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STANDING COMMITTEE ON ENERGY

(2017-18)

SIXTEENTH LOK SABHA

MINISTRY OF POWER

**[Action Taken on the recommendations contained in the Thirtieth Report
(16th Lok Sabha) on 'National Electricity Policy – A Review']**

THIRTY FOURTH REPORT



**LOK SABHA SECRETARIAT
NEW DELHI**

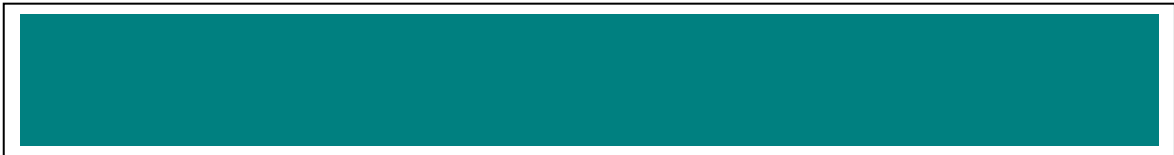
March, 2018/ Phalguna, 1939 (Saka)

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(2017-18)
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Thirtieth Report (16th Lok Sabha) on 'National Electricity Policy – A Review']**

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

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4. Shri Om Birla
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32. 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 Fourth Report on action taken by the Government on the recommendations contained in the 30th Report of the Standing Committee on Energy on the subject 'National Electricity Policy – A Review'.

2. The 30th Report was presented to the Lok Sabha on 10th August, 2017 and was laid on the Table of Rajya Sabha on 9th August, 2017. Replies of the Government to all the recommendations contained in this Report were received on 24th November, 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 30th 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 Thirtieth Report (Sixteenth Lok Sabha) of the Committee (2016-17) on the subject 'National Electricity Policy – A Review'.

2. The Thirtieth Report was presented to Lok Sabha on 10th August, 2017 and was laid on the Table of the Rajya Sabha on 9th August, 2017. The Report contained 25 Recommendations/Observations.

3. Action Taken Notes in respect of all the 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, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, 18, 21, 22, 23, 24 and 25. Total - 20
Chapter-II

- (ii) Recommendation/Observation which the Committee do not desire to pursue in view of the Government's replies:

Serial No. 19. 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. 2, 11, 16 and 20. Total - 04
Chapter-IV

- (iv) Recommendations/Observations in respect of which the final replies of the Government are still awaited:

Nil. Total - 00
Chapter-V

4. 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.

5. The Committee will now deal with action taken by the Government on some of their Recommendations that require reiteration or merit comments.

Recommendation No. 2

6. The Committee had noted that the Electricity Policy stated that the key development objective of the power sector was supply of electricity to all areas including rural areas as mandated in section 6 of the Electricity Act. Both, the Central Government and the State Governments would jointly endeavour to achieve this objective at the earliest. Consumers, particularly those who were ready to pay a tariff which reflects efficient costs have the right to get uninterrupted twenty four hours supply of quality power. To achieve this Government of India had launched Deen Dayal Upadhyaya Grameen Jyoti Yojana with the objective of electrifying all the villages and households in the country. However, the Committee had found that as per the extant definition of an electrified village, a village with a mere 10% of the total number of households in the village could be declared as electrified. Therefore, despite having 90% un-electrified households, the Government could assume a village to be electrified. However, when the Committee raised this issue with the Ministry, they had stated that “24 x 7 Power for All” documents had been signed with all the States/UTs. Government of India supported States with schemes such as Ujjwal DISCOM Assurance Yojana (UDAY), Integrated Power Development Scheme (IPDS) and Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) to help them to achieve the objective of providing uninterrupted power supply to every household. As the focus was then on Power for All, definition of electrified village became irrelevant. However, the Committee were not convinced by this plea of the Ministry. The Committee were aware that the present definition of electrified village was slight improved version of its earlier definitions wherein, a village was qualified to be classified as electrified if electricity was being used within its revenue area for any purpose whatsoever. Since, the Ministry had changed the definition of the village electrification several times in a piecemeal manner, there had been situations when a village once declared electrified becomes un-electrified after change in definition, causing a repetition of the entire work in the form of so called intensive electrification to meet the criteria of the new definition. As

per the definition of village electrification, 99.4% villages were electrified but at the same time more than 4 crore households in the country were deprived of the electricity connection. It was apparent that rural electrification was nothing but sheer formality to declare as many as villages electrified. The Committee had believed that the definition did not reflect the true picture of universal access to electricity status in the country, therefore, had strongly recommended that the definition of village electrification should be changed as such that a village should be declared electrified only when all the households of the village are electrified. They had further desired that a village shall not get the tag of being electrified in any case when the household coverage is less than 80%.

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

"The present definition of Village Electrification, though envisage electrification of at least 10% households, does not restrict households electrification beyond 10% and accordingly Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) scheme provides for creating access to electricity for all household.

Under the scheme, free service connection is provided to Below Poverty Line (BPL) households, and access to electricity is also provided to APL households to facilitate extension of service connection by the respective State Power Utilities as per the extant rules.

Further, substantial investment is being made in power infrastructure strengthening. States have been advised to provide service connection to all the un-electrified households.

All the states have signed the "24x7 Power for All" document, joint initiative of Government of India and State Government, which envisages providing access to all the households by 2019.

Recently, Government of India has launched "Pradhan Mantri Sahaj Bijli Har Ghar Yojana - Saubhagya to achieve universal household electrification in the country. The scheme envisages providing last mile connectivity and electricity connections to all remaining un-electrified households in rural areas and poor households in urban areas by 31st March 2019. The total outlay of the scheme is Rs. 16320 Crore including budgetary support of Rs. 12320 crore from Government of India."

8. In response to the recommendation of the Committee, the Ministry has stated that the present definition of Village Electrification, though envisage electrification of at least 10% households, does not restrict households

electrification beyond 10% and accordingly Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) provides for creating access to electricity for all households. It has also been stated that all the States have signed “24x7 Power for All” document and Saubhagya Scheme has been launched to achieve universal household electrification in the country.

The Committee are of the view that despite the schemes like DDUGJY, 24x7 Power for All and Saubhagya, the definition of Electrified Villages has its own significance. Even those villages which were declared electrified a decade ago under centrally sponsored electrification schemes, are yet to achieve 100% household electrification. The Committee are not convinced with the claim of the Ministry that the definition of Electrified Villages has become irrelevant as the focus is now on ‘Power for All’.

The Committee feel that the present definition of Electrified Villages is nothing but sheer formality to declare maximum number of villages as electrified with minimum effort and it does not reflect true picture regarding electricity access in the country. The Committee, therefore, reiterate their recommendation that the definition of Electrified Villages should be amended as such that a village be declared electrified only when all the households of that village are electrified.

Recommendation No. 5

9. The Committee had recommended that every connection irrespective of the purpose, type or category, provided for by the Discoms should invariably be metered. The Committee had believed that 100 % metering of all the connection will help in better energy auditing and fixing accountability. The Committee were not averse to providing electricity free of cost or at subsidized rate but they desired that whatever electricity was supplied to anybody, should be metered.

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

“Section 55 of the Electricity Act, 2003 stipulates that No licensee shall supply electricity, after the expiry of two years from the appointed date, except through installation of a correct meter in accordance with the regulations to be made in this behalf by the Authority. Further Central Electricity Authority has notified CEA (Installation and operation of meter) Regulation, 2006 in June, 2006. In accordance with the above, the concerned utilities have to take

appropriate action for providing 100% metering of all the connection for better energy auditing and fixing accountability.

To help the States achieve this objective of achieving 100% metering, Government of India is also assisting State Governments/Distribution Utilities under DDUGJY & IPDS by providing funds for achieving 100% metering of consumers, feeders, DTs etc. for about 2 crores meters in the country.

Ministry of Power, Government of India has notified "Integrated Power Development Scheme" (IPDS) on 3rd December, 2014 with following components:

- i. Strengthening of sub-transmission and distribution networks in the urban areas;
- ii. Metering of distribution transformers / feeders / consumers in the urban areas;
- iii. IT enablement of distribution sector and strengthening of distribution network under R-APDRP for 12th and 13th Plans by carrying forward the approved outlay for R-APDRP to IPDS.

Metering of distribution transformers, feeders and consumers is one of the core objectives of IPDS. Against the total of Rs. 25,913 Cr sanction, Rs. 1364 Cr. has been sanctioned for consumer meters. As of date BoQ of 82, 64,182 no. of consumers meters has been sanctioned. Smart meters and Pre-paid meters are also included in BoQ under IPDS.

Consumer meters have also been sanctioned by Ministry of Power, Government of India under R-APDRP scheme notified in September, 2008 for 1227 towns under Part B."

11. In response to the recommendation of the Committee, the Ministry has furnished that Metering of distribution transformers, feeders and consumers is one of the core objectives of IPDS and against the total allocation of Rs. 25,913 Cr., Rs. 1364 Cr. has been sanctioned for consumer meters. The Committee are satisfied to note that the Government is assisting State Governments/ Distribution Utilities under DDUGJY & IPDS by providing funds for achieving 100% metering of consumers, feeders, DTs etc. as 100 % metering of all the connection will help in better energy auditing and fixing accountability.

Recommendation No. 8

12. The Committee had observed that initial higher tariff of the hydro power was one of the deterrents for retarded growth of this sector. It was an established fact that hydro power plants had the longest life span and was source of cheapest energy in the long run. The expected life span of civil structure of a typical hydro power project could go beyond 100 years, whereas, mechanical and electrical component lasted for 25-50 years. However, banks and financial institutes provided loan to hydro power project for the 10-12 years only. Therefore, higher cash flow was required in the initial 10-12 years on account of repayment of debt. To meet the increased cash flow requirement, a higher rate of depreciation was allowed for the initial period of 12 years for the purpose of determination of tariff. As a result, the tariff of hydro power became front loaded and was quite high for the first 12 years. The tariff then reduced and came down drastically once the loan had been repaid and the plant was fully depreciated. The Committee with a view to make hydro power tariff more levelized, had recommended that appropriate provision be made to provide long tenure finances i.e. upto 25 years, to hydro power projects.

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

"The Government is considering a proposal for revival of hydro power sector which, inter alia, includes mandate to engage with bankers/ financial institutions for modifying lending terms & conditions and engaging Central Electricity Regulatory Commission (CERC) for rationalizing hydropower tariff.

High tariff of hydro power is main obstacle for the growth of hydro power sector and beneficiaries are not coming forward for making Power Purchase Agreement (PPA) resulting into number of hydro power projects unviable although having all clearances in hand. The life span for hydro projects is quite long and extended debt repayment will considerably lower the tariff.

The recommendation of the Committee for provision to be made to provide long tenure finance to hydro projects is good for hydro sector. Such loans should be made available to developers of hydro projects without a corresponding increase in the interest cost on account of tenure premium. Further, it is a fact that some CPSU have large cash reserves which need to be utilized for the development of the Nation. Such reserves could be gainfully deployed as long term loans for developing the hydro sector of the country while also earning good returns in the long run for the CPSUs.

Para 5.8 of the revised Tariff Policy notified on 28.01.2016 already provides that the Appropriate Commission should frame 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. Also, in the draft EFC Memo for revival of hydro power sector, it is proposed to engage with bankers/financial institutions for modifying lending terms and conditions for hydropower projects. It may be mentioned that Financial Institutions such as PFC & REC have already started giving long term debt upto 20 yrs.

Presently, Hydropower tariffs are front loaded due to repayment of debt within essential 12 year's period. The change in recovery of depreciation from 12 to 25 years is in order provided the financing is available for 25 years. In addition to above, there are other issues also which increase the Hydro tariff and need attention for its redressal. The major points are as below:-

- i. The concept of 12% free power to home State which is not applicable for other source of Energy.
- ii. In addition to free power, some states are imposing water cess on non-consumptive use of water; it is also increasing the tariff of Hydropower.
- iii. Normally, Hydropower Projects are located in remote/under developed areas. In process of construction of Hydropower Projects, lot of infrastructural work like construction of roads, bridges, hospitals and schools etc. are to be done which is ultimately added in the capital cost. In case, such facilities are provided by State Government or Central Government, as the case may be, the capital cost/tariff of Hydropower Projects will drastically come down.
- iv. Due to increased security threat, Hydro generating companies are making huge expenditure on security aspect or bearing the total expenditure on para-military organizations, which is increasing capital cost as well as Operational & Maintenance cost of the Power Station. The provision of security arrangements should be considered by respective State Government/Central Government at their cost."

14. In response to the recommendation of the Committee that appropriate provision be made to provide long tenure finance to the hydro power projects, the Ministry has stated that high tariff of hydro power is the main obstacle for the growth of sector as distribution companies are not coming forward for Power Purchase Agreement (PPA) making a number of hydro power projects unviable despite having all other clearances and as the life span of hydro projects is quite long so extended debt repayment will considerably lower the tariff.

It has also been stated that Para 5.8 of the revised Tariff Policy provides that the Appropriate Commission should frame 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. Also, in the draft EFC Memo for revival of hydro power sector, it is proposed to engage with bankers/financial institutions for modifying lending terms and conditions for hydropower projects. It has been mentioned that Financial Institutions such as PFC & REC have already started giving long term debt upto 20 yrs.

