31

STANDING COMMITTEE ON ENERGY

(2017-18)

SIXTEENTH LOK SABHA

MINISTRY OF POWER

(Action Taken on the recommendations contained in the Fourteenth Report (16th Lok Sabha) on 'Evaluation of Role, Performance and Functioning of the Power Exchanges')

THIRTY FIRST REPORT

LOK SABHA SECRETARIAT
NEW DELHI

March ,2018/ Phalguna,1939 (Saka)

THIRTY FIRST REPORT

STANDING COMMITTEE ON ENERGY
(2017-18)

(SIXTEENTH LOK SABHA)

MINISTRY OF POWER

(Action Taken on the recommendations contained in the Fourteenth Report (16th Lok Sabha) on 'Evaluation of Role, Performance and Functioning of the Power Exchanges')

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)

COE NO. 290

Price: **Rs.**

Published under Rule 382 of the Rules of Procedure and Conduct of Business in Lok Sabha (Fifteenth Edition) and Printed by_____.

CONTENTS

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

LOK SABHA

Dr. Kambhampati Hari Babu- Chairperson

2. Shri Devendra Singh Bhole
3. Shri Om Birla
4. Shri M. Chandrakasi
5. Shri Harish Dwivedi
6. Shri Deepender Singh Hooda
7. Shri Bhagat Singh Koshyari
8. Dr. Arun Kumar
9. Kunwar Sarvesh Kumar
10. Shri Malyadri Sriram
11. Shri R.P. Marutharajaa
12. Dr. Pritam Gopinath Munde
13. Shri Jagdambika Pal
14. Shri Ravindra Kumar Pandey
15. Shri M.B. Rajesh
16. Shri Vinayak Bhaurao Raut
17. Shri Gutha Sukhender Reddy
18. Shri Conrad Kongkal Sangma
19. Shri Bhanu Pratap Singh Verma
20. Shri Kotha Prabhakar Reddy
21. Shri Nagendra Kumar Pradhan

RAJYA SABHA

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

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

SECRETARIAT

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

INTRODUCTION

I, the Chairperson, Standing Committee on Energy, having been authorized by the Committee to present the Report on their behalf, present this Thirty First Report on the action taken by the Government on the recommendations contained in the 14th Report of the Standing Committee on Energy on the subject 'Evaluation of Role, Performance and Functioning of the Power Exchanges'.

2. The 14th Report was presented to the Lok Sabha on 27th April, 2016 and was laid on the Table of the Rajya Sabha on the same day. Replies of the Government to all the recommendations contained in this Report were received on 28th July, 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 14th 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 Fourteenth Report (Sixteenth Lok Sabha) of the Committee (2015-16) on the subject 'Evaluation of Role, Performance and Functioning of the Power Exchanges'.

2. The Fourteenth Report was presented to the Lok Sabha on 27th April, 2016 and was laid on the Table of the Rajya Sabha on the same day. The Report contained 17 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, 11, 12, 13, 15 and 17. Total - 13
Chapter-II

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

Nil. Total - 00
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, 10, 14 and 16. 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 draw attention of the Ministry towards the fact that the 14th Report of the Committee on the Subject 'Evaluation of Role, Performance and Functioning of the Power Exchanges' was presented to the Parliament on April 27, 2016 and the Ministry was expected to furnish Action Taken Replies regarding the Recommendations/Observations contained in the that Report within three months of its presentation to the Parliament. However, the Action Taken Replies were furnished on 28th July 2017 i.e. the Ministry took 15 Months to furnish the replies. The Committee have taken a serious view of this delay and they expect the Ministry to adhere to the prescribed time limit.

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

Recommendation No. 2

6. The Committee were informed that one of the objectives behind the setting up of the Power Exchanges was to promote competition in the power market. The Electricity Act, 2003 envisages development of a competitive power market for promoting efficiency, economy and for mobilization of new investments in the Power Sector. However, the Committee had noted that there were only two Power Exchanges in the country of which one had monopoly in the Power Trading, which according to the Committee, was not in the interest of the sector. 96 per cent of the Power Market was owned by one Exchange i.e. IEX and the owner of this very Exchange had been debarred from the Commodity Exchanges. That was undoubtedly a very anomalous situation as the Exchange against which action had to be taken was, in fact, running the whole Power Market.

