

13

STANDING COMMITTEE ON ENERGY

(2015-16)

SIXTEENTH LOK SABHA

MINISTRY OF NEW AND RENEWABLE ENERGY

Development and Status of Small Hydro Sector

THIRTEENTH REPORT



**LOK SABHA SECRETARIAT
NEW DELHI**

March, 2016/Phalguna, 1937 (Saka)

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Presented to Lok Sabha on 14.03.2016

Laid in Rajya Sabha on 14.03.2016



**LOK SABHA SECRETARIAT
NEW DELHI**

March, 2016/Phalguna, 1937 (Saka)

COE NO. 268

Price: Rs.

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Published under Rule 382 of the Rules of Procedure and Conduct of Business in Lok Sabha
(Sixteenth Edition) and Printed by _____

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**COMPOSITION OF THE STANDING COMMITTEE ON ENERGY
(2015-16)**

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@ expired on 04.03.2016

INTRODUCTION

I, the Chairperson, Standing Committee on Energy, having been authorized by the Committee to present the Report on their behalf, do present this Report on 'Development and Status of Small Hydro Sector'.

2. The Committee had extensive consultations with the Ministry of New and Renewable Energy and also undertook a site visit to M/s OREVA Small Hydro Power Project on River Curzon at Narmada, Gujarat.

4. The Committee focused on the potential and installed capacity, incentive scheme, issues and policy and hindrances relating to development of small hydro power. After the series of discussions and consultations, keeping in view the Government of India's ambitious renewable power mission of 1,75,000 MW by 2022, the Committee feel that there is a need to give greater importance/priority to mini/small hydro power projects, so as to supplement the generation/supply of power with the solar/renewable power generation. The observations/recommendations suggested by the Committee in this regard are given in the following chapter.

5. The Report was considered and adopted by the Committee at their sitting held on 9th March, 2016.

6. The Committee wish to express their thanks to the officers of the Ministry of New and Renewable Energy for their valuable assistance.

NEW DELHI
10th March, 2016
Phalguna 20, 1937 (Saka)

DR. KIRIT SOMAIYA
Chairperson
Standing Committee on Energy

REPORT
PART I
Narration Analysis

I. Introductory

1.1 The Ministry of New and Renewable Energy (MNRE) has been allocated the business of micro/ mini/ small hydropower plants up to 25 MW station capacity. Electricity and electricity generated from hydro projects is a subject in the concurrent list, and subject of both the Union and State Governments. However, water being a subject in the State List, the Small Hydro Power (SHP) projects are governed by State policies. The decision of setting up SHP projects or its allotment is taken by the State Government. The expression of interests/ proposals/bids from private developers are invited by the State Government. The Techno-Economic Clearances (TEC)/ approvals for the SHP projects are provided by the State Government concerned. The MNRE have stated that they do not set up or allocate small hydro project.

1.2. However, the Ministry of New and Renewable Energy has been providing Central Financial Assistance to State Governments and the private sector to set up small / mini hydro projects. The Ministry is also organizing technical support towards survey and investigation, preparation of Detailed Project Reports (DPRs), project monitoring and training through the Alternate Hydro Energy Center (AHEC), IIT Roorkee.

1.3. According to the Ministry, the SHP programme in India now is largely private investment driven. Generally, SHP projects are economically viable and the private sector has been showing interest to set up SHP projects. The viability of these projects is normally directly proportional to the capacity of the project. Most of the States with reasonably high SHP potential have been interested in allotting the projects to the private sector for implementation and operation.

1.4 It has been reported that the total installed capacity of small hydro projects, at the end of the 11th Plan, was 3395 MW. This was achieved by adding an aggregate capacity of 1419 MW during 2007-2012. There has been a decline in the capacity addition from small hydro in the last two years. The cost of project has gone up and tariff given to the power generated from SHP projects is no more attractive and not supporting investments. The low rate of average pool power purchase rate in hydro rich States and non-sale of Renewable Energy Certificates in the open market are some of the other reasons for the declining interest in the SHP sector. For the year 2014-15, the target was 250 MW. During the year, SHP projects aggregating to a capacity of 187.15 MW (up to 31.12.2014) have been commissioned, both in the commercial and State Sector. In cumulative terms, 1019 small hydropower projects aggregating to 3990.90 MW have been set up in various parts of the country. In addition, 233 projects of about 747.66 MW are in various stages of implementation.

1.5 In order to revive the interest of the States and the private sector, the Ministry has revised its incentive scheme during the current year. The Ministry is providing financial assistance in the form of grants /subsidy under the following schemes / activities:

- i) Resource assessment and support for identification of new sites:
- ii) Scheme to support for setting up new SHP projects in the private/ co-operative/ joint sector, etc.
- iii) Scheme to support for setting up new SHP projects in the Government Sector.
- iv) Scheme to support for Renovation and Modernization of existing SHP projects
- v) Scheme to support for development/Upgradation of Water Mills (mechanical/ electrical output) and setting up Micro Hydel Projects (up to 100KW capacity).
- vi) Research & Development and Human Resource Development.

1.6 It has also been stated that small hydel projects normally do not encounter the problems associated with large hydel projects like deforestation and resettlement. The projects have potential to meet the power requirements of remote and isolated areas.

These factors make small hydel as one of the most attractive renewable sources of grid quality power generation. 23 States of the country have policies in place towards private sector participation to set up SHP projects.

1.7. The Ministry has been taking a series of steps to promote development of SHP and to improve reliability and quality of the projects. By giving various physical and financial incentives, investments have been attracted in commercial SHP projects apart from subsidizing State Governments to set up small hydro projects. The Ministry is giving special emphasis to promote use of new and efficient designs of water mills for mechanical as well as electricity generation and setting up of micro hydel projects up to 100 KW for remote village electrification. These projects are taken up with the involvement of local organizations such as the Water Mills Associations, cooperative societies, registered NGOs, village energy cooperatives, and State Nodal Agencies.

1.8. The Ministry has also reported that so far, 1047 small hydropower projects aggregating to 4146 MW have been set up in various parts of the country and 206 projects of about 591 MW are in various stages of implementation. At present, a capacity addition of about 250 MW per year is being achieved from SHP projects of which more than 70% is coming through the private sector. In order to accelerate the pace of small hydro development, both public and private sector participation for commercial projects and decentralized micro hydel for remote village electrification are being encouraged.

II. Small/Mini-Hydel Potential

2.1 According to the Ministry, the estimated potential for power generation in the country from small / mini hydel projects is 19749 MW from 6474 identified sites. Out of this, about 50% lies in the States of Himachal Pradesh, Uttarakhand, Jammu & Kashmir and Arunachal Pradesh. The plain regions of Maharashtra, Chhattisgarh, Karnataka and Kerala also have sizeable potential. It has been stated that focused attention is being given towards these States through close interaction, monitoring of projects and reviewing policy environment to attract private sector investments.

2.2 The details of the State-wise number and aggregate capacity of SHP Projects (upto 25 MW), potential, installed and under implementation as on 31st August, 2015 as furnished by the Ministry are as under:

Sl. No.	State	Potential		Projects Installed		Projects under Implementation	
		Nos.	Total Capacity (MW)	Nos.	Capacity (MW)	Nos.	Capacity (MW)
1	Andhra Pradesh & Telengana	387	978.4	70	232.23	11	20.84
2	Arunachal Pradesh	677	1341.38	152	104.605	41	21.53
3	Assam	119	238.69	6	34.11	3	12
4	Bihar	93	223.05	29	70.7	5	17.7
5	Chhattisgarh	200	1107.15	9	52	5	115.25
6	Goa	6	6.5	1	0.05	0	0
7	Gujarat	292	201.97	6	16.6	0	0
8	Haryana	33	110.05	9	73.5	0	0
9	Himachal Pradesh	531	2397.91	176	754.81	15	0.3
10	J&K	245	1430.67	39	156.53	5	8.65
11	Jharkhand	103	208.95	6	4.05	8	34.85
12	Karnataka	834	4141.12	161	1177.93	9	26.8
13	Kerala	245	704.1	27	168.92	8	39.25
14	Madhya Pradesh	299	820.44	11	86.16	3	4.9
15	Maharashtra	274	794.33	60	336.875	7	34.25

16	Manipur	114	109.13	8	5.45	3	2.75
17	Meghalaya	97	230.05	4	31.03	3	1.7
18	Mizoram	72	168.9	18	36.47	1	0.5
19	Nagaland	99	196.98	11	29.67	3	3.2
20	Odisha	222	295.47	10	64.625	4	3.6
21	Punjab	259	441.38	48	157.4	10	18.25
22	Rajasthan	66	57.17	10	23.85	0	0
23	Sikkim	88	266.64	17	52.11	1	0.2
24	Tamil Nadu	197	659.51	21	123.05	0	0
25	Tripura	13	46.86	3	16.01	0	0
26	Uttar Pradesh	251	460.75	9	25.1	1	1.5
27	Uttarakhand	448	1707.87	101	209.32	44	139.54
28	West Bengal	203	396.11	24	98.5	16	84.15
29	A&N Islands	7	7.91	1	5.25	0	0
Total		6474	19749.44	1047	4146.905	206	591.71

2.3 On being asked about the last assessment of small hydro potential in the country, the Ministry, in a note, stated:

“The last assessment of SHP potential in the country was done by AHEC IIT Roorkee under the project “Preparation of Status inventory of SHP station in the Country” assigned to them by the Ministry during 2005. The report along with assessment of 5815 potential sites with aggregate capacity of 16091.3 MW was submitted by them in January, 2012. In later stage, the potential of SHP sites in some of the States were reassessed by States themselves and accordingly revised potential was worked out to 19749.44 with 6474 sites”.

2.4 When asked as to whether the Ministry has any plan to evaluate/assess the SHP Potential afresh in the country, the Ministry stated:

"The identification of new potential sites is an ongoing process and with a view to induct efficient and new technologies, the Ministry is planning to reassess/evaluate the hydro potential in the country to harness the hydro potential on low head and ultra-low head sites including existing SHP Projects. During the review meeting held with the State Government Nodal Department/ Agencies and SHP developers held on 31st August 2015, the state government were requested to make the plan for re-assessment of SHP potential in their respective state. Further, Ministry is also in the process of review and re-assessment of SHP potential in the country through competent and reputed organization".

2.5 Against a potential of 19749 MW of power generation from SHP, the Ministry has proposed exploitation of only 4700 MW till the end of the 12th Plan. When asked about the reasons for setting such low targets and the steps initiated to tap this potential at a faster pace, the Ministry, in a note, stated:

"The decision of implementing hydro projects rests with State Governments. Both large hydro and small hydro projects have their own advantages. In order to encourage small hydro power projects, the Government is giving financial support to the State Government to set up projects and also for identification of new potential sites including survey and preparation of DPRs.

Small hydro projects are difficult to construct as they are normally located in remote and hilly areas. The gestation period is relatively long and the projects usually take 4 to 5 years in completion. Water being State subject, the projects are allotted by the States and all clearances are given by them. Some time the allotment, physical possession of land, forest clearance etc. takes 2 to 3 years. The Ministry has a very limited catalytic role in the exploitation of this potential. It facilitates by way of guiding the States, providing subsidy to the projects to improve their economic viability and create technical support services. However, the Ministry stepped up substantially its efforts towards close monitoring of the projects, interaction with potential States and private developers. A series of meetings and visits were held at the level of the Minister and Secretary, MNRE with the States to monitor the ongoing projects and take up new potential sites.

2.6 On a query regarding exploitation of small hydro power, the Secretary, MNRE, during the evidence, deposed before the Committee:

"The latest roadmap which the Cabinet has also cleared, is that we have to have 175,000 MW of renewable energy by 2022. The break-up is like this. For hydro, it is 5,000 MW; for biomass, it is 10,000 MW; for solar, it is 100,000 MW; and for wind, it is 60,000 MW".

III. Performance during the 11th and 12th Plan.

3.1 The Ministry of New and Renewable Energy has reported that against a target of capacity addition from SHP projects of 1300 MW (revised target 1400 MW) during the 11th Plan period, projects with an aggregate capacity of 1419 MW were installed. The total installed capacity of small hydro projects (up to 25 MW) at the end of 11th Plan was 3395 MW.