The Committee would like to know about the steps taken by the Appropriate Commission in accordance with the revised Tariff Policy for incentivizing the developers of Hydro Electric Projects in order to reduce the tariff burden in the initial years.

Recommendation No. 11

15. The Committee had noted that there were various Central PSUs which were engaged in development of hydro power like NHPC, NEEPCO, THDC and SJVNL. These Undertakings had the required infrastructure, expertise and manpower that were specialized in the development of hydro projects. Since all these were reputed organization with the proven track record in development and upkeep of hydro projects, there was no issue of mobilization of funds for them. Despite having huge hydro power potential that remained to be harnessed these PSUs were not having many projects to develop. The Committee had felt that under-utilization of Central PSUs was nothing but sheer waste of available resources and expertise. The Committee had believed that the participation of private players was a necessity for speedy and optimal growth of the power sector. However, the Committee had observed that the performance of private players unlike in thermal sector, was not encouraging. Rather, the Committee had found that many a projects which had been allocated to private players with little or no experience of hydro power, were stuck due to inabilities of the developers. Also, due to long gestation period of hydro power projects and the extended period taken in getting the returns on the investment, private players were reluctant to venture in this sector. The Committee had recommended that Government should make a policy so that Central PSUs get most of the hydro power projects. They should also explore the idea to reserve hydro power sector exclusively for PSUs or with the collaboration of PSUs until the sector was adequately developed.

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

“Water being a state subject, the allotment of hydropower projects is being done by the respective State Governments. As on 31.08.2017, there are 40 existing power stations of Central PSUs with a capacity of 14,547.72 MW. Further, 30 projects with aggregate installed capacity of 16198 MW in the country have been allotted to Central PSUs and these projects are at various stages of development as given below:

Status of H.E. Projects allotted to CPSUs	Nos.	I.C. (MW)
Under Construction	11	6125
H.E. Projects concurred by CEA and yet to be taken up for construction	12	8522
H.E. Projects under Examination in CEA	2	318
DPR Returned by CEA to project authorities for resubmission	1	130
H.E. Projects under S&I	4	1103
Total	30	16198

It is observed that apart from above, a large number of projects have been allotted to private sector for implementation. However, majority of these projects are yet to take off. Even, those projects which are under construction are progressing at a slow pace. As such, recommendation of the Committee in this regard may be suitably considered.

The main reasons for the stagnant growth of the hydro sector are on account of geological surprises, litigation, R&R issues, law and order problems, poor infrastructural connectivity like roads, dispute between beneficiary States, etc. These factors affect both public and private sector projects. The Government is trying to fast track the growth of the hydro sector by offering certain incentives. These incentives are being examined in the Ministry.

However, given the fact of vital strategic importance of the Hydropower Projects particularly storage based Hydropower Projects, for the energy security and water security of the Country in the coming years when water is projected to become a very scarce resource, development of the Hydropower Projects has become a need of the time. CPSEs like NHPC are committed to develop the Hydropower Projects despite the various constraints being faced by them on several fronts in getting the Projects cleared and further during its execution. Thus, till such time when Hydro sector gets adequately developed, PSUs should be incentivized through various policy measures for taking up these Hydro Projects which are located in far flung regions of the Country with extremely inclement working conditions. Initiatives like continuing the present cost plus

tariff regime, providing single window clearance/ speedier clearances especially w.r.t. Environment/ Forest and R&R aspects etc. in case of the Hydropower Projects are expected to bring some relief to the sector."

17. In response to the recommendation of the Committee, the Ministry has stated that Water being a state subject, the allotment of Hydro Power Projects is being done by the respective State Governments and as on 31.08.2017, there are 40 existing Hydro power stations of Central PSUs with a capacity of 14,547.72 MW. Further, 30 projects with aggregate installed capacity of 16198 MW in the country have been allotted to Central PSUs and these projects are at various stages of development. It has also been stated that a large number of projects have been allotted to private sector for implementation, however, majority of these projects are yet to take off and even, those projects which are under construction are progressing at a slow pace.

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 Hydro Sector. The Committee agree with the Ministry that in view of the vital strategic importance of the Hydropower Projects particularly storage based Hydropower Projects, for the energy security and water security of the Country in the coming years, development of the Hydropower Projects has become a need of the hour.

The Committee note that CPSEs like NHPC, THDC, NEEPCO, SJVNL, etc., are committed to develop the Hydropower Projects despite the various constraints being faced by them on several fronts in getting the Projects cleared and executed. Thus, till such time when Hydro sector gets adequately developed, PSUs should be incentivized through various policy measures for taking up these Hydro Projects which are located in far flung regions of the Country.

The Committee feel that the expertise of these CPSUs should be utilized for development of Hydro Sector and the State Government concerned should be consulted for the same. The Committee, therefore, reiterate their recommendation that the Government should make a policy to give most of the

hydro power projects to Central PSUs and should also explore the idea to reserve hydro power sector exclusively for PSUs until the sector is adequately developed.

Recommendation No. 13

18. The Committee had observed that higher tariff was the main suppressant of electricity demand. In view of the Committee, there was latent demand of electricity in the system that would surface once tariff is brought down to more affordable levels. The Committee, therefore, had recommended the Government to make policy provision that ensure reduction in power generation cost and electricity tariff. The Committee had desired that with a view to decrease generation cost, availability of cheaper indigenous coal be made available inadequate quantity, rationalization of coal supply sources, super-critical technology be adapted according to indigenous conditions, R&M exercises for power plants be undertaken at the right time, etc. The Committee had further observed that running of power plants at lower PLF also escalate the generation cost. The Committee, therefore, had further recommended that the Government should make necessary provisions to increase the utilization of power plants.

19. The Ministry of Power, in its Action Taken Reply, has stated as under:

"In so far as Committee's recommendation in regard to increasing the utilization of power plants i.e increasing the Plant Load Factor (PLF) of power plants is concerned, increase in electricity demand may result in better utilization of power plants. Various policies & developmental activities/programmes of the Government viz. (i) Power for All initiative for providing 24x7 power to all (ii) Make in India Initiative to encourage multi-national as well as national companies to manufacture their products in India (iii) penetration of Electric Vehicles in the system etc. would lead to increase in electricity demand and this increase in electricity demand may lead to better utilization of power plants.

In order to ensure reduction in power generation cost and electricity tariff, the scheme of Flexibility in utilization of domestic coal amongst power generating stations of Central Sector, State Sector as well as IPP Power Stations for reducing the cost of power generation has been issued. The flexibility in utilization of domestic coal scheme envisages transferring coal to more efficient generating stations, leading to lower generation costs and ultimately lesser cost of electricity for the consumers."

20. In regard to the recommendation of the Committee, the Ministry has stated that increase in electricity demand may result in increasing the Plant Load Factor (PLF) of power plants. It has also been stated that to ensure reduction in power generation cost and electricity tariff, a scheme of flexibility in utilization of domestic coal amongst power generating stations has been launched.

The Committee are satisfied to note that the Ministry has come up with the scheme of flexibility in utilization of domestic coal to encourage efficiency in generating stations which is expected to lead to lower generation costs and ultimately lesser cost of electricity for the consumers. However, the Committee feel that transparency should be ensured in implementation of this scheme as a genuine generating station should not be harassed and deprived of coal under this scheme under the garb of encouraging efficiency.

The Committee desire the Ministry to furnish the details and outcomes/achievement of this scheme, as early as possible.

Recommendation No. 16

21. The Committee had noted that the IPDS aimed at bringing down AT&C losses to the level of 15%. The Committee had found that the level of 15% losses was being targeted since 2002-03 when APDRP was launched. After elapse of 15 years we were still far from that target. The Committee had believed that once IPDS scheme was fully implemented and the technological up-gradation and strengthening of the system was done, there should not be any excuse left for not containing AT&C losses barring its technical component. The Committee, therefore, had desired that the targeted level of 15% AT&C losses need to be lowered accordingly leaving little scope for inclusion of commercial losses therein.

22. The Ministry of Power, in its Action Taken Reply, has stated as under:

"The audited AT&C losses of the last 11 financial years are tabulated below:

Year	AT&C Losses*
2005-06	32.66
2006-07	30.47
2007-08	29.07
2008-09	27.34
2009-10	26.99
2010-11	26.35

2011-12	26.63
2012-13	25.48
2013-14	22.58
2014-15	24.62
2015-16	23.97

*As per PFC's report on performance of State Power Utilities

Distribution of Electricity is done by the States and their licenced DISCOMS. The Government of India handholds the States in improving their infrastructure through financial assistance programs and schemes based on the needs expressed by them. Besides IPDS, under Ujwal DISCOM Assurance Yojana also, the participating States have agreed to trajectories and measures to reduce the AT&C losses to a level of 15% by FY 19.

As per the table above, the DISCOMs have been able to manage approximately 9% reduction in AT&C losses in the last 11 financial years till 2015-16. Looking at the rate of reduction in AT&C losses, in the present context, a target of 15% AT&C losses by FY 2019 seems appropriate."

23. In response to the recommendation of the Committee, the Ministry has stated that the DISCOMs have been able to manage approximately 9% reduction in AT&C losses till 2015-16.

The Committee are dissatisfied to note that the DISCOMs have been able to achieve only 9% reduction in AT&C losses in the last 11 financial years despite the claim of the Ministry that it has handheld the States in improving their infrastructure through financial assistance programs and schemes based on the needs expressed by them.

The Committee are of the view that the Ministry's approach towards reducing AT&C losses is lackadaisical which can be inferred from the fact that the Ministry has been targeting the level of 15% loss since 2002-03 and it is still far from that target. The Committee feel that going by the rate of reduction of AT&C losses in the country, DISCOMs will take lifetime to reach to the level of 15 %, unless the Ministry adopts a strict and uncompromising approach towards the same.

The Committee are of the opinion that technological up-gradation under IPDS will help the sector to bring down technical losses and the Ministry should

handhold the DISCOMs to bring down commercial losses as AT&C losses in the country are unacceptably high.

The Committee, therefore, reiterate their recommendation that the targeted level of 15% AT&C losses need to be lowered accordingly leaving little scope for inclusion of commercial losses therein.

Recommendation No. 20

24. The Committee had noted that Section 166 (2) of the Electricity Act, 2003 provided that the Central Government shall constitute a forum of regulators consisting of the Chairperson of the Central Commission and Chairpersons of the State Commissions. It further provided that the Chairperson of the Central Commission shall be the Chairperson of the Forum of regulators. Accordingly, a Forum of Regulators (FOR) was constituted vide Notification dated 16th February, 2005. The Committee had further noted that the objective of setting up FOR was to provide a common platform to the electricity regulators to share their experiences and best practices. The intent was also to build synergy between various Electricity Regulatory Commissions and to inter-alia bring about harmonization of regulation in power sector. Important issues of the power sector (at inter-state level or intra-state level) were discussed and consensus was evolved in FOR. The Forum is a statutory body and does not have the power to enforce its regulations or decisions on individual State Commissions. The Committee had felt that FOR was good forum that can provide some kind of uniformity in approaches of various State Regulators by discussing and sharing best practices, success stories and implementation status of various provisions of the Act. The Committee, however, felt that this platform can be utilized in a more effective manner if some enforcing power be provided to them. It would not only be helpful in bringing in certain uniformity in regulations in the States but would also be helpful in accelerating the various reforms measures aimed at proper and fast development of power sector. The Committee, therefore, had recommended that necessary provisions should be made so that the decisions, taken by consensus at Forum of Regulators, become enforceable.

25. The Ministry of Power, in its Action Taken Reply, has stated as under:

"The FOR constituted under Section 166(2) of the Electricity Act, 2003 by GOI, has been assigned the following functions:

- (a) Analysis of the tariff orders and other orders of Central Commission and State Commissions and compilation of data arising out of the said orders, highlighting, especially the efficiency improvements of the utilities;
- (b) Harmonization of regulation in power sector;

- (c) Laying of standards of performance of licensees as required under the Act.
- (d) Sharing of information among the members of the Forum on various issues of common interest and also of common approach.
- (e) Undertaking research work in-house or through outsourcing on issues relevant to power sector regulation;
- (f) Evolving measures for protection of interest of consumers and promotion of efficiency, economy and competition in power sector; and
- (g) Such other functions as the Central Government may assign to it, from time to time.

It may be noted from the above that one of the functions assigned to FOR is harmonization of regulations in power sector. As per the recommendation of the Standing Committee, it is felt that FOR will have to pursue this activity aggressively so that the concerns of the Standing Committee about ensuring uniformity in regulations in the States and accelerating the various reforms measures, are addressed comprehensively.

Since the FOR comprises of Chairperson of CERC and Chairperson of SERCs and Chairperson of CERC is the Chairperson of FOR, it is expected to consider effective & timely implementation of the decisions taken by consensus at FOR to accelerate the reform measures for rapid development of power sector.

The State Commissions independently function in their respective States / Union Territories, as the case may be, and the Forum of Regulators (FOR) provides an interactive platform to the member SERCs/JERCs to share their experiences.

It is evident from the active participation of the SERCs / JERCs during the interactions held in the Forum, that the intent to build synergy between the member organizations and to facilitate harmonization of regulations among the States is received in the right spirit by the Regulators. Such synergy has facilitated the Forum to bring about Model Regulations on several important subjects for benefit of SERCs / JERCs.