The Committee had found that the objective of ensuring competition in the Power Market had not been followed scrupulously. Rather, consciously or otherwise, one Exchange had been allowed to monopolize the Market. This had led to perception that the Regulations, Contracts and other Guidelines had been tailor-made to suit the requirements of one Power Exchange.

With a view to addressing the need for elimination of this anomaly in the Power Market which was not conducive to the concept of competitive economy, the Committee had recommended that:

(i) The Ministry and the CERC must come up with clear and effective Guidelines so as to ensure healthy competition in the Power Market and also to eliminate the monopoly of one Power Exchange so that the diminishing trust of the stakeholders in the system can be restored.

(ii) The Ministry should work out an Action Plan on setting up of the Power Exchanges in every zone (North Zone, South Zone, East Zone, West Zone, Central Zone and North East Zone) of India, to facilitate competition in the Market which will benefit the consumer.

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

"(i)The over-arching objective of the Electricity Act, 2003 is to encourage competition, induce efficiency improvements, with a view to ensuring quality supply of electricity to consumers at competitive rates. The Central Commission evolved an enabling framework for operation of power exchanges through its Power Market Regulations, 2010. The power exchange is a platform which can be located anywhere, irrespective of the geographical area where physical power transactions are being made, there would be no need to have regional power exchanges physically. If it is seen by the CERC that there are sufficient regional transactions within a region, the regional power exchange can also be operated in the existing power exchanges, which would save in infrastructure cost, or, could be set up on Region-wise basis. At present, since the day ahead transactions are to an average extent of about 4,000 MW, out of a total all-India peak demand of about 1,50,000 MW, it is felt that if regional exchanges are implemented, the transactions per exchange would go down and this would lead to non-optimization of the available surplus power being bought by deficit states.

The framework for operation of power exchanges through its Power Market Regulations, 2010 addresses the issues around monopoly of a single power exchange. The relevant extracts of the Power Market Regulations, 2010, the Explanatory Memorandum and the Statement of Reasons to the said Regulations are reproduced below:-

CERC (Power Market) Regulations, 2010

35. A Power Exchange which has less than 20 % market share for continuously two financial years falling after a period of two years of commencement of its operations shall close operations or merge with an existing Power Exchange with in a period of next six months. (For this purpose Market size is defined as the total Annual Turnover in Million Units of all contracts transacted in all the Power Exchanges in each financial year) Provided that this regulation shall not apply if there are only two Power Exchanges in operation.

Explanatory Memorandum – Power Market Regulations

9. After two years of operations, any exchange with a market share less than 20 % for a continuous period of 2 years shall need to close or merge with other exchange. This will not be applicable in case there are only of two exchanges operational. The rationale behind this stipulation is to concentrate liquidity for improved pricing of contracts while at the same time avoiding monopoly of a single exchange.

Statement of Objects and Reasons – CERC (Power Market) Regulations, 2010

8.19.2. The rationale behind this provision in the regulations is to concentrate liquidity in Power Exchanges for improved pricing of standardized contracts. Numerous spot prices with low volume will provide confusing signals and not serve the intended purpose of Power Exchange providing investment signals. It shall also complicate corridor allocation process adopted by NLDC and have a negative impact on social welfare maximization. Sufficient care has been taken to ensure that a situation where monopoly of a single Power Exchange occur does not happen by allowing two Exchanges to always co exist…...

- CERC issued the Second Amendment to the Open Access Regulations on 11.09.2013, wherein, SLDCs were asked to provide an exchange neutral NOC to the market participants to help creating a level playing field between the two power exchanges.

- CERC notified Third Amendment of the Open Access Regulations on 12.05.2015 reducing the NLDC operating charges payable by the participants of power exchanges from Rs 5000 to Rs 2000.This was also done to create a level playing field between the two power exchanges.

