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**STANDING COMMITTEE ON ENERGY**

**(2017-18)**

**SIXTEENTH LOK SABHA**

**MINISTRY OF POWER**

**(Action Taken on the recommendations contained in the Seventeenth Report (16<sup>th</sup> Lok Sabha) on 'Hydro Power - A Sustainable, Clean and Green Alternative')**

**THIRTY THIRD REPORT**



**LOK SABHA SECRETARIAT  
NEW DELHI**

***March, 2018/ Phalgun, 1939 (Saka)***

**THIRTY THIRD REPORT**  
**STANDING COMMITTEE ON ENERGY**  
**(2017-18)**

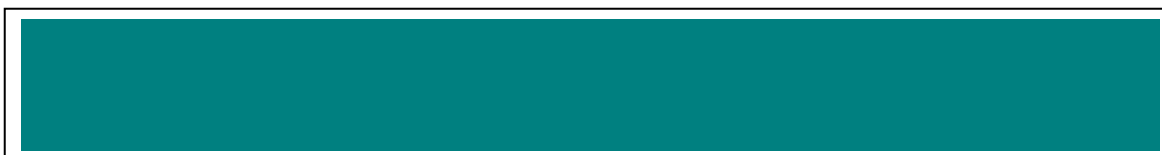
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**(Action Taken on the recommendations contained in the  
Seventeenth Report (16<sup>th</sup> Lok Sabha) on 'Hydro Power - A Sustainable,  
Clean and Green Alternative')**

*Presented to Lok Sabha on 07.03.2018*

*Laid in Rajya Sabha on 07.03.2018*



**LOK SABHA SECRETARIAT**  
**NEW DELHI**

*March, 2018/ Phalguna, 1939 (Saka)*

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## **COMPOSITION OF THE STANDING COMMITTEE ON ENERGY (2017-18)**

### **LOK SABHA**

**Dr. Kambhampati Hari Babu- Chairperson**

2. Shri Devendra Singh Bhole
3. Shri Om Birla
4. Shri M. Chandrakasi
5. Shri Harish Dwivedi
6. Shri Deepender Singh Hooda
7. Shri Bhagat Singh Koshyari
8. Dr. Arun Kumar
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11. Shri R.P. Marutharajaa
12. Dr. Pritam Gopinath Munde
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15. Shri M.B. Rajesh
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17. Shri Gutha Sukhender Reddy
18. Shri Conrad Kongkal Sangma
19. Shri Bhanu Pratap Singh Verma
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21. Shri Nagendra Kumar Pradhan

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22. Shri T.K.S. Elangovan
23. Shri Oscar Fernandes
24. Shri Manish Gupta
25. Shri Ram Jethmalani
26. Dr. Prabhakar Kore

27. Shri Shamsheer Singh Manhas
28. Shri S. Muthukaruppan
29. Shri Surendra Singh Nagar
30. Dr. Anil Kumar Sahani
31. Smt. Viplove Thakur

**SECRETARIAT**

- |    |                  |                      |
|----|------------------|----------------------|
| 1  | Shri A.K. Singh  | Additional Secretary |
| 2. | Shri N.K. Pandey | Director             |
| 3. | Ms. Deepika      | Executive Assistant  |

## **INTRODUCTION**

I, the Chairperson, Standing Committee on Energy, having been authorized by the Committee to present the Report on their behalf, present this Thirty Third Report on the action taken by the Government on the recommendations contained in the 17<sup>th</sup> Report of the Standing Committee on Energy on the subject 'Hydro Power - A Sustainable, Clean and Green Alternative'.

2. The 17<sup>th</sup> Report was presented to the Lok Sabha on 6<sup>th</sup> May, 2016 and was laid on the Table of the Rajya Sabha on the same day. Replies of the Government to all the recommendations, except two, contained in this Report were received on 9<sup>th</sup> August, 2017.

3. The Report was considered and adopted by the Committee at their sitting held on February 15, 2018.

4. An Analysis of the Action Taken by the Government on the recommendations contained in the 17<sup>th</sup> Report of the Committee is given at Appendix-II.

5. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in the body of the Report.

**New Delhi  
March 05, 2018  
Phalguna 14,1939 (Saka)**

**DR. KAMBHAMPATI HARI BABU,  
Chairperson,  
Standing Committee on Energy**

## CHAPTER – I

This Report of the Standing Committee on Energy deals with Action Taken by the Ministry of Power on the Recommendations/Observations contained in the Seventeenth Report (Sixteenth Lok Sabha) of the Committee (2015-16) on the subject 'Hydro Power - A Sustainable, Clean and Green Alternative'.

2. The Seventeenth Report was presented to the Lok Sabha on 6<sup>th</sup> May, 2016 and was laid on the Table of the Rajya Sabha on the same day. The Report contained 14 Recommendations/Observations.

3. Action Taken Notes in respect of 12 out of 14 Recommendations/Observations contained in the Report have been received from the Government. These have been categorized as follows:

- (i) Recommendations/Observations which have been accepted by the Government:  
Serial Nos. 1, 4, 5, 7, 8, 9, 10 and 14. Total - 08  
Chapter-II
  
- (ii) Recommendation/Observation which the Committee do not desire to pursue in view of the Government's replies:  
Serial No.13. Total - 01  
Chapter-III
  
- (iii) Recommendations/Observations in respect of which the replies of the Government have not been accepted by the Committee and which require reiteration:  
Serial Nos. 3, 6 and 11. Total - 03  
Chapter - IV
  
- (iv) Recommendations/Observations in respect of which the final replies of the Government are still awaited:  
Serial Nos. 2 and 12. Total - 02  
Chapter-V



**4. Action Taken Notes in respect of the following Recommendations contained in the Report are still awaited:**

(i) Recommendation No. 2 relating to constitution of sub – committee(s) to look after various issues related to the subject and to examine the subject intensively and extensively by holding meetings with various Government agencies and other stakeholders involved; and

(ii) Recommendation No. 12 relating to study of the remaining river basins and expediting the process of granting environmental clearances.

**The Committee draw attention of the Ministry towards the fact that the 17<sup>th</sup> Report on the Subject 'Hydro Power – A Sustainable, Clean and Green Alternative' was presented to the Parliament on 6<sup>th</sup> May, 2016 and the Ministry was expected to furnish Action Taken Replies regarding the Recommendations/Observations contained in the that Report within three months of its presentation to the Parliament. However, the Action Taken Replies were furnished on 9<sup>th</sup> August, 2017 i.e. the Ministry took 15 Months to furnish the replies and Action Taken Replies in respect of two Recommendations are still awaited. The Committee have taken a serious view of this delay and they expect the Ministry to adhere to the prescribed time limit.**

**5. The Committee desire that Action Taken Notes on the Recommendations/Observations contained in Chapter-I of the Report may be furnished to the Committee within three months of the presentation of this Report.**

### **Recommendation No. 3**

6. The Committee had noted that out of the total potential of 1,45,320 MW assessed in the country, Arunachal Pradesh alone had 46,805 MW of hydro power capacity that was to be developed. The Committee had noted that in Arunachal Pradesh, where there was approval for 12,000 MW capacities, only 2,705 MW capacity was under development and a meager 200 MW was under operation. It was a well-known fact that the gestation period of hydro power projects was comparatively longer, owing to the elaborate process of survey, preparing DPR and obtaining various clearance and difficulties faced during construction of the project itself, which were mostly in remote and uninhabitable areas. The Committee were concerned to note that there were 25,962 MW capacities which were yet to be taken up for any development. There was every possibility that the project which were at various stages of development could take upto 7-8 years or even more to be operational. In this scenario, the future of about 26,000 MW capacity which had not been taken up for development, looked very bleak. It was also a fact that in the long run, hydro power proved cheaper as flowing water was used for its operation; therefore, the sooner we develop and start harnessing hydro power, the lesser would be the per unit cost. The Committee, therefore, had strongly recommended that:

- (i) All-out efforts should be made by the Government to ensure that the construction work on the projects which have got all the clearance should be started without any loss of time.
- (ii) To ensure that the timeline for the projects, which are under various stages of development, is adhered to, the Government should take pre-emptive as well as prompt resolution of any issue which may crop up during their development.
- (iii) The Committee strongly recommend to the Government to make efforts on priority basis to ensure the balance capacity of 25,962 MW, which is yet to be developed, is allocated for development at the earliest.

