3

STANDING COMMITTEE ON ENERGY (1996-97)

ELEVENTH LOK SABHA

MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

DEMANDS FOR GRANTS (1996-97)

THIRD REPORT

LOK SABHA SECRETARIAT
NEW DELHI

August, 1996/Bhadra, 1918 (Saka)

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Presented to Lok Sabha on 3rd September, 1996

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LOK SABHA SECRETARIAT
NEW DELHI

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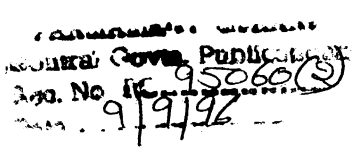

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INTRODUCTION

I, the Chairman, of the Standing Committee on Energy having been authorised by the Committee to present the Report on their behalf, present this Third Report on the Demands for Grants (1996-97) relating to the Ministry of Non-Conventional Energy Sources.

2. The Committee took evidence of the representatives of the Ministry of Non-Conventional Energy Sources on 13th August, 1996.

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

4. The Report was considered and adopted by the Committee at their sitting held on 21st August, 1996.

NEW DELHI;
24 August, 1996
Bhadra 2, 1918 (Saka)

JAGMOHAN,
Chairman,
Standing Committee on Energy.

PART I

REPORT

Analysis of Demands for Grants 1996-97 of the Ministry of Non-Conventional Energy Sources

The Demands for Grants of Ministry of Non-Conventional Energy Sources were laid on the Table of Lok Sabha on 2nd August, 1996. Demand No. 63 of the Ministry contains the figures of Revenue as well as Capital Expenditure which are as follows:—

(Rs. in Crores)

	Revenue	Capital	Total
Voted	220.58	115.32	335.90

1.2 The details of actual Revenue and Capital expenditure for the year 1994-95, the budget estimates, revised estimates for 1995-96 and budget estimates for 1996-97 of the Ministry are as under:—

Revenue Section

(Rs. in Crores)

Sl. No	Major Heads	Programmes/ Schemes	1994-95 Actuals		1995-96 B.E.		1995-96 R.E.		1996-97 B.E.		Remark
			Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	
1	2	3	4	5	6	7	8	9	10	11	12
1.	3451	Secretariat Economic Service	1.43	2.82	2.09	2.25	2.09	2.80	2.65	2.90	This Head comprises Salaries, Wages, O.T.A. Domestic & Foreign Travel Expenses, Rent, Rates & Taxes, Publications, other Administrated Expenses, Advertising and Publicity Professional Services, Commission for Additional Energy Sources.
2.	2501	Special Programmes for Rural Development	-	-	2	-	2	-	5.35	-	This programme includes IREP Programme grant-in-aid for training and National & Regional Training Centre.
3.	2810	Non-Conventional Sources of Energy	137.64	-	175.41	-	125.41	-	165.87	-	This Head comprises R&D in Non-conventional sources of energy, Bio-energy, Assistance to Bio-gas Development, Assistance to Biomass Programme, National Programme for Biogas Development, Community and Institutional Biogas Development, Biomass, Energy Plantation, Biomass Gasifier for Stand Alone, Application, National Bio-Energy

Board, Biomass Co-generation and Combustion, Grid Connected Gasifier, Animal Energy Programme, Solar Thermal Energy Programme, Solar Passive Architecture, Solar Energy Centre, Interactive Research with other Institutions Ogranisations, Photovoltaic, Amorphous. Silicon Programme, SPV Pump Programme, Solar Thermal Power Generation, Grid Connected SPV Power Project, Wind Pump Programme, Assistance to Wind Power Generation Programme, Assistance to Wind Pump Programme, Wind Energy Programme, Wind Resource Assistant, National Programme on Improved Choolah, Energy from Urban and Agricultural Waste, Energy from Industrial Waste, Small Hydro Power Promotion Programme, Chemical Sources of Energy, Alternative Fuel for Surface Transportation, Hydrogen Energy, Geothermal Energy Ocean Energy Programme

1	2	3	4	5	6	7	8	9	10	11	12
											Special Area project, Energy conservation, TIFAC/Dalta Management System Informations Publicity Programme, International Cooperation.
4.	3601	Grants-in-aid to State Govt.	48.42	-	41.95	-	41.95	-	43.20	-	This head includes Grants-in-aid to State Governments for Small Hydro Power Programme, Wind Energy, Grants for Centrally sponsored Plan Schemes for Bio-Energy National Programme for Biogas Development Community and Institutional Biogas Development, Solar Thermal Energy Programme, National Programme on Improve Choolah, Rice Straw Agro-Thermal Power Plant (Punjab), Integrates Rural Energy Planning Programme-Monitoring.
5.	3602	Grants-in-aid to Union Territory Govt.	0.02	-	0.6	-	0.6	-	0.6	-	This Head Includes Grants for Central Plan Scheme for Wind Demonstration, Grants for Centrally Sponsored Plan Scheme for NPBD, Community and Institutional Biogas Development, Solar Thermal Energy Programme, National Programme on Improved Choolah Integrated Rural Energy Planning Programme Monitoring.
	Total Revenue Section		187.53	2.82	222.08	2.25	172.08	-	217.68	2.90	

Capital Section

Sl. No	Major Heads	Programmes Schemes	1994-95 Actuals		1995-96 B.E.		1995-96 R.E.		1996-97 B.E.		Remark
			Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	
1	2	3	4	5	6	7	8	9	10	11	12
1.	4810	Capital Outlay on Non-Conventional Sources of Energy	14.15	-	24.05	-	24.05	-	28.08	-	This head comprises of Capital Outlay of Solar Energy Centre, Investment in IREDA.
2.	6810	Loans for Non-Conventional Sources of Energy	-	-	-	-	51.73	-	87.24	-	This head comprises of items IDA Loans Assistance to IREDA, Other loans to IREDA.
Total Capital Section			14.15	-	24.05	-	75.78	-	115.32	-	
Grand Toral (Revenue and Capital Section)			201.68	2.82	246.13	2.25	247.86	-	333.00	2.90	

1.3 The Head-wise demands have been discussed in the succeeding paragraphs.

I. UNDER UTILISATION OF PLAN BUDGETARY ALLOCATION

1.4 During the year 1994-95 plan outlay was Rs. 224.13 crores and R.E. was Rs. 246.61 crores while the actual expenditure of the Ministry was Rs. 201.68 crores. The actual utilisation of plan budgetary allocation of the Ministry have been lower by as much as Rs. 45 crores in comparison to R.E. for 1994-95. In the year 1995-96 the plan outlay of the Ministry was Rs. 246.13 crores and the revised outlay was Rs. 247.86 crores. The Plan outlay for the Ministry for 1996-97 have been Rs. 333 crores which have been increased by about Rs. 85 crores in comparison to R.E. of 1995-96.