3.2 When asked about the year-wise physical achievements vis-à-vis target under SHP during the 11th Five Year Plan, the Ministry furnished :

Table No. 3.2 Physical achievements vis-à-vis target of 11th Five Year Plan

Period	Physical (MW)	
	Target	Achievement
2007-08	200	205
2008-09	250	249
2009-10	300	305
2010-11	300	307
2011-12	350	353
Total	1400	1419

3.3 On a query regarding year-wise financial performance vis-à-vis allocation under SHP during the 11th Five Year Plan, the Ministry furnished:

Table No. 3.3 Financial performance vis-à-vis allocation of 11th Five Year Plan

Period	Financial(Rs. In crore)	
	Allocation	Expenditure
2007-08	50.00	49.95
2008-09	82.50	82.49
2009-10	107.00	106.94
2010-11	152.00	151.99
2011-12	155.10	154.71
Total	543.60	546.08

3.4 On being asked about the budgetary allocation made for the 12th Plan under the SHP Programme, the Ministry stated that they have proposed a total outlay as Rs.824.00 crore. The proposed budget allocation and actual budget allotted (year-wise) as furnished by the Ministry are as under:

Table No.3.4 Proposed and actual allocation of 12th Five Year Plan

(Rs. In crore)

Year	Budget demanded	Budget Allocated in Annual Plan	Expenditure
2012-13	159.00	159.00	159.00
2013-14	152.00	123.18	123.18
2014-15	152.00	108.00	108.00
2015-16	176.00	107.00	85.84 (as on 31.12.2015)
2016-17	185.00	-	-

3.5 When asked about the physical targets and the achievements of the 12th Plan, the Ministry furnished:

Table No. 3.5 Physical targets and the achievements of the 12th Plan

Sl.No.	Year	Physical target (MW)	Achievement (MW)
1	2012-13	250	237.00
2	2013-14	300	171.40
3	2014-15	250	251.60
4	2015-16	250	121.55 (Up to December,2015)
5	2016-17	250	NA

3.6 When the Committee asked as to whether the Ministry are in a position to achieve the remaining capacity by the end of the 12th Plan period, the Ministry, in a note, stated:

"All efforts are being made by the Ministry to achieve the target of 1,300 MW in full by the end of 12th Plan. However, due to delay in announcement of SHP scheme in the beginning of 12th plan, the pace of implementation of SHP projects was slow, therefore, only 408.47 MW was installed during the 1st two years of the 12th Five Year Plan against the target of 500 MW i.e. during 2012-13 and 2013-14. The SHP scheme for the continuation of SHP programme was announced in July 2014 and the target was achieved in full during 2014-15.

To achieve the target in full, regular consultative/review meetings are being held with the State Nodal Depts. & Developers. The Ministry is also trying to get resolved the issues responsible for retarding the pace of implementation of SHP Projects. This Ministry is also in touch with Ministry of Environment, Forests and Climate Change for solving the issue related to forest clearances for SHP

Projects and also with State Governments to ease the process of obtaining statutory clearances.

The growth in the SHP sector is relatively slow. The main reason for the slow progress can be attributed to the difficult locations where SHP projects are normally set up, short working season in hilly areas and involvement of private and forest land in setting up of SHP projects. The risks due to natural calamities in setting up SHP projects are high and sometimes the developers face resistance from local residents. This apart, time taken in allotment of sites and obtaining statutory clearances in the States, adds up to the over all time in construction of SHP projects. The main constraints in setting up SHP projects are:

- The SHP projects are governed by the State policies and the potential sites are allotted by the State Governments to private developers.
- Time consuming process for allotment of sites by the States and statutory clearances including land acquisition, forest clearance, irrigation clearance etc.
- Relatively longer gestation period in completing the projects due to difficult terrain and limited working season.
- Inadequate evacuation facilities for power generated from projects.
- Increase in project cost due to inflation in the prices of steel and cement".

3.7 When asked to provide detailed action plan of the Ministry to achieve the remaining targets set for the 12th Plan, the Ministry, in a note, stated:

"To achieve the target in full during the remaining period of 12th Plan, the Ministry is in close interaction with the State Nodal Departments/Agencies and in a consultative meeting held on 31st August, 2015, wherein the State Governments opted to achieve the following targets voluntarily. State-wise details are given below:

S.No.	Name of State	Target allocated (MW)
1	Arunachal Pradesh	500
2	Himachal Pradesh	750
3	Jammu & Kashmir	500
4	Karnatka	250
5	Maharashtra	200
6	Odisha	100
7	Punjab	100
8	Uttarakhand	500
	Total	2900

3.8 On being asked as to how the Ministry envisaged to utilize the remaining amount of budgetary allocation during the remaining period of the 12th Plan, the Ministry stated:

"A total of Rs. 497.18 crore has been allocated to SHP against the Rs.824.00 crore demanded by the Ministry for SHP programme up to the year 2015-16. In the past Ministry has utilized the full allocated amount under SHP programme. The Ministry is in a position to utilize the allocated amount in full during 2016-17 also for installation of SHP projects and liquidizing the past liabilities accumulated based on the completed SHP projects".

IV. Micro Hydel Projects and Water Mills

4.1 The Water mills (WM) and Micro Hydel Projects (MHP) have the potential to meet the power requirements of remote and hilly areas in a decentralized manner.

4.2 According to the Ministry, there is significant potential for development and upgradation of water mills and micro hydro projects (up to 100 kW) in the country. Water mills and micro hydro projects can result in to micro entrepreneurship development and meet energy requirements in remote hilly areas. They have also proposed to spread and enlarge micro hydro, water mill and individual projects. In remote hilly and forest fringed area, the fuel wood may be replaced with cheap electricity from mini/micro hydropower projects owned by individuals/community for which a large human resource otherwise is wasted and women are exposed to hazards. The micro hydro / water mill activity would also be linked to economic activities.

4.3 The Ministry has also stated that there are a large number of water mills in the hilly areas of the country. These traditional water mills are operating at a very low efficiency of around 15 to 20 per cent. Under the water mill programme of the Ministry, new designs of water mills have been developed which are 2 to 3 times more efficient than the traditional water mills. About 2460 upgraded water mills [mechanical and electrical output (up to 5 kW)] have been installed in the States of Kerala, Karnataka, J&K, Tamil Nadu, Nagaland and Uttarakhand. This is basically a scheme which is directly benefiting the local people living in the difficult remote and hilly areas of Himalayan & sub-Himalayan regions of the country. Beside this, about 200 micro hydel projects are also installed by the State Nodal Departments / Agencies mainly in the States of Arunachal Pradesh and Uttarakhand.

4.4 To encourage and accelerate the development of water mills and Micro Hydel Projects in the remote & hilly areas, the Ministry of New and Renewable Energy is providing Central Financial Assistance (CFA) as per details given below:

(i) Micro Hydel Projects up to 100 kW Capacity:

S. No.	Areas	Amount of CFA
1	All States	Rs. 1,25,000/- per KW

(ii) Water mills:

S. No.	Category of Water mill	Amount of CFA
1.	Mechanical output only	Rs. 50,000/- per Water mill
2.	Electrical output (up to 5 kW) or, Both mechanical and electrical output (up to 5 kW)	Rs. 1,50,000/- per Water mill

4.5 When asked to provide the State-wise installation of water mills in the country, the Ministry furnished:

Table No. 4.5 State-wise installation of water mills

Name of State	Systems in number
	Water mill/ Pico hydro
J&K	50
Karnataka	865
Kerala	30
Nagaland	30
Tamil Nadu	60
Uttarakhand	1411
Total	2446*

* About 1,900 for electrical output.

4.6 On being asked as to how the water mills are useful in catering to the need of electricity in remote areas, the Ministry stated:

"The Water Mills (WM) and Micro Hydel Projects (MHP) have the potential to meet the power requirements of remote & hilly areas in a decentralized manner. There is significant potential for development and upgradation of water mills and micro hydro projects (up to 100 kW) in the country. These traditional Water mills are operating at a very low efficiency of around 15 to 20 per cent. Under the Water mill programme of the Ministry, new designs of water mills have been developed which are 2 to 3 times more efficient than the traditional Water mills. About 1500 up graded water mills [mechanical and electrical output (up to 5 kW)] have been installed in the States of Kerala, Karnataka, J&K, Tamil Nadu, Nagaland and Uttarakhand. This is basically a scheme which is directly benefiting the local people living in the difficult remote and hilly areas of Himalayan & sub-Himalayan region of the country Water mills and micro hydro projects can result in to micro entrepreneurship development

and meet energy requirements in remote hilly areas. In remote hilly and forest fringe area, the fuel wood may be replaced with cheap electricity from mini/micro hydropower projects owned by individuals/community for which a large human resources otherwise is wasted and women are exposed to hazardous situations/conditions. The micro hydro / water mill activity would also be linked to economic activities.

About 1,900 water mills/ Pico hydro working in the country and providing electricity for small communities and also for individual households. Beside, this water mills are also supporting the livelihood activities in the villages.

4.7 The Ministry have further stated that besides lighting, water mills are also providing income generating opportunity to the villagers as it is used for grinding, wool carding, oil expeller as well as for small cottage industries.

V. SHP incentive schemes

5.1 The MNRE has been providing financial support / subsidy for the following activities to develop the SHP sector:

- Research & Development, Capacity building
- Resource Assessment, Detailed Survey & Investigation, DPR preparation and perspective plan for States
- Capital Subsidy to State Sector Projects
- Subsidy for Commercial Projects
- Renovation & Modernization of old SHP projects (State Sector)
- Water Mills / Micro hydel projects

5.2 Details of the subsidies provided by MNRE for SHP projects:

(i) Support for Survey, Investigation and Preparation of DPRs for identification of new potential sites

- Rs. 6.00 lakh for project upto 1.00 MW capacity and
- Rs. 10.00 lakh for project with more than 1.00 MW & upto 25 MW capacity to the Govt. dept./agencies

(ii) Support to new SHP projects in State sector:

Category	Above 100 KW and up to 1000 KW	Above 1 MW – 25 MW
Special category and NE States	Rs.75,000 / KW	Rs.7.50 crore/ MW limited to Rs. 20.00 crore per project.
Other States	Rs.35,000 / KW	Rs.3.50 crore/MW limited to Rs. 20.00 crore per project.

- Minimum of 10% contribution of the project cost from the implementing organization.
- The subsidy would be released in four installments based on progress in the project.

(iii) Support to new SHP project in private / co-operative / joint sector :

Category	Above 0.1 MW – 25 MW
Special category and NE States	Rs.1.5 crore/MW limited to Rs. 5.00 crore per project.
Other States	Rs.1.0 crore/MW limited to Rs. 5.00 crore per project.

- Minimum of 50% contribution of the project cost from the project developer/ owner of the project.
- The subsidy would be released in two installments. 50% subsidy will be released to the financial institution, during execution of the project (after placement of order for electro-mechanical equipment and 50% loan disbursement) and balance after performance testing.

(iv) Scheme to support Renovation & Modernization of old SHP projects in public sector:

Category	Up to 1000 KW	Above 1 MW – 25 MW
All States & UTs	Rs. 10,000 / KW	Rs. 1.00 crore/MW limited to Rs.10.00 Crore per project.

- Minimum of 50% contribution of the project cost from the State sector project implementing organization of the works.
- The subsidy would be released in 4 installments based on progress in the project.

5.3 Details of the financial support/subsidy provided by the Ministry for development of SHP (project-wise) during the last five years is given in *Annexure-I*.

VI. Project on Electrification / illumination of all Villages along the State border of Arunachal Pradesh

6.1 The Prime Minister, during his visit to Arunachal Pradesh on 31st January – 1st February 2008, had announced a package of Rs.550 crore to provide electricity / illumination through solar power as well as small hydro power projects to all the villages along the State border. The project was in two Parts. Part-II is being implemented by MNRE as a project for electrification / illumination of 1058 villages from small / micro hydel projects and solar photovoltaic systems with a total cost of Rs.275.58 crore. After approval of CCEA, the implementation of the projects started from 1st December, 2008. So far, 976 villages have been electrified / illuminated, including 523 villages by Solar PV home lighting systems.