7. In its Action Taken Reply, the Ministry of Power has stated as under:

"The following monitoring mechanism is in place in the Ministry of Power to coordinate country's hydro capacity addition programme and to ensure that the timelines for project execution are adhered to:

- a) Central Electricity Authority (CEA) is monitoring the under construction hydro power projects (above 25 MW) in pursuance of Section 73 (f) of Electricity Act, 2003. The progress of each project is monitored continuously through site visits, interaction with the developers & other stake holders. Chairperson,

CEA holds review meetings with the Power Projects Monitoring Panel (PPMP) and monitoring divisions of CEA.

- b) Power Project Monitoring Panel (PPMP), set up by the Ministry of Power, independently follow up and monitors the progress of the hydro projects.
- c) Ministry of Power also reviews the progress of ongoing hydroelectric projects regularly with the concerned officers of CEA, equipment manufacturers, State Utilities / CPSUs / Project developers, etc.
- d) Further, in order to improve the capacity performance of the power sector public undertakings, and to ensure that the projects are commissioned on time, the Government has taken the following steps:
  - The project implementation parameters / milestones are incorporated in the annual MoU signed between respective CPSU's and MoP and the same are monitored during the quarterly performance review meetings of CPSU's and other meetings held in MoP/ CEA.
  - The issues related to erection and supply of Electro-Mechanical equipment is expedited with BHEL in various meetings held in CEA / MoP and other local issues affecting the progress of works are taken up with respective State Governments by the Concerned CPSU / MoP."

**8. In response to the recommendation of the Committee, the Ministry has furnished a list of various monitoring mechanisms to coordinate the country's Hydro Capacity Addition Programme and to ensure that the timelines for project execution are adhered to. But, the Ministry has not provided any detail regarding outcome of these monitoring mechanisms.**

The Committee had noted in their report in May, 2016 that in Arunachal Pradesh there was approval for 12,000 MW capacity, out of which 2,705 MW capacity was under development and a meager 200 MW was under construction. The Committee have expected the Ministry to come up with updated data, especially when the Ministry has taken 15 Months to furnish the Action Taken Replies.

In view of the above, the Committee desire that the Ministry should furnish the latest status regarding Hydro Power Development in Arunachal Pradesh and they reiterate their recommendation that:

- (i) All-out efforts should be made by the Government to ensure that the construction work on the projects which have got all the clearance should be started without any loss of time.**
- (ii) To ensure that the timeline for the projects, which are under various stages of development, is adhered to, the Government should take pre-emptive as well as prompt resolution of any issue which may crop up during their development.**
- (iii) The Committee strongly recommend to the Government to make efforts on priority basis to ensure the balance capacity of 25,962 MW, which is yet to be developed, is allocated for development at the earliest.**

#### **Recommendation No. 5**

9. The Committee, in the preceding para, had noted that the performance of the Private Sector in hydro power had not been up to the mark for various reasons. The Committee were of the firm belief that involvement of private players in a big way was necessary for the development of hydro power sector. However, they were not sure whether this would happen soon. On the other hand, the Committee found that the Government has giant Public Sector Undertakings like NHPC, NEEPCO, THDC, etc., having the required infrastructure, manpower and expertise, who are also specialized in the development of hydro projects. Despite all these, these PSUs did not have many projects to develop. The Committee felt that under-utilization of these PSUs was nothing but sheer waste of available resources and expertise. In Arunachal Pradesh, after utilizing their expertise to prepare DPRs, many projects had been assigned to private players who were new in this field. The Committee had also been apprised that hydro power projects were allotted in Arunachal Pradesh on payment of upfront premium on 'First come First served basis'. Since this upfront premium was not included in the cost of the projects, the same could not be calculated for tariff determination. However, NHPC or Government PSUs could not pay upfront premium as they did not have provision for the same, because of which all the projects allocated to them were taken back and allocated to private companies who paid upfront premium. The Committee, therefore, had strongly recommended that:

- (i) It has become imperative to promote PSUs engaged in hydro power by allocating them more and more projects as they have the required infrastructure, expertise and resources to work in remote areas; besides, they do not have problems in arranging finances for projects.**
- (ii) The Government should take necessary steps to discontinue the practice of payment of upfront premium for allocation of hydro projects.**

10. In its reply, the Ministry of Power has stated as under:

i) "At present, following projects have been allotted to Central PSU and these projects are at various stages of development. Details are given below:

<b>Status of H.E. Projects allotted to CPSU's</b>	<b>Nos.</b>	<b>I.C. (MW)</b>
Under Construction	13	6235
H.E. Projects concurred by CEA and yet to be taken up for construction	10	5102
H.E. Projects under Examination in CEA	3	714
DPR Returned by CEA to project authorities for resubmission	1	130
H.E. Projects under S&I	3	1504
<b>Total</b>	<b>30</b>	<b>13685</b>

It is observed, that apart from the above a number of project have been allotted to private sector for implementation. However, a majority of the projects are yet to take off. Some of them are progressing at a slow pace.

ii) The Tariff Policy, 2006 provides for upfront payment as one of the bidding criteria for the hydro power projects. It is also to mention that Hydro Power projects were allotted to IPPs on payment of 'up front premium' in accordance with the Tariff Policy, 2006. But there was no impact on the tariff on account of the above, since this premium was not included in the project cost. However, this provision has now been removed in the Tariff Policy, 2016."

**11. With regard to the recommendation of the Committee, the Ministry has furnished details regarding status of Hydro Projects that have been allotted to the CPSUs. It has been stated that apart from the projects that have been allotted to the CPSUs, a number of projects have also been allotted to private sector for implementation.**

**The Committee note with satisfaction that the provision regarding upfront payment as one of the bidding criteria for the Hydro Power Projects has been removed in the Tariff Policy, 2016. However, the Committee are concerned to note that a majority of the projects are yet to take off and some are progressing at a slow pace which implies that the hydro power sector has been neglected and hardly any effort has been made by the Government to ease numerous obstacles in its development.**

### **Recommendation No. 6**

12. The Committee had noted that 96,524 MW capacity of pumped storage scheme had been identified in the country. Out of this, capacity of 4,785.6 MW was under operation and 1,080 MW was under construction, whereas 1,000 MW projects DPR were prepared and submitted to CEA. The Committee had found that development of pumped storage scheme in the country was at a rudimentary stage and its utilization against the total potential was meager. Considering the vast network of electricity grid in the country and the quantum of electricity demand, it was not difficult to gauge the range of fluctuation in power demands. Pumped storage schemes were meant for storing energy and using at times when demands for electricity soars. Hence, pumped storage scheme would be quite beneficial for developing ancillary power market and in meeting sudden high demands of electricity. The Committee, therefore, had recommended that due attention should be given to develop identified pumped storage schemes in the country.

13. The Ministry of Power, in its reply, has stated as under:

"Apart from catering to peaking demands, pumped storage projects are becoming increasingly important to meet the balancing power requirements for ensuring grid stability in the light of large capacity addition envisaged from renewable resources like solar (100000 MW) and wind (60000 MW) by 2022 which supply intermittent and variant power.