1.5 Asked to explain the reasons for under utilisation of plan budgetary allocation for the year 1994-95, the Ministry, in their written reply, stated that during 1994-95, against BE of Rs. 224.13 crores, the RE was estimated at Rs . 246.61 crores which included an estimate of Rs. 23 crores towards loans to IREDA. However, the additional grant of Rs. 23 crores sought for the Indian Renewable Energy Development Agency (IREDA) was not obtained. The reason was, (a) the total sanctioned amount out of International Development Agency (IDA) loan assistance by IREDA during 1994-95 was Rs. 56 crores. In order to enable IREDA to utilise IDA assistance and disburse the loan, a provision of Rs. 23 crores was made in the RE for 1994-95. However, considering the progress of disbursement of loan which was only Rs. 4.92 crore during the financial year 1994-95, the supplementary grant was not obtained and Rs. 4.92 crores was met from the available funds with IREDA; and (b) the other programmes of major saving were SPV pumps, bio-energy, cogeneration and solar thermal energy programme.

1.6 Enquired about the under utilization of plan budgetary resources for the year 1994-95, the Secretary, MNES stated during evidence:

> "Now, when the revised estimate was asked, we anticipated that about Rs. 23 crores will be required by the Indian Renewal Energy Development Agency. They have a line of credit from the World Bank for some of their programmes. That money from the World Bank comes to the Government and Government in turn releases through the Budget to the Indian Renewal Energy Development Agency as a loan. So that gets reimbursed to the Government of India by the World bank. This is a soft loan. That has to be against actual disbursal. They cannot draw the money and keep it for too long. Therefore, anticipating that there will be sanction of loans to some private sector projects by the IREDA, they projected a requirement of Rs. 23 crore through World Bank assistance for counterpart funding. Now on that basis, the revised estimate of Rs. 246 crore was given. Thereafter, when IREDA reviewed its requirement, actual disbursal was only Rs. 4.92 crores. It had to be linked to disbursal and not to sanctions though there were sanctions amounting to Rs. 56 crore. There is a delay between sanctioning of the loan and the actual disbursal. So because of that, they reviewed the position. Once we ask for revised estimate, we have to float a supplementary

demand and submit it to Parliament asking for additional funds. At the time of submission of supplementary demands, it was realised that the actual utilisation may be only about Rs. 5 crore, therefore IREDA said that if it was only 5 crore, we would not like to go in for a supplementary demand and that we can manage within our own resources. Therefore, what we have to indicate is budget estimate was Rs. 224 crore but revised estimate was Rs. 246 crores which was not backed up by supplementary demand and actual expenditure was Rs. 201 crore. So, against budget estimate, there is a shortfall in expenditure of about Rs. 23 crore."

1.7 The Ministry was required to explain the reasons for steep increase (about Rs. 85 crores) in the Budget Estimates of 1996-97 in comparison to the Revised Extimates of 1995-96. It was asked to explain the manner in which this amount would be spent in 1996-97 keeping in view the past experience of 1994-95 and 1995-96. The Secretary, MNES clarified that Rs. 85 crores out of Rs. 330 crores was meant for counterpart funding of IREDA, that is for external assistance coming into IREDA through the Government of India. If this was excluded, the actual demand would come to Rs. 250 crores which was more or less the same as that of the last year. The Ministry was therefore confident of utilizing the entire amount.

1.8 The Committee find that the shortfall of Rs. 45 crores in the plan expenditure of the Ministry for the year 1994-95 has been attributed to the reduction in the projected fund requirements for IREDA to meet its loan disbursal activities. The Committee fail to understand why IREDA's fund requirements were not properly assessed while formulating the R.E. for the year 1994-95. The Ministry has not been able to give any other reason for the shortfall of Rs. 45 crores in the plan expenditure apart from the sum of Rs. 23 crores being the fund requirement for IREDA. The Committee also observe that the steep increase of Rs. 88 crores in the B.E. of 1996-97 in comparison to the estimates of the previous year has once again been attributed to meet the funding requirements of IREDA. The Committee regret that the fund requirement of IREDA was not assessed while formulating the estimates in the earlier years. The Ministry ought to have analysed the fund requirement of IREDA in detail while formulating the Budget Estimates for 1996-97 so that the huge variation between the budget estimates and the actuals could have been avoided. The Committee recommend that such analysis should be made.

Major Head 2810
(Non-Conventional Sources of Energy)

II. BIOMASS BRIQUETTING

1.9 As biomass briquetting technology is considered to be commercially viable, the Ministry have not kept any provision for Biomass Briequetting as IREDA is financing such project on a concessional rate of interest andavailability of fiscal incentives.

1.10 The annual production of biomass briquetting in the country is about 70 tonnes per hour.

1.11 During the Eighth Plan period, IREDA has sanctioned a loan of Rs. 2.28 crores against a target of Rs. 6.00 crores and has disbursed an amount of Rs. 1.27 crores, which is about 55 per cent.

1.12 IREDA had no targets for the biomass briquetting during the years 1992-93 and 1993-94. However, IREDA sanctioned one project. The targets fixed for 1994-95, 1995-96 and 1996-97 were 12 projects in each year whereas. IREDA has sanctione so far only 4 projects in 1994-95 and 2 projects in 1995-96.