However, the State Commissions are independent to take their own considered view despite the consensus arrived at the Forum of Regulators. As is evident from the provisions of the Act and the Rules framed thereunder, the Forum does not have the power to enforce its regulations or decisions on individual State Commissions."

26. In response to the recommendation of the Committee, the Ministry has stated that the State Regulatory Commissions are independent to take their own

considered view despite the consensus arrived at the Forum of Regulators as according to the provisions of the Electricity Act and the Rules framed thereunder, the Forum does not have the power to enforce its regulations or decisions on individual State Commissions.

The Committee understand that the rules framed under the Act, do not assign FOR the power to enforce its regulations/decisions and it was precisely because of this reason, the Committee had recommended that the necessary Rules should be made/amended so that the decision taken by consensus at Forum of Regulators becomes enforceable.

The Committee note that the reply of the Government is self-contradictory in stating that the State Commissions are independent to take their own considered views despite the consensus arrived at FOR. It altogether negates the relevance of FOR, what to say of consensus. This is amusing and makes mockery of not only the consensus, but also the deliberations done at FOR. The Committee feel that during the meetings of FOR issues of electricity sector hampering its growth are debated upon. The role and responsibilities of regulators are to make the sector efficient, competitive and consumer friendly. If consensus of such debate/ discussion is not honoured by the participating members, there is need to revisit the purpose of such discussions.

The Committee feel that FOR can be utilized in a more effective manner if it is provided with some enforcing power. It will not only be helpful in bringing in certain uniformity in regulations of the various States but will also be helpful in accelerating the various reforms measures aimed at proper and fast development of power sector. The Committee, therefore, reiterate their recommendation and desire the Ministry to take some serious measures for the same.

CHAPTER – II

OBSERVATIONS/ RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

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

Recommendation No. 1

The Committee note that Section 3 (1) of the Electricity Act, 2003 provides that the Central Government shall, from time to time, prepare the National Electricity Policy. In compliance of this the Government of India had notified the National Electricity Policy on 10th February, 2005. The National Electricity Policy aims at achieving the following objectives:

- Access to Electricity - Available for all households in next five years
- Availability of Power - Demand to be fully met by 2012. Energy and peaking shortages to be overcome and adequate spinning reserve to be available
- Supply of Reliable and Quality Power of specified standards in an efficient manner and at reasonable rates.
- Per capita availability of electricity to be increased to over 1000 units by 2012.
- Minimum lifeline consumption of 1 unit/household/day as a merit good by year 2012.
- Financial Turnaround and Commercial Viability of Electricity sector
- Protection of consumers' interests

The scrutiny by the Committee, however, revealed that no objective of the National Electricity Policy, 2005 could be achieved within stipulated timeline. Most of the objectives are yet to be achieved. The Committee note that there are still more than 4 crore households to be electrified, there is adequate generation capacities but due to affordability issue demand is not fully met, financial conditions of Discoms have become bad to worse. Moreover, there are other issues that are now putting challenges in proper development of electricity sector of the country. The substantive fall in solar tariff and its very low gestation period is posing a threat to economic viability of thermal power plants. Presently, solar power is doing the same to thermal power what thermal power did to hydro power. Though growth in Solar energy is a good sign for the country, nonetheless, thermal power has been the mainstay of power sector and due to various reasons its importance is not going to end anytime soon. Therefore, the growth of this sector needs to be done in more balanced manner wherein, various sectors of electricity complement one another. We have built enough generation capacity but due to affordability issue, demand is being suppressed leading

to lesser utilization of capacities. Electricity being the Concurrent Subject, the key to proper and expeditious development of this Sector largely depends on effective coordination between the Centre and the States. A long time of 12 years has elapsed since notification of the Electricity Policy, the Committee; therefore, recommend that due to rapid changes in electricity scenario, the National Electricity Policy, 2005 should be amended at earliest by taking into account a holistic view of the sector. The Committee have also made various observations/ recommendations relating to Electricity Policy in the succeeding paragraphs.

Reply of the Government

The National Electricity Policy was brought out in the year 2005. Since then a number of changes have taken place in the Indian power sector. Presently, adequate power is available in the country to meet the demand of power of the consumers who are having access to electricity.

Though some of the objectives of National Electricity Policy notified in 2005 are yet to be achieved, considerable progress has been made, like:

- Per capita consumption of electricity has increased to 1122 units in the year 2016-17 from 613 units in 2005,
- Share of renewables in the installed Power Generation capacity has increased from 3.2% as on 31.03.2005 to about 17.5% as on 31.03.2017.
- Further, about 1,35,000ckt. kms of transmission lines have been added in the last 10 years.
- Also, at present, there are only about 2457 villages remained to be electrified.
- In 2005-06, the Electricity demand-supply gap in terms of Energy and Peak stood at 8.4% and 12.3% respectively. This came down to an all-time low gap of 0.7% and 1.6% respectively in 2016-17. Further, this gap is on account of factors other than inadequacy of power in the country. This shortage is basically due to some of the State utilities not purchasing costly power and some distribution bottlenecks.

Recently, Government of India has launched "Pradhan Mantri Sahaj Bijli Har Ghar Yojana - Saubhagya to achieve universal household electrification in the country. The scheme envisages to provide last mile connectivity and electricity connections to all remaining un-electrified households in rural areas and poor households in urban areas by 31st March 2019. The total outlay of the scheme is Rs. 16320 Crore including budgetary support of Rs. 12320 crore from Government of India.

The fall in solar tariff has made solar power affordable but due to the variability and uncertainty associated with solar power, Indian power sector cannot rely solely on the solar power. Key Role of Thermal Power in the Indian Power Sector is to be continued in the near future since it is firm power, more economic and provides reliable power for Grid security.

Government has increased its focus on Renewable Energy (RE) based Generation Capacity Addition and set a target of 175 GW of RE Capacity by 2022. The Thermal power is not going to be partly replaced by solar power and both the sources of generation will complement each other during the entire load duration curve. However, Thermal generation may be required to operate flexibly for accommodating RE Generation.

Taking all this into account along with other factors, a new National Electricity Policy covering all the aspects and factors associated with future of Electricity Sector is already under finalization and will supersede the National Electricity Policy 2005. The observations made in this para would be comprehensively covered in the new National Electricity Policy.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated:24/11/2017]

Recommendation No.3

The Committee believes that the true spirit of the Electricity Act and the National Electricity Policy is to electrify all the households. However, the Committee are dismayed to find that so far the focus was on electrification of all the villages and there was no talk on electrifying each and every households of the country. Besides this there was a condition of minimum population for a village to be considered for electrification exercise. However, to the satisfaction of the Committee, the Government have now removed these barriers and aspiring to implement the universal access to electricity in its true sense by setting a deadline to cover all the households for electrification. Still the Committee find that there are provisions in the electrification policy that may create obstacles or procrastinate the full implementation of the scheme. The Committee note that under DDUGJY, the Central Government fund electricity connections to BPL households only. APL families have to pay charges in order to get connections. Furthermore, the responsibility of providing connection to APL families rest with Discoms. The Committee do understand that it is a concurrent subject and the Centre and the States jointly have to achieve the objective of providing universal access to electricity. Nonetheless, this arrangement has created duality of jurisdiction and approach leading to uncertainty in regard to electrification of villages. Even those villages which were declared electrified a decade ago under centrally sponsored electrification scheme, are yet to achieve 100% households electrification. This only

highlights the lackadaisical approach of Discoms to providing connections to remaining households as per provisions of the scheme. Also, there are chances that some APL families may not be capable of paying the connection charges in one go due to various reasons. The Committee, therefore, recommend that the policy in regard to village electrification may be amended in such manner that there should be provision to provide electricity connection to all the families be it BPL or APL at the time of electrification drive. The connection charges to APL families may also be exempted as done by some States or it may be provided at discounted rates. If this not being feasible then there must be provision of realizing the connection charges in Equated Monthly Installments (EMI) instead of paying it in one go.

Reply of the Government

Electricity is a concurrent subject and distribution of electricity and management of associated functions is carried out by State's Distribution Companies (Discom). Releasing connections to consumers fall in the domain of respective state distribution company or the power department, as the case may be.

Under the joint initiative, all the states have signed of 24x7 Power for All documents which envisages providing access to all the households. Through various forums, States have been asked to take necessary steps, including connection charge in Equated Monthly Installment (EMI), to reduce entry barrier and enable electricity access to all households.

The recommendation that connection charges from the APL families be recovered in the form of Equated Monthly Installments (EMI) may be conveyed to the States for implementation.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.4

The Committee find that at present the village electrification scheme aims only to provide electricity access to households limiting to the purpose of illumination. This endeavors itself it so ambitious that despite the concerted efforts of the Centre and the States Government, there are crores of households which are yet to be electrified. However, the Committee feel that use of electricity for illumination only serves the purpose to a certain extent as it does not provide scope for the beneficiaries to carry out even small electricity based commercial activities to earn livelihood or increase their income leading to enhanced capacity to pay electricity bills. On the other hand, Discoms who provide such connections perceive them as liability having little or no scope for generation of revenue there from. The Committee, therefore, believe that this situation is neither much helpful in improving the prospect of earnings of beneficiaries

nor encouraging for Discoms to provide such electricity connections and adequate supply of electricity to them. The Committee further note that presently the per capita electricity consumption is around 1000 kWh which is way below the world's average of 3030 kWh. When it developed countries, it is not comparable which are having per capita electricity consumption as high as 15,520 kWh. Due to massive addition in power generation capacities in the country, there is no dearth of electricity. Moreover, with the mammoth capacity addition planned from the renewable energy as well as conventional source which is expected to be added in the coming years, it is expected that there will not be any constrain from supply side. The Committee believe that this is the high time when we can promote more intensive usage of electricity for the benefit of the people as well as for the electricity sector. The Committee, therefore, recommend that the Government should aspire to provide electricity connections in the rural areas that are capable of carrying out some commercial activities. Simultaneously, provisions in regard to supply of quality and reliable power for reasonable time should also be made as mere electrification without adequate electricity supply does not make sense.

Reply of the Government

Under Deen Dayal Upadhyaya Gram Jyoti Yojana, basic electricity infrastructure viz. LT Line, HT Line, Distribution Transformer is provided in the rural areas. Any commercial establishment can get service connection by paying prescribed charges as per rules/norms of respective State Power Utility.

Government of India has taken up a joint initiative with all States/UTs for preparation of State specific documents for providing 24x7 power supply to all households/homes, industrial & commercial consumers and adequate supply of power to agricultural consumers as per State policy. This initiative aims at ensuring uninterrupted supply of quality power to existing consumers and providing access to electricity to all unconnected consumers.

As on date all State Governments and Union Territories have signed the "24X7 Power for All' agreement with the Union Government.

Recently, Government of India has launched "Pradhan Mantri Sahaj Bijli Har Ghar Yojana - Saubhagya to achieve universal household electrification in the country. The scheme envisages providing last mile connectivity and electricity connections to all remaining un-electrified households in rural areas and poor households in urban areas by 31st March 2019. The total outlay of the scheme is Rs. 16320 Crore including budgetary support of Rs. 12320 crore from Government of India.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.5

The Committee further recommend that every connection irrespective of the purpose, type or category, provided for by the Discoms should invariably be metered. The Committee believe that 100 % metering of all the connection will help in better energy auditing and fixing accountability. The Committee are not averse to providing electricity free of cost or at subsidized rate but they desire that whatever electricity is supplied to anybody, should be metered.

Reply of the Government

Section 55 of the Electricity Act, 2003 stipulates that No licensee shall supply electricity, after the expiry of two years from the appointed date, except through installation of a correct meter in accordance with the regulations to be made in this behalf by the Authority. Further Central Electricity Authority has notified CEA (Installation and operation of meter) Regulation, 2006 in June, 2006. In accordance with the above, the concerned utilities have to take appropriate action for providing 100% metering of all the connection for better energy auditing and fixing accountability.

To help the States achieve this objective of achieving 100% metering, Government of India is also assisting State Governments/Distribution Utilities under DDUGJY & IPDS by providing funds for achieving 100% metering of consumers, feeders, DTs etc. for about 2 crores meters in the country.

Ministry of Power, Government of India has notified "Integrated Power Development Scheme" (IPDS) on 3rd December, 2014 with following components:

- i. Strengthening of sub-transmission and distribution networks in the urban areas;
- ii. Metering of distribution transformers / feeders / consumers in the urban areas;
- iii. IT enablement of distribution sector and strengthening of distribution network under R-APDRP for 12th and 13th Plans by carrying forward the approved outlay for R-APDRP to IPDS.

Metering of distribution transformers, feeders and consumers is one of the core objectives of IPDS. Against the total of Rs. 25,913 Cr sanction, Rs. 1364 Cr. has been sanctioned for consumer meters. As of date BoQ of 82, 64,182 no. of consumer meters has been sanctioned. Smart meters and Pre-paid meters are also included in BoQ under IPDS.