- Further, CERC vide order in Petition No.158/MP/2013, directed allocation of upto 10% of the constrained corridor to the smaller Power Exchange with the provision for review of the methodology after six months.
- In order to further competition between the Power Exchanges, CERC notified Fourth Amendment of the Open Access in inter-State Transmission Regulations on 22nd June 2016. The NLDC operating charges have been reduced and are now payable by each of the successful buyer and seller on the basis of its energy scheduled (MWh) at regional periphery by NLDC for transactions in the respective power exchange. The rate of NLDC operating charges is Re 1/MWh for collective transactions. NLDC operating charges payable by each of the successful buyer and seller in case of collective transaction, for a day, shall be capped to a maximum ceiling of Rs 200 per day.

(ii): The Electricity Act 2003 provides that development of the market is vested with the Appropriate Commission. The CERC (Power Market) Regulations allow the setting up of multiple power exchanges, subject to the provision that each power exchange must have a market share of at least 20% and subject to at least two power exchanges being in operation, for which this provision of 20% market share does not apply. For the 20% condition, if the market share remains less than 20% for two continuous financial years falling after a period of two years of commencement of operation, then it is to close its operations or merge with the

existing power exchange. This therefore means that competition in power exchanges is encouraged by the CERC Power Market Regulations to ensure that there are at least two power exchanges in operation. Worldwide, it is seen that there is normally one power exchange for a country, which is regulated by the appropriate Regulator.

Further, the Central Commission vide CERC's Power Market Regulations and related orders do not prohibit setting up of Power Exchanges in every zone. Regulation 3(ii) of Power Market Regulations defines Power Exchange Market and part 3 of the Power Market Regulations provides for Approval/suspension of the contracts by the Commission. Any eligible entity fully compliant to the regulations notified by CERC can set up and run a Power Exchange, with prior approval of the Commission.

In India, CERC has provided for multiple Power Exchanges to exist simultaneously in one physical market. This allows for competition amongst the existing Power Exchanges and an automatic system of checks and balances. The market participants stand to benefit from the innovative process of Exchanges vying with each other for providing superior quality of service. A stakeholder located in any corner of the country can transact locally on the pan-India power exchange platform. Worldwide, it is seen that there is only one power exchange in a country such as European Energy Exchange (EEX) in Germany, Power next in France and Belgium Power Exchange (Belpex) in Belgium etc. Also, a single exchange named Nord Pool operates Spot and Balancing Market segments in three countries namely Norway, Sweden and Finland.

Two power exchanges viz. Indian Energy Exchange (IEX), Delhi and Power Exchange India Ltd (PXIL), Mumbai commenced operations from 27.06.2008 and 22.10.2008 respectively after approval of CERC.

Pursuant to the application filed by NTPC Ltd. seeking permission to set up and operate Power Exchange, the CERC granted in-principle approval to establish a National Power Exchange, subject to compliance of certain directions vide Order dated 1.7.2009 in Petition No. 91/2007. Thereafter, CERC approved the Rules, By-laws and Business Rules of National Power Exchange Limited (NPEX) for setting up and operation of Power Exchange on 24.2.2012. Thereafter, NPEX Board approved the 'Business Plan' for setting up of Power Exchange and 'Vision Document' was prepared encompassing various future market scenarios.

NPEX was engaged in a process to ascertain the 'business viability' under changed market scenario and the promoters were in the process of revisiting the issue to study feasibility of 3rd Power Exchange in the Indian power market. In the meantime, NTPC, one of the promoters of NPEX, decided to exit from NPEX deriving no strategic advantage by investing in the power exchange. Thereafter, the group of promoters of NPEX has voluntarily recommended for winding up of the Company. Therefore, the Commission vide Order dated 17.4.2014 in Petition No. 262/SM/2014 has withdrawn the approval of National Power Exchange with effect from 1.4.2014.

Also, in November, 2011, Marquis Energy Exchange Limited filed application under CERC (Power Market)Regulations, 2010 seeking permission for setting up and operation of a Power Exchange. Vide order dated 16.01.2013 in the Petition No. 216/PX/2011, CERC rejected the application of Marquis Energy Exchange Limited as the company did not meet the net worth criteria required under the Power Market Regulations for registration for setting up and operation of a Power Exchange. However, the recommendation of the Committee has been noted."

