance to Wind Pump Programme, Wind Energy Centre, Wind Resource Assessment, National Programme on Improved Choolah, Woman and Renewable Energy Development Energy from Urban and Agricultural Waste, National Programme for Biogas Development, Community and Institutional Biogas Development, Solar Thermal Energy Programme, National Programme on Improved Chulhas, Energy from Urban & Agriculture Wastes, Integrated Rural Energy Planning Programme Monitoring. Lumpsum provision for North-Eastern States including Sikkim.

1.	2	3	4	5	5	7	8	9	10	11	12
5.	3602	Grants-in-aid to Union Territory Government	1.45	-	4.60	-	3.25	-	4.76	-	This Head includes Grants for Central Plan Schemes for Wind Demonstrations, Grants for Centrally Sponsored Plan Scheme for NPBD, Community and Institutional Biogas Development, Solar Thermal Energy Programme, National Programme on Improved Chulhas, Integrated Rural Energy Planning, Programme Monitoring.
6.	-	Total Revenue	223.15	4.73	327.61	5.30	241.97	5.15	414.80	5.32	-
7.	4810	Capital Outlay on NCES	42.00	-	29.05	-	27.05	-	27.05	-	This Head includes capital investment for minor works in the Solar Energy Centre and investment in Indian Renewable Energy Development Agencies Ltd. (IREDA).
8.	6810	Loans for NCES	46.19	-	84.50	-	84.50	-	140.40	-	This Head includes counter-part loan to IREDA for the International Development Association (IDA) and Danish Export Finance Corporation (DEFC) components of credit under the Indian Renewable Resources Development Project of the Ministry implemented through IREDA.
9.		Total Capital	88.19	-	113.55	-	111.55	-	167.45	-	-
10.		Total (Gross)	311.34	4.73	441.16	5.30	353.52	5.15	582.25	5.32-	-

MINUTES OF THE THIRD SITTING OF THE STANDING COMMITTEE
ON ENERGY (2001) HELD ON 29TH MARCH, 2001 IN
COMMITTEE ROOM '53', PARLIAMENT HOUSE,
NEW DELHI

The Committee met from 11.00 hours to 13.00 hours

PRESENT

Shri Sontosh Mohan Dev - Chairman

MEMBERS

2. Shri Prakash Yashwant Ambedkar
3. Shri Vijayendra Pal Singh Badnore
4. Shri Girdhari Lal Bhargava
5. Shri Lal Muni Chaubey
6. Shri Trilochan Kanungo
7. Shri Sanat Kumar Mandal
8. Shri Ravindra Kumar Pandey
9. Shri Dalpat Singh Parste
10. Shri Amar Roy Pradhan
11. Shri Chandra Pratap Singh
12. Shri Tilakdhari Prasad Singh
13. Shri Manoj Sinha
14. Prof. Ummareddy Venkateswarlu
15. Shri Gandhi Azad
16. Shri Santosh Bagrodia
17. Shri Brahamakumar Bhatt
18. Shri R.P. Goenka
19. Shri Rama Shanker Kaushik
20. Shri V.V. Raghavan
21. Ven'ble Dhamma Viriyo

SECRETARIAT

1. Shri John Joseph - Joint Secretary
2. Shri P.K. Bhandari - Deputy Secretary
3. Shri R.S. Kambo - Under Secretary

Witnesses

1. Shri P.M. Nair Secretary
2. Shri C.S. Rao Addl. Secy. &FA
3. Dr. E.V.R. Sastry Adviser
4. Dr. K.C. Khandelwal Adviser

5.	Shri Ajit K. Gupta	Adviser
6.	Dr. Ved Mitra	Adviser
7.	Dr. T.C. Tripathi	Adviser
8.	Shri N.P. Singh	Adviser
9.	Shri A.K. Mangotra	Jt. Secretary
10.	Dr. V. Bakthavatsalam	MD, IREDA
11.	Shri Yogendra Prasad	CMD, NHPC

At the outset, the Chairman, Standing Committee on Energy welcomed the representatives of the Ministry of Non-Conventional Energy Sources to the sitting of the Committee and apprised them of the provision of Direction 58 of the Directions by the Speaker.

2. The Committee then took oral evidence of the representatives of the Ministry in connection with the examination of the Demands for Grants (2001-2002) relating to the Ministry of Non-Conventional Energy Sources.

3. The following important points were discussed by the Committee:-

- (i) Cut imposed on Budgetary allocation to the Ministry
- (ii) Rise in Non-Plan expenditure of the Ministry
- (iii) Targets allocated for Biomass Cogeneration/Combustion Programme
- (iv) Village Electrification by NCES--Identification of villages under
- (v) Delay in issuing Project Authority Certificate, in connection with individual funding schemes for equipment imports needed for various NCES Programmes
- (vi) Solar Energy-steps to increase coverage and reduction in production cost
- (vii) Commercialisation of Wind Energy

4. A copy of the verbatim proceedings of the sitting of the Committee has been kept on record.

The Committee then adjourned

ANNEXURE II

MINUTES OF THE SEVENTH SITTING OF THE STANDING COMMITTEE
ON ENERGY (2001) HELD ON 12TH APRIL, 2001 IN COMMITTEE
ROOM 'E', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 11.00 hours to 13.00 hours

PRESENT

Shri Sontosh Mohan Dev - Chairman

MEMBERS

2. Shri Prasanna Acharya
3. Shri Prakash Yashwant Ambedkar
4. Shri Vijayendra Pal Singh Badnore
5. Shri Girdhari Lal Chaubey
6. Shri Lal Muni Bhargava
7. Shri Sanat Kumar Mandal
8. Shri Amar Roy Pradhan
9. Shri Chada Suresh Reddy
10. Shri Chandra Pratap Singh
11. Shri Ramji Lal Suman
12. Shri Santosh Bagrodia
13. Shri Manohar Kant Dhyan
14. Shri Vedprakash P. Goyal
15. Shri Aimaduddin Ahmad Khan (Durru)
16. Shri B.J. Panda
17. Shri V.V. Raghavan
18. Ven'ble Dhamma Viriyo

SECRETARIAT

1. Shri John Joseph - Joint Secretary
2. Shri P.K. Bhandari - Deputy Secretary
3. Shri R.S. Kambo - Under Secretary

2. At the outset, the Chairman welcomed the Members to the sitting of the Committee.

3. The Committee then considered and adopted the following Draft Reports with some additions/deletions/modifications.

- (i) Draft Report on Demands for Grants (2001-2002) of the Ministry of Power.
- (ii) Draft Report on Demands for Grants (2001-2002) of the Ministry of Non-Conventional Energy Sources.
- (iii) Draft Report on Demands for Grants (2001-2002) of the Ministry of Coal.
- (iv) Draft Report on Demands for Grants (2001-2002) of the Department of Atomic Energy.

4. The Committee authorised the Chairman to finalise the Reports after making consequential changes arising out of factual verification by the concerned Ministries/Department and to present these Reports to both the Houses of Parliament during the current Session.

The Committee then adjourned .