6.2 When asked about the overall physical target and the achievements made thereon, under the project “Electrification / illumination of all villages along the State border of Arunachal Pradesh”, the Ministry stated:

"The project on Electrification / illumination of all villages along the State border of Arunachal Pradesh has been approved by CCEA for implementation at a total cost of Rs.275.58 crore in its meeting held on 20th November 2008. As the part of the project, Micro Hydel and Small Hydel projects are proposed to be setup for Electrification / illumination of all villages along the State border of Arunachal Pradesh. The Department of Hydro Power Development, government of Arunachal (DHPD) and Arunachal Pradesh Energy Development Agency (APEDA), Itanagar are implementing these projects. The achievement vis-à-vis target envisaged under the “Electrification / illumination of all villages along the State Border of Arunachal Pradesh under PM’s Special Package” is given below:

Technology	Physical	
	Target	Achievement
SHP/MHP	153 nos. (512 villages)	141 nos. (453 villages)
SPV HLS	546 villages	523 villages
Total	1058	976

6.3 On being queried about the time frame to complete the remaining unelectrified villages under this project, the Ministry, in a note, stated:

"The Projects was started from 1st December, 2008 with the project duration of three years, and same was extended upto 31st March 2015 with the approval of

the steering committee of the project. Delay in completion of some of the MHP/SHP projects is due to cost overrun due to remote location of the projects and difficult terrain (additional estimated requirement is Rs.25.38 crore). Now State Government of Arunachal Pradesh has requested for additional fund to complete the balance MHP/SHP projects. As "No" additional funds were provided to the Ministry for this purpose and funds for this project were utilized from the budget provision available under Small Hydro Programme. The balance MHP /SHP projects will be completed only after availability of additional fund to the State Government for this purpose.

The balance MHP/SHP projects needed to electrify the balance villages can be taken up by the State Government only after availability of additional fund to the state Government for this purpose under the package".

6.4 On being asked about the status of fund utilisation on the budgetary allocation of Rs.275.58 crore under Part-II of the project, the Ministry stated:

"Under the Project on "Electrification / illumination of all Villages along the State border of Arunachal Pradesh" a Budgetary Allocation of Rs. 275.58 crore was made for Part-'II' of the project. The Ministry has so far released Rs.255.99 crore within the budgetary allocation for SHP programme to the project and the total released amount has been utilized by the State of Arunachal Pradesh".

6.5 When the Committee desired to know the amount of fund allocation dedicated to and utilised for Small Hydro Projects, the Ministry stated:

"Under Part – II of the Project on "Electrification / illumination of all Villages along the State border of Arunachal Pradesh" total amount of Rs.275.58 crore was earmarked, out of which Rs. 240.00 has been sanctioned for implementation of MHP/SHP project (453 nos.) The total released amount has been utilised in full by the State Government for installation of the MHP/SHP projects.

6.6 On being asked as to whether the budgetary support extended would be adequate to achieve the target of the project of border villages illumination, the Ministry stated:

"The Cabinet Approval for part-II of the project was Rs.275.58 crore as per the estimate done during 2008-09. However, due to less working season, difficult locations of the projects, lack of all-weather roads and availability of regular flow of fund, the projects got delayed and resulted in escalation in installation cost for the MHP/SHP projects. The State Government has requested an additional amount of Rs.25.38 crore to complete/commission the remaining projects.

6.7 When asked as to how the Ministry plan to finance the project in order to achieve the target, the Ministry stated:

"The Ministry may consider the proposal of State Government for providing additional fund over and above sanctioned outlay after examining the proposal on project to project basis and also on availability of fund under the SHP Programme. However, State Government has been already requested to explore the possibility of arranging funds from other sources like Department of Border Area Development, Ministry of Home Affairs, North Eastern Council or from DoNER, etc.

6.8 The main hurdles faced by the implementing agencies under this project as stated by the Ministry are:

- i. Less working season due to prolonged monsoon and winter seasons.
- ii. Difficult locations of the projects.
- iii. Lack of proper transport infrastructure.
- iv. Lack of locally available skilled manpower.

VII. Ladakh Renewable Energy Initiative

7.1 The 'Ladakh Renewable Energy Initiative' project was approved by the Cabinet Committee on Infrastructure (CCI) on 23 April, 2010 with a total cost of Rs.473 crore. The Ministry stated that the project was originally approved to be implemented in three and a half years and its implementation had started from 1 June, 2010. The Project duration has been extended up to 31 December, 2017 in the fourth Steering Committee Meeting within the sanctioned outlay. The project envisages setting up of Small Hydro Power (SHP) Projects, Solar Photovoltaic (SPV) and Solar Thermal systems. The budget provisions as furnished by the Ministry are as under:

S.No.	Activity	Amount (Rs.in crore)		
		LREDA	KREDA	Total
i	Small Hydro Project	127.00	140.00	267.00
ii	SPV component	80.00	60.00	140.00
iii	ST component	32.00	20.00	52.00
iv	Capacity Building, training consultancy etc.	7.00	7.00	14.00
	Total	246.00	227.00	473.00

7.2 When asked about the physical targets and the achievements made thereon under the Ladakh Renewable Energy Initiative, the Ministry stated: .

"Due to site constraints no project has been commissioned till now. The project duration has been extended till Dec,2017.

Ladakh - SHP Projects implemented by Ladakh Renewable Energy Development Agency (LREDA).

S No.	Project Name	Capacity (kW)
1	Tsati MHP	500
2	Chamshen MHP	450
3	Henache MHP	600

4	Bogdang MHP	800
5	Chalungkha MHP	800
6	Turtuk-I MHP	500
7	Shayok MHP	600
8	Durbuk II MHP	350
9	Waris III MHP	1200
10	Sumda-Dho MHP	300
11	Rongdo MHP	3000
	TOTAL	9100

Kargil - SHP Projects implemented by Kargil Renewable Energy Development Agency(KREDA).

S. No.	Name of SHP Project	Potential (KW)
1	Chilong	1000
2	Khandi	1500
3	Sangrah	1500
4	Umblung	1000
5	TambisKanoor	200
6	Thasgam-Sakoo	500
7	Zungkul	2500
8	Raru	2000
9	Matayeen	1000
10	Bearas	1500
11	Tasgam-Drass	500
Total		13200

7.3 On being queried about the reason for extension of the project duration, the Ministry stated:

"Due to limited working seasons & remoteness and cut off of the region lead to slow progress on Small Hydro Power projects. Project duration has been extended up to 31st Dec. 2017".

7.4 The details of funds released in Ladakh Renewable Energy Initiative for SHP projects as furnished by the Ministry is as follows:

Name of Agency	Capacity Building (Rs. in Crore)	SHP (Rs. in Crore)
LREDA	5.99606	40.80
KREDA	6.00	38.699
Total	11.99606	79.499

7.5 On a query as to whether the fund allocation of Rs.473 crore would be sufficient to achieve the targets under the project, the Ministry stated that fund allocation of Rs.473 crore would be sufficient to achieve the targets under the Ladakh Renewable Energy Initiative Project.

VIII. National Mission on Small Hydro

8.1 The Ministry has set up a group to prepare a National Small Hydro Mission. The objective of the Mission is to address issues responsible for decline of SHP sector in the country and to regenerate interest among government, community and private sector to develop and make investment in this renewable energy sector. Technological innovation, new methods of civil construction, standard designs and automation can be helpful in arresting the increase in cost of projects. The Mission would target to achieve 500 MW of capacity in the next two years and aim towards adding 4500 MW in the subsequent three years, for which preparation, including appropriate policy interventions, will be done in the first two years of the Mission. An investment of Rs. 50,000 crore is expected to be infused primarily in the rural economy and about Rs.5,000 crore may be required as support from the Govt. of India. There are a number of irrigation canal drops (specially below 3 m) and dams in the country that can open new avenues for developing small hydro projects.

8.2 The Mission would aim at technology development and set up 1000 MW SHP projects on canal drops, dam outlets, spillways and water outfall structures. The Mission would also help the State Governments to modernise working old SHP projects with a view to improve their capacity and efficiency. Identification of new potential sites will form an integrated part of the Mission. The Mission would develop a programme of micro/mini hydro and water mills to provide off-grid power supply linked to economic activities with livelihood, agro/cottage/small industries, education, health and clean drinking water, etc. SHP projects in remote areas, specially hilly and forest fringed areas, will have opportunity of using cheap electricity as substitute to fuelwood for which a sizeable human resources is spent and also cause high level of CO₂ emission including harmful gases to human health. The feasibility of local grid would also have to be worked out.

8.3. The objectives and targets of the National Mission on Small Hydro as stated by the Ministry:

"The objective of the National Mission on Small Hydro is to address issues responsible for decline of SHP sector in the country and to regenerate interest of

private sector to make investment in this renewable energy sector. Technological innovation, new methods of civil construction, standard designs and automation can be helpful in arresting the increase in cost of projects. The Mission would target to achieve 500 MW of capacity in next two years and aim towards adding 4500 MW in the subsequent three years, for which preparation including appropriate policy interventions will be done in the first two years of the mission. There are number of canal drops in the country and can open new avenues for developing small hydro projects. The Mission would aim at technology development and set up 1000 MW SHP projects on canal drops, dam outlets and water outfall structures. The Mission would also help the State Governments to renovate old SHP projects and improve their capacity and efficiency. Identifying new potential sites would be taken up. The Mission would develop a programme of micro hydro and water mill for hilly regions of the country to provide off-grid power supply linked to economic activities in remote and rural areas".

8.4 To achieve the objectives, the Mission aims to:

- Create an enabling policy framework along with the State Governments for the development of 5,000 MW of small hydro projects by 2022 and a platform for long term sustainable growth in small hydro sector.
- Encourage and enable all the States to participate in the National Mission of Small Hydro for setting up new SHP projects, provide conducive policy and institutional support for SHP projects by private sector.
- Evaluation of all existing Government sector small hydro projects with a view to Renovate, Modernize and uprate (RMU) them, if required, to improve efficiency and add capacity where ever possible.
- Develop new technologies and engineering solutions to set up low and ultra low head (below 3m) small hydro projects on canals, dam outlets and water outfall structures. Projects of 1000 MW on canals and existing water structures by 2022.
- Develop a network of water mills, individual household systems and micro hydro projects in remote and rural areas and set up 5000 water mills/micro hydro projects and establishing local mini grids.
- Undertake systematic study to identify new small hydro potential sites.

8.5 When asked about the physical targets and budgetary allocation of the National Mission on Small Hydro, the Ministry stated:

"The proposed national mission on Small Hydro is under consultative stage. Under the mission it is proposed to install 5000 MW aggregate installed capacity against the estimated potential of 19749.44MW by the end of year 2022.

No budgetary allocation has been envisaged under the Mission.

8.6 On being enquired as to whether the Ministry has chalked out any time bound Action Plan to achieve the objectives set out in the Mission, the Ministry stated:

"Under the National Mission on Small Hydro, no year-wise/phase-wise physical targets have been fixed so far. However, it is envisaged that the total installed SHP capacity will be enhanced to 5000 MW by 2022".

IX. Policy for SHP development & Private Sector SHP projects

9.1 The Ministry has stated that small hydro power projects have reached commercial stage. The projects are normally economically viable and private sector has started showing interest in investing in the SHP project. The viability of these projects improves with increase in size of the project.

9.2 Since 1993-94, the thrust of the Ministry's SHP programme has been developed of SHP projects through private sector investments. Now a large part of capacity addition is being achieved through private investment. State Nodal Agencies provide assistance for obtaining necessary clearances, in allotment of land and potential sites. As per the Electricity Act, 2003, the State Electricity Regulatory Commissions (SERCs) have been empowered to decide on various components of the policy such as tariff, wheeling, banking and third party sale for grid interactive renewable energy based power projects, in their respective States.

9.3 Regarding policy, the Ministry has stated that the policy for Small Hydro Power (SHP) and private sector participation therein, is governed by the Electricity Act, 2003, the National Electricity Policy, 2005 and Tariff Policy 2006 announced by the Government of India. Power is a concurrent subject. 23 State Governments have so far announced policy for private sector participation for the development of SHP projects. The State Electricity Regulatory Commissions (SERCs) have been deciding tariff in their respective States. These States are: Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, J&K, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal.

9.4 Regarding tariff on small hydro projects, it has been stated that CERC has issued guidelines to determine tariff for all renewable energy technologies, including small hydro projects.

9.5 When asked about the SHP projects set up through private sector, the Ministry stated that out of the 6474 SHP projects in the country, 395 SHP projects with total

capacity of 2227.60 MW have been set up through private sector participation. State-wise details of private sector projects as furnished by the Ministry are:

Table No.9.5 SHP projects set up through Private sector

Sl. No.	State	Total Number	Total capacity (MW)
1	Andhra Pradesh	47	133.73
2	Assam	2	4.1
3	Chattisgarh	5	40.95
4	Gujarat	3	8.6
5	Himachal Pradesh	108	509.2
6	Haryana	5	12.2
7	Jammu & Kashmir	5	50
8	Karnataka	119	992.4
9	Kerala	7	45
10	Madhya Pradesh	1	2.2
11	Maharashtra	32	128.75
12	Odisha	5	58.325
13	Punjab	25	29.6
14	Tamil Nadu	1	0.35
15	Uttarakhand	16	146.45
16	West Bengal	6	6.55
	Total	395	2227.60

9.6 On being queried as to whether any State policy stands in the way for development of SHP projects, the Ministry stated:

"24 States have announced their policy for SHP development. However, some of the States have restrictions/levies like Entry Tax on SHP equipment, sale of power outside the State, water royalty even for non-consumptive use of Water, etc. which may be seen as hurdle by the private developers in taking up SHP Projects".