Consumer meters have also been sanctioned by Ministry of Power, Government of India under R-APDRP scheme notified in September, 2008 for 1227 towns under Part B.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

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

Recommendation No. 6

The Committee note that during the recent years, the country has witnessed massive growth in generation capacities. The country at present have 3, 30,260 MW capacity of which 2, 21,626 MW comes from thermal power, 57,260 MW from renewable energy sources and only 44,594 MW from hydro power. The Committee further note that the share of hydro power, in the total energy mix, is on constant decline due to various reasons. The share of hydro in 2007-08, not long before, was more than 25% which has now come down to a meagre 13.6%. The Committee further note that as per the survey carried out in 1987, total Hydro Electric Power potential in the country when fully developed would result in an installed capacity of about 1,48,701 MW on the basis of probable average load factor. Against this potential, the actual capacity that could be harnessed as on 31.03.2017 is 44,478.42 MW which is about 30% of the potential. The Committee believe that the assessed potential could further increase if a new study is carried out keeping in view the technological advancements, new techniques and Pumped Storage Plants. The Committee further note that extant Electricity Policy while considering hydro-electricity as a clean and renewable source of energy envisages that maximum emphasis would be laid on the full development of the feasible hydro potential in the country. The Policy have also recognized that harnessing hydro potential speedily will also facilitate economic development of States, particularly North-Eastern States, Sikkim, Uttaranchal, Himachal Pradesh and J&K, since a large proportion of our hydro power potential is located in these States. These States with hydro potential need to focus on the full development of hydro power potential at the earliest. Besides generation of electricity, hydro power projects also have ingrained benefits like supply of drinking water, flood and drought control, and irrigation. Moreover, hydro plants especially, Pumped Storage Plants can be used as electricity storage. The Committee also note that as per the targets set by the Government, a capacity to the tune of 175 GW from renewable energy will be added in the system by the year 2022. Since, generations from renewable energy sources are intermittent in nature, therefore, a balancing power will be needed to support the Grid and even out the fluctuations. The balancing power could either be gas based power or hydro power. As there is scarcity of gas, hydro power becomes Hobson's choice. Therefore, if hydro power is not developed in the right proportion there is every chance that PLF of thermal power which is already at the level of 64% may fall to detrimental levels due to their possible use as balancing power. The Committee are dismayed over the non-attention towards development of hydro power despite having numerous advantages and its necessity for harmonious functioning of the system. The Committee feel that instead of taking corrective measures in a piecemeal manner there is dire need of policy interventions taking into account the holistic view of the sector. The Committee,

therefore, in succeeding paras have recommended various changes that should be made by the Government to provide much needed push for development of hydro power.

Reply of the Government

As per re-assessment studies of hydro-electric potential carried out by the Central Electricity Authority during 1978-87, the hydro power potential in terms of Installed Capacity (IC) was estimated at 148701 MW out of which 145320 MW of the potential consists of hydroelectric schemes having Installed Capacity above 25 MW. Of the above identified capacity 39867.8 MW (27.43%) has been developed as on 31.08.2017. In addition, against assessed potential of 96524 MW of Pumped Storage Schemes, 4785.6 MW (4.95%) have also been developed. Thus, the total hydroelectric installed capacity in the country as on 31.08.2017 is 44653.42 MW. The work for basin-wise review of hydroelectric potential in the country & preparation of basin reports has already been taken up by Central Electricity Authority in association with WAPCOS Ltd. in March, 2017. It is likely to be completed in a period of 30 months i.e. by September, 2019.

The benefits of hydro power are well recognized. Instantaneous start and stop ability of hydro project makes it unparalleled in providing peaking power to the Grid. In addition, it provides many benefits viz. flood moderation, drinking water, ground water table elevation, navigation, recreation, irrigation, draught alleviation etc. Government has initiated process for revival of hydro power sector. Ministry of Power's Office Memorandum dated 27.03.2017 on "Proposal for EFC consideration for revival of hydro power sector" is a step to encourage development of hydro power sector.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.7

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. The Committee further find that as per International Energy Agency (IEA) "Renewable energy is energy that is derived from natural processes (e.g. sunlight and wind) that are replenished at a higher rate than they are consumed. Solar, wind, geothermal, hydropower, bio-energy and ocean power are sources of renewable energy." The Committee failed to comprehend as to why hydro power in our country has been categorized as a source of conventional energy as there is no justified logic or reason. Instead, if hydro power is declared as renewable energy, it will open new vistas for this sector to receive various concessions and assistance not

from the Government but also from foreign countries and agencies. The Committee, therefore, strongly recommend that all the hydro power in the country irrespective of their capacities should be considered as renewable source of energy.

Reply of the Government

Renewable Energy is described as energy sources that are replenished by natural processes on a sufficiently rapid time-scale so that they can be used by humans more or less indefinitely, provided the quantity taken per unit of time is not too great. In its various forms, it derives directly from the sun or from heat generated deep within the earth. It includes electricity and heat generated from Solar, Wind, Ocean, Hydropower, Biomass, Geothermal resources, Biofuels and Hydrogen derived from renewable resources.

Hydropower is considered a Renewable Energy resource because it uses the Earth's water cycle to generate electricity. Hydropower is a renewable resource as the water that is used to power the turbines is not lost in the process. It can be reused over and over again to produce electricity in cascade development. Also, water on the earth is continually replenished by rain and snow.

All Hydropower Projects, irrespective of size and capacity, are traditionally clean, green and renewable sources of energy. However, the small hydro projects upto 25 MW capacity and presently under the purview of Ministry of New and Renewable Energy are extended certain incentives. The Government is considering a proposal for revival of hydro power sector which, inter alia, envisages declaring all hydropower projects (irrespective of size) as Renewable Energy.

This will enable hydro projects, which are highly capital intensive projects with large gestation period, receive greater assistance from Government(s) and also attract investments from various institutions/ agencies, thereby giving this sector a much needed push. Further, this may also help States to fulfill their Renewable Purchase Obligation (RPO) objectives and may encourage State Government(s) to invest or to attract investments in hydro projects.

Due to the recent provisions of environmental law, NPV of forest product, measures to mitigate Rehabilitation and Resettlement (R&R) issues etc. makes hydro power costly. Categorizing hydro power as renewable power would make it eligible for concessions and assistance available for renewable projects thereby making hydro power commercially attractive and viable. With addition in more solar and wind power in the Grid, the corresponding increase in Hydropower capacity is essentially required for grid stability and meeting the peaking requirement.

However, a separate policy decision is under consideration wherein additional “Hydro Power Obligation (HPO)” provisions are required to be introduced in line with RPO provisions.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.8

The Committee observe that initial higher tariff of the hydro power is one the deterrent for retarded growth of this sector. It is an established fact that hydro power plants have the longest life span and is source of cheapest energy in the long run. The expected life span of civil structure of a typical hydro power project can go beyond 100 years, whereas, mechanical and electrical component last for 25-50 years. However, banks and financial institutes provide loan to hydro power project for the 10-12 years only. Therefore, higher cash flow is required in the initial 10-12 years on account of repayment of debt. To meet the increased cash flow requirement, a higher rate of depreciation is allowed for the initial period of 12 years for the purpose of determination of tariff. As a result, the tariff of hydro power becomes front loaded and is quite high for the first 12 years. The tariff then reduces and comes down drastically once the loan is repaid and the plant is fully depreciated. The Committee with a view to make hydro power tariff more levelized, recommend appropriate provision be made to provide long tenure finances i.e. upto 25 years, to hydro power projects.

Reply of the Government

The Government is considering a proposal for revival of hydro power sector which, inter alia, includes mandate to engage with bankers/ financial institutions for modifying lending terms & conditions and engaging Central Electricity Regulatory Commission (CERC) for rationalizing hydropower tariff.

High tariff of hydro power is main obstacle for the growth of hydro power sector and beneficiaries are not coming forward for making Power Purchase Agreement (PPA) resulting into number of hydro power projects unviable although having all clearances in hand. The life span for hydro projects is quite long and extended debt repayment will considerably lower the tariff.

The recommendation of the Committee for provision to be made to provide long tenure finance to hydro projects is good for hydro sector. Such loans should be made available to developers of hydro projects without a corresponding increase in the interest cost on account of tenure premium. Further, it is a fact that some CPSU have large cash reserves which need to be utilized for the development of the Nation. Such reserves could be gainfully deployed as long term loans for developing the hydro sector of the country while also earning good returns in the long run for the CPSUs.

Para 5.8 of the revised Tariff Policy notified on 28.01.2016 already provides that the Appropriate Commission should frame 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. Also, in the draft EFC Memo for revival of hydro power sector, it is proposed to engage with bankers/financial institutions for modifying lending terms and conditions for hydropower projects. It may be mentioned that Financial Institutions such as PFC & REC have already started giving long term debt upto 20 yrs.

Presently, Hydropower tariffs are front loaded due to repayment of debt within essential 12 year's period. The change in recovery of depreciation from 12 to 25 years is in order provided the financing is available for 25 years. In addition to above, there are other issues also which increase the Hydro tariff and need attention for its redressal. The major points are as below:-

- i. The concept of 12% free power to home State which is not applicable for other source of Energy.
- ii. In addition to free power, some states are imposing water cess on non-consumptive use of water, it is also increasing the tariff of Hydropower.
- iii. Normally, Hydropower Projects are located in remote/under developed areas. In process of construction of Hydropower Projects, lot of infrastructural work like construction of roads, bridges, hospitals and schools etc. are to be done which is ultimately added in the capital cost. In case, such facilities are provided by State Government or Central Government, as the case may be, the capital cost/tariff of Hydropower Projects will drastically come down.
- iv. Due to increased security threat, Hydro generating companies are making huge expenditure on security aspect or bearing the total expenditure on para-military organizations, which is increasing capital cost as well as Operational & Maintenance cost of the Power Station. The provision of security arrangements should be considered by respective State Government/Central Government at their cost.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

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

Recommendation No.9

The Committee are happy to observe that the Government is paying sincere attention in promotion of solar power in the country. However, they are surprised to find that hydro power which is also a source of renewable energy and will be counted in meeting targets of global commitments related to climate conditions, is not been given the due attention. The solar power is receiving much support and assistance from the

Government and other agencies, is expected to become the largest source of renewable energy. Nonetheless, its inherent limitation owing to its variable generation potential capacity, corresponding hydro power capabilities will be required to balance the grid. The Committee feel that in absence of adequate hydro power as balancing power, the massive addition of solar power in the network will pose a threat to equilibrium of the power system. The Committee, therefore, recommend that financial interventions viz. issuance of tax-free bonds, viability funding, collateral loans from world's agencies and likewise, should be made to promote hydro power sector on the lines of promoting solar power.

Reply of the Government

In this connection a proposal for encouraging hydro power has already been sent by the Ministry of Power for approval of the cabinet.

In the draft Expenditure Finance Committee (EFC) Memo for revival of Hydro Power Sector, it is proposed to create a Hydro Power Development Fund (HPDF) from the Coal Cess/ National Clean Energy Fund (NCEF)/ Non-Lapsable Central Pool of Resources (NLCPR)/or any other source of fund. HPDF will be used to provide 4% interest subvention during construction (maximum of 7 years) and 3 years post Commercial Operation Date (COD) to all hydropower projects (both public and private sector) above 25 MW, attaining COD within 5 years after notification of the Policy. The Government could also introduce an interest subvention mechanism for loans taken by Developers of hydro projects which will help in reducing the tariff per unit and making hydro energy competitive enough to attract investment in the sector.

The power from hydro project can be fed to the grid in much lesser time as compared to other forms of power which ultimately ensures the stability of grid. Hence, promotion of hydro power sector through financial interventions on the similar lines of promoting solar power will certainly boost the hydro sector and there by much needed grid stability.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.10

The Committee note that the establishment of hydro power projects which in itself is a complicated and challenging task, is further made onerous by the formalities of obtaining various clearances, the cumbersome process of R&R and development of enabling infrastructure. These things not only contribute in delaying of the project but also escalate the cost of the project leading to higher tariff. The gestation period of hydro power project, is quite longer as compared to thermal and solar power plants. The Committee believe that unless the formalities in regard to setting up hydro power projects are streamlined, this sector cannot be developed expeditiously. The

Committee, therefore, recommend that instead of putting the onus of obtaining all the clearances and undertaking R&R relating to hydro power projects on the developers alone, the Government(s) should share the responsibility. The Government agencies should undertake all the formalities and R&R related to project on behalf of the developers to shorten the time consumed in these processes. The developers should be assigned only with the job what they do best i.e. development of the projects. Since, the concept of river basin study has already been introduced; the government agencies may take it further by identifying all the potential and suitable hydro power projects sites in a river basin and developing the basic enabling infrastructure before its allotment to developer.

Reply of the Government

Water being a state subject, the allotment of hydropower projects is being done by the respective State Governments. The issues highlighted above are mainly related to projects already allotted. Apart from advising the States Governments to consider the above factors before allotment of future projects, the Ministry on a regular basis reviews and monitors all the existing projects to resolve the outstanding issues such as inadequate infrastructure, R&R issues, law & order problem, Inter-State issue, difficulty in land acquisition etc. to fast track their implementation. Further, the Government is considering a proposal for revival of hydro power sector which, inter alia, includes sharing the cost of enabling infrastructure by the Central and State Government.

The Committee's recommendation for developing the basic infrastructure by Government(s) before allotting hydro projects to the developer is supported by this Ministry. In general, the hydro projects get delayed due to hydrological surprises or R&R problems of land. This will ensure speedy execution of the hydro project and will help reduce the project cost leading to lower tariff.