8. In regard to the recommendation of the Committee that the Ministry and the CERC must come up with clear and effective guidelines so as to ensure healthy competition in the power market and also to eliminate the monopoly of one power exchange so that the diminishing trust of the stakeholders in the system can be restored, the Government has stated that the Power Market Regulations, 2010 address the issues around monopoly of a single power exchange, wherein a power exchange which has less than 20% market share for continuously two financial years falling after a period of two years of commencement of its operations shall close operations or merge with an existing Power Exchange within a period of next six months, provided that this regulation shall not apply if there are only two Power Exchanges in operation.

It has been submitted that the rationale behind this stipulation is to concentrate liquidity for improved pricing of contracts while at the same time avoiding monopoly of a single exchange and sufficient care has been taken to ensure that a situation does not occur where monopoly of a single Power Exchange is established by allowing two Exchanges to always co-exist. It has also been stated that the CERC has notified four amendments to the Power Market Regulations, 2010 in order to further competition between the Power Exchanges.

The Committee note that despite the above mentioned efforts of the CERC, the situation on the round remains the same i.e. one power exchange (IEX) has monopoly controlling 96% of the power trading at the power exchanges. The Committee feel that the Power Market Regulations, 2010 and the subsequent amendments have failed to deliver desired results as these regulations have not been able to address the issues regarding monopoly of a single power exchange.

The Committee are of the view that the objective of ensuring competition in the power market has not been followed scrupulously. Rather, one exchange has been allowed to monopolize the market which has eroded the spirit of Electricity Act, 2003. With a view to address the need for elimination of this anomaly in the power market which is not conducive to the concept of competitive economy, the Committee reiterate their recommendation that the Ministry and the CERC must come up with clear and effective Guidelines so as to ensure healthy competition in the Power Market and also to eliminate the monopoly of one Power Exchange so that the diminishing trust of the stakeholders in the system can be restored.

Recommendation No. 6

9. The Committee had noted that functions of the Power Exchanges, among others, included :

(i) Providing fair, transparent and neutral platform for trading of electricity;
(ii) Matching algorithm on the principle of social welfare maximization;
(iii) Scheduling power through merit order dispatch across the country;
(iv) Splitting of market to alleviate congestion for delivery of power;
(v) Providing access to smaller consumers located in remote corners;
(vi) Having provisions of clearing and settlement mechanism;
(vii) Round the clock access with introduction of contracts which operate as close as 3 hours to the actual delivery;
(viii) Monthly operation of renewable energy certificate market;
(ix) Information dissemination regarding prices discovered for the next day;
(x) Providing pan India electronic platform for anonymous bids by buyers and sellers;
(xi) Portfolio optimization by distribution utilities;
(xii) Facilitating open access as envisaged in the Electricity Act, 2003;
(xiii) Ensuring a robust payment security mechanism.

The functions were varied and meant for development of fair and transparent system. However, it had also led to various problems which were inherent and related to the working of the Power Exchanges. The temporal nature of prices, seasonality of supply and demand dynamics, inadequate transmission network, scope of participant's ability to influence prices, etc. had also been brought to the fore which require immediate remedial attention. The Committee, therefore, had recommended that:

(i) The areas of functioning of the Power Exchanges need to be safeguarded from external interventions.

(ii) Functioning of the Power Exchanges should be thoroughly reviewed.

(iii) Clearing and settlement mechanism needs to be more simple and transparent.

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

"(i) It is mentioned that power exchanges should be safeguarded from external interventions, for e.g. a participant's ability to influence prices. It may be stated that whenever any rules are made, there is always a scope for gaming by participants, whether in India or in any other country. Regulations for adequate safeguards have been provided through market oversight. In case it is detected that some participant is trying to influence market prices for its own benefit, there are provisions for taking action against the same, including cancelling of the Membership of the member of the Exchange and in case of malpractice of the Exchange, cancellation of the Registration of the Exchange by CERC.

CERC Regulations provide for such safeguards. Part 4 of Power Market Regulations spells out the principles of Market and Market Design. Under regulation 25(iii) of Power Market Regulations, the Power Exchanges constitute a Market Surveillance committee headed by an independent director of the board and having members from the executive team of the Power Exchange. No member of this committee is a Member of the Power Exchange. The exchanges submit a surveillance report quarterly to CERC. The report is analysed by CERC and exceptions in the functioning of power exchanges, if any, are taken up with the power exchanges for suitable corrective measures.