Around 40% of the Pumped storage potential identified in the states like MP, Chhattisgarh, Kerala, Karnataka could not be taken up for development etc. due to variety of other reasons like their location in Reserve Forests, Coal mines, Western Ghat region (declared as Eco-Sensitive Zone by MoEF and all the construction activities have been stopped) etc. As such, an assessment of the doable Pumped Storage Schemes in the near future has been made by CEA in consultation with various State Governments and various CPSUs involved in hydro power development. Based on these consultations, 13 nos. of PSS having aggregate capacity of 8345 MW have been identified for providing benefits in near future which includes schemes on existing hydro projects as well as new pumped storage schemes."

**14. In its Action Taken Reply, the Ministry has stated that around 40% of the pumped storage potential identified in the states like MP, Chhattisgarh, Kerala, Karnataka etc. could not be taken up for development and all the construction activities there have been stopped due to variety of reasons like their location in Reserve Forests, Coal Mines, Western Ghats Region, etc., which have been**

declared as Eco-Sensitive Zone by the MoEF. It has also been stated that an assessment of the doable Pumped Storage Schemes in the near future has been made by CEA in consultation with various State Government and CPSUs involved in Hydro Power Development and based on these consultations, 13 nos. of Pumped Storage Schemes having aggregate capacity of 8345 MW including schemes on existing Hydro Projects have been identified for development.

The Ministry itself has stated that apart from catering to peak demand, Pumped Storage Schemes are important to meet the balancing power requirements for ensuring grid stability in the light of large capacity addition envisaged from Renewable Sources like Solar (100 GW) and Wind (60 GW) by 2022.

The Committee are of the view that the Ministry should hold consultations with MoEF and try to find a way out as about 90,000 MW of capacity should not be abandoned right away. The Committee, therefore, reiterate their recommendation that due attention should be given to develop identified Pumped Storage Projects in the country.

#### **Recommendation No. 11**

15. The Committee, during the examination of the subject, had been apprised that some States had imposed heavy water cess, which had affected the viability of hydro power projects due to increase of tariff by more than one rupee. The Committee had felt that this issue would only exacerbate the grim scenario of hydro power sector of the country. They had desired the Government to take up this matter with the States concerned and find out some solution to this problem so that the already distressed hydro power sector was exempted from the additional burden in the form of water cess. The Committee, therefore, had recommended that:

- (i) There should be no retrospective charges like cess on water, reallocation of DPR rate projects for want of upfront premium or any other kind of levy which is likely to impact the competence of the tariff of hydro power.
- (ii) The State Governments concerned may be taken on board in this regard so as to ensure that such lateral super-imposition retrospectively is not taken recourse to for any reason.

16. In its Action Taken Reply, the Ministry has stated as under:

"Water is a State Subject. However, it has been taken up with the State Governments that levying of Cess and other such charges result in making the tariff uncompetitive and hence should not be resorted to."

17. **In response to the recommendation of the Committee, the Ministry has stated that Water is a State subject.**

**The Committee appreciate that the Ministry has taken up the matter related to the levying of Water Cess and other such charges with the State Governments concerned. But, the Committee are of the view that the fact that Water is a state subject does not absolve the Ministry of its responsibility towards development of the Hydro Sector which is already in a grim situation.**

**The Committee desire that the Ministry should take up the matter of Water Cess and other charges with the State Government concerned with utmost sincerity and find out some solution to this problem so that the already distressed hydro power sector is exempted from the additional burden of water cess. The Committee, therefore, reiterate their recommendation that:**

- (i) There should be no retrospective charges like cess on water, reallocation of DPR rate projects for want of upfront premium or any other kind of levy which is likely to impact the tariff of hydro power.**
- (ii) The State Governments concerned may be taken on board in this regard so as to ensure that such lateral super-imposition of cess retrospectively is not taken recourse to for any reason.**



## CHAPTER II

### OBSERVATIONS/ RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

**Status of implementation of the recommendations of the Committee contained in the Seventeenth Report, under Direction 73A of the 'Directions by the Speaker'**

#### **Recommendation No.1**

The Committee note that as per the present policy, hydro power plants upto 25 MW capacities are considered as renewable energy sources and are under the purview of the Ministry of New and Renewable Energy, whereas, hydro power plants having capacities more than 25 MW are considered conventional energy source and are dealt with by the Ministry of Power. In reply to the query of the Committee as to why not all the hydro power projects, irrespective of their capacity, cannot be considered as renewable energy sources, the Ministry have stated that as per the Allocation of Business Rules, all matters relating to Small / Micro Hydel Project of and below 25 MW capacity comes under the domain of the Ministry of New & Renewable Energy (MNRE). Declaring all hydro power projects as renewable energy source is a policy decision which may involve joint consultation between the Ministry of Power, Ministry of New and Renewable Energy, State Governments and other stakeholders. The Committee, during the examination of the subject, have learned that hydro power is a clean and green source of energy and unlike conventional thermal plants does not emit pollutants into the environment. The Committee also found that there is no logic for segregation of hydro power into renewable energy and conventional energy and also its baseline, viz. 25 MW. The Committee wonder if perpetuity of the source and non-emission of pollutants are the criteria for considering a source as renewable energy, then why cannot hydro power projects having capacity of more than 25 MW be also counted as renewable sources. The Committee was informed by the Ministry that in view of the examination of the subject, the Cabinet has recently approved the new tariff policy in which hydro power has been exempted from the renewable solar power obligation. The result of the new tariff policy will be exemption of hydro power from the account for meeting the obligation of buying solar power. The Committee believe that this is a step in the right direction and will act as an incentive for the hydro power sector. The Committee feel that the spirit of the tariff policy in exempting hydro power from the solar obligation is also an endorsement that hydro power, irrespective of the capacity, should be treated as renewable sources of energy because solar power obligation is nothing but equivalent of renewable power obligation and hydro power exemption signifies that it meets the basic criteria of these obligations. The Committee, therefore, recommend that:

- (i) All types of hydro power should be treated as renewable sources of energy.
- (ii) If necessary, legislative provisions may be introduced in this regard as defining hydro a renewable source involves a policy decision and allocation of business in the Government as well.
- (iii) The exemption of hydro power from solar power obligation in the new tariff policy be made permanent.

### **Reply of the Government**

In compliance of the recommendations of the Committee, the Ministry has initiated a policy intervention to formulate a hydro power development policy, which envisages following interventions:-

- Declaring all hydropower (irrespective of size) as Renewable Energy.
- Provide Hydro Power Obligation(HPO) within currently mandated Non-Solar RPOs to qualify for dispatch priority, however such HPO/ RPO benefit would be available to such > 25 MW HEPs which attain COD within 5 years after notification of this policy.
- Providing 4% interest subvention during construction (maximum of 7 years) and 3 years post COD to all hydropower projects (both public and private sector) above 25 MW, attaining COD within 5 years after notification of this policy with funding from Coal Cess/ NCEF/ DONER (NLCPR) or any other source of fund. However, it would be mandatory that the benefits of such interest subvention should be passed on to the consumers in all cases, including in those cases where PPAs have already been signed prior to the policy.
- Excluding cost of enabling infrastructure from project cost for tariff calculations and reimbursement of the same from appropriate funds of the concerned department/entities of the GoI/State Govts.
- Engaging with banks and CERC for rationalizing tariffs through a combination of measures.

Create a Hydro Power Development Fund (HPDF) by ear-marking funds from the Coal Cess/ NCEF/ DoNER (NLCPR)/ or any other source of funds. This fund would be located within a suitable entity under the administrative control of Ministry of Power.

The proposed draft policy would address the recommendation of the Hon'ble Committee and is likely to encourage private as well as public sector investment in hydro power sector.