As per reassessment study conducted by CEA, India has huge Hydro potential of 145320 MW (above 25 MW capacity). The total installed capacity of Hydro (above 25 MW), excluding pumped storage, of the Country as on 31.08.2017 is 39867.8 MW (as per CEA website). Hydropower potential already developed is only about 27.43 % and that under development is about 7.34%. Thus the bulk of Hydropower potential amounting to 65.22% remains to be developed.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.12

The Committee while examining the hydro sector found that lack of coordination among the Ministries, State Governments, Departments, and Agencies related with the development of hydro power, to be the prime reason for sluggish growth of hydro sector. The Committee, therefore, recommend that there should be a forum where the

representatives of the Ministries of Power, Ministry of New and Renewable Energy, Finance, Environment and Forest, Water Resources and the concerned States Government/Agencies should meet time to time for the resolution of issue related to development of hydro power projects. They further desire that deliberation should also take place in regard to linking of future thermal and solar power projects with hydro power projects till the sector get developed to its potential.

Reply of the Government

Clearance process will be faster if a forum of concerned Ministries/Agencies is formed for resolving issues like single window clearance system. Already under the initiative of CEA, consultation meetings are held to discuss Detailed Project Report (DPR) preparation and clearance process where Central Water Commission (CWC), Central Soil and Materials Research Station (CSMRS) and Geological Survey of India (GSI) also take part. This forum may suitably be extended to include Ministry of Environment and Forests & Climate Change (MOEF&CC), Finance and other concerned State Govt. Authorities. This will ensure a faster pace to develop the hydro power sector in timely manner and also to its full potential.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.13

The Committee observe that higher tariff is the main suppressant of electricity demand. In view of the Committee, there is latent demand of electricity in the system that will surface once tariff is brought down to more affordable levels. The Committee, therefore, recommend the Government to make policy provision that ensure reduction in power generation cost and electricity tariff. The Committee desire that with a view to decrease generation cost availability of cheaper indigenous coal be made available inadequate quantity, rationalization of coal supply sources, super-critical technology be adapted according to indigenous conditions, R&M exercises for power plants be undertaken at the right time, etc. The Committee further observe that running of power plants at lower PLF also escalate the generation cost. The Committee, therefore, further recommend that the Government should make necessary provisions to increase the utilization of power plants.

Reply of the Government

Insofar as Committee's recommendations in regard to increasing the utilization of power plants i.e increasing the Plant Load Factor (PLF) of power plants is concerned, increase in electricity demand may result in better utilization of power plants. Various policies & developmental activities/ programmes of the Government viz. (i) Power for All initiative for providing 24x7 power to all (ii) Make in India Initiative to encourage multi-national as well as national companies to manufacture their products in

India (iii) penetration of Electric Vehicles in the system etc. would lead to increase in electricity demand and this increase in electricity demand may lead to better utilization of power plants.

In order to ensure reduction in power generation cost and electricity tariff, the scheme of Flexibility in utilization of domestic coal amongst power generating stations of Central Sector, State Sector as well as IPP Power Stations for reducing the cost of power generation has been issued. The flexibility in utilization of domestic coal scheme envisages transferring coal to more efficient generating stations, leading to lower generation costs and ultimately lesser cost of electricity for the consumers.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Comments of the Committee

(Please see Para No. 20 of Chapter – I of the Report

Recommendation No.14

The Committee note that as per National Electricity Policy a well-planned and strong transmission system will ensure not only optimal utilization of transmission capacities but also of generation facilities and would facilitate achieving ultimate objective of cost effective delivery of power. The Committee find that transmission sector has very well kept pace with the rapidly growing generation sector. In belief of the Committee, there has not been any constraint owing to lack of transmission capabilities. The Committee praise the excellent work done in the transmission sector. The Committee hope that the good work will continue in future also. The Committee further note that there is planning of huge generation capacities from renewable energy sources and integration of this into the system would pose a great challenge due to its intermittent and variable nature. This will require further strengthening and technological up-gradation of the transmission system to optimally utilized generation capabilities. The Committee note that there is planning in regard to integration of upcoming renewable energy into the system by the way of constructing Green Energy Corridor. There are other preparatory work and studies going on in this regard. The Committee, however, feel that there is need for greater coordination among the concerned agencies. The Committee, also recommend that transmission sector which has so far performed well, need to be taken to the next level by expeditious implementation of Smart Grid project to cope up future challenges.

Reply of the Government

POWERGRID is playing a key role for integration of renewable energy resources into the grid. The company has taken a lead initiative and developed a comprehensive master plan for grid integration of large scale renewable generation envisaged as 'Green Energy Corridors (GEC). The Plan covers transmission infrastructure at Inter

and Intra State level as well as control infrastructure to mitigate grid integration challenges of renewables.

Green Energy Corridor-I Scheme: The scheme comprises comprehensive transmission plan for intra state and inter-state transmission system strengthening along with the control infrastructure such as establishment of Renewable Energy Management Centers (REMC) etc. Intra State Transmission system is being implemented by respective State Transmission Utilities (STU) and Inter State transmission system (ISTS) is being established by POWERGRID. Under GEC-I, a high capacity GEC (viz. Mundra – Bhuj – Banaskantha – Chittorgarh – Ajmer – Moga high capacity lines) is under implementation, which will serve dual purpose to facilitate interconnection of large scale renewables, into the National grid as well as enlarging the balancing area to address renewable volatility.

Further, establishment of Renewable Energy Management Centers (REMC) at 11 (eleven) locations in various RE resource rich state viz. Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, Gujarat, Madhya Pradesh, Rajasthan, regional load dispatch centers at SR, WR, NR as well as at National Load Dispatch Centre has been taken up. This would enable forecasting of renewable resources and efficient management of variable renewable generation ensuring grid stability & security.

Green Energy Corridor-II Scheme: Under GEC-II, transmission schemes for eight (8) nos. Ultra Mega Solar Power Parks (7200 MW) is under implementation in various states.

To address intermittency and variability of renewable generation, POWERGRID has established country's first grid interactive energy storage pilot project with different battery technologies. The findings of the energy storage project would be helpful in its large scale deployment.

Towards smart transmission, the Company is implementing Phasor Measurement Unit (PMU) based Unified Real Time Dynamic State Measurement (URTDMS) project, integrating all State and Central grids for Wide Area Measurements (WAMS). In addition, analytics using PMU data are being developed in association with IIT Bombay. Synchronized measurements integrated with high end analytics will facilitate improved monitoring, visualization and enhanced situational awareness of the grid events on real time towards grid reliability improvement.

Most of transmission sector is having SCADA / DMS, the basic automation system which is required for moving towards smart transmission system? The new components and developments taking place in the Indian smart transmissions system are given below. With reference to Smart Grid technologies for transmission sector, central transmission utility (Power Grid) has already deployed Phasor Measurement Units (PMUs) and Phasor Data Concentrators (PDC) on pilot basis across the various

regions for better visibility of grid. The PMUs installations are being extended to coverall regional load dispatch centres. The country is planning to add huge capacity of renewable sources to the grid in the coming years. "Renewable Energy Management Centres (REMC)" is being planned at all regional load dispatch centres by Government of India. Conventional approach of handling load dispatch operation is based on assumption of guaranteed availability of generation and fixed load (both peak and off peak). As the renewable energy sources are highly intermittent and variable in nature, the load dispatch operation requires additional information like meteorological data and other information and hence there is requirement of REMC. Transmission companies and other MoP organizations including CPRI are providing support to state distribution companies in implementing various smart grid activities.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.15

The Committee observe that the economic viability of the whole electricity sector hinges on the Distribution Sector, which happens to be the most financially distressed in our country. The Committee note that power is a concurrent subject and the responsibility for distribution and supply of power to rural and urban consumers rests with the States. The Committee further note that AT&C losses levels in the country are still unacceptably high. In view of the Committee, the high AT&C losses are the main reason behind the distressed conditions of Discoms. The Ministry, with the aim to bring down AT&C losses to the level of 15%, has introduced IPDS with R-APDRP being its component. Newly launched scheme UDAY put emphasis on reducing AT&C losses and set a trajectory to be conformed by Discoms. The Committee, however, find the concept of AT&C losses flawed as it disguise the commercial losses which unlike the technical losses, can be eliminated completely. The Committee are also aware that commercial losses which have the major chunk in AT&C losses can be reduced with the managerial interventions. It is beyond doubt that technological up-gradation as envisaged under the IPDS will help the sector in many ways, nevertheless, the efforts to address the problem of commercial losses can be started without waiting full implementation of IPDS, be it feeder wise metering and supervision, fixing of accountability, etc. However, to act in this regard we first need to segregate the value of commercial and technical losses in AT&C losses. The Committee, therefore, recommend that provisions should be made in regard to segregation of commercial and technical losses. So that all-out efforts in regard to reduction of losses are made at the earliest.

Reply of the Government

The losses as per existing procedure are calculated as 'Aggregate Technical & Commercial (AT&C) Losses'. However, a pilot study

for segregation of Commercial Losses from overall AT&C losses in 10 capital/large towns was carried out from Nov 2015 to Feb 2016 on the direction of Standing Committee on Energy in its meeting held on 26 October 2015. The details of Technical and Commercial losses found in the study are as tabulated below:

S. No	Name of Town	State	Annual AT&C Loss	Technical Loss	Commercial Loss
1	Dehradun	Uttarakhand	29.71%	6.70%	23.01%
2	Vishakhapatnam	Andhra Pradesh	8.71%	4.15%	4.56%
3	Hyderabad UA	Telangana	17.91%	5.75%	12.16%
4	Bhopal	Madhya Pradesh	38.21%	7.71%	30.50%
5	Ahmedabad	Gujarat	4.94%	3.80%	1.14%
6	Kolkata UA	West Bengal	18.52%	2.62%	15.90%
7	Navi Mumbai	Maharashtra	5.21%	4.05%	1.16%
8	Shimla	Himachal Pradesh	40.07%	3.16%	36.91%
9	Panchkula	Haryana	18.36%	6.27%	12.09%
10	Battapara	Chhattisgarh	29.06%	2.68%	26.38%

Technical losses in above towns were calculated using GIS based Network Analysis module of the IT system, which has been installed in Distribution utilities of above States. Respective towns' Commercial losses were calculated by subtracting technical losses from its AT&C losses. To minimize the effect of seasonal variations, cumulative AT&C losses figure was taken of past 12 months.

The Commercial loss figure might be slightly lesser than above figures because the actual Technical loss would be slightly higher than system generated figure as any loss due to joints or loose connections are not captured in Network Analysis Module.

The study points out that the Commercial losses are dominating portion of total AT&C losses in 7 out of 10 towns selected for study.

Once all 1405 towns under R-APDRP have been declared Go-Live, it should be possible to segregate technical and commercial losses in said towns. IT enablement of additional 2600 towns under IPDS shall also pave way for segregation of technical and commercial losses in said urban towns.

The methodology indicated above is only indicative and depends on the granularity of the data entered into the Network analysis modules and its consonance with the network and network connections available on the ground. Thus, it is likely that the

figures of commercial losses thus computed could be at variance with that in reality. More so, the same can only be done by the State Utilities in urban areas mapped on the GIS modules. In view of the fact that the above methodology is only an estimate, audited segregated figures of the Technical and Commercial losses at a DISCOM/State level would not be possible.

Thus, while it would be difficult to establish correct and dependable segregated figures of Commercial and Technical losses, the segregated figures established thus by the DISCOMs in the Urban areas mapped on IT enablement, can be used for monitoring trends of losses subject to reasonable technical interpretation.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.17

The Committee note that that poor financial health of India's power distribution companies (Discoms) is reported to be the biggest concern in the Indian Power Sector. The total outstanding debt (during 2014-15) of the utilities selling power directly to consumers was to the tune of Rs. 4,06,825 crore. The Committee note that Ujjwal Discoms Assurance Yojana (UDAY) has been formulated and launched for a sustainable financial and operational turnaround of Discoms which provides permanent solutions to legacy debts and to address potential future losses. The Committee are appreciative of the initiative of the Government in the form of UDAY to turnaround the financial conditions of Discoms. The key feature of the scheme is that unlike its predecessor schemes, it envisages undertaking the herculean task without any outlay from the Central Government. Through this scheme, the Central Government have involved the whole machinery of the State to address the issues responsible for financial losses to Discoms. Since, this scheme provide to eliminate the gap between Average Cost of Supply (ASC) and Average Revenue Realized (ARR), the Committee are hopeful that this initiative will be able to settle the issues of distribution sector once and for all. The Committee at the same time are also a bit cautious as we have past experiences when the initiatives with identical objective have failed due to one or the other reasons. The Committee, therefore, recommend that the initiative of UDAY should be implemented with utmost sincerity and attention lest it become another bitter experience. The Committee further desire that necessary need based calibration may be done in the scheme as and when need arises to address any new issue that crop up during its implementation.

Reply of the Government

An inter-ministerial Monitoring Committee has been constituted under the chairmanship of Secretary (Power), Government of India for close monitoring of performances made under Ujjwal Discom Assurance Yojana (UDAY) and proper implementation of the scheme to prevent any slippage. The Committee meets at

regular interval to discuss & resolve various issues which come up impediments for smooth implementation of the scheme.