9.7 On a query about the obstacles faced by private sector participants with regard to development of SHP Projects, the Ministry stated:

"The Ministry is constantly interacting with the Private Developers and they have pointed out the following main obstacles faced by the private sector:

- Delay in land acquisition
- Obtaining/ arranging statutory clearances
- Delay in forest clearances from State Government

- Low tariff
- Power transmission line corridor
- Low sale of RECs,
- Compensations liability
- PPA tenure

9.8 During the evidence, when the Committee desired to know how the Ministry are monitoring and tackling the problems in the hydro sector, the Secretary, MNRE, stated:

"Recently, I took two meetings of all the hydro producers of various States. My Ministry also took a meeting and we are trying to find out who are the people who have problems, bring the bankers at the national level. So far, we have gone to eight States. Each month, we go to a State where people from hydro energy along with other renewable energy are called, the bankers are called. The State Governments are also called there. If there is any problem, we try to sort it out there.

Secondly, when our Minister took the meeting, the association they have made a list of problems including the problem with Environment Ministry. All those issues we will take up at our level. If any technical assessment or technical knowhow is required, our scientists will help. Each State has a nodal officer. They do help them. But we do not monitor individual projects. It is a good idea to have a census as to how many of them are not working, when they are not working and what can be done. That we will definitely do".

9.9 On being asked as to whether setting up of small hydro projects has any impact on environment, the Ministry stated:

"Like any activity, setting up of small hydro projects also has impacts on environment though their quantum may be small or more depending on the site specific location. It is seen that the impacts of SHP on environment are marginal and hence SHPs are excluded from ambit of environmental clearance as per EIA notification, 2006".

9.10 When the Committee desired to know as to whether reputed PSUs in hydro sector viz. NHPC are allowed to venture in Small Hydro Power, the Ministry stated:

"Ministry encourages participation of reputed PSUs to venture in small hydro power and the Ministry would welcome venturing of reputed PSUs in Small Hydro sector".

X. Alternate Hydro Energy Centre

10.1 The Alternate Hydro Energy Centre (AHEC) at the Indian Institute of Technology, Roorkee, was established in the year 1982 with initial sponsorship of the Ministry of New and Renewable Energy. AHEC has been providing professional support in the field of Small Hydropower Development covering planning, Detailed Project Reports, Detailed Engineering Designs and Construction drawings, Technical Specifications of Turn Key execution/equipment Supply, Renovation and Modernization of SHP Stations, and Techno-Economic Appraisal. Technical support to over 25 different State and Central Government organizations for SHP development has been provided. Independent Power Producers and financial institutions are utilizing its expertise support for their SHP development. Data Bank for small hydro projects is the unique facility created at AHEC which has also developed two new designs of water mills for grains grinding and for mechanical/electricity generation purpose for the hilly regions of the country.

10.2 AHEC has been imparting training to field engineers and technologists through short-term training courses. AHEC offers a four semester Master of Technology (M.Tech.) programme in "Alternate Hydro Energy Systems". A real time digital simulator for small hydropower plants has been established with the support from the Ministry for providing efficient initial and advanced training to operators and engineering staff of different types of small hydroelectric plants. Standards, manuals and guidelines for various aspects of small hydropower development are being prepared by AHEC through consultative process with the sponsorship of MNRE. A project to set up a small hydro hydraulic turbine R&D laboratory at AHEC with an objective of creating international level facilities for testing, design and R&D in the area of hydraulic turbines, hydro mechanical equipment, control and instrumentation of small hydro electric power plants has been sanctioned.

PART II

Observations/Recommendations of the Committee

1. The Committee note that the Government of India's ambitious renewable power mission of 1,75,000 MW (hydro 5,000 MW; biomass 10,000 MW; solar 100,000 MW; wind 60,000 MW) by 2022 need to be balanced by supplementary power projects to balance the generation/supply of power with the solar/renewable power generation. As the renewable/solar power will be available for 8+ hours, the power supply for balancing 8 to 16 hours will have to be done by a power technology like hydro power projects. The thermal power and the nuclear power are required to be run round the clock. Hydro power can be stopped/closed when solar power is available. The balance to solar power can be generated with the help of hydro projects; small hydro/mini hydro power projects. On the background of the above, the Committee feel that there is a need to give greater importance/priority to mini/small hydro power projects. The Committee observe that mini hydro power projects momentum got lost in the so called mini hydro power projects scam/non-transparency which got attracted in major regions like Arunachal Pradesh, Uttarkhand, Himachal Pradesh and Sikkim. **The Committee recommend that :**

- (i) **Government may appoint a task force/committee to have an action plan along with time bound programme to settle down the issues of mini hydro projects.**
- (ii) **Priority may be given to mini hydro power projects which are being planned to take up on the river/dam back water.**

2. The Bhakra Beas Management Board briefed the Committee that 28 mini hydro power projects may be developed/planned on such river/dam back water, but the projects could not be taken up due to lack of attention/coordination between the State Governments/BBMB/Ministry of MNRE/Power etc. **The committee recommend that:**

- (i) Top priority be given to these projects and the problems/ issues should be sorted out at the earliest.**
- (ii) The past performance on the implementation of mini hydro projects demands attention.**
- (iii) Government of India must take initiative/ coordinate/ motivate and encourage State Governments/ PSUs in this regard as the efficient performance on implementation of mini hydro is very important.**

3. The Committee note that the Ministry of New & Renewable Energy has been entrusted with the responsibility of developing small, micro and mini hydro power upto 25 MW capacity. Water being a subject in the State List gives the States a decisive say in matters of small hydro power projects. As the State Governments do not involve themselves directly in the development of small hydro power projects, the participation of private developers becomes essential for the development of the sector. The involvement of multiple agencies is a kind of barrier for the expeditious development of the available small hydro potential. Within the given situation, a well coordinated mechanism needs to be evolved with the participation of all the stake holders concerned. The Government of India do not set up small hydro power projects as such and they act only as a catalyst by providing Central financial assistance to the State Governments and to private entrepreneurs. In addition, the Ministry may organize

technical support towards survey and investigation, preparation of DPRs, project monitoring and training through the Alternate Hydro Energy Centre. The small hydro power sector is primarily private investment driven and projects are allocated by the State Government for implementation. **The Committee, therefore, recommend that :**

- (i) Steps should be taken to attract more investment in the small hydro power sector from private entrepreneurs and State Governments.**
- (ii) The incentive schemes for the sector should be made more attractive involving single window clearances for such projects. Identification of sites, preparation of DPRs, obtaining of clearances, survey and investigation, etc. should be a pre-requisite before allocation of a small hydro power project to an interested developer.**

4. The Committee note that small hydro power projects usually do not encounter the problems associated with the large hydro power projects like land acquisition, deforestation and re-settlement. These projects have the potential to meet the power requirements of remote and isolated areas. The sector has the added advantage to make the small hydro as an renewable source of grid quality power generation. For this to happen, the policy framework requires to be reoriented and made uniform all across. The reliability and quality of projects is another important factor. For the purpose, state-of-the-art technology may be developed and adopted while setting up the projects. Priority should be given for development of efficient designs of water mills for mechanical as well as electrical generation. The Committee observe that for accelerating the pace of hydro development, public and private sector participation for

commercial projects and decentralized micro hydel in remote villages electrification are essential. **The Committee, therefore, recommend that :**

- (i) Small hydro power projects should have smaller gestation period as they are free from problems like deforestation and resettlement.**
- (ii) To achieve faster pace of small hydro development, public and private sector participation should be encouraged.**
- (iii) To improve reliability and quality of small hydro power projects, their annual energy audit should be made mandatory. This should also include the quality of the machinery of the power project.**

Small/Mini Hydel potential

5. The Committee note that the estimated potential for power generation in the country from small hydro projects (upto 25 MW capacity) is 19749 MW from 6474 identified sites, and as on 31st August, 2015, a cumulative capacity of 4146.905 MW has been set up from 1047 project sites and projects of about 591.71 MW are in various stages of implementation. The Committee find that only 20 per cent of the estimated potential in the country has been exploited so far. A scrutiny of the State-wise data reveals that the performance of the States with maximum potential has been far from satisfactory. Thus, against the identified potential of 1341.38MW in Arunachal Pradesh, only 104.605 MW capacity (7.8 %) has been installed. Likewise, in Chhattisgarh, Himachal Pradesh, Jammu & Kashmir and Uttarakhand, against estimated potential of 1107.15MW, 2397.91MW, 1430.67MW and 1707.87MW, the installed capacity is 52MW (4.69%), 754.81MW (31.4%), 156.53MW (10.94%) and 156.53MW (10.94%), respectively. The Committee have taken note of the cumulative capacity addition target

of 4700 MW from small hydro projects by the end of the 12th Plan. To achieve this target, the Ministry needs to achieve about 500 MW during the year 2016-17. Even if the projected figure of 4700 MW of cumulative capacity of SHP projects is to be achieved by the end of the 12th Plan, the total installed capacity would be only about 23 per cent of the identified potential. The Committee also note the constraints involved in the construction of small hydro projects and the limited role of the Ministry. However, the Ministry is playing the role of catalyst by way of facilitating and guiding the States, providing subsidy to the projects to improve their economic viability and create technical support services. In the light of these, **the Committee observe/recommend that:**

- (i) the development of the small hydro potential in the country has been less than satisfactory, and by the end of the 12th Plan, it will only be 23 percent of the identified SHP potential.**
- (ii) The Ministry should step up its efforts by closely monitoring the projects and their performance.**
- (iii) Interaction with the States who are developing SHPs themselves and private developers should be direct more frequent and result oriented.**
- (iv) Besides monitoring the ongoing projects, new sites having potential should also be identified.**
- (iv) The Ministry should come out with a concrete plan of action to expedite the huge untapped potential at a faster pace and in a time-bound manner.**

11th and 12th Five Year Plan performance

6. The Committee appreciate the overall achievement under the small hydro during the 11th Plan. Against the targeted capacity addition of 1400 MW for the 11th Plan, 1419 MW was achieved, which is more than the targeted capacity. Reportedly, the achievement so far under the 12th Plan is very discouraging, i.e. against a capacity addition target of 1300MW, as on December, 2015, only 781.55 MW could be achieved (forming only 60.11 per cent of the target), leaving a daunting task ahead to achieve about 40 per cent of the total target of the 12th Plan in less than one and a half years. Keeping in view the performance so far during the current Plan period (except 2014-15), the Committee feel that the task ahead is certainly challenging and the Ministry do not have any other option but to tighten their monitoring and coordination mechanism in order to get the desired results from the developers and the State Nodal Agencies. No doubt, a cohesive, well coordinated and dynamic management would be required to achieve the objectives. **The Committee, therefore, recommend that:**

- (i) Reasons for non-achievement of targets during the 12th Plan Period should be ascertained.**
- (ii) Strategy should be redrawn to achieve the outstanding targets in the remaining time frame of the 12th Plan period.**
- (iii) Fiscal and financial targets should correspond with each other.**

7. The Committee note that the planned target of 1,300 MW of the 12th Plan seems unattainable. The delay in announcing the SHP scheme and slow pace of implementation of projects have been attributed as reasons for the same. The

Committee further note that the Ministry is in touch with the Ministry of Environment, Forest and Climate Change for solving issues related to various clearances for SHP Projects and also with the State Governments to ease the process of obtaining statutory clearances. Low progress has also been attributed to difficult locations of the project, slow working sessions in hilly areas and involvement of private and forest land in setting up the projects. The risk of natural calamities, resistance from local residents and delay in allotment of sites have also been cited as reasons for the delay. The Committee note that these reasons are extremely routine in nature and unless they are addressed, no SHP can be set up. Hence, they are not convinced with the reasons attributed for the delay in achieving the targets. The Committee also would like to know about the role of the Ministry of Environment, Forest and Climate change in setting up of SHPs. In the light of the foregoing, **the Committee recommend that :**

- (i) The Ministry should not proffer routine excuses for non-performance;**
- (ii) Budgetary allocation should be adequate to ensure that a project does not stop midway for want of funds;**
- (iii) Process of clearances should be streamlined and made time-bound.**