[Ministry of Power  
File No.10/5/2016-H-II, Dated:09/08/2017]

#### **Recommendation No.4**

The Committee note that out of the total installed hydro power capacity of 42,433.4 MW, only 3,154 MW capacity, which stands at a meager 7%, belongs to the Private Sector. The Committee further note that the Private Sector, in the 11<sup>th</sup> Plan period, could manage to achieve only 1,292 MW hydro power generation capacity against their mediocre target of 3,491 MW. Also, during the ongoing 12<sup>th</sup> Plan, their actual achievement so far is only 595 MW against the target of 3,285 MW. The Committee find that this is in sharp contrast with their contribution in the thermal power sector in the 11<sup>th</sup> and in the ongoing 12<sup>th</sup> Plan. The Private Sector, in thermal power, during the 11<sup>th</sup> Plan had achieved 21,720 MW against their target of 11,552, a whopping 188% of their target. Even in the ongoing 12<sup>th</sup> Plan, they have already achieved 44,667.5 MW capacities, against the target of 43,540 MW and there is one more year to go for the Plan period to be completed. The Committee are dismayed over the grim condition of hydro power sector in respect of capacity addition, wherein, even the Private Sector, an outstanding performer in thermal power, has miserably failed. The above mentioned figures speak volumes about the hydro power scenario of the country. The Committee, during the examination of the subject, learnt that many private players who have been allocated hydro power projects are finding it difficult to construct/complete the project due to various reasons, including their inexperience in the field. It has also been learnt that in some cases, though they have managed to complete the projects, their faulty construction is a cause of concern now. Since hydro power projects are site-specific and mostly located in remote areas, they demand a high level of expertise and quality manpower, whereas most of the private players are lacking in this aspect. The hydro power sector has been neglected for decades and hardly any effort has been made by the Government to ease numerous obstacles in their development. This has led to a shift of focus of the private players to thermal power which is much easier and less risky to develop and that too with a shorter gestation period. However, the Committee are of the considered view that to bring about a rapid growth in hydro power similar to the thermal sector, it is imperative to involve private players. Since the Government have now put its focus back on hydro power, the Committee feel that the steps taken in regard to reviving the sector should not become an unproductive exercise but should be concrete and capable of making this sector attractive for the Private Sector on sustainable basis.

- (i) The Committee, therefore, recommend that the Government, while drawing up the plan and policies to revive the sector should also make enabling provisions to attract private players to this sector in a big way.
- (ii) The Committee also desire that the Government should make suitable provisions/ take steps so that only private players with required capabilities and expertise could be allocated hydro power projects so as to ensure that the allocated projects are developed within the stipulated time period.

## **Reply of the Government**

A no. of measures have been taken by the Govt. in the past for development of hydro power sector including formulation of Hydro Policy, 2008 to boost the hydro power development in the country which includes the following:

- Transparent selection criteria for awarding sites to private developers.
- Enables developer to recover his additional costs through merchant sale of upto a maximum of 40% of the saleable energy.

Recently Govt. of India came out with revised Tariff Policy, 2016 with the following other provisions related to hydro sector.

- Cost plus Tariff regime (in which tariff is to be determined by the regulator under section 62 of Electricity Act, 2003) has been extended for public & private sector hydro power projects up to 15.08.2022.
- Certainty of long term PPA for min. 60% of capacity, balance through merchant sale - Provision for extension of PPA beyond 35 years for a further period of 15 years.
- Enabling provision for suitable regulatory framework incentivizing HEPs for using long term financial instruments - in order to reduce tariff burden in the initial years.
- Depreciation – Developer shall have the option of charging lower rate of depreciation vis-à-vis the ceiling determined by CERC.

It is to mention that the development of hydro project is affected due to number of other reasons like land acquisition, law & order problem, geological surprises inadequate infrastructure facilities, financial crunch with the developer, inter-state issues etc. As such, the proposed Hydro Power Policy 2017 aims to address all the other issues comprehensively.

[Ministry of Power  
File No.10/5/2016-H-II, Dated:09/08/2017]

### **Recommendation No. 5**

The Committee, in the preceding para, have noted that the performance of the Private Sector in hydro power has not been up to the mark for various reasons. The Committee are of the firm belief that involvement of private players in a big way is necessary for the development of hydro power sector. However, they are not sure whether this would happen soon. On the other hand, the Committee find that the Government have giant Public Sector Undertakings like NHPC, NEEPCO, THDC, etc., having the required infrastructure, manpower and expertise, who are also specialized in the development of hydro projects. Despite all these, these PSUs have not many projects to develop. The Committee feel that under-utilization of these PSUs is nothing but sheer waste of available resources and expertise. In Arunachal Pradesh, after

utilizing their expertise to prepare DPRs, many projects have been assigned to private players who are new in this field. The Committee have also been apprised that hydro power projects were allotted in Arunachal Pradesh on payment of upfront premium on 'First come First served basis'. Since this upfront premium is not included in the cost of the projects, the same cannot be calculated for tariff determination. However, NHPC or Government PSUs cannot pay upfront premium as they do not have provision for the same, because of which all the projects allocated to them were taken back and allocated to private companies who paid upfront premium. The Committee, therefore, strongly recommend that:

(i) It has become imperative to promote PSUs engaged in hydro power by allocating them more and more projects as they have the required infrastructure, expertise and resources to work in remote areas; besides, they do not have problems in arranging finances for projects.

(ii) The Government should take necessary steps to discontinue the practice of payment of upfront premium for allocation of hydro projects.

#### **Reply of the Government**

i) At present, following projects have been allotted to Central PSU and these projects are at various stages of development. Details are given below:

<b>Status of H.E. Projects allotted to CPSU's</b>	<b>Nos.</b>	<b>I.C. (MW)</b>
Under Construction	13	6235
H.E. Projects concurred by CEA and yet to be taken up for construction	10	5102
H.E. Projects under Examination in CEA	3	714
DPR Returned by CEA to project authorities for resubmission	1	130
H.E. Projects under S&I	3	1504
<b>Total</b>	<b>30</b>	<b>13685</b>

It is observed, that apart from the above a number of project have been allotted to private sector for implementation. However, a majority of the projects are yet to take off. Some of them are progressing at a slow pace.

ii) The Tariff Policy, 2006 provides for upfront payment as one of the bidding criteria for the hydro power projects. It is also to mention that Hydro Power projects were allotted to IPPs on payment of 'up front premium' in accordance with the Tariff Policy, 2006. But there was no impact on the tariff on account of the above, since this premium was not included in the project cost. **However, this provision has now been removed in the Tariff Policy, 2016.**

[Ministry of Power  
File No.10/5/2016-H-II, Dated:09/08/2017]

## **Comments of the Committee**

**(Please see Para No. 11 of Chapter – I of the Report)**

### **Recommendation No. 7**

The Committee note that the development of a hydro power project is a long and cumbersome process. It is also a fact that little technological advancements have been made in this sector either to curtail the long gestation period or increase the efficiency of generation of electricity with lesser amount of water. During the examination of the subject, the Ministry stated that the major advancements during recent years have been the use of advanced Tunnel Boring Machines for excavation of tunnels, Tunnel Seismic Prediction machines to predict the geology ahead of the tunnel face upto 200m, use of advanced Drill Jumbos for excavation of tunnels etc. These technologies help in reducing the construction period to some extent. The Committee firmly believe that technological advancements can provide further boost to the distressed hydro power sector. However, not much attention has been paid to this crucial aspect. The advancements as appraised to the Committee have been limited to the excavation of the land only. Improvement in the size and efficiency of generator, turbines and other related equipment is one area which has not been paid the desired attention. Improvement in this area with a scientific approach may open up new avenues in reducing the time and cost involvements. During the visit to Narmada, the Committee was apprised that a new technology, namely, "Screw Technology" has been invented in Germany which is capable of running turbines with the flow of only 10% of water as compared to the requirement of present day technology. If this technology is found to be successful and effective, it will give a fillip to the hydro sector. The Committee, therefore, recommend that:

- (i) Government must give utmost priority to research and development activities of hydro power.
- (ii) Emphasis should be on indigenous research and development relating to hydro power.
- (iii) We should also explore the options of collaboration with advance technologies in this sphere across the world and if needed, latest technologies from advanced countries should be adopted.