1.13 Pointing out whether the target for biomass briquetting has been achieved, the Secretary, Ministry of Non-Conventional Energy Sources stated:

> "Currently briquetting is not taking off in a big way. We have some technological problems. Many of the briquetting units have been facing serious problems. The technology was not fully perfected before it was launched. Thereafter, there was a slight set back to briquetting. Now, the Indian Renewable Energy Agency has given a lot of attention to the technology. Now, there are about 42 briquetting units in the country."

1.14 Enquired about the number of briquetting units functioning, the Secretary, MNES stated that:

> "One of 42 units, 28 briquetting units are functioning. But, there has been a slow down because of machinery problems and technological problems."

1.15 The Committee find that the disbursement of funds of Rs. 1.27 crores for Biomass Briquetting by IREDA during the Eighth Plan period has been stated to be to the extent of 55 per cent of the sanctioned loan of Rs. 2.28 crores as against a target of Rs. 6 crores. The Committee note that IREDA could not meet the target envisaged for the plan period. It is also observed that presently only 28 of the 42 Briquetting units are operating. It has been admitted that the briquetting units are facing serious operational problems of a technical nature. The Committee stress that issues relating to these problems must be analysed thoroughly and corrective measure should be taken accordingly, so as to make the briquetting units and programmes in this respect viable. The Committee would like to know the present status of production capacity/targets in respect of the 28 operating briquetting units. The same may be communicated at the earliest.

III. BIOMASS POWER GENERATION PROGRAMME

1.16 The Biomass Power Generation activity of the Ministry comprises of (a) bagasse based cogeneration; (b) biomass combustion based power generation and (c) grid-interactive biomass gasifier based power generation. The budgetary provisions for bagasse based cogeneration, biomass combustion and grid-connected

gasifier based power generation programme during 1995-96 and 1996-97 are as under:

(Rs. in crores)

Biomass Power Generation Programme	B.E. 1995-96		R.E. 1995-96		B.E. 1996-97	
	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan
Biomass Cogeneration & Combustion						
Gants-in-Aid	1.00	-	0.4	-	1.00	-
Suibsidies	16.75	-	0.5	-	6.3	-
Grid Connected Gasifier						
Grants-in-Aid	1.17	-	0.4	-	0.5	-

1.17 It can be seen from the above that there is a steep reduction in Revised Estimates of 1995-96 as against the Budget Estimates of 1995-96 for Biomass Cogeneration and Combustion and Grid Connected Gasifier. The budgetary provision of 1996-97 for Biomass Cogeneration and Combustion under minor head Grants-in-aid is Rs. 1.00 crores which is the same as B.E. of 1995-96 whereas the R.E. of 1995-96 was Rs. 0 4 crores which is 60% less than B.E. of 1996-97. Similarly, under the minor head 'subsidy', B.E. of 1995-96 was Rs. 16.75 crores while in the R.E. of 1995-96 it was Rs. 0.05 crores which is nearly 30% less than the B.E. of 1995-96. Again in 1996-97 the Ministry's B.E. under this minor head is Rs. 6.3 crores. Further in the case of grid connnected gasifier the B.E. of 1996-97 is Rs. 0.5 crores while the B.E. of 1995-96 was Rs. 1.15 crores and R.E. of 1995-96 was Rs. 0.48 crores. B.E. of 1996-97 has been reduced approximately by 42% as against the B.E. of 1995-96.

1.18 Pointing out the reasons as to why the B.E. of 1996-97 of the programmes for Biomass Cogeneration and combustion and Grid Connection Gasifier was much higher than the R.E. of 1995-96, the Ministry of Non-Conventional Energy Sources stated in their written reply that at the time of finalisation of Annual Plan for 1995-96, the major programme for which budgetary provision was requested was bagasse cogeneration. Under this programme a demonstration scheme for providing capital subsidies to sugar mills in private/cooperative/public sector and a soft loan scheme for IREDA, was being implemented. However, later during the year, the Ministry decided to revise the schemes with a view to provide preference to cooperative/public sector sugar mills and also to open up the soft loan scheme to financial institutions other than IREDA. Consequently, projects in private sector which had been approved 'in principle' during 1994-95 for capital subsidy were not accorded final approval. Further, the revised scheme was announced in the middle of the Financial Year. Since 1995-96 was a difficult year for the sugar industry also most of the planned cogeneration projects were kept in abeyance. As a result of these factors the budgetary outlay had been brought down at the RE stage.

1.19 The B.E for 1996-97, includes release to ongoing projects which had been approved in the latter part of the financial year 1995-96. An amount of Rs. 4.5 crore

will also be required towards MNES subsidy for these projects. The approved projects include a 5 MW rice-husk based power project and two bagasse based cogeneration projects of 12 MW aggregate capacity. The balance budgetary provision is expected to be utilised for new projects which are in the pipeline.

1.20 Asked about the total potential for Biomass Co-generation and Combustion and Grid Connected Gasifier and how much of this is being exploited, the Ministry stated in their written reply that the potential for surplus power generation from bagasse cogeneration in the country has been estimated at 3,500 MW. Potential for power generation from surplus biomass materials in the country utilising direct combustion and gasification technologies is estimated at around 14,000 MW. A total capacity of 48 MW has been installed so far in the country (as on 31.7.1996) through grid-connected bagasse cogeneration and biomass combustion projects. Projects of another around 100 MW capacity are under implementation and are expected to be commissioned by end of 1996-97. A target of 25 MW capacity creation had been set for the Eighth Plan through biomass cogeneration and combustion technologies. The Ministry has stated that it is expected that commissioning of these initial projects will result in demonstration of technical and financial viability of these technologies and will thus expedite the process of exploitation of their ultimate potential.

1.21 On being enquired about the position that the total capacity for bagasse cogeneration created has been very little as compared to the potential envisaged the Secretary, Ministry of Non-Conventional Energy Sources stated that :

> "This 3,500 megawatt is the estimated potential from the sugar factories. The balance 14,000 MW is an estimate of power possible out of the surplus biomass material which is available. But that is rather an ambitious goal which, I think, would take quite sometime to realise because the idea of collecting biomass on a large scale and burning it and generating power is still comparatively new. But we have promoted two projects, one in Madhya Pradesh and the other in Andhra Pradesh which are progressing very well. Both the projects are substantially helped by us as demonstration projects. They are both in the private sector. The project in Madhya Pradesh is based on paddy husk. The project in Andhra Pradesh is based on wild growing species called Prosopis Juliflora which is available in plenty. These projects are likely to be completed in the next one and a half years. Thereafter, we expect a lot of proposals. This is a difficult programme. We have to mop up all the surplus biomass like twigs, leaves, sugarcane trash agricultural residues and various other things."