Micro Hydel Projects and Water Mills

8. The Committee note that there is a significant potential for development and upgradation of water mills and micro hydro projects (up to 100 kW) in the country and that water mills and micro hydro projects lead to micro entrepreneurship development which would further meet the power requirements of remote areas, particularly hilly and

mountain areas, in a decentralized manner. The Committee are informed that new designs of water mills have been developed which are 2 to 3 times more efficient than the traditional in water mills. The Committee do appreciate the steps taken by the Ministry to promote production of scientifically improved designs of the water mills with better efficiency, longer life and diversified uses. **The Committee, therefore, recommend that :**

- (i) The cost of installation of improved designs of water mills and Central Financial Assistance be managed in a realistic manner, keeping in mind the affordability for the end-users.**
- (ii) The production of the improved version of water mills in large scale may also be linked with their maintenance, so that spare parts and technical/mechanical services are easily available at reasonable cost.**

9. The Committee observe that besides lighting, water mills are providing income generating opportunity to the villagers as it is used for grinding, wool carding, as oil expeller and for small cottage industries. The Committee feel that the mechanical and electrical uses of the water mills and their socio-economic value make it a significant tool in enhancement of the economic activities and betterment of the opportunities of livelihood for the people of remote and inaccessible areas where grid connectivity is not feasible. The Committee are informed that to encourage and accelerate the development of water mills and Micro Hydel Projects in the remote and hilly areas, the

Ministry is providing Central Financial Assistance. **The Committee, therefore, recommend that :**

- (i) The promotional programmes and financial assistance for watermills be spread on a large scale and implemented in potential areas by involving local bodies, NGOs, Associations etc.**
- (ii) Appropriate mechanism be developed to ensure that the financial assistance is reaching the intended beneficiary and result achieved on desired lines.**

SHP incentive schemes

10. The Committee note that to develop the SHP sector, the Ministry of New and Renewable Energy have been providing financial support/subsidy for the activities related with Research & Development, capacity building, Resource Assessment, Detailed survey & investigation, DPR preparation and perspective plan for States, capital subsidy to State sector projects, subsidy for commercial projects, Renovation & modernization of old SHP projects (State Sector) and water mills/micro hydel projects. The Committee are aware that the Government is providing financial assistance to States, private entrepreneurs, etc. to boost the sector. The Committee observe that during the year 2014-15, financial support/subsidy provided for development of SHP amounts to Rs.10.5 crore. Considering the huge gap in the potential and the installed capacity, the present level of targets in this regard for achievement is not very encouraging. **The Committee, therefore, recommend that the incentives and**

subsidies extended as financial assistance for development of the hydro sector may be reviewed and all out efforts should be made to encourage entrepreneurs.

Electrification / illumination of all Villages along the State border of Arunachal Pradesh

11. The Committee note that the project for electrification/ illumination of all the villages along the state border of Arunachal Pradesh had been launched in December, 2008 with a financial package of Rs. 550 crore. Part-II of the project is being implemented by MNRE with the physical target for electrification / illumination of 1058 villages from small / micro hydel projects and solar photovoltaic systems with a total cost of Rs.275.58 crore. The Committee find that as on December, 2015, 976 villages have been electrified/ illuminated, including 523 villages by Solar PV home lighting systems. The Committee are informed that to complete the remaining project, an additional fund of Rs. 25.38 crore is required and the project could be taken up by the State Government only after availability of this additional fund. The Committee observe that the project had been initiated way back in December, 2008 with a target to complete it in three years, i.e., by the end of 2011. However, it was extended up to 31 March, 2015 as the targets could not be achieved within the time frame. The extended period has already expired, and there are 82 villages yet to be covered under this project, due to lack of funds, as reported. The Committee note that there is an absolute need for better coordination between the Union Government and the State Government in the implementation of this strategically important programme. Out of the earmarked total amount of Rs.275.58 crore, Rs.240 crore has already been sanctioned for the

implementation of the project and a shortfall of Rs.25 crore is hampering its completion, leaving 82 villages unelectrified. **The Committee, therefore, recommend that :**

- (i) There should be clarity on the issue of physical and financial target. Allocation of a sum of Rs.25 crore has delayed the completion of the project by more than 5 years.**
- (ii) The Ministry should initiate action to mobilize the additional fund requirement and make it available to the State Government, so that the targets for electrification/ illumination of all villages along the State border of Arunachal Pradesh is achieved without any further delay. There should be immediate release of funds for the project from the SHP or other heads of the Ministry.**
- (iii) The physical verification of the electrified villages/ audit of the result achieved under the programme be done and reported to the Committee.**

Ladakh Renewable Energy Initiative

12. The Committee note that the 'Ladakh Renewable Energy Initiative' project was approved on 23 April, 2010 with a projected cost of Rs.473 crore, envisaging setting up of small hydro power projects, solar photovoltaic and solar thermal systems. The project was originally approved for implementation in three and a half years beginning from 1 June, 2010. The Committee are surprised to find that after 5 years, the project has not been commissioned till now due to site constraints, and the Committee are informed that the project duration has been extended till December, 2017. The slow progress has been attributed to limited working seasons, remoteness and cut off of the

region. The Committee feel that these hurdles are a known fact in an area like Ladakh and the initiative had been taken up knowing all the probable hurdles. These problems could be tackled by proper planning, monitoring and concerted efforts. **The Committee, therefore, recommend that the Ministry should review the feasibility and accessibility of the various renewable energy sources, other than small hydro, in the Ladakh area and make all out efforts for their implementation, by evolving a proper coordination mechanism with the State Government.**

National Mission on Small Hydro

13. The Committee note that the objective of the National Mission on Small Hydro is to address issues responsible for the decline of the SHP sector in the country and to regenerate interest among the government, the community and the private sector to develop and make investment in this renewable energy sector. The target of the Mission is to achieve 500 MW of capacity in the next two years and aim towards adding 4500 MW in the subsequent three years. The Committee are informed that an investment of Rs. 50,000 crore is being infused primarily in the rural economy and about Rs.5,000 crore as support from the Government of India. The Mission also aims to set up 1000 MW SHP projects on canal drops, dam outlets, spillways and water outfall structures and to renovate old SHP projects to improve their capacity and efficiency. The Committee appreciate the initiatives of the Ministry, the objective of which is to revamp the small hydro sector. The Committee are, however, concerned to find that under the Mission, no year-wise/phase-wise physical targets have been set; it merely envisages total installation of 5000 MW SHP capacity by 2022. Similarly, there is no budgetary allocation despite the fact that substantial investment will be required to achieve the

targets. The Committee feel that in the absence of year-wise or phase-wise target, achievement cannot be targeted which will consequently affect the overall targets of the Mission. **The Committee, therefore, recommend that :**

- (i) year-wise/phase-wise target may be set under the Mission.**
- (ii) Appropriate policy framework for long term sustainable growth in small hydro sector may be prepared in consultation with the Ministry of Power and the States.**
- (iii) Requisite budgetary allocation be made to ensure the implementation of the project.**

Policy for SHP development & Private Sector SHP projects

14. The Committee note that development of SHP projects through private sector investments has been the thrust of the Ministry's SHP programme since 1993. Out of the 1047 SHP projects commissioned in the country, 395 SHP projects with total capacity of 2227.60 MW have reportedly been set up through private sector participation so far. The Committee also note that a large part of capacity addition is being achieved through private investment where the State Nodal Agencies provide assistance for obtaining necessary clearances, in allotment of land and potential sites. The Committee have been informed that the policy for Small Hydro Power (SHP) and private sector participation therein is governed by the Electricity Act of 2003, the National Electricity Policy of 2005 and the Tariff Policy of 2006 announced by the Government of India. The Central Electricity Regulatory Commissions (CERC) have issued guidelines to determine tariff for all renewable energy technologies, including small hydro projects. They are also informed that the State Electricity Regulatory

Commissions (SERCs) have been empowered to decide on various components of the policy such as tariff, wheeling, banking and third party sale for grid interactive renewable energy based power projects. Reportedly, 23 State Governments have so far announced policy for private sector participation for the development of SHP projects in their respective States. However, it has been stated that some of these States have imposed restrictions/levies like Entry Tax on SHP equipment, sale of power outside the State, water royalty even for non-consumptive use of water, etc, which are seen as hindrances by the private developers in taking up SHP projects. **The Committee therefore, recommend that :**

- (i) Grievances Redressal mechanism be put in place to redress grievances of developers/ investors.**
- (ii) There should be uniform policies on the development of the small hydro power.**
- (iii) Restrictions in the form of taxes, levies on water and sale of electricity outside States be reasonable and practical, which only would facilitate unhindered growth of the sector.**
- (iv) State Regulatory Commissions should also look into the aspects of proper growth of the sector before determining the tariff.**

Alternate Hydro Energy Centre, IIT Roorkee

15. The Committee note that the Alternate Hydro Energy Centre (AHEC) at the Indian Institute of Technology, Roorkee, has been providing professional support in the field of Small Hydropower Development covering planning, Detailed Project Reports,

Detailed Engineering Designs and Construction drawings, Technical Specifications of Turn Key execution/equipment Supply, Renovation and Modernization of SHP Stations, and Techno-Economic Appraisal. It has been imparting training to the field engineers and technologists through short-term training courses. The Committee are informed that real time digital simulator for small hydropower plants has been set up with support from the Ministry for providing efficient initial and advanced training to operators and engineering staff of different types of small hydroelectric plants. Standards, manuals and guidelines for various aspects of small hydropower development are being prepared by AHEC through consultative process with the sponsorship of MNRE. A project to set up a small hydro hydraulic turbine R&D laboratory at AHEC with an objective of creating international level facilities for testing, design and R&D in the area of hydraulic turbines, hydro mechanical equipment, control and instrumentation of small hydro electric power plants has been sanctioned. **The Committee feel that AHEC, IIT Roorkee, is a premier institution in the development of small hydro technology in the country paving the way for economic and efficient development of the technology and hence should be provided all support in encouraging it to boost research and development activities in the small hydro sector. The Committee, therefore, recommend that the Institution may be strengthened with regard to their capacities and resources, both human and financial, and it should be made a guiding star for the sector with sufficient technical, financial and functional support and autonomy.**

NEW DELHI
10th March, 2016
Phalgun 20, 1937 (Saka)

DR. KIRIT SOMAIYA,
Chairperson,
Standing Committee on Energy

ANNEXURE - I

State-wise details of the financial support/subsidy provided for development of SHP (project-wise) during the last five years

Sanctions issued for releases during 2010-11

S.No.	Project/ Organisation	Funds Released
		(Rs. in Lakh)
I. Arunachal Pradesh		
(a) SHP Projects in Government Sector		
1	Sippi - DHPD	84.85
2	Kambang - DHPD	114.50
3	Subung - DHPD	200.00
4	PM Package - DHPD	3,000.00
(a) R & M		
5	R & M of Along - DHPD	28.46
II. Bihar		
(a) SHP Projects in Government Sector		
6	Dehra (1.00 MW) - BHPC	62.50
7	Sipaha (1.00 MW) - BHPC	62.50
8	Amethi (500 KW) - BHPC	43.75
9	Rampur (250 KW) - BHPC	21.88
10	Paharma (1.00 MW) - BHPC	87.50
11	Natwar (250 KW) - BHPC	40.63
III. Himachal Pradesh		
(b) SHP Projects in Government Sector		
12	Billing-I (400 KW) - HIMURJA	77.80
13	Ghanvi-II (10 MW)	187.00
IV. Karnataka		
(b) SHP Projects in Private Sector		
14	Mrujaara-II (750 KW) - MPP	45.00
V. Kerala		
(b) SHP Projects in Government Sector		
15	Vilangad (7.50 MW) - KSEB	127.50
16	Chathankottunada (6.00 MW) - KSEB	112.50
17	Poozhithodu (4.80 MW)	120.60
VI. Nagaland		
(b) SHP Projects in Government Sector		