### **Reply of the Government**

CPSUs have an R & D wing since April'2011 with established R& D policy guidelines. . Efforts are being made to do some quality R& D works in consultation with various reputed R & D institutions and Academic institutions such as IITs etc. CPSEs are adopting latest technology in its construction projects as well as S&I (survey &

Investigation) stage. Latest practices like micro earthquake studies, neo-techniques/paleo-seismic studies, magneto telluric (MT) surveys has also been used successfully in certain hydro electric projects. To minimize geological surprises in tunnels, probe holes and tunnel seismic prediction (TSP) are being used.

Concrete face Rock fill dam (CFRD) and cut off wall were provided first time in India at dam of Dhauli Ganga HE Project in Uttrakhand to reduce time consuming excavation work as well as cost of project by way of special design and construction techniques necessary to overcome the difficulties created by 70 mtr. thick alluvium overburden in the river bed with large amount of pebbles and boulders. Roller Compacted Concrete (RCC) was used in the dam of Teesta Low dam Project-IV in (W.B.) which is an economical as well as time saving with strength and durability technique. Jet grouting has been introduced for the first time in India at Teesta-V HE Project (510 mw), Sikkim. Application of Remote Sensing and GIS in estimation of river inflow/discharge in to the reservoir of Kameng H.E.Project.

[Ministry of Power  
File No.10/5/2016-H-II, Dated:09/08/2017]

### **Recommendation No. 8**

The Committee note that so far financial institutions have been granting loan to hydro projects for a period of 10-12 years, entailing repayment of debt in the initial 10-12 years only, whereas the life of the hydro projects is 35 years and more. Therefore, higher cash flow is required in the initial years on account of repayment of debt. To meet the increased cash flow requirement, a higher rate of depreciation is allowed (5.28%) for the initial period of 12 years for the purpose of determination of tariff. As a result, the tariff of hydro power is quite high in the initial years. The tariff then reduces, once the loan is repaid and the plant is fully depreciated. That being so, the issue of the initial higher tariff of hydro power has become one of the biggest concerns as the same has gone up to Rs. 5-6 per unit. Since thermal power tariff is still on the lower side, the States are naturally finding tariff of hydro power too high; therefore, they are not ready to purchase it causing non-execution of Power Purchase Agreements in some instances. The Committee are concerned with the state of affairs and feel that it will be most undesirable for hydro power to become unsellable for whatever reasons. The Committee have strongly felt that to develop the hydro power sector at a desirable pace, there is an urgent need to provide long terms finances to hydro power projects. The provision of long term financing will help in levelizing the tariff of hydro power in place of the initial higher tariff. The Committee, during the examination of the subject, was apprised that two financial institutions relating to the power sector, namely, PFC and REC have now modified their policy to extend loans for a longer period of 25 years to hydro power projects. The Committee are glad with the prompt action taken by the Ministry and further recommend that:

- (i) The provision of providing long term loans should not be limited to these two PSUs but utmost efforts be made by the Government to make the required provisions and persuade other financial institutions and banks as well to lend finances to hydro power project for longer tenure.
- (ii) The Committee recommends that the average lifespan of the hydro power, for calculation of tariff per unit, be treated as 30 to 40 years. The Government must change the policy and also ask the financial institutions to give long term finances to make hydro power affordable and attractive.
- (ii) The Committee also recommend that long term bonds with sovereign guarantee should also be floated to provide long term finances to this sector.

### **Reply of the Government**

As per para 5.8 of revised Tariff Policy notified on 28.01.2016, the Appropriate Commission shall provide for suitable regulatory framework for incentivizing the developers of Hydro Electric Projects(HEPs) for using long term financial instruments in order to reduce the tariff burden in the initial years.

According to the CERC Tariff Regulations, 2014 the life span of hydro power project has been fixed as 35 years for the purpose of calculation of tariff.

In the proposed Hydro Power Policy 2017, it is proposed to engage with banks and CERC for rationalizing tariffs through a combination of measures.

[Ministry of Power  
File No.10/5/2016-H-II, Dated: 09/08/2017]

### **Recommendation No. 9**

The Committee note that there are hydro power projects which are being delayed due to lack of finances. The Committee also note that apart from the problem of getting loan only for shorter tenure, the hydro power projects have to pay high rate of interest on the loan amount. The Committee have further noted that the gestation period of hydro power project, i.e. 8-10 years is longer as compared to thermal plants where it is 4-5 years and solar power plants where it is only one year. Therefore, return on the investment made in hydro power projects starts to flow only after 8-10 years. This way, given the same rate of return and calculating the overall project life cycle, hydro power projects yields a lesser return as compared to thermal and solar power plants. These financial issues are resulting in higher tariff of hydro power which is ultimately paid by the end users. The Committee strongly believe that electricity is critical for the economic progress of the country. Considering the numerous inherent benefits and in view of the upcoming huge capacity addition in renewable source, the development of hydro power sector has become critical. However, so far, hydro power sector has been neglected and not given the due attention. Since the Government, for various reasons, has now decided to focus on hydro power sector, it is important that this sector should not only



be provided long term finances but also at more reasonable rate of interest to make tariff of hydro power competitive and sellable. The Committee, therefore, recommend the following:

- (i) Tax free bonds, similar to the infrastructure sector, should be issued for the hydro power sector.
- (ii) The Government should sincerely find out ways and means to provide multilateral funds from international agencies, viz. World Bank, ADB, etc., for the hydro power sector.
- (iii) The Government should also explore avenues to provide funds to the hydro power sector by the Life Insurance Corporation of India (LIC) and Pension Funds.
- (iv) Cash rich PSUs of the country should invest in hydro power sector for diversification, as fossil fuels are limited.
- (v) Similarly, various PSUs of hydro power should be encouraged to invest in other hydro power projects.
- (vi) The Committee also desire that hydro power projects, depending on their importance, may be declared as vital infrastructure and should be extended the required support and benefits to overcome any obstacles in their development.

#### **Reply of the Government**

- (i) Hydro generation is already a part of the Infrastructure sector according to Definition of Infrastructure lending by the RBI circular dated 25.11.2013. As per the information available in CEA, NHPC had already Issued Tax free bonds in the recent past. Government allows Hydro PSUs to issue tax free bonds. This allows them to borrow funds at reduced interest rates.
- (ii) The multilateral funds from international agencies viz. World Bank, ADB etc. is available at a lower rate of interest, thereby reducing the tariff.
- (iii) NHPC has already availed the Term Loan from LIC for hydro power sector in the past.
- (iv) NTPC Ltd., a Maharatna CPSE which is mainly involved in the development of thermal power projects, has already invested in the Hydro power sector by setting up of hydro power projects like Kol Dam, Lata Tapovan, Tapovan Vishnugad, Rammam etc. Moreover, PSUs like NTPC, NHPC, THDC, SJVN etc are also implementing renewable projects like Solar, Wind etc.

(v) NHPC Ltd., a PSU in the hydro sector has already made investment in Chenab Valley Power Projects [P] Limited (CVPP), which has been incorporated as a Joint Venture Company of NHPC Limited, JKSPDC and PTC (India) Limited for execution of 3 Hydroelectric Projects namely Pakal Dul, Kiru and Kwar with aggregate capacity of 2164 MW at Chenab River Basin in Distt. Kishtwar of Jammu & Kashmir, with equity participation of 49%, 49% and 2% by NHPC, JKSPDC & PTC respectively. Similarly, some PSUs have also formed JVs viz. NHPC (with Druk Green power corp. Ltd. of RGoB), NHPC (with Druk Green power corp. Ltd. of RGoB), SJVNL (with Druk Green power corp. Ltd. of RGoB) and THDC (with Druk Green power corp. Ltd. of RGoB) for executing hydro projects in Bhutan. THDC is also planning to develop Malshej Ghat and Humabrali PSS in Maharashtra.