1.22 Enquired about the number of project proposals for cogeneration received by the Ministry and the costs of cogeneration and the financial support from Government the Secretary, Ministry of Non-Conventional Energy Sources stated that :

> "Cogeneration is actually a part of energy conservation and there is scope for cogeneration where requirement of both heat and electricity is there. Sugar factory is a typical example for cogeneration. Our estimate of potential

of cogeneration in the sugar factories in the country is 3,500 megawatt. There is scope for cogeneration in other industries also.

So far as the programme of the Ministry is concerned, the pattern for bagasse based cogeneration is, we first decided to promote 12 demonstration plants where the Ministry offered Rs.70 lakh per megawatt of capacity created surplus to the captive requirement of the sugar factory. That means if somebody could create capacity for 5 megawatt surplus to the requirement in a sugar factory, he would be getting Rs.3.5 crore as assistance. But creation of that 5 megawatt would cost about Rs.20 crore to Rs.25 crore. That is the pattern of assistance which was offered for the 12 initial demonstration projects. In our assessment, it was commercially and economically viable even without any subsidies. Therefore, there were some questions raised whether this subsidy is really necessary. We thought that to initiate action we have to give some incentives. Eight projects have made some headway in the private sector. Thereafter we are waiting for proposals because 60 to 70 per cent of the sugar factories are in the Government and cooperative sector. We wanted some cooperative sugar factories to come forward with programmes. We have received five or six proposals from Government and Cooperative sector sugar factories. The year 1995-96 has not been good for the sugar industry. Many of the factories do not have surplus money. Normally cooperative sugar factories distribute all their realisation to the cane-growers. They do not have much of investible surplus.

We are in touch with the NCDC, and the IFCI. They are evaluating these projects. The year 1996-97 is expected to be a good sugar year. We are hopeful that more projects will be coming in this year. We have an interest subsidy scheme under which we are providing an assistance of Rs.20 lakh per megawatt. That is applicable for the private sector also."

1.23 Pointing out the uniform policy with regard to pricing of surplus power produced through Biomass Cogeneration and Combustion and Grid Connected Gasifier, the Ministry stated that in August 1993, it issued a set of guidelines to the States on purchase price and provision of other facilities for projects generating electricity from renewable energy sources. These were also discussed and broadly accepted in a Conference of Chief Ministers in September, 1994. It was suggested that for grid connected electricity generated from renewables, a purchase price of Rs.2.25/kwh may be announced with an annual escalation of 5%. It was also suggested that the producer would be given freedom to bank the power upto one year, wheeling facilities to be given at 2% and third party sale facility would be given with the price being mutually settled between the producer and the consumer.

1.24 In response to this seven State Governments, namely, Tamil Nadu, Karnataka, Maharashtra, Andhra Pradesh, Uttar Pradesh, Punjab and Madhya Pradesh have announced general policies for purchase of power from such projects at rates varying from Rs.1.50 to Rs.2.25 per unit. Several of these States also

provide facilities of wheeling/banking/third party sale at nominal charges. Haryana and Gujarat have also been reported to be finalising their policies.

1.25 The Committee find that biomass based cogeneration has been identified as an area holding considerable promise for grid interactive power generation. The Committee, however, are of the opinion that several institutional or operational impediments come in the way of quick exploitation of the potential. For instance, managerial problems relating to obtaining loans from financial institutions, signing of agreements with State Electricity Boards in a timely and proper manner can discourage people interested in this field. Presently, though seven States have been stated to have announced their policy for wheeling, banking, third party sale, minimum buy-back rate per unit, the Ministry have informed that only few States have responded positively to the uniform policy guidelines issued by them. The Committee desire that the Ministry should approach the States to adhere to the uniform policy formulated by the Ministry. The Committee also suggest that steps should be taken to ensure that the agreements with SEBs are reached in proper time schedule so that private entrepreneurs are attracted to this field. Furthermore, the Committee expect that all the proposals in this regard are cleared expeditiously.

IV. SOLAR THERMAL ENERGY PROGRAMME

1.26 The Budgetary provision under Solar Thermal Energy Programme for Demonstration, Technology Utilisation & Market Development have been increased from Rs.2.65 crores (R.E. of 1995-96) to Rs.5.91 crores (B.E. of 1996-97).

1.27 The Ministry have stated that following a review of the loan schemes implemented through IREDA, the Ministry, at the suggestion of the Planning Commission, decided to introduce an interest subsidy programme for solar hot water systems. A new scheme to provide soft loans to household and small users was finalised with the Canara Bank towards the end of 1995-96. The scheme is proposed to be expanded and also operated through other banks during 1996-97. This requires a substantially increased outlay.

1.28 Under the interest subsidy scheme for solar heat water system, householders and small establishments such as nursing homes, hotels, etc. will be able to obtain loans from Canara Bank under their consumer loan programme at a subsidised interest rate of 5% instead of about 18%. The difference in the interest rates will be met by the Government and re-imbursed to Canara Bank. The bank has been allowed to sanction loans to the extent of Rs.10 crores, benefitting about 6,000 users. The scheme will be operational initially in Bangalore, Mangalore, Mysore, Delhi, Madras and Pune.

1.29 A similar programme is being operated through IREDA, catering mostly to industrial and institutional users as well as financial intermediaries. Efforts are being made to operate the scheme through some more banks and cover more cities such as Hyderabad, Bombay, Calcutta, Dehradun, Ranchi and Lucknow.

1.30 The Committee observe that the budgetary provision under solar thermal energy programme has been increased from Rs.2.65 crore to Rs.5.91 crores, with the introduction of interest subsidy scheme for purchasing of solar hot water systems. The Committee would like to know whether the commercial as well as the technological viability of solar hot water systems has been assessed while initiating the scheme. The Committee would like to be apprised of the progress of the subsidy scheme.