The Monitoring Committee constituted under UDAY reviews the progress as well as issues/challenges faced by the States/Discoms in connection with effective implementation of UDAY scheme. The Monitoring Committee, in the process, takes up the various issues raised by states with the appropriate agencies for resolving the same for enabling the States/Discoms to achieve the targets envisaged under the scheme.

Further, the Ministry of Power is also lending support to the States/DISCOMs in identifying the areas where improvements are required from time to time.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.18

The Committee note that one of the key provisions of the Electricity Act on competition in distribution is the concept of multiple licensees in the same area of supply through their independent distribution systems. The Committee further note that National Electricity Policy states that the Government of India would notify within three months, the requirements for compliance by applicant for second and subsequent distribution licence as envisaged in Section 14 of the Act. With a view to provide benefits of competition to all section of consumers, the second and subsequent licensee for distribution in the same area shall have obligation to supply to all consumers in accordance with provisions of section 43 of the Electricity Act 2003. The Committee, however, find that the concept of introduction of Open Access at distribution level is still far from being implemented. In regard to its implementation, the Ministry have stated that Discoms are not comfortable with open access due to the fact that some sections of the consumers are being supplied electricity at subsidized rates. The Ministry has accepted that open access as a philosophy and policy, is good. They have further stated that they are committed to promote open access to the extent possible; however, the Discoms and the States have to take a call because it directly affects the financial position of the Distribution Companies. The Committee believe that system of open access at distribution level can create a competitive atmosphere which will help consumer get reliable and quality electricity supply. The Committee do understand that there is genuine problem in implementation of open access in the present scenario due to existence of multiple tariffs for different segment of consumers. Nonetheless, the Committee do not find the problem insurmountable as some remedial measures can be taken which will address the issue. One of the many options is the provision of direct transfer of subsidy provided by the State Government to the account of the beneficiary.

The Committee, therefore, recommend that the Government will take recourse for effective implementation of open access at distribution level.

Reply of the Government

A Committee was constituted by Ministry of Power under the chairmanship of Member (E&C), Central Electricity Authority to address the issues of Open Access. Based on the recommendations of the Committee, Ministry of Power has issued a Consultation Paper for obtaining views of the stakeholders on the relevant issue. The views of the stakeholders received on the consultation paper are under examination by Central Electricity Authority.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.21

The Committee note that a strong research and development base is essential for any sector to be effective, efficient and economical. For electricity sector, R&D efforts and technological development holds more good as it is primarily a technologically driven sector. With the heralding in of supercritical technology into generation, watershed transmission has been introduced though in a small scale. The Committee believe that this will be the important milestone for the energy sector of the country. However, the Committee feel that there is a lot needs to be done for making Electricity affordable to common man. Establishment of large size generating units with cost effectiveness, development and deployment of technologies for productive use of fly ash, a flawless transmission system and efficacious distribution mechanism, effective grid code and efficient and transparent load dispatch centres are the issues where advanced technological intervention can bring the turnaround in the electricity sector. Other areas which also need the technological intervention are metering of electricity, functioning of transformers, advancement of generators and other equipment essential for generation and transmission of electricity. The Committee feel that other priority areas can also be identified for research and modernization to achieve higher efficiency levels. In this regard, some minimum acceptable standards can also be fixed for performance which should be made mandatory for all to comply with. The Committee, therefore, recommend that due attention should also be paid to research and development activities of the electricity sector in core areas so that it can become economical and efficient.

Reply of the Government

Ministry of Power through its nodal research body Central Power Research Institutes (CPRI) coordinates the research activities in the Power Sector. These research activities are directed towards generation, transmission & distribution areas in the Power Sector, including the equipment used in these areas.

At present, Ministry of Power through CPRI is implementing three R&D schemes to create strong research and development base in power sector. Details of these schemes are:

1) National Perspective Plan (NPP)

The projects under NPP aim to promote R&D in the power sector in technological areas of importance to manufacturers, power utilities and academia in collaborative mode. For Projects directly taken by CPRI under this scheme, 50% funding is by Ministry of Power and 50% funding by the concerned manufacturer/power utilities/ academia. A total number of twenty projects under NPP were approved during 12th Plan period (2012-2017).

2) Research Scheme on Power (RSoP)

RSoP schemes are fully funded by MOP and aims to carry out need based research in power sector including research in various operational problems encountered in power system. The RSoP projects are undertaken by organizations including academia such as IITs, NITs, etc. A total number of Thirty-eight projects under RsoP were approved during the 12th Plan period (2012-2017).

3) In-House Research & Development (IHRD)

Under this Scheme, various Divisions and Units of the CPRI take up Research Projects under the In-house R&D (IHRD) scheme which is fully funded by Ministry of Power. A total number of Thirty-Two projects under IHRD were approved during 12th Plan period (2012-2017).

Besides, the Ministry of Power also participates in research projects under Impacting Research Innovation and Technology (IMPRINT) and Uchhatar Avishkar Yojana (UAY) scheme/programme of Ministry of Human Resource and Development (MHRD). Since the research projects under UAY and IMPRINT are mainly collaborative in nature involving participation of industry and the IITs, these are being considered as R&D proposals/projects under National Perspective Plan (NPP) scheme. The funding pattern under these schemes is as follows:-

1) Projects under IMPRINT- To be funded by MHRD and participating Ministries/Donors/Industry partners/Alumni/any other Agency (i.e. max. sharing would be 50% funding by MoP)

2) Projects under UAY- 50 % funding by MHRD, 25% funding by Industry/industries and 25% funding by participating Ministry (i.e. max. sharing would be 25% funding by MoP).

CPRI has played crucial role in creation of a conducive environment for R&D to flourish in the country by carrying out/coordinating various research projects on identified thrust areas leading to new technology development, evaluation studies for bringing out new

standards and process improvement, in a collaborative nature involving Utility, Industry, Academia and Research Organizations.

In addition to the above, research in power sector is also being undertaken by various PSUs (NTPC, PGCIL, THDC, NEEPCO, SJVN and NHPC) under this Ministry in their domain fields.

Some of the broad research areas include:

- Material science, erosion studies of turbine and other power equipment of thermal power plants, heat flow and Computational Fluid Dynamics (CFD) Analysis.
- Cavitation and erosion/corrosion issues of hydraulic turbines
- Performance evaluation of insulating fluid and paper insulation of transformer, Nano-materials for power equipment, HVDC/ FACTS devices, WAMS based system security, material research for cables, Corona & partial discharge studies, Transmission tower development/ characterization
- Smart Meters, Efficient Energy Management System, Power quality & harmonics mitigation, Microgrid controllers, Energy Storage, Solar integration to grid, LED packages and efficiency
- Pollution mapping and Fly Ash utilization.

Metering in Electricity sector

Following actions/initiatives have been taken so far for intervention of advanced technology in Metering in electricity sector:

- Govt of India has taken the initial steps for introduction of automation and use of IT in Power sector through R-APDRP during 11th plan period which was the first step towards implementation of smart grid in the country. SCADA projects now being undertaken by utilities in big towns and Under R-APDRP, SCADA projects for 59 towns have been approved by Govt of India which are under various stages of completion.
- To test the various smart grid technologies in India, 10 pilots projects, with various functionalities of smart grid, are also under various stages of implementation with 50% funding as a grant by GOI.
- The Indian Standards for Smart Meters (IS 16444) have also been published by BIS for facilitating the standardization of smart meters in the country.
- Govt of India has also approved National Smart Grid Mission (NSGM) in 2015, for planning, monitoring and implementation of policies and programs related to Smart Grid activities in the country.
- For accelerating the process of implementation of Smart Metering in the country, functional Requirements of Advanced Metering Infrastructure including Technical Specifications of Smart Meters have also been framed by CEA in August, 2016 which has been shared with all the utilities to serve as guidelines for implementation of Smart Metering in States.

Smart Grid in distribution sector would be an integral part of coming up smart cities in the country where bi-directional flow of information from and to Central Control Centers would facilitate reduction of peak demand by controlling consumer devices, consumer participation, online availability of consumer load pattern & disconnection and connection of consumer load in case of violations of certain predefined conditions etc.

The Smart Metering solution (AMI) would enable two way communication between smart energy meter and control centre (HES) to enable remote reading, monitoring & control of electrical energy meters to serve as repository of record for all raw, validated and edited data. The sanitized data may also be used in other functions for billing and collection analysis, planning etc.

Supercritical Technology: Efficiency improvement has led to reduced fuel consumption and reduced Green House Gas (GHG) emissions which have been the main focus for coal based power generation.

Supercritical technology has already been adopted to enhance the efficiency of coal fired power generation. First Supercritical unit of 660 MW was commissioned in Dec., 2010. Upto June end, 62 nos. of supercritical units of total capacity 42630 MW have been commissioned and supercritical units (660/ 800 MW) aggregating to a capacity of around 45,000 MW are under various stages of construction.

Ultra Supercritical and Advanced Ultra Supercritical Technologies (A-USC): with steam pressure of around 270 kg/cm² and temperatures of around 600/ 600 degC is also in the process of being adopted in the country. The design efficiency of Ultra supercritical technology is around 42%.

High Level committee for assessment and review of R&D activities of organizations/PSU under the Ministry of Power

In order to have a coordinated approach and proper monitoring of R&D activities being carried in the power sector by Organisations/ PSUs of the Ministry of Power, a High Level Committee under the Chairmanship of Secretary (Power) has been constituted by the Ministry vide Order dated 25th Nov, 2016.

Subsequently, in the first meeting of the High Level Committee held on 19th January 2017, it was resolved to constitute a Sub -Committee to carry out the following terms of reference:

- i. To list out all major R&D activities being undertaken by Organizations/PSUs under the Ministry of Power
- ii. To identify areas where there is an overlap and possibility for collaboration
- iii. To identify areas of importance for the power sector and focus areas for research in the next 4 years

The final report of the sub-committee has been submitted to the Ministry of Power and the same has been deliberated upon during the second meeting of the High Level Committee held on 19th September, 2017. It includes a number of areas focusing on measures to achieve higher efficiency levels in all the domains of the power sector. It is agreed that some minimum acceptable standards need to be fixed for performance in research areas and it should be made mandatory for all to comply.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.22

The Committee note that adequate funds are not being made available for R&D activities of the electricity sector. If research and development activities are to be promoted for the sector, then a suitable and institutional funding mechanism will have to be put in place. There is no dearth of talent in our country and various technical institutions can be roped in for this purpose. The Committee feel that Central Power Research Institute (CPRI) is a body which can diversify its activities in the research areas as well and it can be funded separately for its research activities. Targets in priority areas of research should be fixed for CPRI and other technical bodies like IITs and IISCs etc. for improving the sector and their activities can be funded from institutional funding mechanism. The Committee feel that on the lines of CSR, a fund can be created out of the profits of energy sector PSUs solely for research activities. Based on the needs of the sector and performance of these institutions, this fund can be appropriately increased also if so required. The Committee, therefore, strongly recommend that a separate pool of fund for research activities in the power sector be established on the lines of CSR from the profits of the PSUs of the energy sector. This will give impetus to the research and make them financially autonomous as well.

Reply of the Government

The Ministry of Power had approved an outlay of Rs 80 crore to CPRI for the “Research and Development Schemes of Mop “under 12th Plan (2012-17).The scheme wise break-up of the approved outlay is furnished below:

Sl No.	Scheme	12th Plan Sanctioned Amount (Rs In Lakhs)
1	R&D under NPP	4500
2	RSoP	2000
3	IHRD	1500

CPRI has funded 20 projects under the NPP scheme, 38 projects under RSoP scheme and 32 projects under the IHRD scheme. The total outlay of the 90 projects under the “Research and Development Schemes of CPRI” amounts to Rs 60 crores (approx.)

These funds are being utilized as a part of institutional arrangement comprising of CEA and CPRI to allocate funds for the research proposals. This arrangement includes four Technical Committees (TCRD) for review, recommendation and monitoring of R&D proposals under the Schemes of the MoP, namely Technical Committee on Thermal Research, Technical Committee on Hydro Research, Technical Committee on Transmission Research and Technical Committee on Grid, Distribution & Energy Conservation Research. Further the projects with cost exceeding 50 lakhs have to get the approval of the standing committee on research & Development (R&D) headed by the chairperson, CEA. These committees work together to bring about an institutional arrangement to the funding mechanisms of the Ministry of Power for the research schemes.

India has a pool of young talented people which can be harnessed to give impetus to the research activities carried out by different organizations with the involvement of institutions such as IITs and IISCs etc. The involvement of young talented people in research will make them more capable for the future.

The idea of creation of common pool on the lines of the CSR (Corporate Social Responsibility) will be a welcome step which will coordinate the research schemes of the PSU's thus avoiding duplication and overlap in research activities. One of the functions of the sub-committee as mentioned under the point No.21 was to find the overlap of research works between the different research groups engaged in the research works. Overlapping can be avoided to a large extent with the creation of the common pool. Moreover, recent deliberation on the "roadmap of New – India 2022" also advocate the utilization of the funds of PSUs in the same sector together to enhance cooperation and make research financially autonomous.