(vi) The Govt. through various provisions in its policies is already extending certain support & benefits to hydro projects in their development. These include:

- Exemption for procurement of power through Tariff based bidding till 15.08.2022.
- Para 5.8 of revised Tariff Policy 2016, provides for suitable regulatory framework for incentivizing the developers of Hydro Electric Projects (HEPs) for using long-term financial instruments in order to reduce the tariff burden in the initial years.
- Higher rate of return on Equity (RoE) @ 16.5% for Storage type hydro generating stations including pumped storage and Run of River generating stations with pondage.

[Ministry of Power  
File No.10/5/2016-H-II, Dated: 09/08/2017]

### **Recommendation No. 10**

The Committee note that the project financing cycle of hydro projects is very different from that of the other infrastructure projects like highways and railways, for the main reason that in a hydro project the investigation on the site, pre-investigation survey, as preparation of DPR are far more complex and take a longer time. Secondly, it takes time to obtain environment and forest clearances. Moreover, land acquisition and rehabilitation is a very long third stage process. Normally, DPR is prepared after pre-investigation which, by the time of obtaining all the clearances, becomes obsolete and requires estimate revision. Till the time land is acquired, the need for second revised estimation looms large. At the time of the start of actual construction work, these varying estimations create much confusion in various financial calculations. The Committee, therefore, would like to recommend:

- (i) The Ministry should take necessary action in regard to adopting the practice of treating financial appraisal and financial approval as two distinct stages.

(ii) The activities before the actual start of the construction work should be treated as pre-investment activities. Therefore, the financial appraisal at this stage should be approved as pre-investment activities and not as original cost estimation.

(iii) The final financial approval taken at the time of actual start of work should be treated as original cost estimate to adjust cost escalation, if any, so that the need for resubmission of project approval in case of any cost escalation does not arise.

### **Reply of the Government**

The above recommendation of the committee are already being adhered to. The investment proposal for a project is considered in two stages. The first stage is investment approval for Survey & Investigation, and other pre investment activities. This is treated as financial appraisal/approval for the pre investment activities. Subsequently, Detailed Project Report (furnishing total cost of the project also indicating the cost of pre-construction activities) for Hydro Power Projects costing above Rs 1000 crores is submitted by the Developer to CEA for techno economic concurrence. After approval of CEA, the investment proposal for the entire project is taken up for approval by the Government in respect of Public Sector Undertakings and this cost is considered as Original Cost Estimate. The actual construction work is started after this investment approval.

[Ministry of Power  
File No.10/5/2016-H-II, Dated: 09/08/2017]

### **Recommendation No.14**

The Committee note that most of the hydro power potential lies in far-flung and remote areas. The access to these sites and their development, in the absence of any connecting road and enabling infrastructure, is an issue. In these conditions developers face many difficulties in developing these projects. The Border Roads Organization (BRO) has been entrusted with the work of constructing roads to these sites. During the examination of the subject, when the Committee asked for the reasons for delays in their road projects, the BRO have stated that the major roadblock in development of road projects is acquisition of land. Land being a State subject, lot of problems are being faced. In many cases, even after compensation money was given by BRO to revenue authorities and the same has been disbursed to affected people, mutation of the land has not been done. Secondly, obtaining forest and wildlife clearances take years leading to further delays in road projects. Also, lack of labourers, especially in the States of Arunachal Pradesh and Jammu & Kashmir, further aggravates the problem. Moreover, the Committee note that the BRO does not have sufficient capacity to construct roads at a required pace and in a definite timeframe. The Committee feel that

these road projects are important enabling elements of hydro power projects; hence they should also be given the due attention. The Committee believe that delay in these road projects will have a cascading effect on the developmental timeline of hydro power projects and result in cost overrun. It is obvious that any cost overrun will ultimately increase the tariff. The Committee, therefore, recommend that:

(i) The Government should take up the matter of land acquisition issue affecting the BRO road projects with the respective State Governments at appropriate level with a view to finding amicable and lasting solutions. They should also persuade the States which are endowed with hydro power, to grant forest and wildlife clearance to BRO road projects more expeditiously and liberally as the time bound development of many hydro power projects are dependent on the timely completion of these connecting roads.

(ii) The BRO should make utmost efforts to expedite the execution pace of the allocated road projects. The Committee also recommend to the Government to consider the issue of augmenting the capacity of BRO or make provisions to allow them to engage private contractors for the time-bound development of these crucial projects, subject to stringent quality control.

#### **Reply of the Government**

Ministry of Power has been holding regular meetings with Ministry of Road Transport and Highways (MoRTH) and Border Road Organization (BRO) to discuss the status of various critical stretches of roads and bridges being implemented in the state. The recommendations of the Committee have been noted.

[Ministry of Power  
File No.10/5/2016-H-II, Dated: 09/08/2017]

## CHAPTER III

### OBSERVATIONS/ RECOMMENDATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENT'S REPLIES

#### Recommendation No. 13

The Committee note that there is an urgent need to fast track hydroelectric projects by the CEA. Though it has been stated that the mechanism has been streamlined, yet much more requires to be done with the coordination of various agencies which are involved in the process of according clearance for the projects. The Central Water Commission, Geological Survey of India, Central Soil and Mineral Research Station and several divisions of The Central Electricity Authority take their own time, leading up to several years, before a clearance is given for the project. This unnecessarily leads to huge escalation in cost estimation. The Committee have been informed that before formal taking up of DPR for concurrence, clearances are given for various chapters by CEA. Thereafter, DPR is taken up for appraisal by CEA and a time period of 150 days is required for getting the financial appraisal, lay out and other issues. The Committee feel that this process consumes too much time, which is avoidable. Once chapters are approved with the guidance of CEA and discussed extensively then the time limit of 150 days for CEA to accord approval appears to be a bit longer which requires rationalization. The Committee, therefore, recommend that:

- (i) The entire process of approval of various stages before the commencement of the DPR requires to be streamlined, with a view to reducing the time frame involved therein.
- (ii) The time limit of 150 days for CEA to accord approval to DPR should be curtailed to not more than 60 days as all the pre-requisites are already completed with the knowledge and concurrence of various divisions of CEA.

#### Reply of the Government

As per “guidelines for accord of concurrence to Hydro Electric Schemes submitted to the Authority”, before formally taking up the DPR under examination only 9 chapters (out of 24 chapters) are appraised during the Pre-DPR stage. These are mainly related to planning and investigation aspects. Subsequently, the DPR is prepared incorporating design and cost/financial aspects of civil structures and E&M equipment based on the planning and investigation approved in the Pre-DPR stage.

In the post –DPR stage, the designs of all components (Civil as well as E&M) are examined and appraised and concurrence is accorded. These activities are to be carried out in 150 working days as per guidelines. These time lines have been fixed recently after detailed deliberation with all the appraising groups in CEA-CWC and

finalized by Ministry of Power. The same have been duly approved by Hon'ble Minister of Power. It is informed that out of 150 days, appraisal of design aspects is to be completed in 90 days; quantities, cost/financial aspects in 50 days and 10 days are kept for various activities such as preparation and circulation of agenda note and convening of concurrence /appraisal meeting related meeting related to accord of concurrence by the authority. As such the timeline fixed for concurrence of DPR by CEA appears justified.