V. SMALL HYDRO POWER PROGRAMME

1.31 The Eighth Five Year Plan goal for Small Hydro Power Programme is to produce 200 MW of power including private sector efforts. The Ministry in its reply stated that the capacity of 38.63 MW has been achieved during 1992-93 to 1995-96. It is expected that about 50 MW capacity will be added during 1996-97. A capacity of only about 90 MW is likely to be completed during the plan period.

1.32 Regarding the question of the problems and constraints for not achieving the Eighth Plan target for small Hydro Power Programme, the Ministry of Non-Conventional Energy Sources stated in their written reply that the target for taking up 200 MW projects during the Eighth Plan has already been achieved and a capacity of 248 MW is now under implementation in the country. However, the pace of completion and commissioning of projects has been somewhat slow — a capacity of about 90 MW is likely to be commissioned during the Eighth Plan period. The projects so far have been implemented by the State Power Departments/State Electricity Boards, who usually accord low priority to the implementation of these small projects. In addition, the main problems and constraints in the implementation of this programme are poor infrastructural facilities; accessibility and approach in North-Eastern and Hilly Regions; problems of land acquisition and forestry clearance; lack of coordination among various State agencies; and diversion of funds by State agencies.

1.33 On being asked about the efforts made by the Ministry to overcome these problems and constraints and to promote the Small Hydro Power Programme, the Ministry have stated that the programme was being implemented mainly by State Governments/State Electricity Boards so far, either through State Plan allocations or Capital subsidy scheme by MNES. In view of the constraints, it has now been decided to encourage greater private sector participation in small hydro projects. Accordingly, the capital subsidy scheme has been revised to interest subsidy for private sector, SHP projects through financial institutions to attract private investment. 11 States have invited offers for private sector projects having a potential of about 500 MW. 8 States have announced policies for wheeling, banking, 3rd party sale and buy-back by State Electricity Boards. It has been suggested to the States to create separate cells in Electricity Boards to deal with non-conventional energy based power projects including SHP projects and to create suitable mechanisms and procedures, such as single window clearance of such projects. It is expected that these initiatives will lead to more rapid exploitation of the SHP potential in the country.

1.34 The Committee are of the view that progress with regard to small hydro power is unsatisfactory. The Eighth Five Year Plan goal for Small Hydro Power Programme is to Produce 200 MW of power including private sector efforts. A capacity of only about 90 MW is likely to be completed during the Eighth Plan period. This year the target is 50 MW. Already five months have elapsed and the Ministry are left with only seven months. The Committee are not certain that even the target of 50 MW set for the year 1996-97 would be achieved. The Committee expect that vigorous efforts will be made to accelerate the implementation of this programme.

1.35 The Committee have been informed that private sector has shown considerable interest in establishing small hydro projects. However, most of the States are yet to announce a clear promotional policy to attract private developers and entrepreneurs. Eight states have announced policy for wheeling, banking, third party sale and buy-back rate per units by State Electricity Boards. The Committee recommend that the Ministry may take up the matter with other State Governments also to announce the policy in this regard for promotion of SHP Programme expeditiously.

1.36 The Committee observe that there are problems of land acquisition and forestry clearance for the promotion of Small Hydro Projects. The Committee desire that the Ministry of Environment and Forests should be approached to take an early decision on the question of ensuring speedy environmental clearances for small hydro projects upto 5 MW. The Committee express the need for minimising the levels of examination for clearing small hydro projects. Quick and speedy procedures need to be evolved for clearing relatively larger projects. This will enable speedy exploitation of small hydro potential which is abundant in the country.

VI. WIND POWER PROGRAMME

1.37 The bugetary provision for wind power programme during the last three was as under:

(In thousand of Rupees)

		Actual 1994-95		B.E. 1995-96		R.E. 1995-96		B.E. 1996-97	
		Plan	N.Plan	Plan	N.Plan	Plan	N.Plan	Plan	N.Plan
03.004-	Research & Development (Minor Heads)								
01-	Assistance to Wind Power Generation Programme								
01.00.31-	Grants-in-aid	9,57		75,00	—	31,00	—	10,00	—
02-	Assistance to Wind Pump Programme								
02.00.31-	Grants-in-aid	—	—	5,00	—	200	—	600	—

		Actual 1994-95		B.E. 1995-96		R.E. 1995-96		B.E. 1996-97	
		Plan	N.Plan	Plan	N.Plan	Plan	N.Plan	Plan	N.Plan
03.103	Demonstration (Minor Head)								
01-	Assistance to Wind Power Generation Programme								
01.00.31-	Grants-in-aid	14,42,00	—	9,73,00	—	5,58,00	—	2,76,00	—
02-	Assistance to Wind Pump Programme								
02.00.31-	Grants-in-aid	54,00	—	67,00	—	67,00	—	67,00	—

1.38 It is observed from the above that there has been progressive reduction in the budgetary allocation for the programme of Wind Power Generation in the successive years since 1994-95.

1.39 When asked about the reasons for successive reduction in the budgetary allocation for wind power generation, the Ministry have stated in their written reply that they are seeking reduced budgetary outlay since 1994-95 in view of the fact that the Wind Power Programme is on the way of being commercialised through increasing private sector participation. The Ministry's support is mainly directed to a limited number of demonstration projects aiming to demonstrate new technologies and open up new sites. Since a large number of potential areas have already been covered, reduced budgetary allocation has been sought. Substantial indirect support is being given by way of accelerated depreciation.

1.40 The Committee note that on the reasons for reduced budgetary outlay for wind power programme over the years, the Ministry have stated that this is owing to increased private sector participation in this area. The Committee would like to know whether private sector participation in this area has achieved the expected level as envisaged by the Ministry.