18	Tuphaleri (200 KW) - CVC	21.00
VII. Sikkim		
(b) SHP Projects in Government Sector		
19	Chhatten (3 MW) - SPDC	150.00

Sanctions issued for releases during 2011-12

S.No.	Agency/ Developer	Funds Released
		(Rs. in Lakh)
I. Andhra Pradesh		
(b) SHP Projects in Private Sector		
1	Nagavali (1.5 MW)-Sardar	65.00
II. Bihar		
(a) SHP Projects in Government Sector		
2	Nirmali (7 MW)-BHPC	122.50
III. Himachal Pradesh		
(b) SHP Projects in Private Sector		
3	Manglad (4.5 MW) - Shree Bhavani	275.00
4	Sarbari-II (5.40 MW)-DSL Hydro	332.00
5	Chaksi (2.00 MW)-POM	115.00
6	Luni - II (5.00 MW)-Sri Sai Krishna	375.00
7	Luni - III (5.00 MW) - Sri Sai Krishna	375.00
8	Belij (5.00 MW) - Belij	160.00
9	Sainj (5 MW) - Himashakti	320.00
10	Kut (24 MW) - Kut	445.00
11	Maujhi-II (5 MW) -	160.00
IV. Jammu & Kashmir		
(b) SHP Projects in Government Sector		
12	Haftal - PDC	112.50
13	Sanjak - PDC	117.38
14	Bhadarwah -PDC	73.13
V. Karnataka		
(b) SHP Projects in Private Sector		
15	SohamMannapitlu (15 MW)-Soham	250.00
16	Kanchanguda (6 MW)-Pusala	137.50
17	Yattinohole (3 MW)-Mysore Mercantile	80.00
VI. Kerala		
(b) SHP Projects in Government Sector		

18	Poozhithodu (4.80 MW) - KSEB	110.20
19	Ranni-Perunad (4.00 MW) - KSEB	129.50
20	Perunthenaruvi (6 MW)-KSEB	112.50
VII. Nagaland		
(b) SHP Projects in Government Sector		
21	Lang (1.00MW) - Power dept.	120.00
VIII. Tamil Nadu		
(b) SHP Projects in Government Sector		
22	Perunchani (2x650 kW), TANGEDCO	11.94
23	Mukurthi - TNEB	11.44
24	Aliyar (2.50 MW) - TNEB	8.45
25	Thirumurthi - TNEB	13.29
XI. Uttarakhand		
(a) R & M		
26	Galogi (3 MW) R&M, UJVNL	100.00
27	Galogi (3 MW) R&M, UJVNL	127.50
28	Mohammadpur (3x3.1 MW), UJVNL	92.00

Sanctions issued for releases during 2012-13

S.No.	Project/ Organisation	Funds Released
		(Rs. in Lakh)
I. Andhra Pradesh		
(a) SHP Projects in Private Sector		
1	Nandigama (1.60 MW)	132.00
II. Aruanchal Pradesh		
(a) SHP Projects in Government Sector		
3	Taksing (2x50kW), DHPD	65.00
(b) R & M		
4	Dulom (400 kW) SHP, DHPD	23.00
5	Abhapani (1x250+2x100kW), DHPD	27.00
6	DoorahNallah (4x100kW), DHPD	25.00
7	Pasighat (2x100 kW), DHPD	12.50
III. Gujrat		
(a) SHP Projects in Private Sector		
8	DassarGanaga (3.00 MW)	160.00
IV. Himachal Pradesh		
(a) SHP Projects in Private Sector		
9	Upper Khauli	258.75
10	BinuaParai	320.00
11	Dehar - II	107.50
12	Brahali	145.00

13	Neogoli (4.50 MW)	152.50
14	Luri (4.5 MW),	152.50
15	Aura (4.5 MW)	152.50
16	Iqua (4.5 MW)	152.50
17	Dikleri (2 MW)	115.00
18	Rukti -II (5MW)	320.00
19	Jirah (4MW)	145.00
20	Kurmi (8 MW)	205.00
21	Palor-I (3.00 MW), Mangalam Energy	200.00
22	Taraila - III (5.00 MW)	20.00
23	Chandni (2x1.5 MW)	10.00
24	Taraila -II (5.00 MW)	20.00
25	Rakchad (5.00 MW)	20.00
V. Jammu & Kashmir		
(a) SHP Projects in Government Sector		
26	Pahalgam (2x1.5 MW), JKSPDC	18.75
27	Hanu (9MW), JKSPDC	225.00
28	Dah (3 MW), JKSPDC	225.00
29	Chenanai (23.3 MW), JKSPDC	306.50
30	Gandarbal (9MW), JKSPDC	1.40
(b) SHP Projects in Private Sector		
31	Branwar	197.50
VI. Karnataka		
(a) SHP Projects in Private Sector		
32	Manajandka , Bangalore	300.00
33	Varahi Irrigation	340.00
34	Mandagre	106.25
35	Dadarpur	220.00
VII. Kerala		
(a) SHP Projects in Government Sector		
36	Vilangad (7.5 MW)	153.00
37	Chimony (2.5 MW),	77.50
38	Peechi (1.25 MW)	169.00
(b) SHP Projects in Private Sector		
39	Irruttukan (1.50 MW)	30.00
VIII. Madhya Pradesh		
(a) SHP Projects in Government Sector		
40	Korba-II (850 kW), CSPGCL	15.69
(b) SHP Projects in Private Sector		

41	Chirchind (5.00 MW)	320.00
IX. Maharashtra		
(a) SHP Projects in Private Sector		
42	Akhara (1.10 MW)	122.00
43	Deogarh (1.50 MW)	130.00
44	Radhanagari (10.00 MW)	300.00
45	Darna (9.90 MW), IREDA	10.00
X. Meghalaya		
(a) SHP Projects in Government Sector		
46	Lakroh (1.50 MW)	135.00
XI. Mizoram		
(a) SHP Projects in Government Sector		
47	Tlawa (5MW) ZEDA	175.00
48	Tuirivang (3x100 kW), ZEDA	18.75
49	Serlui -B (12 MW), P&E, ZEDA	110.25
XII. Nagaland		
(a) SHP Projects in Government Sector		
50	TsustsungYongki (2x500 kW) NREDA	125.00
51	Tahok (1 MW), NREDA	140.00
52	Lang (1 MW), NREDA	120.00
53	NoiRoi Stage I&II (2x75 MW), NREDA	28.00
54	Maymong (2x50 kW), NREDA	25.00
XIII. Punjab		
(a) SHP Projects in Private Sector		
55	Sudhar (1.40 MW)	128.00
56	Terkiana (650 kW), Chandigarh	39.00
(b) SHP Projects in Government Sector		
57	GGSSSTP SHP (1.70 MW) PSPCL	41.88
XIV. Sikkim		
(a) SHP Projects in Government Sector		
58	Chatten Stage - II (2x1500 kW), SPDCL	180.00
59	Lachung (2x1.5 MW), SPDCL	67.50
XV. Uttarakhand		
(a) R & M		
60	Mohammadpur (3x3.1 MW), UJVNL	340.25
61	Pathri (3x6.8 MW), UJVNL	124.00
(b) SHP Projects in Government Sector		
62	Limchagad (3.5 MW), UJVNL	156.25
63	Hafila (200 kW), UREDA	30.00

64	GauriChhina (250 kW), UREDA	30.00
65	Bijapur (30 kW), UPDCC	1.00
(c) SHP Projects in Private Sector		
66	Bhilangana (22.50 MW)	81.70
XVI. UTTAR PRADESH		
(a) SHP Projects in Private Sector		
67	Chamnsaral (900 kW)	108.00
68	Ghohian (800 kW)	96.00
69	Khanpur (1.10 MW)	122.00
XVII. West Bengal		
(a) R & M		
70	Massanjore (4MW)	25.00
(b) SHP Projects in Government Sector		
71	Diaram Tea Garden (100kW),	12.00
<u>Sanctions issued for releases during 2013-14</u>		
Sl.No.	Project/ Organisation	Funds Released (Rs. in Lakh)
I. Aruanchal Pradesh		
(a) SHP Projects in Government Sector		
1	3rd release against Subung MHP for DHPD	114.50
(b) R & M		
2	Dali (4x100 kW), DHPD	25.00
3	Yingkiong-I,II (3x50), (2x100), DHPD	21.88
4	ChiniAfra (1x250 kW), DHPD	15.63
5	Rupa (2x100 kW), DHPD	12.50
6	Tafregam (1x250 kW), DHPD	15.63
7	SilliGeku (2x250 kW), DHPD	31.25
8	Mechuka, DHPD	21.88
9	Abhapani (2x100 + 250kW), DHPD, 2nd installment	73.13
10	Yingkiong Ph I (3 x 50 kW) & Ph II (2 x 100 kW), DHPD, 2nd installment	56.88
11	2nd installment Dali SHP (4x100KW)	65.00
12	2nd installment Dulom SHP (4x100KW)	59.78
13	2nd installment Dura Nallah SHP (4x100KW)	65.00
14	2nd installment Tafragram SHP (250KW)	40.62

15	2nd installment for R& M of Mai Ph-II SHP	67.42
16	2nd installment for R& M OF ChiniAfra SHP(1 x 250KW)	40.63
17	2nd installment for R& M of Rupa SHP(2 x 100KW)	32.50
18	2nd installment for R& M of Pasighat SHP(1 x 100KW)	32.50
19	2nd installment Dirang SHP for R&M	96.33
20	2nd release of fund to DHPD for R & M Tago SHP (3 x 1500 KW)	79.22
II. Bihar		
(a) SHP Projects in Government Sector		
21	Mathuali (2x400 kW), BHPC	130.00
22	Nirmali (4x2 MW), BHPC	147.00
23	Dehra (2x0.5 MW), BHPC	162.50
24	Bathnala (8MW), BHPC	159.00
25	Sipaha (2x0.5) , BHPC	75.00
III. Gujrat		
(a) SHP Projects in Private Sector		
26	Karjan (3 MW) M/S OREVA Energy Pvt. LTD	160.00
IV. Himachal Pradesh		
(a) SHP Projects in Government Sector		
27	Bhaba (2x1.5 MW), HPSEB	110.00
(b) SHP Projects in Private Sector		
28	Palor -I (3 MW), Mangalam Energy	60.00
29	Taraila-III(5.00 MW), Tarela Power	300.00
30	Chandni (2x1.5 MW), Himalayan Crest	215.00
31	Taraila-II(5.00 MW), Cimaran Constru	306.25
32	Rakchad (5.00 MW), IREDA	300.00
33	Upper Joiner (3x4 MW), IREDA	530.00
34	Maujhi-II(5.00 MW), IREDA	160.00
35	Manuni-II (4.80 MW), Priyadarshini	157.00
36	Tulang (3.00 MW), Himachal Hydel	130.00
37	SumanSarwari (5 MW), Usaka Hydro	160.00
38	Kurhed (4.5 MW), Himachal Hydel Project	152.50
39	Andhra Stage - II (5 MW), Gawthami	281.25
40	BanerSangam (5 MW), Yogindera Power	160.00

41	Balsio (5 MW),Ginni Global	160.00
42	2nd instalment to Beaskund (9MW) - Kapil Mohan Associates Hydro Power Pvt. Ltd.	220.00
43	Release of final installment for Belij (5 MW) in Chamba H.P. by M/s Belij Hydro Power Pvt. Ltd.	128.00
44	Finacial Support for Jogini II (4.80 MW) under Pvt. Sector by M/s GEE CEE Hydro Pvt. Ltd., Shimla	7.00
V. Jammu & Kashmir		
(a) SHP Projects in Government Sector		
45	Haftal (1 MW), JKSPDC	52.25
46	Mercellong (3 MW), JKSPDC	75.00
47	Pahalgam (2x1.5 MW), JKSPDC	97.50
48	Bhadarwah (3x0.5 MW), JKSPDC	60.94
49	Marpochoo (750 kW), JKSPDC	42.64
50	KREDA (SHP Raru, Matayeen&Chilong)	641.00
51	release of 3rd installemnt against PahalgamShp Project (1.5MW) additional unit by JKSPDC	25.25
VI. Karnataka		
(a) R & M		
52	Bhadra SHP (2 x 12 MW), 2nd Installament, KPCL	442.71
(b) SHP Projects in Private Sector		
53	1st installment to suvarnamukhi SHP(2MW)	70.00
VII. Kerala		
(a) SHP Projects in Government Sector		
54	Vellathooval (2x1.8 MW), KSEB	90.00
55	Adyanpara (2x1.5+0.5.5=3 MW), KSEB	87.50
56	Kakkayam (3 MW) KSEB	82.50
VIII. Maharashtra		
(a) SHP Projects in Private Sector		
57	Darna (4.90 MW), DLI Power	188.00
58	Chitri (2.00 MW), Shree TatyaSaheb	140.00
59	Pench RBC (2x700 kW), SMS Vidhyut	128.00
XI. Mizoram		
(a) R & M		
60	Release of 2nd installment for Tuirivang (3 x 100 MW) to Power	48.75