[Ministry of Power  
File No.10/5/2016-H-II, Dated: 09/08/2017]

## CHAPTER IV

### **OBSERVATIONS/ RECOMMENDATIONS IN RESPECT OF WHICH THE REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE AND WHICH REQUIRE REITERATION**

#### **Recommendation No. 3**

The Committee note that out of the total potential of 1,45,320 MW assessed in the country. Arunachal Pradesh alone has 46,805 MW of hydro power capacity that is to be developed. The Committee note that in Arunachal Pradesh, where there is approval for 12,000 MW capacities, only 2,705 MW capacity is under development and a meager 200 MW is under operation. It is a well-known fact that the gestation period of hydro power projects is comparatively longer, owing to the elaborate process of survey, preparing DPR and obtaining various clearance and difficulties faced during construction of the project itself, which are mostly in remote and uninhabitable areas. The Committee are concerned to note that there are 25,962 MW capacities which are yet to be taken up for any development. There is every possibility that the project which are at various stages of development could take upto 7-8 years or even more to be operational. In this scenario, the future of about 26,000 MW capacity which has not been taken up for development, looks very bleak. It is also a fact that in the long run, hydro power proves cheaper as flowing water is used for its operation; therefore, the sooner we develop and start harnessing hydro power, the lesser will be the per unit cost. The Committee, therefore, strongly recommend that:

- (i) All-out efforts should be made by the Government to ensure that the construction work on the projects which have got all the clearance should be started without any loss of time.
- (ii) To ensure that the timeline for the projects, which are under various stages of development, is adhered to, the Government should take pre-emptive as well as prompt resolution of any issue which may crop up during their development.
- (iii) The Committee strongly recommend to the Government to make efforts on priority basis to ensure the balance capacity of 25,962 MW, which is yet to be developed, is allocated for development at the earliest.

#### **Reply of the Government**

The following monitoring mechanism is in place in the Ministry of Power to coordinate country's hydro capacity addition programme and to ensure that the timelines for project execution are adhered:

- a) Central Electricity Authority (CEA) is monitoring the under construction hydro power projects (above 25 MW) in pursuance of Section 73 (f) of Electricity Act, 2003. The progress of each project is monitored continuously through site visits, interaction with the developers & other stake holders. Chairperson, CEA holds review meetings with the Power Projects Monitoring Panel (PPMP) and monitoring divisions of CEA.
- b) Power Project Monitoring Panel (PPMP), set up by the Ministry of Power, independently follow up and monitors the progress of the hydro projects.
- c) Ministry of Power also reviews the progress of ongoing hydroelectric projects regularly with the concerned officers of CEA, equipment manufacturers, State Utilities / CPSUs / Project developers, etc.
- d) Further, in order to improve the capacity performance of the power sector public undertakings, and to ensure that the projects are commissioned on time, the Government has taken the following steps: -
- The project implementation parameters / milestones are incorporated in the annual MoU signed between respective CPSU's and MoP and the same are monitored during the quarterly performance review meetings of CPSU's and other meetings held in MoP/ CEA.
  - The issues related to erection and supply of Electro-Mechanical equipment is expedited with BHEL in various meetings held in CEA / MoP and other local issues affecting the progress of works are taken up with respective State Governments by the Concerned CPSU / MoP.

[Ministry of Power  
File No.10/5/2016-H-II, Dated: 09/08/2017]

### **Comments of the Committee**

**(Please see Para No. 8 of Chapter – I of the Report)**

### **Recommendation No. 6**

The Committee note that 96,524 MW capacity of pumped storage scheme has been identified in the country. Out of this, capacity of 4,785.6 MW is under operation and 1,080 MW is under construction, whereas 1,000 MW projects DPR are prepared and submitted to CEA. The Committee find that development of pumped storage scheme in the country is at a rudimentary stage and its present utilization against the total potential is meager. Considering the vast network of electricity grid in the country and the quantum of electricity demand, it is not difficult to gauge the range of fluctuation in power demands. Pumped storage schemes are meant for storing energy and using at times when demands for electricity soars. Hence, pumped storage scheme will be quite beneficial for developing ancillary power market and in meeting sudden high demands



of electricity. The Committee, therefore, recommend that due attention should also be given to develop identified pumped storage schemes in the country.

### **Reply of the Government**

Apart from catering to peaking demands, pumped storage projects are becoming increasingly important to meet the balancing power requirements for ensuring grid stability in the light of large capacity addition envisaged from renewable resources like solar (100000 MW) and wind (60000 MW) by 2022 which supply intermittent and variant power.

Around 40% of the Pumped storage potential identified in the states like MP, Chhattisgarh, Kerala, Karnataka could not be taken up for development etc. due to variety of other reasons like their location in Reserve Forests, Coal mines, Western Ghat region (declared as Eco-Sensitive Zone by MoEF and all the construction activities have been stopped) etc. As such, an assessment of the doable Pumped Storage Schemes in the near future has been made by CEA in consultation with various State Governments and various CPSUs involved in hydro power development. Based on these consultations, 13 nos. of PSS having aggregate capacity of 8345 MW have been identified for providing benefits in near future which includes schemes on existing hydro projects as well as new pumped storage schemes.

[Ministry of Power  
File No.10/5/2016-H-II, Dated: 09/08/2017]

### **Comments of the Committee**

**(Please see Para No. 14 of Chapter – I of the Report)**

### **Recommendation No. 11**

The Committee, during the examination of the subject, was apprised that recently some States have imposed heavy water cess, which has affected the viability of hydro power projects due to increase of tariff by more than one rupee. The Committee feel that this issue will only exacerbate the grim scenario of hydro power sector of the country. They desire the Government to take up this matter with the States concerned and find out some solution to this problem so that the already distressed hydro power sector is exempted from the additional burden in the form of water cess. The Committee, therefore, recommend that:

- (i) There should be no retrospective charges like cess on water, reallocation of DPR rate projects for want of upfront premium or any other kind of levy which is likely to impact the competence of the tariff of hydro power.

(ii) The State Governments concerned may be taken on board in this regard so as to ensure that such lateral super-imposition retrospectively is not taken recourse to for any reason.

**Reply of the Government**

Water is a State Subject. However, it has been taken up with the State Governments that levying of Cess and other such charges result in making the tariff uncompetitive and hence should not be resorted to.

[Ministry of Power  
File No.10/5/2016-H-II, Dated: 09/08/2017]

**Comments of the Committee**

**(Please see Para No. 17 of Chapter – I of the Report)**

## CHAPTER V

### OBSERVATIONS/ RECOMMENDATIONS IN RESPECT OF WHICH THE FINAL REPLIES OF THE GOVERNMENT ARE STILL AWAITED

#### Recommendation No. 2

The Committee note that the country has total installed power generation capacity of 2,78,884 MW, wherein, the share of hydro power is only 15% as compared to thermal power, which is 70%. The Committee also note that the share of hydro power in the total energy mix has been falling ever since 1962-63, when the share of hydro was at its peak of 51%. The Committee further note that against the total assessed potential of 1,45,320 MW of hydro power in the country, 37,648 MW capacity is installed and operational and 11,812 MW capacity is under development stage, whereas a whopping 95,860 MW capacity is yet to be developed. In regard to the falling share of hydro, the Ministry have stated that lack of adequate infrastructure, drying-up of funding by bilateral/ multilateral agencies, increasingly stringent environment clearance regime for hydro projects after the 1970s due to the worldwide focus on environmental / ecological / R&R issues and consequent activism against the development of hydro projects by NGOs/ Environmental activists, and greater emphasis on rapid development of thermal power during the 1970s for quicker capacity addition in view of large scale industrialization have contributed to the slow growth/ decline of hydro share in the subsequent years. In addition, factors like land acquisition issues, R&R issues, inter-State issues and non-tie-up/ non-availability of requisite finances on long term basis, etc. have further slowed down the development of hydro power. The Ministry have stated various steps that have been taken by the Government to boost the hydro power sector. However, in the considered view of the Committee, the present installed capacity of hydro power proves that they were not effective enough. The Committee have been given to understand that a capacity addition of 1.75 lakh MW of Solar and Wind power has been envisaged by the Government. Since these sources of energy are intermittent in nature, there will be a need for balancing power which could start-up and shut down quickly to provide stability to the grid – this could be gas powered thermal power or hydro power. It is a well-known fact that there are many gas powered power plants which are either stranded or running way below their optimum PLF due to non-availability of the required amount of gas. Hence, development of hydro power becomes the only option. Moreover, for fulfilling global commitments to contain emission levels, choosing hydro power will be more judicious. Therefore, the Committee believe that we are left with no choice but to develop the hydro power sector rapidly. The Committee was apprised by the Ministry that owing to detailed examination of 'Hydro Power' subject by this Standing Committee, they have formed two sub-Committees to look into the

overall legal regulatory framework and various financing options for hydro power. The Committee are pleased with the prompt action taken by the Ministry and are of the belief that this will go a long way in identifying and resolving the issues that have been hindering the development of the hydro power sector. The Committee recommend that:

- (i) The Government should adopt a holistic approach for optimum development of the hydro power sector in the country and thoroughly revise the present Hydro Power Policy, as per the needs of the time.
- (ii) The two sub-Committees, formed by the Ministry to look after various issues related to the subject should meet regularly and examine the subject intensively and extensively by holding meetings with various Government agencies involved and other stakeholders.
- (iii) Further, the findings/recommendations of these sub-Committees should be sincerely and promptly implemented by the Government.