VII. RESEARCH & DEVELOPMENT

1.41 The budgetary allocation for Research and Development for 1996-97 of various non-conventional energy sources programmes have been reduced as compared to 1995-96. The budgetary provision for R & D during the last 3 years are as under :

(Rs.in crores)

Programme	1994-95 Actual	B.E. 1995-96	R.E. 1995-96	B.E. 1996-97
Photovoltaic	1.00	1.00	1.00	0.5
Solar Thermal Power Generation	0.71	0.5	0.5	0.25
R & D For Wind Power	0.09	0.75	0.31	0.10

1.42 The Committee have expressed concern in their 22nd Report (Tenth Lok Sabha) on Demands for Grants 1995-96 regarding reduction in budgetary provision for R & D. Inspite of that the Budget allocation of 1996-97 for R & D has been reduced.

1.43 Enquired about the reasons for lower budgetary allocation for R & D programmes of photovoltaic, solar thermal power generation and wind power, the Ministry have stated that sanction of new R&D projects was suspended during 1993-94 pending a review of the R&D policy of the Ministry. A new R&D policy was adopted during 1994-95 which emphasised funding of industry-driven and goal-oriented projects. The policy also suggested that indigenous R&D effort should concentrate on the development of new and emergent technologies. Accordingly, a set of projects for the development of new types of thin solar film/ solar cells were sanctioned towards the end of 1994-95. Two more projects which meet these criteria were sanctioned during 1995-96 in the solar photovoltaic area. The budgetary allocation for 1996-97 was worked out on the basis of the assessment of funds required for the previously sanctioned projects and the new projects which may be sanctioned during 1996-97.

1.44 The Ministry have further stated that technology development in the area of wind power is mainly being carried out by industry. The provision kept in 1995-96 for R&D relating to wind power was mainly for releases against the two on-going wind turbine rotor blade development projects. However, in view of the slow progress of the projects and private sector blade production facilities getting established in the country, it has been decided not to support these R&D projects further. The reduced amount retained in R.E. 1995-96 and B.E. 1996-97 are for balance releases to be made against the on-going projects.

1.45 Enquired as to whether the Ministry is doing any R&D in the fundamental area of development of photovoltaic and which agency is doing it, the representative of the Ministry stated:

> "We are, in fact, supporting the research also in the new emerging areas for photovoltaic technology. The traditional method of making solar cells is from silicon wafers. This has also been adopted by the industries. We are also supporting some research in National Laboratories. We are separately funding research in technologies which are using new photovoltaic materials. A lot of development needs to be done. In India we are now having about six research projects in these new areas. We have given grants to various universities and institutions for which we have now a fully integrated programme."

1.46 On being asked whether there is any agency or laboratory under the Ministry which is directly doing the R&D in photovoltaic and whether the Ministry is only funding the private sector units, the universities and other institutions, the representative of the Ministry stated :

> "There is already a scientific infrastructure in the country. There are a large number of national laboratories and IITs and Universities which have a lot of

facilities for undertaking this research. The research group in these laboratories come; they require equipments and other assistance so that they can take up the projects in a time-bound fashion. The Ministry so far has not set up exclusive laboratories on its own. We do have a solar energy centre at Gurgaon. This Centre, I think, plays a valuable role. Otherwise, we are quite satisfied at the research that is being done by the other institutions."

1.47 When the Committee desired to know about the agencies monitoring the progress of R&D, the Ministry of Non-Conventional Energy Sources stated in their written reply that the project-wise monitoring of the R&D projects is being done by the respective divisions in the Ministry. An apex R&D Committee of the Ministry consisting of experts, officials and non-officials besides the Group Heads in the Ministry, also monitor the R&D programme in the Ministry. The R&D Division in the Ministry provides coordination for monitoring of the R&D projects. As a part of the new industrial R&D strategy, it is proposed to carry out evaluation studies for the major R&D projects. The monitoring mechanism is also proposed to be strengthened through utilisation of recognised experts/agencies by developing a computer data base on R&D.

1.48 The Committee note that the high initial cost is the main barrier of solar photovoltaic area. The Committee have been informed that a new R&D policy was adopted during 1994-95 which emphasised funding of industry-driven and goal-oriented projects. The policy also suggested that indigenous R&D effort should concentrate on development of new and emergent technologies. The Committee will await the report on the outcome of the new R&D policy and the action taken on its findings/observations. The Committee recommend that efforts should be made to persuade major public undertakings to fund the R&D programmes, particularly in the thrust areas such as photovoltaic technologies.

1.49 The Committee note that the wind turbine rotor blade development projects funded by the Ministry have not made any significant contribution. The Ministry's reply stating that private sector production facilities have been established whereas the funded R&D projects have progressed slowly implies that serious deficiencies exist in the R&D. The Committee desire that the programmes relating to wind turbine rotor blade should be thoroughly reviewed with a view to identifying the deficiencies and taking appropriate corrective measures.

NEW DELHI;
24 August, 1996
Bhadra 2, 1918 (Saka)

JAGMOHAN,
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.	1.8	The Committee find that the shortfall of Rs. 45 crores in the plan expenditure of the Ministry for the year 1994-95 has been attributed to the reduction in the projected fund requirements for IREDA to meet its loan disbursal activities. The Committee fail to understand why IREDA's fund requirements were not properly assessed while formulating the R.E. for the year 1994-95. The Ministry has not been able to give any other reason for the shortfall of Rs. 45 crores in the plan expenditure apart from the sum of Rs. 23 crores being the fund requirement for IREDA. The Committee also observe that the steep increase of Rs. 88 crores in the B.E. of 1996-97 in comparison to the estimates of the previous year has once again been attributed to meet the funding requirements of IREDA. The Committee regret that the fund requirement of IREDA was not assessed while formulating the estimates in the earlier years. The Ministry ought to have analysed the fund requirement of IREDA in detail while formulating the Budget Estimates for 1996-97 so that the huge variation between the budget estimates and the actuals could have been avoided. The Committee recommend that such analysis should be made.
2.	1.15	The Committee find that the disbursement of funds of Rs. 1.27 crores for Biomass Briquetting by IREDA during the Eighth Plan period has been stated to be to the extent of 55 per cent of the sanctioned loan of Rs. 2.28 crores as against a target of Rs. 6 crores. The Committee note that IREDA could not meet the target envisaged for the plan period. It is also observed that presently only 28 of the