	&ElectricityDeptt.	
XII. Nagaland		
(a) SHP Projects in Government Sector		
61	TsustsungYongki (2x500 kW), NREDA	150.00
XIII.Haryana		
(a) SHP Projects in Private Sector		
62	Mussapur (1.40 MW),M/S Puri Oil Mills (P) Ltd.	64.00
63	Khukhni (1.40 MW),M/S Puri Oil Mills (P) Ltd.	64.00
XIV. Sikkim		
(a) SHP Projects in Government Sector		
64	Release of 2nd installemnt of SPDC against CHATTEN Shp Project (5MW) in Lachen District	210.00
65	Release of part of final(7th) installment to Rongli (5MW) to SPDC, Sikkim.	35.00
XV. Uttarakhand		
(a) SHP Projects in Private Sector		
66	Release of part payment of 2nd installment of Bhilganga (25 MW)	220.00
XVI. Uttar Pradesh		
(a) SHP Projects in Government Sector		
67	Khara SHP (2x750 KW),UPJVNL	67.50

Sanctions issued for releases during 2014-15

S.No.	Project/ Organisation	Funds Released
		(Rs. in Lakh)
II. Arunachal Pradesh		
(a) SHP Projects in Government Sector		
1	2nd installment for R&M of SilliGeku (2x250 KW) to DHPD	81.25000
2	Release of 1st installment of fund to HPDCAPL for setting up of Sumbachu SHP.	300.00000
3	Release of 1st installment of fund to HPDCAPL &NePED for WM (Elect.) dg. 2014-15 (Rs. 22.50 lakh to HPDCAPL &Rs. 22.50 lakh for NePED)	22.50000
4	Release of fund to DOP, Govt. of A.P. for T&D Links under PM Package	500.00000
5	Release of final installment for solar component of PM package (523 vill) to APEDA	183.37000
6	Release of 1st installment of CFA for R&M of Rahung SHP (2 x 250	21.64000

	kW) to DHPD.	
(b) R & M		
1	1st installment for R&M of 3 projects(Yembung, Pagi&Deopani) to DHPD	71.25000
2	Release of 2nd installment for R&M of Mai Phase -I to DHPD	8.40000
Sub-Total		1,188.41000
V. Himachal Pradesh		
(a) SHP Projects in Government Sector		
1	Final release of Sach SHP by Himurja	96.38000
2	Settlement of account of Billing -I SHP (400kW) to Himurja	31.12000
3	Part release/reimbursement against final settlement of funds for R&M of Chaba SHP (1.75 MW) to HPSEB	0.44000
(c) SHP Projects in Private Sector		
1	1st installment for Jogini li (4.80 MW) to M/s GEE CEE Hydro Power (P) Ltd. Shimla.	150.00000
2	Reimbursement of subsidy (Full) for setting up of Sechi(4.5 MW) SHP inKullu District, H.P. by M/s Ascent Hydro Projects Ltd., Pune.	305.00000
3	Release of final installment of subsidy to Chakshi SHP (2MW) in Kullu district of H.P. by M/s Puri Oil Mills Pvt. Ltd.	115.00000
4	Release of full and final subsidy for setting up of Binwa IV SHP (4 MW) project in Kangra District of H.P. by M/s Bhawani Renewable Energy (P) Ltd.	290.00000
5	Release of final subsidy to Baner-II SHP (5MW) in H.P. by M/s Lanco Hydro Power Limit, Gurgaon	326.25000
6	Final Installment against SumanSarwari SHP (5 MW) in Kullu, H.P. by M/s Usaka Hydro Project Pvt.LTd., New Delhi	160.00000
7	Release of Subsidy for Baragaon (24 MW) SHP in Kullu by Kanchanjunga Power Company (P) Ltd. Noida.	445.00000
8	Release/reimbursement of final installment for setting up of Dikleri (2 MW) in chamba, H.P. by M/s ManimaheshHydel Power Project Co-Operative Society Ltd. Chamba.	115.00000
(d) Water Mills		
1	Release of 1st installment to HIMURJA for target of 50 Water mill programme	10.00000
Sub-Total		2,044.19000
VI. Jammu & Kashmir		
(a) SHP Projects in Government Sector		
1	Release of balance funds to KREDA against Ladakh Renewable Energy Initiative	491.49700
2	Ladakh Renewable Energy Initiative-Release of funds to LREDA	728.21000
3	Release of 1st installment for R&M of USHP by JKSPDC	250.00000
4	Release of fund to KREDA for SHP Projects under Ladakh Renewable Energy Initiative.	1,456.00000

5	R & m of upper sindhnallah(Sumbal) 2 x 11.3 MW SHP Project - Release of second & third installment to JKSPDC.	650.00000
6	Release against Ladakh Renewable nergy Initiative to LREDA	100.00000
7	Release of 2nd installment for R&M of Chennani (23.3 MW) SHP to JKSPDC	188.50000
(b) Water Mills		
1	Release of 1st installment of fund for upgradation/installation of Watermill to -KREDL(1,50,000), KREDA(12,50,000) & UREDA(2,05,00,000)	12.50000
Sub-Total		3,876.70700
VII. Karnataka		
(a) Water Mills		
1	Settlement of account and release/reimbursement of fund for 188 Watermill/Pico Hydro in Karnataka	115.60000
2	Release of 1st installment of fund for upgradation/installation of Watermill to -KREDL(1,50,000), KREDA(12,50,000) & UREDA(2,05,00,000)	150.00000
3	Sonna SHP (10.5 MW) installed by Jasper Energy Pvt. Ltd. At Bijapur, Karnataka	310.00000
Sub-Total		575.60000
VIII. Kerala		
(a) SHP Projects in Government Sector		
1	Setting up of Barapole SHP (15 MW) -Release of second installment of funds.	243.00000
2	Setting up of Kakkayam SHP (3 MW) by (KSEB) - Release of 2 nd installment .	99.0000
3	Setting up of Chimony SHP (3 MW) by (KSEB) - Release of 2 nd installment .	93.0000
4	Setting up of Bhoothathankettu SHP (24 MW) project in Ernakulam district of Kerala by Kerala State Electricity Board (KSEB)	0.00000
(b) SHP Projects in Private Sector		
1	Reimbursement of subsidy to Ulankal SHP (2x3.5 MW) in Kerala by Energy Development Company Ltd., Kolkata	240.00000
(c) Water Mills		
1	Settlement of Account/release/reimbursement for 34 Watermills/Pico Hydro (Electrical) in Kerala by EMC.	10.80000
2	Release of first installment for 30 Watermills in Kerala by EMC.	22.50000
Sub-Total		708.30000
X. Maharashtra		
(a) SHP Projects in Private Sector		
1	Reimbursement of subsidy for setting up of Kasari (2 MW) SHP in Kolhapur, Maharastra by M/s Vishwaj Energy Pvt. Ltd.	142.50000

2	Release of 1st Installment of fund to Gautami Godavari (1.2) MW) project in Nasik District of Mahrastra by M/s Sanwat System (P) Ltd,Pune.	62.00000
Sub-Total		204.50000
XI. Meghalaya		
(a) SHP Projects in Government Sector		
	Relaese of 1st installment for Ganol SHP (3 x 7.5 MW) in Garo Hills District to MePGCL through MeECL	50.00000
Sub-Total		50.00000
XIII. Nagaland		
(a) SHP Projects in Government Sector		
1	Setting up of TsutsungYongki SHP (2x500KW) by NREDA- Release of 3rd Installment.	175.00000
2	Release of 4th Installment to Tehok MHP (2 x 500 KW) to Department of Power, Government of Nagaland	120.00000
3	Final installment against Lang SHP (1 MW) by Deptt. Of Power, Nagaland	60.00000
4	Final Installment of Subsidy for 13 DPRs to Deptt. Of Power, Nagaland	23.50000
5	Final Installment of Subsidy for 17 DPRs to New & Renewable Energy Department, Nagaland	20.00000
6	Release of 1st installment of fund to HPDCAPL & NePED for WM (Elect.) dg. 2014-15 (Rs. 22.50 lakh to HPDCAPL &Rs. 22.50 lakh for NePED)	22.50000
7	Release of 2nd Installment to Mayenmong MHP to NREDA	65.65000
8	2nd installment for Noiroi Stage-I (2x75kW) to DNRE	22.50000
9	Release of 1st installment for Thizaru SHP (2 x 75 kW) in Phek District to NREDA	18.75000
Sub-Total		527.90000
XIV. Punjab		
(a) SHP Projects in Government Sector		
1	Setting up of Mukherian SHP (2x9 MW) by (PSPCL) - Release of 3 rd installment .	172.50000
Sub-Total		172.50000
XVI. Sikkim		
(a) SHP Projects in Government Sector		
1	Part of final installment to SPDCL against Rongli (2x2500KW)	139.69800
Sub-Total		139.69800
XVIII. Uttarakhand		
(a) DPR		
1	1st release for preparation of 6 nos. of DPRS to UREDA	18.00000
2	Release of 1st installment to UREDA for preparation of 9 DPRs	10.25000

(b) SHP Projects in Private Sector		
1	Final Subsidy against Bhilangana-III (24MW) to M/s Bhilangana Hydro Power Ltd., Noida.	225.00000
2	Release of full & final subsidy for setting up of BirahigangaSHP(7.2 MW) project in Chamoli district of Uttarakhand by M/s Birahi Ganga Hydro Power Limited.	370.57500
(c) Water Mills		
1	Release of 1st installment of fund for upgradation/installation of Watermill to -KREDL(1,50,00,000), KREDA(12,50,000) & UREDA(2,05,00,000)	205.00000
(d) Miscellaneous		
1	Sanction for training courses on various aspects of Small Hydropower Development to AHEC-1st release.	50.00000
2	Technical Evaluation of existing SHP projects under PM Package by AHEC, IIT Roorkee.	1.32400
3	Reimbursement of fund for training courses conducted by AHEC during 2013-14 on SHP.	9.04637
4	Release of 1st installment of fund to UREDA for preparation of 11 DPRs in the State of Uttarakhand.	33.00000
5	2nd release for R&D project on Development of Efficient Cross Flow Turbine for Hilly Region by AHEC, Roorkee.	5.9200
6	Financila Support for preparation of Master Plan document on Ultra Low Head based MHP sies located on the irrigation Canal network in the State of Uttarakhand with UNIDO.	5.00000
7	Sanction of training courses on various aspects of SHP development organized dg. 2013-14 at AHEC, Roorkee.	8.94600
8	Release of funds to UREDA for International Conference of Hydro at Dehradun.	7.00000
9	1st installment for training courses to AHEC, IIT, Roorkee.	25.0000
10	Release of 1st installment for R&D project on Development of Sediment Monitering and Impact analysis in Hydro Power Plants to AHEC, IIT, Roorkee.	44.0800
Sub-Total		1,018.14137

MINUTES OF THE SECOND SITTING OF THE STANDING COMMITTEE ON ENERGY (2015-16) HELD ON 22nd SEPTEMBER, 2015 IN COMMITTEE ROOM 'G-074', PARLIAMENT LIBRARY BUILDING, NEW DELHI

The Committee sat from 1130 hours to 1330 hours.

PRESENT

Dr. Kirit Somaiya - Chairperson

LOK SABHA

- 2 Shri Om Birla
- 3 Shri M.Chandrakasi
- 4 Shri Harish Dwivedi
- 5 Shri Saumitra Khan
- 6 Shri Deepender Singh Hooda
- 7 Shri Bhagat Singh Koshyari
- 8 Kunwar Sarvesh Kumar
- 9 Dr. Arun Kumar
- 10 Shri R.P. Marutharajaa
- 11 Dr. Pritam Gopinath Munde
- 12 Shri Ravindra Kumar Pandey
- 13 Shri M.B. Rajesh
- 14 Shri Gutha Sukender Reddy
- 15 Shri Purno Agitok Sangma
- 16 Shri Malyadri Sriram

RAJYA SABHA

- 17 Shri V.P. Singh Badnore
- 18 Shri Oscar Fernandes
- 19 Shri Pyarimohan Mohapatra
- 20 Shri S. Muthukaruppan
- 21 Shri Javed Ali Khan
- 22 Dr. K.P. Ramalingam

- 23 Shri Ananda Bhaskar Rapolu
- 24 Dr. Anil Kumar Sahani
- 25 Smt Viplove Thakur

SECRETARIAT

1. Shri K. Vijaykrishnan - Additional Secretary
2. Shri N.K. Pandey - Director
3. Shri A.K. Kaushik - Director

LIST OF WITNESSES

MINISTRY OF NEW AND RENEWABLE ENERGY

1. Shri Upendra Tripathi Secretary
2. Ms. Varsha Joshi Joint Secretary
3. Shri J.B. Mohapatra JS&FA
4. Shri J.C. Sharma Eco. Advisor
5. Dr. N.P. Singh Sr. Consultant
6. Shri K.S. Popli CMD, IREDA
7. Dr. S. Gomathinayagam Director General, NIWE
8. Dr. Ashwani Kumar DG, SECI

2. At the outset, the Chairperson welcomed the Members of the Committee and the representatives of the Ministry of New and Renewable Energy and PSUs/Institutions under MNRE and made known to them the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. After introducing themselves to the Committee, the representatives of the Ministry of New and Renewable Energy made a PowerPoint presentation on the subject 'Small Hydro in India'. The Members raised certain queries which were answered to by the representatives of the Ministry of New and Renewable Energy.