(ii) As per information made available by CERC, it has initiated and completed the exercise of carrying out review of Power Exchanges. The auditors, M/s KPMG and M/s Deloitte were engaged for review of Power Exchanges PXIL and IEX respectively. CERC has received a comprehensive report from both the auditors and based on the report CERC is taking actions to ensure transparency and compliance to Power Market Regulations. The Commission has also initiated IT audit of Power Exchanges.

(iii)The clearing and settlement mechanism of both Power Exchanges is as per the bye laws and business rules as approved by the Commission. Multiple clauses of the Bye Laws of IEX (one of the exchanges) spell out the Clearing and settlement process undertaken by IEX as approved by CERC. Chapter 5 of the Business rules of PXIL (one of the exchanges) explains the clearing and settlement of funds at PXIL as approved by CERC. Vide Order in Petition No. 175/RC/2015, CERC has approved a modified trading platform for PXIL called P-NEST."

11. The Committee are satisfied to note that the regulations for adequate safeguards against external interventions have been provided and in case it is detected that some participant is trying to influence market prices for its own benefit, there are provisions for taking action against the same, including cancelling of the Membership of the member of the Exchange and in case of malpractice of the Exchange, cancellation of the Registration of the Exchange by the CERC.

The Committee have also noted that the exchanges submit a surveillance report quarterly to CERC and the report is analyzed and exceptions in the functioning of power exchanges, if any, are taken up with the power exchanges for suitable corrective measures and the clearing and settlement mechanism of both the Power Exchanges is as per the bye laws and business rules as approved by the Commission.

The Committee appreciate the fact that the CERC has initiated and completed the exercise of carrying out review of Power Exchanges and IT audit of Power Exchanges has also been initiated. However, the Committee want the CERC to furnish before them the report from the auditors M/s KPMG and M/s Deloitte. The Committee would also like to know about the actions taken by the CERC based on these reports to ensure transparency and compliance of Power Market Regulations.

Recommendation No. 10

12. The Committee had noted that Regulation 22 of the Power Market Regulations, 2010 governed the broad structure of the Power Exchanges and Regulation 19 of the Power Market Regulations, 2010 specifies the share holding pattern of the Power Exchanges. Regulation 19 notes that any shareholder other than a member of the Power Exchanges can have a maximum of 25 per cent shareholding; for a member, the limit has been fixed at 5 per cent. In total, a Power Exchange can have a maximum of 49 per cent of its total shareholding owned by entities (whether directly or indirectly) which are members of the Power Exchanges. The reason given for share holding pattern was that the Power Exchange should be a demutualised and ring fenced organization and hence a power sector participant may have the stake in the power sector only upto 5 per cent of the total shareholding. The Committee had found that despite precautions, the

Regulations for share holding pattern of the Power Exchange provided an opportunity for control of the Exchanges and had led to their mutualisation. The over-bearing presence of one exchange in the electricity sector and its complete command and control exemplified that the rationale behind the Regulations for share holding pattern of the Power Exchange did not deliver the desired results. The Committee, therefore, had recommended that:

(i) Regulation 19 of the Power Market Regulations, 2010 should be revised to find out as to why it has failed in its objective.

(ii) Share holding pattern of the Power Exchanges need to be made wide ranging and demutualised with the involvement of stake holders of every segment of the electricity sector.

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

"The provisions of the Power Market Regulations already ensure de-mutualisation and enables involvement of any stakeholder of electricity sector subject to the conditions specified therein. Regulation 19 of the Power Market Regulations, 2010 specifies the shareholding pattern of the power exchanges. There it is specified that any shareholder other than the member of the power exchange can have a maximum of 25% shareholding. For a member the limit has been fixed at 5%. The relevant extract is excerpted below:-

19. Shareholding Pattern of Power Exchange

(1) The shareholding pattern for equity holders in the Power Exchange shall be as follows:

- *Any shareholder other than a Member of the Power Exchange can have a maximum (whether directly or indirectly) of 25% shareholding in the Power Exchange.*
- *A Member of the Power Exchange can have a maximum (whether directly or indirectly) of 5 % shareholding in the Power Exchange.*
- *In total, a Power Exchange can have a maximum of 49% of its total shareholding owned by entities (whether directly or indirectly) which are Members of the Power Exchange.*

The statement and object of reasons for Power Market Regulations.2010 provides the rationale for these limits. It is reproduced below for clarification:

8.5.2. *Decision and rationale*

(i) The Commission has considered the views of all stakeholders. The Commission maintains the view that Power Exchange is market based institution and hence should be a widely held organization. The commission is also of the view that Power Exchange should be fully demutualised and ring fenced organization and hence a power sector participant may have equity stake in the Power Exchange (as is an internationally practice) but limited to 5 % of total shareholding.