1	2	3
		42 Briquetting units are operating. It has been admitted that the briquetting units are facing serious operational problems of a technical nature. The Committee stress that issues relating to these problems must be analysed thoroughly and corrective measures should be taken accordingly, so as to make the briquetting units and programmes in this respect viable. The Committee would like to know the present status of production capacity/ targets in respect of the 28 operating briquetting units. The same may be communicated at the earliest.
3.	1.25	The Committee find that biomass based cogeneration has been identified as an area holding considerable promise for grid interactive power generation. The Committee, however, are of the opinion that several institutional or operational impediments come in the way of quick exploitation of the potential. For instance, managerial problems relating to obtaining loans from financial institutions, signing of agreements with State Electricity Boards in a timely and proper manner can discourage people interested in this field. Presently, though seven States have been stated to have announced their policy for wheeling, banking, third party sale, minimum buy-back rate per unit, the Ministry have informed that only few States have responded positively to the uniform policy guidelines issued by them . The Committee desire that the Ministry should approach the States to adhere to the uniform policy formulated by the Ministry. The Committee also suggest that steps should be taken to ensure that the agreements with SEBs are reached in proper time schedule so that private entrepreneurs are attracted to this field. Furthermore, the Committee expect that all the proposals in this regard are cleared expeditiously.
4.	1.30	The Committee observe that the budgetary provision under solar thermal energy programme has been increased from Rs. 2.65 crores to Rs. 5.91 crores, with the introduction of interest subsidy scheme for purchasing of solar hot water systems. The Committee would like to know whether the commercial as well as the technological viability of solar hot water systems has been assessed while initiating the scheme. The Committee would like to be apprised of the progress of the subsidy scheme.

1	2	3
5.	1.34	The Committee are of the view that progress with regard to small hydro power is unsatisfactory. The Eighth Five Year Plan goal for Small Hydro Power Programme is to produce 200 MW of power including private sector efforts. A capacity of only about 90 MW is likely to be completed during the Eighth Plan period. This year the target is 50 MW. Already five months have elapsed and the Ministry are left with only seven months. The Committee are not certain that even the target of 50 MW set for the year 1996-97 would be achieved. The Committee expect that vigorous efforts will be made to accelerate the implementation of this programme.
	1.35	The Committee have been informed that private sector has shown considerable interest in establishing small hydro projects. However, most of the States are yet to announce a clear promotional policy to attract private developers and entrepreneurs. Eight states have announced policy for wheeling, banking, third party sale and buy-back rate per unit by State Electricity Boards. The Committee recommend that the Ministry may take up the matter with other State Governments also to announce the policy in this regard for promotion of SHP Programme expeditiously.
	1.36	The Committee observe that there are problems of land acquisition and forestry clearance for the promotion of Small Hydro Projects. The Committee desire that the Ministry of Environment and Forests should be approached to take an early decision on the question of ensuring speedy environmental clearances for small hydro projects upto 5 MW. The Committee express the need for minimising the levels of examination for clearing small hydro projects. Quick and speedy procedures need to be evolved for clearing relatively larger projects. This will enable speedy exploitation of small hydro potential which is abundant in the country.
6.	1.40	The Committee note that on the reasons for reduced budgetary outlay for wind power programme over the years, the Ministry have stated that this is owing to increased private sector participation in this area. The Committee would like to know whether private sector participation in this area has achieved the expected level as envisaged by the Ministry.

1	2	3
7.	1.48	The Committee note that the high initial cost is the main barrier of solar photovoltaic area. The Committee have been informed that a new R&D policy was adopted during 1994-95 which emphasised funding of industry-driven and goal-oriented projects. The policy also suggested that indigenous R&D effort should concentrate on development of new and emergent technologies. The Committee will await the report on the outcome of the new R&D policy and the action taken on its findings/ observations. The Committee recommend that efforts should be made to persuade major public undertakings to fund the R&D programmes, particularly in the thrust areas such as photovoltaic technologies.
	1.49	The Committee note that the wind turbine rotor blade development projects funded by the Ministry have not made any significant contribution. The Ministry's reply stating that private sector production facilities have been established whereas the funded R&D projects have progressed slowly implies that serious deficiencies exist in the R&D. The Committee desire that the programmes relating to wind turbine rotor blade should be thoroughly reviewed with a view to identifying the deficiencies and taking appropriate corrective measures.

PART—II

MINUTES OF THE SECOND SITTING OF STANDING COMMITTEE ON ENERGY HELD ON TUESDAY, THE 13TH AUGUST, 1996

The Committee sat from 11.00 hrs. to 13.30 hrs.

PRESENT

Shri Jagmohan — *Chairman*

MEMBERS

2. Prof. (Smt.) Rita Verma
3. Prof. Om Pal Singh 'Nidar'
4. Shri Muni Lal
5. Shri Manoj Kumar Sinha
6. Shri G. Venkataswamy
7. Shri Tariq Anwar
8. Shri Parasram Bhardwaj
9. Shri Prithviraj D. Chavan
10. Shri Ishwar Prasanna Hazarika
11. Shri Sandipan Thorat
12. Shri Anil Basu
13. Shri Haradhan Roy
14. Shri P.R.S. Venkatesan
15. Shri V. Ganeshan
16. Shri Prem Singh Chandumajra
17. Shri Ramendra Kumar
18. Shri M. Rajasekara Murthy
19. Shri Ramji Lal
20. Shri Ved Prakash Goyal
21. Shri Lakhiram Agarwal
22. Shri Prem Chand Gupta
23. Shri Dipankar Mukerjee
24. Shri V.P. Duraisamy

SECRETARIAT

1.	Shri G.R. Juneja	—	*Deputy Secretary*
2.	Shri A.S. Chera	—	*Under Secretary*

WITNESSES

1.	Shri B.R. Prabhakura	—	*Secretary*
2.	Shri S.W. Oak	—	*Joint Secretary*
3.	Shri E.V.R. Sastry	—	*Advisor*
4.	Dr. K.C. Khandelwal	—	*Advisor*
5.	Dr. V. Bakthavatsalam	—	*M.D. (IREDA)*
6.	Shri Ajit K. Gupta	—	*Advisor*
7.	Dr. D.K. Joshi	—	*Director*

2. The Committee took oral evidence of the representatives of the Ministry of Non-Conventional Energy Sources in connection with the examination of Demands for Grants (1996-97) of the Ministry of Non-Conventional Energy Sources.