[Ministry of Power
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Recommendation No.23

The Committee note that the core functioning of the CPRI is certification of rating and performance to ensure availability of equipment of adequate quality for use in the power sector. Its activities revolve around power system studies covering Load Flow, Short Circuit and Relay Coordination, Condition Monitoring and Diagnostics Services, Energy Audit, Communication Protocol Testing, Third Party Inspection Services, Seismic Qualification of Power Equipment, Customized Training Programmes and Protection Audit. The Committee find that these activities mostly concentrate into post operational scenario and thus lack the penetration of research efficiency and innovation. There can be inferences based on these activities for improvement and rectification of the system, but it is a back-hand drive. The institute like CPRI should take a lead in real innovation and research to make the sector vibrant, self-reliant, efficient and economical. The country is witnessing a boom in renewables. CPRI

should concentrate on improving the quality, life and efficiency of the solar, thermal and solar photovoltaic system so as to enable the solar system to become more sustainable for the people. Battery storage, inverters and other devices of storing electricity are the challenge areas for which CPRI should pick up the cudgels. Similarly, NPTI is also a body of Government which is engaged in modernizing the electricity sector through its training programmes. Its programme on generation stimulators has improved PLF of generating units and has also increased the viability of transmission and distribution. Its training programmes are vital for the sector. While applauding the efforts of the NPTI for the electricity sector, the Committee lay emphasis that it should venture into other areas of research through its trained manpower. Specialised classes in research can be conducted, interactive sessions can be organized, and demonstration series on achievement can also be organized by NPTI in areas which will have positive impact on the sector. The Committee, therefore, strongly recommend that the bodies like CPRI and NPTI should diversify their activities and also concentrate on the research segment of the electricity sector for the benefit of the people.

Reply of the Government

As observed, Central Power Research Institute (CPRI) is mostly concentrating on post operational and testing activities. Moreover most of the research projects being undertaken currently by CPRI are of study and simulation types. CPRI is the only approved testing centre for solar lighting system and related equipment in Southern part of India.

Solar Photovoltaic Lab at ERED, CPRI has been accredited for testing solar operated CFL and LED based Lighting systems as per MNRE Specifications. CPRI is testing these equipment successfully since one & half decades as per MNRE Standards.

Effective testing mechanism of CPRI ensures the quality, life and efficiency of solar Equipment which reaches the consumers. Also, CPRI is establishing a full-fledged Module testing facility to test PV modules as per the relevant IEC standard.

The research focus is now on the growing renewable energy systems in the power sector and the research needs to be on these areas to better integrate these devices and provide a sustainable growth trajectory. We agree that CPRI should take a lead in all research needs and innovation in the power. CEA has taken initiative to ensure that the project areas are identified and research is done according to the need of the power sector currently. This was done by constituting a sub-committee to identify major thrust areas for the power sector whose report has been finalized and will be implemented in due course of time.

In the area of thermal research, CPRI has designed and fabricated an innovative draft tube reactor for NTPC-NETRA which will be highly beneficial for optimizing power plant parameters and design of supercritical and ultra-critical boilers.

In the area of energy storage, CPRI has undertaken an R&D project related to development of flow battery (soluble lead redox flow battery) including electrode materials development, electrode fabrication, cell design and fabrication. Under this project, currently, one single cell has been fabricated and performance analysis studies of the cell are under progress.

CPRI has also provided a platform for conducting research & experiments on Solar PV Panels upto 500 W and Solar inverters 500 kVA. CPRI has created facilities for simulating the various environmental conditions on solar panels and measure their performance.

In addition, CPRI has encouraged various academic institutions like IIT, NIT etc. to take up research projects on various challenges faced in the Power Sector. CPRI has funded 20 projects under the “R&D under NPP” scheme, 38 projects under Research Scheme on Power (RSoP). Some of the projects aim at design and development of indigenous technologies with the objective of cost reduction, import substitution and employment generation. The projects when successfully completed will aid to Government of India’s vision of “Make in India”, “Skill India” and “Start-up India”.

NPTI conducts many industry-interfaced academic programs with the objective to create a pool of committed and competent professionals equipped with appropriate technical skills to steer the Indian Power Sector. NPTI has also been catering to the Training Needs of Power Sector Organizations and Process Industries such as Steel, Cement, Aluminium, Fertilizers, and Refineries.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.24

The Committee note that National Electricity Policy lays due emphasis on energy efficiency through demand side management measures. Making energy audit compulsory for power intensified industries, encouraging other industries for energy audits and energy conservation measures, adoption of conservation measures in all Government buildings, labeling of appliances, regulatory approach for setting standards are some of the measure which have been enunciated through Energy Conservation Act. In agricultural sector, promotion of high efficiency in pump-sets and water delivery system, energy efficiency, technologies in industrial sector are also measures to enhance energy conservation. For industries, commercial and domestic establishments, energy efficiency lighting system has been encouraged. In addition, suitable load management technique are being encouraged to coordinate the electrical power demand during peak period and off peak period and regulatory commissions have also been advised to ensure adherence to energy efficiency standard of utilities. The Committee welcome the measures introduced by the Government for energy

conservation as these measures will help in meeting the energy needs and providing adequate and varied energy of desired quality in a sustainable manner at reasonable cost. Environmental and health issues have also been taken care of in energy efficiency and clean energy systems. The aspect of energy conservation through energy efficiency is such that it has to be encouraged at all cost and there can be no second opinion about it. While appreciating the measures taken by the Government, the Committee recommend that certain targets should be set for achieving energy savings through strengthening of existing policies/ schemes and also by expanding to new areas like utility demand side management, human resource development programme, capacity building in Discoms, promoting energy efficiency in buildings, programme for small and medium enterprises and strengthening institutional capacity of State designated agencies etc.

Reply of the Government

Energy efficiency measures has been vigorously pursued by Government especially the UJALA (Unnat Jyoti by Affordable LEDs for All) scheme with a target of replacing 77 crore incandescent lamps with LED bulbs. Presently, more than 26 crores LED bulbs have been distributed to masses. The Government has also started distributing Energy efficient fans and LED tube lights under this scheme.

To promote the development of Smart Grid in the country, Government of India has launched 'National Smart Grid Mission (NSGM)' for planning, monitoring and implementation of policies & programs related to development of Smart Grid in India. Government is also giving attention to the penetration of Smart Meters in several areas.

India has also committed to reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels. India has also committed for achieving a share of more than 40 % in Installed Capacity of RE based sources. These commitments demonstrate the inclination of Government to achieve energy security in an environmental friendly and sustainable manner.

Ministry of Power, through Bureau of Energy Efficiency (BEE), has initiated a number of energy efficiency initiatives in the areas of household lighting, commercial buildings, standards and labeling of appliances, demand side management in agriculture/municipalities, SME's and large industries including the initiation of the process for development of energy consumption norms for industrial sub sectors, capacity building of State Designated Agency (SDA), etc. These initiatives have resulted in an avoided capacity generation of 36,323 MW during the period 2006-2014.

The National Mission for Enhanced Energy Efficiency (NMEEE) aims to strengthen the market for energy efficiency by creating conducive regulatory and policy regime and has envisaged fostering innovative and sustainable business models to the energy efficiency sector.

The NMEEE spelt out four initiatives to enhance energy efficiency in energy intensive industries which are as follows:

- Perform, Achieve and Trade Scheme (PAT), a regulatory instrument to reduce specific energy consumption in energy intensive industries, with an associated market based mechanism to enhance the cost effectiveness through certification of excess energy saving which can be traded.
- Market Transformation for Energy Efficiency (MTEE), for accelerating the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable.
- Energy Efficiency Financing Platform (EEFP), for creation of mechanisms that would help finance Demand Side Management (DSM) programmes in all sectors by capturing future energy savings.
- Framework for Energy Efficient Economic Development (FEEED), for development of fiscal instruments to promote energy efficiency.

The Mission seeks to upscale the efforts to unlock the market for energy efficiency which is estimated to be around Rs. 74,000 crores and help achieve total avoided capacity addition of 19,598 MW, fuel savings of around 23 million tonnes per year and greenhouse gas emission reductions of 98.55 million tonnes per year at its full implementation stage. Continuation of NMEEE was approved by Cabinet on 6th August, 2014 with a total outlay of Rs. 775 crores.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Recommendation No.25

The Committee note that National Electricity Policy provides for ensuring quality of power supply based on pre-determined indexes of utilities. The parameters set in this regard inter alia include frequency and duration of interruption, voltage parameters, transformer failure rates, waiting time for restoration of supply, percentage of defective meters and waiting list of new connections. It has been provided that appropriate commission would specify expected standards of performance. The Committee note that reliability indexes of supply of power to consumers has also been prescribed for distribution licensee. However, the reliability index is yet to be declared for cities and towns upto District Headquarter level, not to say of the rural areas of the country. State Regulatory Commissions have a greater role to be played in this regard. The setting up of grievances redressal forum is another important area for redressal of the grievances

of the consumers. The Committee feel that the interest of the consumer can be protected by capacity building of consumer groups and their effective representation before the regulatory commissions. This will help in enhancing the efficacy of regulatory process also. In the modern era, consumer care centres are the places for better consumer connect with a view to improve the customer service through resolving consumer queries/ complaints in a time-bound manner. This is a single window service to consumer and can be of great help. The Committee are of the opinion that these measures should duly be institutionalized in a proper manner with adequate man power, systemic role, fund arrangements, technical know-how and transparency as they are the indicators of the health of the energy sector. The Committee, therefore, strongly recommend that for protection of the interests of consumers, every effort should be made in a transparent and honest manner and the power related grievances should be resolved within a definite time-frame failing which the responsibility should be fixed of the concerned official with the provisions of the compensation to the consumer.

Reply of the Government

To protect the interest of consumers, SERCs have notified Standard of Performance to be followed by distribution utilities in the states. Standard of Performance are being monitored for implementation by respective SERCs and also enforcing penalty in case the utilities fails to perform as per rules and regulations of Standard of Performance.

Government of India, under IPDS scheme, has facilitated the states/UTs for setting up of call centre with phone No. 1912 to address the power supply related complaints on a proactive basis and provide effective, assured and timely services to the customers in power distribution companies/Electricity Department. These call centres work round the clock to receive customer complaints through several channels such as telephone, fax, email, etc. The telephone number 1912 is specifically allotted to Electricity Call Centres for handling power supply related complaints. At present, 47 Govt. Utilities and 10 private utilities established electricity call centres associated with Phone No. 1912.

Customer Care Centres (CCC) are providing a centralized customer friendly channel for receiving & resolving consumer requests / queries/ complaints like No-Supply complaints related to supply of electricity, forwarding of receipted complaints, receipt of resolution of complaints and intimation of the same to the Consumer over the phone on 24x7 basis.

Consumer protection under Standards of performance has been specifically dealt in the Electricity Act, 2003. As per Section 42 of Electricity Act, 2003 Consumer Grievances Redressal Forum and Ombudsman are in place in the states to protect the interest of consumers.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

CHAPTER III

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

Recommendation No. 19

The Committee note that Section 61 of the Electricity Act, 2003 empowers the appropriate Commission to specify the terms and conditions for determination of tariff in accordance with the provision of the said section and National Electricity Policy and Tariff Policies. Besides, the Commission shall also advise the Union Government on all or any of the matters, i.e., (i) formation of National Electricity Policy and tariff policy; (ii) promotion of competition, efficiency and economy in activities of the electricity industry; (iii) promotion of investment in electricity industry; (iv) any other matter referred to the Central Commission by that Government. The Committee observe that the Regulators have been entrusted with the important assignment that is capable of determining the shape and future of the sector. However, when the Committee analyze the present situation, they find that though there has been noteworthy development in the sector, but the various issues that have been affecting the sector adversely for long are yet to be addressed viz. high AT&C losses, bad financial conditions of Discoms, environmental issues, problems of end consumers, etc. Moreover, over the period of time some more new problems have surfaced, like falling of hydro power in energy mix, low PLF of thermal power plants leading to their economic un-viability, issue of affordability of electricity, etc. Since Regulators have been entrusted with the power to regulate the sector for attaining the goals and objectives of Electricity Policy, the Committee feel that there should be some kind of performance appraisal of regulators and the impact of formulated regulations. The Committee, therefore, recommend that apart from giving adequate resources and authority, the Regulators accountability should also be ensured by making necessary provisions in this regard.

Reply of the Government

The Standing Committee on Energy has cited the various issues which have been affecting the power sector adversely over a period of time. In this context, it would be pertinent to mention that the problems being faced by the power sector as duly noted by the Standing Committee would require a comprehensive administrative, policy and regulatory intervention. Coordinated effort of the Government and Regulators can reasonably address these issues.

It has pointed out a very important aspect regarding the impact assessment of formulated regulations. In this context, it may be mentioned that Government of India/MoP have constituted the Forum of Regulators (FOR) vide Notification dated 16th February, 2005 in pursuance of the provision under Section 166(2) of the Electricity

Act, 2003. The FOR consists of Chairperson of Central Electricity Regulatory Commission (CERC) and Chairpersons of State Electricity Regulatory Commission (SERCs). The Chairperson of CERC is the Chairperson of the FOR. While the various functions of the FOR have been stipulated in the notification, it also mentions about such other functions as the Central Government may assign to it from time-to-time.