4. The following important points were discussed during the sitting:
- i) Need for an Action Plan for electrification of non-electrified villages through New and Renewable Energy in collaboration with 'Saansad Adarsh Gram Yojana';
 - ii) To explore the possibility of using MPLAD Funds in Renewable Energy Projects in addition to the subsidy provided by the Ministry;
 - iii) Need to connect off-grid Small Hydro Projects to the grid to make them viable during lean periods;
 - iv) Need to expedite the process of Environmental Clearance for Renewable Energy Projects;
 - v) To explore the scope of using New Airports, Sea Ports, Railway Stations and Platforms for installation of Renewable Energy Projects;
 - vi) Need of audit of subsidies/loans given by the Ministry for Renewable Energy Projects;
 - vii) Need to persuade people to use LED bulbs and also to encourage the use of LED bulbs in street lighting.
5. Thereafter, the members sought clarifications on various issues relating to the subject and the representatives of the Ministry responded to the same. The Committee directed the representatives of the Ministry to furnish written replies to those queries which could not be readily responded to by them.
6. The Chairperson desired the representatives of Ministry of New and Renewable Energy to present before the Committee a Status Report regarding the small hydro projects which have been started in the last ten years.
7. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

MINUTES OF THE FOURTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2015-16) HELD ON 16th OCTOBER, 2015, IN COMMITTEE ROOM '62', PARLIAMENT HOUSE, NEW DELHI

The Committee met from 1500 hrs to 1650 hrs

PRESENT

LOK SABHA

Dr. Kirit Somaiya - Chairperson

2. Shri M. Chandrakasi
3. Shri Harish Dwivedi
4. Shri Bhagat Singh Koshyari
5. Dr. Arun Kumar
6. Dr. Pritam Gopinath Munde
7. Shri Jagdambika Pal
8. Shri Ravindra Kumar Pandey
9. Shrimati Krishna Raj
10. Shri M.B. Rajesh
11. Shri Malyadri Sriram

RAJYA SABHA

12. Shri Oscar Fernandes
13. Shri Pyarimohan Mohapatra
14. Shri Javed Ali Khan
15. Shri Ananda Bhaskar Rapolu
16. Dr. Anil Kumar Sahani
17. Smt. Viplove Thakur

SECRETARIAT

1. Shri N.K.Pandey - Director
2. Shri Arun K Kaushik - Director
3. Smt. L. Nemjalhing Haokip - Under Secretary

Witnesses

MINISTRY OF NEW AND RENEWABLE ENERGY

1.	Shri Upendra Tripathy	Secretary
2.	Shri Tarun Kapoor	Joint Secretary
3.	Ms. Varsha Joshi	Joint Secretary
4.	Shri J.B. Mohapatra	JS & FA
5.	Shri J.C. Sharma	Eco. Adviser
6.	Dr. N.P Singh	Sr. Consultant
7.	Shri K.S. Popli	CMD (IREDA)
8.	Dr. Arun Kumar	Chair Professor, AHEC
9.	Dr. Ashwani Kumar	MD, SECI
10.	Dr. Gomathinayagam	DG(NIWE)
11.	Dr. O.S. Sastry	DG(NISE)

2. At the outset, the Chairperson welcomed the Members of the Committee and the representatives of the Ministry of New and Renewable Energy to the sitting of the Committee. Hon'ble Chairperson informed that the sitting of the Committee has been called to discuss the developments in small hydro sector in the country. As such, the Committee would like to understand the status, scenario, the challenges in the sector and the potential along with suggestions as to how to give momentum to it.

3. After the introduction of the witnesses, the Secretary, MNRE, informed the Committee that at the initiative of the Hon'ble Prime Minister, an international agency to be named as "International Agency for Solar Technology and Applications" with its Headquarters in India is likely to be established soon. If this happens, it will be the first such International Agency in the country. Thereafter, the Secretary, MNRE, informed the Committee that with the cooperation of the States, 28 Solar Parks have been finalized. MNRE has been geared up to face the challenges such as ensuring Grid connectivity, ensuring that the developers come forward and put up Solar Parks and facilitate Green Energy Corridors to be connected to these Parks. He assured the

Committee that this would be achieved and that the Committee would be posted with the developments in this regard.

4. The Secretary, MNRE, further informed that the Alternate Hydro Energy Centre (AHEC) at Roorkee was established in 1982, which is doing very good work. Thereafter, a video film on the activities of AHEC was shown. Thereafter, Dr. Arun Kumar, Chair Professor, AHEC, made a power point presentation before the Committee informing about its various activities. Following were the highlights of the presentation :-

- (i) AHEC imparts education, training and research and development related to small hydro and other renewable energy.
- (ii) It conducts under-graduate programmes, M.Tech. programmes and PHD programmes.
- (iii) It also conducts short-term international training programmes.
- (iv) Various facilities and expertise for small hydro power development such as hydraulic turbine laboratory. real type SHP simulator, performance laboratory, etc. were elaborated.
- (v) Various activities for rural development through small hydro power such as efficient water mills, livelihood activities using small hydro power illumination of remote villages, electrification, etc. were also elaborated.

5. The Chair Professor, AHEC, suggested the following possible solutions to overcome barriers to SHP development:-

- (i) Capacity development.
- (ii) Upfront public financing.
- (iii) Encouraging higher participation of private sector.
- (iv) Continuous support of R&D in several areas.
- (v) Clarity in policies and regulations.
- (vi) Setting up and enhancing institutional capacity.

6. The Committee observed that while the presentation was good, it lacked certain specific about which the Committee were keen to know such as how many requests for small hydro sector projects were received, how many permissions were given, how much financial assistance was given by the Government, what was the role of the

Government in setting up of these projects, etc. The Committee desired that a detailed note *inter-alia* incorporating all these points may be furnished by the Ministry.

7. The Committee felt that AHEC type institutions should be developed with proper finance and manpower resources. The performance of all the institution viz. National Institute of Wind Energy, National Institute of Solar Energy, Bio-Mass Research Institute, etc. should be reviewed. Further, Government should ensure that these institutions do not face any resource crunch either from financial point of view, land availability on manpower. The Secretary, MNRE, assured the Committee that he would ensure that all infrastructure facilities and finances are provided to enable the institutes to carry out R&D activities.

8. X X X X X X X X X X X X X

9. X X X X X X X X X X X X X

10. The Committee decided to hold their next sitting on 26.10.2015.

11. A verbatim of the proceedings has been kept for record.

The Committee then adjourned

MINUTES OF THE ELEVENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2015-16) HELD ON 18th JANUARY, 2016, IN COMMITTEE ROOM 'B', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1500 hrs to 1630 hrs

PRESENT

LOK SABHA

Dr. Kirit Somaiya - Chairperson

- 2 Shri Saumitra Khan
- 3 Dr. Arun Kumar
- 4 Shri Jagdambika Pal
- 5 Shri Ravindra Kumar Pandey
- 6 Shrimati Krishna Raj
- 7 Shri Gutha Sukender Reddy
- 8 Shri Purno Agitok Sangma
- 9 Shri Bhanu Pratap Singh Verma

RAJYA SABHA

- 10 Shri V.P. Singh Badnore
- 11 Shri Javed Ali Khan
- 12 Shri K.P. Ramalingam
- 13 Shri Ananda Bhaskar Rapolu
- 14 Dr. Anil Kumar Sahani

SECRETARIAT

1. Shri K. Vijaykrishnan - Additional Secretary
2. Shri N.K.Pandey - Director

Witnesses

MINISTRY OF NEW AND RENEWABLE ENERGY

1.	Ms. Varsha Joshi	Joint Secretary
2.	Shri J.B. Mohapatra	JS & FA
3.	Shri J.C. Sharma	Eco. Adviser
4.	Dr. N.P Singh	Sr. Consultant
5.	Shri K.S. Popli	CMD (IREDA)
6.	Dr. Ashwani Kumar	MD (SECI)

2. At the outset, the Chairperson welcomed the Members of the Committee and the representatives of the Ministry of New and Renewable Energy to the sitting of the Committee. Hon'ble Chairperson informed that the sitting of the Committee had been called to discuss the 'Action Plan for achievement of 175 GW Renewable Energy Target - with special reference to Solar Roof-Tops' and 'Development and Status of Small Hydro Sector'. He further informed that the Committee wanted to know about the overall expectations, projections, implementation, experience of the last couple of years and the future plans along with some improvements that the Ministry would like to suggest.

3.	X	X	X	X	X	X	X	X	X	X	X	X
4.	X	X	X	X	X	X	X	X	X	X	X	X

5. The Committee, *inter-alia*, deliberated upon the following points with the representatives of the Ministry of New and Renewable Energy:

- (i) The status of implementation of the Net-Metering.
- (ii) Mission mode implementation of Solar Power Projects in order to achieve 100 GW of Solar Energy by 2022.
- (iii) Mechanism regarding purchase of Green Power Certificates.
- (iv) Time -line for new Renewable Energy Act.
- (v) Need to develop synchronized Wind-Solar Hybrid System.
- (vi) Encouraging higher participation of private sector.
- (vii) Clarity in policies and regulations.

6. The Hon'ble Chairperson asked the Ministry about the targets assigned to Railways and NTPC out of the total target of 40 GW of Solar Energy to be generated through Solar Rooftops and their achievement till date. He further queried about the number of major stakeholders in this Action Plan for achieving 40 GW.

7. The Committee, thereafter, took up the second subject 'Development and Status of Small Hydro Sector' for discussion. The representatives of the Ministry submitted before the Committee that they had already furnished the replies to the List of Points on the subject concerned. They further informed the Committee that the Ministry wished to add a hydro capacity of 5000 MW by 2022. The Ministry also submitted before the Committee that Hydro is a State Subject and the Government of India's role in Hydro Sector is limited only to providing technical and financial support.

8. The Committee was not satisfied with the information furnished by the Ministry regarding the subject 'Development and Status of Small Hydro Sector' as it did not reflect the ground realities. Also, the Committee expressed its unhappiness with the submission by the Ministry that their role in Small Hydro Sector is limited only to disbursement of Subsidies and all the other work in this sector is done by the State Governments. The Committee felt that the Ministry should play a proactive role for the advancement of the sector so as to meet the target of generation of 5 GW of Renewable Energy through Small Hydro by 2022.

9. A verbatim of the proceedings has been kept for record.

The Committee then adjourned.

ANNEXURE V

MINUTES OF THE FIFTEENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2015-16) HELD ON 9TH MARCH, 2016 IN COMMITTEE ROOM 'D', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1730 hrs. to 1800 hrs.

PRESENT

LOK SABHA

Dr. Kirit Somaiya - Chairperson

2. Shri M. Chandrakasi
3. Shri Harish Dwivedi
4. Shri Bhagat Singh Koshyari
5. Smt. Krishna Raj
6. Shri R.P. Marutharajaa
7. Shri M.B. Rajesh
8. Shri Bhanu Pratap Singh Verma

RAJYA SABHA

9. Shri Oscar Fernandes
10. Dr. K.P. Ramalingam
11. Shri Ananda Bhaskar Rapolu
12. Dr. Anil Kumar Sahani

SECRETARIAT

- | | | |
|----|---------------------------|----------------------|
| 1. | Shri K. Vijaykrishnan | Additional Secretary |
| 2. | Shri N.K.Pandey | Director |
| 3. | Smt. L. Nemjalhing Haokip | Under Secretary |

2. At the outset, the Chairperson welcomed the Members and apprised them of the agenda for the sitting. X X X X X X X X X X

3. The Committee then took up for consideration the draft Report on 'Development and Status of Small Hydro Sector'. After discussing the content of the Report, the Committee adopted the aforesaid draft Report without any changes. The Committee also authorized the Chairperson to finalize the Report and present the same to both the Houses of Parliament in the current Session.

The Committee then adjourned.