3. The important points discussed by the Committee were:

(i) Under utilisation of plan budgetary allocation.
(ii) Biomass Briequetting
(iii) Biomass Power Generation Programme
(iv) Small Hydro Power Programme
(v) R&D activities.

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

The Committee then adjourned.

EXTRACTS OF MINUTES OF THE SIXTH SITTING OF STANDING COMMITTEE ON ENERGY HELD ON 21ST AUGUST, 1996

The Committee sat from 11.00 hrs. to 13.00 hrs.

PRESENT

Shri Jagmohan — *Chairman*

MEMBERS

2. Prof. (Smt.) Rita Verma
3. Prof. Om Pal Singh 'Nidar'
4. Shri Ravindra Kumar Pandey
5. Shri Muni Lal
6. Shri Sri Ram Chauhan
7. Shri Sriballav Panigrahi
8. Shri G. Venkataswamy
9. Shri Tariq Anwar
10. Shri Parasram Bhardwaj
11. Shri Prithviraj D. Chavan
12. Shri Iswar Prsanna Hazarika
13. Shri Sandipan Thorat
14. Shri Anil Basu
15. Shri Haradhan Roy
16. Shri P.R.S. Venkatesan
17. Shri N. Ramakrishna Reddy
18. Shri Anand Mohan
19. Shri Chitta Basu
20. Shri Ramendra Kumar
21. Shri Madhavsinh Solanki
22. Shri M. Rajasekara Murthy
23. Shri Ramji Lal

24. Shri Vedprakash Goyal
25. Shri Lakhiram Agarwal
26. Shri Prem Chand Gupta
27. Shri V.P. Duraisamy

SECRETARIAT

1.	Shri G.R. Juneja	—	*Deputy Secretary*
2.	Shri A.S. Chera	—	*Under Secretary*

The Committee first took up for consideration the draft Report on Demands for Grants (1996-97) of Ministry of Non-Conventional Energy Sources. The Committee, after brief discussion adopted the draft Report with the modifications indicated in Annexure-I.

2. ** ** **

3. The Committee authorised the Chairman to finalise the reports adopted by the Committee and present them to Parliament.

The Committee then adjourned.

**Para 2 of the Minutes relating to consideration of Draft Report on Demands for Grants of Department of Atomic Energy is not included.

ANNEXURE I

MODIFICATIONS IN THE REPORT ON DEMANDS FOR GRANTS (1996-97) OF MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

1. **Modify** Para 1.8:

Existing Para:

The shortfall of as much as Rs. 45 crores in the Plan expenditure of the Ministry from the year 1994-95 has been attributed to the reduction in the projected fund requirements for IREDA to meet its loan disbursal activities. The Committee however, fail to understand why IREDA's fund requirements were not properly assessed by formulating the R.E. for the year. The fund requirement of Rs. 23 crores for IREA apart the other reasons for the shortfall in the Plan expenditure have not been satisfactorily explained. The Committee also observe that steep increase of Rs. 88 crores in the B.E. of 1996-97 in comparison to the estimates of the previous year has once again been attributed to meet the funding requirements of IREDA. Considering that the Budgetary outlays meant for IREDA were not utilised during 1994-95, the Committee would like to know whether IREDA fund requirements have been analysed in detail while formulating the Budget Estimates for 1996-97, so as to avoid huge variation between the budgetary estimates and the actuals.

Modified Para:

The Committe find that the shortfall of Rs. 45 crores in the Plan expenditure of the Ministry from the year 1994-95 has been attributed to the reduction in the projected fund requirements for IREDA to meet its loan disbursal activities. The Committee fail to understand why IREDA's fund requirements were not properly assessed while formulating the Revised Estimates for the year 1994-95. The Ministry has not been able to give any other reason for the shortfall of Rs. 45 crores in the Plan expanditure apart from the sum of Rs. 23 crores being the fund requirement for IREDA. The Committee also observe that steep increase of Rs. 88 crores in the Budget Estimates of 1996-97 in comparison to the estimates of the previous year has once again been attributed to meet the

funding requirements of IREDA. The Committee regret that the fund requirement of IREDA was not assessed while formulating the estimates in the earlier years. The Ministry ought to have analysed the fund requirement of IREDA in detail while formulating the Budget Estimates for 1996-97 so that the huge variation between the Budget Estimates and the actuals could have been avoided. The Committee recommend that such analysis should be made.

2. **Add** the following as the last sentence in Para 1.15:

The Committee would like to know the present status of production capacity/targets in respect of the 28 operating briquetting units. The same may be communicated at the earliest.

3. **Add** the following as the last sentence in Para 1.25:

Furthermore, the Committee expects that all the proposals in this regard are cleared expeditiously.

4. **Omit** the last sentence in Para 1.34 beginning with the words, "The Committee would like to know..."

5. **Add** the following as the third sentence in Para 1.36:

The Committee express the need for minimising the levels of examination for clearing small hydro projects.

6. **Modify** the last sentence in Para 1.40 existing sentence :

Existing Sentence

Also the Committee would like to know whether private sector participation in this area has been upto the desired level as envisaged by the Ministry.

Modified Sentence

The Committee would like to know whether private sector participation in this area has achieved the expected level as envisaged by the Ministry.

7. **Modify** the last two sentences in para 1.48:

Existing sentences:

The Committee will await the outcome of new R&D policy and the action taken on its findings. The Committee suggest that efforts should be made to direct major public undertaking to fund R&D programmes, particularly in thrust areas such as photovoltaic technologies.

Modified sentences:

The Committee will await the outcome of new R&D policy and the action taken on its findings/obervations. The Committee recommend that efforts should be made to persuade major public undertakings to fund the R&D programmes, particularly in thrust areas such as photovoltaic technologies.