It has also suggested for accountability by means of some kind of performance appraisal of Regulators. The Commission is accountable to the Parliament and the Parliament through its Committees keeps reviewing the functioning of the Commission at intervals. The Regulations notified by the Commission are also laid on the Table of the Lok Sabha and Rajya Sabha. The Annual Report and Annual Accounts of the CERC are laid on the Table of both the Houses of the Parliament.

In this context, it may also be seen that the intent of the Act provides for Government to maintain distance from regulating the sector. The responsibilities of the Regulators have expanded from the tariff setting in the initial days to licensing, grid security, market development, promotion of renewable energy etc. The initiatives taken by the regulators have also resulted in flow of investments into the sector, which is evident through the increasing generation capacity, increased volumes of power under long term, medium term open access and short term transactions, decreasing short term power prices, increased renewable energy generation capacity etc.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

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. 2

The Committee note that the Electricity Policy states that the key development objective of the power sector is supply of electricity to all areas including rural areas as mandated in section 6 of the Electricity Act. Both, the Central Government and the State Governments would jointly endeavour to achieve this objective at the earliest. Consumers, particularly those who are ready to pay a tariff which reflects efficient costs have the right to get uninterrupted twenty four hours supply of quality power. To achieve this, Government of India have launched Deen Dayal Upadhyaya Grameen Jyoti Yojana with the objective of electrifying all the villages and households in the country. However, the Committee find that as per the extant definition of an electrified village, a village with a mere 10% of the total number of households in the village can be declared as electrified. Therefore, despite having 90% un-electrified households, the Government can assume a village to be electrified. However, when the Committee raised this issue with the Ministry, they have stated that “24 x 7 Power for All” documents have been signed with all the States/UTs. Government of India supports States with schemes such as Ujjwal DISCOM Assurance Yojana (UDAY), Integrated Power Development Scheme (IPDS) and Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) to help them to achieve the objective of providing uninterrupted power supply to every household. As the focus is now on Power for All, definition of electrified village becomes irrelevant. However, the Committee are not convinced by this plea of the Ministry. The Committee are aware that the present definition of electrified village is slight improved version of its earlier definitions wherein, a village was qualified to be classified as electrified if electricity is being used within its revenue area for any purpose whatsoever. Since, the Ministry have changed the definition of the village electrification several times in a piecemeal manner, there have been situations when a village once declared electrified becomes un-electrified after change in definition, causing a repetition of the entire work in the form of so called intensive electrification to meet the criteria of the new definition. As per the present definition of village electrification 99.4% village are electrified but at the same time more than 4 crore households in the country are still deprived of the electricity connection. It is apparent that by present measures electrification is nothing but sheer formality to declare as many as villages electrified. The Committee believe that the present definition does not reflect the true picture of universal access to electricity status in the country, therefore, strongly recommend that the definition of village electrification should be changed as such that a village should be declared electrified only when all the households of the

village are electrified. They further desire that a village shall not get the tag of being electrified in any case when the household coverage is less than 80%.

Reply of the Government

The present definition of Village Electrification, though envisage electrification of at least 10% households, does not restrict households electrification beyond 10% and accordingly Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) scheme provides for creating access to electricity for all household.

Under the scheme, free service connection is provided to Below Poverty Line (BPL) households, and access to electricity is also provided to APL households to facilitate extension of service connection by the respective State Power Utilities as per the extant rules.

Further, substantial investment is being made in power infrastructure strengthening. States have been advised to provide service connection to all the un-electrified households.

All the states have signed the “24x7 Power for All” document, joint initiative of Government of India and State Government, which envisages providing access to all the households by 2019.

Recently, Government of India has launched “Pradhan Mantri Sahaj Bijli Har Ghar Yojana - Saubhagya to achieve universal household electrification in the country. The scheme envisages providing last mile connectivity and electricity connections to all remaining un-electrified households in rural areas and poor households in urban areas by 31st March 2019. The total outlay of the scheme is Rs. 16320 Crore including budgetary support of Rs. 12320 crore from Government of India.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

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

Recommendation No.11

The Committee note that there are various Central PSUs which are engaged in development of hydro power like NHPC, NEEPCO, THDC and SJVNL. These Undertakings have the required infrastructure, expertise and manpower that are specialized in the development of hydro projects. Since all these are reputed organization with the proven track record in development and upkeep of hydro projects, there is no issue of mobilization of funds for them. Despite having huge hydro power potential that remains to be harnessed these PSUs are not having many

projects to develop. The Committee feel that under-utilization of Central PSUs is nothing but sheer waste of available resources and expertise. The Committee believe that the participation of private player is a necessity for speedy and optimal growth of the power sector. However, the Committee observe that the performance of private players unlike in thermal sector, is not encouraging. Rather, the Committee find that many a projects which have been allocated to private players with little or no experience of hydro power, are stuck due to inabilities of the developers. Also, due to long gestation period of hydro power projects and the extended period taken in getting the returns on the investment, private players are reluctant to venture in this sector. The Committee recommend that Government should make a policy so that Central PSUs get most of the hydro power projects. They should also explore the idea to reserve hydro power sector exclusively for PSUs or with the collaboration of PSUs until the sector is adequately developed.

Reply of the Government

Water being a state subject, the allotment of hydropower projects is being done by the respective State Governments. As on 31.08.2017, there are 40 existing power stations of Central PSUs with a capacity of 14,547.72 MW. Further, 30 projects with aggregate installed capacity of 16198 MW in the country have been allotted to Central PSUs and these projects are at various stages of development as given below:

Status of H.E. Projects allotted to CPSUs	Nos.	I.C. (MW)
Under Construction	11	6125
H.E. Projects concurred by CEA and yet to be taken up for construction	12	8522
H.E. Projects under Examination in CEA	2	318
DPR Returned by CEA to project authorities for resubmission	1	130
H.E. Projects under S&I	4	1103
Total	30	16198

It is observed that apart from above, a large number of projects have been allotted to private sector for implementation. However, majority of these projects are yet to take off. Even, those projects which are under construction are progressing at a slow pace. As such, recommendation of the Committee in this regard may be suitably considered.

The main reasons for the stagnant growth of the hydro sector are on account of geological surprises, litigation, R&R issues, law and order problems, poor infrastructural connectivity like roads, dispute between beneficiary States, etc. These factors affect both public and private sector projects. The Government is trying to fast

track the growth of the hydro sector by offering certain incentives. These incentives are being examined in the Ministry.

However, given the fact of vital strategic importance of the Hydropower Projects particularly storage based Hydropower Projects, for the energy security and water security of the Country in the coming years when water is projected to become a very scarce resource, development of the Hydropower Projects has become a need of the time. CPSEs like NHPC are committed to develop the Hydropower Projects despite the various constraints being faced by them on several fronts in getting the Projects cleared and further during its execution. Thus, till such time when Hydro sector gets adequately developed, PSUs should be incentivized through various policy measures for taking up these Hydro Projects which are located in far flung regions of the Country with extremely inclement working conditions. Initiatives like continuing the present cost plus tariff regime, providing single window clearance/ speedier clearances especially w.r.t. Environment/ Forest and R&R aspects etc. in case of the Hydropower Projects are expected to bring some relief to the sector.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Comments of the Committee

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

Recommendation No.16

The Committee note that the IPDS aims at bringing down AT&C losses to the level of 15%. The Committee find that the level of 15% losses is being targeted since 2002-03 when APDRP was launched. After elapse of 15 years we are still far from that target. The Committee believe that once IPDS scheme is fully implemented and the technological up-gradation and strengthening of the system is done, there should not be any excuse left for not containing AT&C losses barring its technical component. The Committee, therefore, desire that the targeted level of 15% AT&C losses need to be lowered accordingly leaving little scope for inclusion of commercial losses therein.

Reply of the Government

The audited AT&C losses of the last 11 financial years are tabulated below:

Year	AT&C Losses*
2005-06	32.66
2006-07	30.47
2007-08	29.07
2008-09	27.34
2009-10	26.99
2010-11	26.35
2011-12	26.63
2012-13	25.48

2013-14	22.58
2014-15	24.62
2015-16	23.97

*As per PFC's report on performance of State Power Utilities

Distribution of Electricity is done by the States and their licenced DISCOMS. The Government of India handholds the States in improving their infrastructure through financial assistance programs and schemes based on the needs expressed by them. Besides IPDS, under Ujwal DISCOM Assurance Yojana also, the participating States have agreed to trajectories and measures to reduce the AT&C losses to a level of 15% by FY 19.

As per the table above, the DISCOMs have been able to manage approximately 9% reduction in AT&C losses in the last 11 financial years till 2015-16. Looking at the rate of reduction in AT&C losses, in the present context, a target of 15% AT&C losses by FY 2019 seems appropriate.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Comments of the Committee
(Please see Para No. 23 of Chapter – I of the Report)

Recommendation No. 20

The Committee note that Section 166 (2) of the Electricity Act, 2003 provides that the Central Government shall constitute a forum of regulators consisting of the Chairperson of the Central Commission and Chairpersons of the State Commissions. It further provides that the Chairperson of the Central Commission shall be the Chairperson of the Forum of regulators. Accordingly, a Forum of Regulators (FOR) was constituted vide Notification dated 16th February, 2005. The Committee further note that the objective of setting up FOR is to provide a common platform to the electricity regulators to share their experiences and best practices. The intent is also to build synergy between various Electricity Regulatory Commissions and to inter-alia bring about harmonization of regulation in power sector. Important issues of the power sector (at inter-state level or intra-state level) are discussed and consensus is evolved in FOR. The Forum is a statutory body and does not have the power to enforce its regulations or decisions on individual State Commissions. The Committee feel that FOR is good forum that can provide some kind of uniformity in approaches of various State Regulators by discussing and sharing best practices, success stories and implementation status of various provisions of the Act. The Committee, however, feel that this platform can be utilized in a more effective manner if some enforcing power be provided to them. It will not only be helpful in bringing in certain uniformity in

regulations in the States but will also be helpful in accelerating the various reforms measures aimed at proper and fast development of power sector. The Committee, therefore, recommend that necessary provisions should be made so that the decision, taken by consensus at Forum of Regulators, becomes enforceable.

Reply of the Government

The FOR constituted under Section 166(2) of the Electricity Act, 2003 by GOI, has been assigned the following functions:

- (a) Analysis of the tariff orders and other orders of Central Commission and State Commissions and compilation of data arising out of the said orders, highlighting, especially the efficiency improvements of the utilities;
- (b) Harmonization of regulation in power sector;
- (c) Laying of standards of performance of licensees as required under the Act.
- (d) Sharing of information among the members of the Forum on various issues of common interest and also of common approach.
- (e) Undertaking research work in-house or through outsourcing on issues relevant to power sector regulation;
- (f) Evolving measures for protection of interest of consumers and promotion of efficiency, economy and competition in power sector; and
- (g) Such other functions as the Central Government may assign to it, from time to time.

It may be noted from the above that one of the functions assigned to FOR is harmonization of regulations in power sector. As per the recommendation of the Standing Committee, it is felt that FOR will have to pursue this activity aggressively so that the concerns of the Standing Committee about ensuring uniformity in regulations in the States and accelerating the various reforms measures, are addressed comprehensively.

Since the FOR comprises of Chairperson of CERC and Chairperson of SERCs and Chairperson of CERC is the Chairperson of FOR, it is expected to consider effective & timely implementation of the decisions taken by consensus at FOR to accelerate the reform measures for rapid development of power sector.

The State Commissions independently function in their respective States / Union Territories, as the case may be, and the Forum of Regulators (FOR) provides an interactive platform to the member SERCs/JERCs to share their experiences.

It is evident from the active participation of the SERCs / JERCs during the interactions held in the Forum, that the intent to build synergy between the member organizations and to facilitate harmonization of regulations among the States is received in the right

spirit by the Regulators. Such synergy has facilitated the Forum to bring about Model Regulations on several important subjects for benefit of SERCs / JERCs.

However, the State Commissions are independent to take their own considered view despite the consensus arrived at the Forum of Regulators. As is evident from the provisions of the Act and the Rules framed thereunder, the Forum does not have the power to enforce its regulations or decisions on individual State Commissions.

[Ministry of Power
OM No.27/08/2017- R&R (Vol-II), Dated: 24/11/2017]

Comments of the Committee
(Please see Para No. 26 of Chapter – I of the Report)

CHAPTER V

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

Nil

**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 15TH 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

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

RAJYA SABHA

45. Shri T.K.S. Elangovan
46. Shri Oscar Fernandes
47. Shri Shamsheer Singh Manhas
48. Shri S.Muthukaruppan
49. Shri Surendra Singh Nagar
50. 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 (16th 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 (16th 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 (16th 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 (16th 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 (16th 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 (16th 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 THIRTIETH REPORT (16TH LOK SABHA) OF THE STANDING COMMITTEE ON ENERGY

(i)	Total number of Recommendations	25
(ii)	Observations/Recommendations which have been accepted by the Government: Sl.Nos.1,3,4,5,6,7,8,9,10,12,13,14,15,17,18,21,22,23,24 and 25. Total: Percentage	20 80%
(iii)	Observations/Recommendations which the Committee do not desire to pursue in view of the Government's replies: Sl. No. 19 Total: Percentage	01 4%
(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. 2,11,16 and 20. Total: Percentage	04 16%
(v)	Observations/Recommendations in respect of which final replies of the Government are still awaited: Nil Total: Percentage	00 00%