#### **Recommendation No. 12**

The Committee, during the examination of the subject, have found that hydro power projects get delayed due to various reasons, which causes cost overrun and ultimately results in increased tariff. The main reason cited for the extended delay is obtaining of environmental clearances, which has been cited as the biggest road block in the development of hydro power sector. To bring clarity on the issue, the Committee heard the views of the Ministry of Environment, Forest and Climate Change. It was stated that since the notification of EIA in 2006, environmental clearances have already been accorded to numerous hydro power projects. However, in a majority of cases, construction work is yet to be started. Further, out of the assessed hydro power capacity of 45,000 MW in Arunachal Pradesh, only 405 MW capacity is operational and 2,710 MW capacity is under construction. In case of 8,500 MW capacity projects which have all the clearances, the development work has not started yet. In regard to pendency of hydro projects before MoEF&CC for clearance, it was stated that out of 45,000 MW, projects of 6,600 MW only are pending with them. They further stated that they have started to undertake study of various river basins. The outcome of these studies will commonly be applied to all the projects in that basin for the purpose of environmental flow, litigation related to disaster and bio-diversity. In regard to hydro power development in the Himalayan region, they stated that certain pockets and area above 3,000 meter are not being touched in view of the risk of damages to environment and biodiversity. Scrutinizing all the related facts and figures and considering the differing views in regard to environmental clearances, the Committee are of the view that the perception that environmental clearances are the biggest roadblock in the development

of the hydro power sector does not hold water. The Committee note that there are various projects which have been accorded all the environmental clearances, even after which they are not being developed. The Committee are also of considered view that both environment and the development of the country are of utmost importance and hence there is an urgent need to strike the light balance between the two. The Committee while endorsing the concept of river basin study, recommend that:

- (i) The work related to study of the remaining river basins should be completed expeditiously.
- (ii) The Committee are of the firm view that certain sensitive areas in respect of environment and bio-diversity should not be touched; however, in rest of the areas there is a need to make the process of granting environmental clearances in a more expeditious and hassle free manner for hydro power projects.
- (iii) The Committee further recommend to the Ministry of Environment, Forest and Climate Change to prepare and disseminate clear cut guidelines in respect of granting clearances to all concerned.
- (iv) The Committee also recommend that the CEA should further streamline the process of granting clearances to fast track hydro power projects.

**New Delhi;  
March 05, 2018  
Phalguna 14, 1939 (Saka)**

**DR. KAMBHAMPATI HARI BABU  
Chairperson,  
Standing Committee on Energy**

## APPENDIX-I

### MINUTES OF THE TENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2017-18) HELD ON 15<sup>TH</sup> FEBRUARY, 2018 IN COMMITTEE ROOM G-074, PARLIAMENT LIBRARY BUILDING, NEW DELHI

The Committee met from 1100 hrs. to 1400 hrs.

#### PRESENT

#### LOK SABHA

##### Dr. Kambhampati Haribabu- Chairperson

32. Shri Om Birla
33. Shri Harish Dwivedi
34. Shri Bhagat Singh Koshyari
35. Dr. Arun Kumar
36. Kunwar Sarvesh Kumar
37. Shri Jagdambika Pal
38. Shri Ravindra Kumar Pandey
39. Shri M.B. Rajesh
40. Shri Gutha Sukhender Reddy
41. Shri Bhanu Pratap Singh Verma
42. Shri Kotha Prabhakar Reddy
43. Shri Nagendra Kumar Pradhan

#### RAJYA SABHA

44. Shri T.K.S. Elangovan
45. Shri Oscar Fernandes
46. Shri Shamsheer Singh Manhas
47. Shri S.Muthukaruppan
48. Shri Surendra Singh Nagar
49. Smt. Viplove Thakur

#### SECRETARIAT

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

2. At the outset, the Chairman welcomed the Members and apprised them about the agenda of the sitting. The Committee then took up the following draft Reports for consideration and adoption:-

- i) Draft Report on 'Stressed /Non-performing Assets in Electricity Sector'.
- ii) Draft Action Taken Report on the recommendations contained in the Fourteenth Report (16<sup>th</sup> Lok Sabha) on 'Evaluation of Role, Performance and Functioning of the Power Exchanges'
- iii) Draft Action Taken Report on the recommendations contained in the Sixteenth Report (16<sup>th</sup> Lok Sabha) on 'Demands for Grants of the Ministry of New and Renewable Energy for the year 2016-17'.
- iv) Draft Action Taken Report on the recommendations contained in the Seventeenth Report (16<sup>th</sup> Lok Sabha) on 'Hydro Power – A Sustainable, Clean and Green Alternative'.
- v) Draft Action Taken Report on the recommendations contained in the Twenty-Second Report (16<sup>th</sup> Lok Sabha) on 'Energy Access in India – Review of Current Status and Role of Renewable Energy'.
- vi) Draft Action Taken Report on the recommendations contained in the Twenty-Seventh Report (16<sup>th</sup> Lok Sabha) on 'Demands for Grants of the Ministry of New and Renewable Energy for the year 2017-18'.
- vii) Draft Action Taken Report on the recommendations contained in the Thirtieth Report (16<sup>th</sup> Lok Sabha) on 'National Electricity Policy – A Review'.

3. After discussing the contents of the Reports in detail, the Committee adopted the aforementioned draft Reports without any change. The Committee also authorized the Chairperson to finalize the above-mentioned Reports and present the same to both the Houses of Parliament in the second part of the Budget Session.

4.	X	X	X	X	X	X	X	X	X	X	X
5.	X	X	X	X	X	X	X	X	X	X	X
6.	X	X	X	X	X	X	X	X	X	X	X
7.	X	X	X	X	X	X	X	X	X	X	X
8.	X	X	X	X	X	X	X	X	X	X	X

*The Committee then adjourned.*

## APPENDIX II

(Vide Introduction of Report)

### ANALYSIS OF ACTION TAKEN BY THE GOVERNMENT ON THE OBSERVATIONS/ RECOMMENDATIONS CONTAINED IN THE SEVENTEENTH REPORT (16<sup>TH</sup> LOK SABHA) OF THE STANDING COMMITTEE ON ENERGY

(i)	Total number of Recommendations	14
(ii)	Observations/Recommendations which have been accepted by the Government:  Sl.Nos.1,4,5, 7, 8, 9, 10 and 14.  Total: Percentage	08 57.14%
(iii)	Observations/Recommendations which the Committee do not desire to pursue in view of the Government's replies:  Sl. No. 13.  Total: Percentage	01 07.14%
(iv)	Observations/Recommendations in respect of which the replies of the Government have not been accepted by the Committee and which require reiteration:  Sl. Nos. 3, 6 and 11  Total: Percentage	03 21.43%
(v)	Observations/Recommendations in respect of which final replies of the Government are still awaited:  Sl. Nos. 2 and 12  Total: Percentage	02 14.29%