8.5.3. *In view of the reasons given in the above paragraphs, the shareholding pattern in the final version of the regulations is as briefly described below:-*

(i) Any shareholder (in case of a corporate this is including its subsidiaries and cross holding in other companies and associate companies) other than member of the Power Exchange can have a maximum of 25% shareholding in the Power Exchange. (Earlier in guidelines it was required that 51 % of the equity share capital of the PX should be held by the public other than the shareholder having trading rights in the Exchange).

(ii) A member of the Power Exchange can have maximum of 5 % shareholding in the Power Exchange. (Earlier there was no limit on individual member's shareholding in the Power Exchange)."

14. In response to the recommendation of the Committee that Regulation 19 of the Power Market Regulations, 2010 should be revisited in order to find out why it has failed in its objective and share holding pattern of the Power Exchanges need to be made wide ranging and demutualised with the involvement of stake holders of every segment of the electricity sector, the Government in its reply has stated that the provisions of the Power Market Regulations already ensure de-mutualisation and enables involvement of any stakeholder of electricity sector subject to the conditions specified therein and has quoted regulation 19 of the Power Market Regulations, 2010 which was furnished to this Committee earlier also and forms part of the main report on this subject.

The Committee expect a Action Taken Note in respect to their recommendation and not a repetition of the information that has already been incorporated by the Committee themselves in their main report and which forms a background to this recommendation of the Committee. The government in its reply has merely provided a part of Power Market Regulation, 2010 which cannot be regarded as action taken by the Government on the recommendation of the Committee.

The Committee are of the view that despite precautions, the Regulations for share holding pattern of the Power Exchange provide an opportunity for control of the Exchanges and have led to their mutualisation. The over-bearing presence of one exchange in the electricity sector and its complete command and control exemplifies that the Regulations for share holding pattern of the Power Exchange

did not deliver the desired results. The Committee, therefore, reiterate their recommendation that:

(i) Regulation 19 of the Power Market Regulations, 2010 should be revised to find out as to why it has failed in its objective.

(ii) Share holding pattern of the Power Exchanges need to be made wide ranging and demutualised with the involvement of stake holders of every segment of the electricity sector.

Recommendation No. 14

15. The Committee had noted that the regulators had been entrusted with the responsibility of development of the Power Market as laid down in the Electricity Act which specifies that the appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such a manner as may be specified, and shall be guided by the National Electricity Policy. The National Policy enjoins upon the appropriate Commission to undertake consultation for the development of market and to provide regulation for the Power Exchanges. Accordingly, the Commission had taken a series of steps, including issuance of guidelines and notification of market regulations. These regulations also provide for qualification and disqualification for the appointment of Director in the Board of a Power Exchange. It *inter alia* includes Risk Management Mechanism Requirement and framework for market oversight and surveillance. The regulations of the regulator are extended to Day Ahead Markets, Term Ahead Markets, Renewable Energy Certificates, etc. The Committee has been apprised that these regulations have ensured that the market functions in a fair and transparent manner. The market intermediaries like electricity traders and market infrastructure like the power exchanges are regulated through these regulations. In addition, the CERC has notified a series of enabling regulations for the development of the Power Market and for promoting power trading. The Committee had also been apprised that absence of market access for buyers and sellers of electricity, evacuation infrastructure for seamless flow of electricity, safe and secure operation of the grid are some of the major bottlenecks that are hindering the growth of the electricity sector. The Committee had found that despite wide ranging regulations in this regard, the problems afflicting the sector were very evident. Inaccessibility to the market for buyers and sellers, evacuation inadequacy, etc., were not insurmountable problems. If this was hampering the growth of the market, then the regulations of the CERC seemed to have failed in achieving the desired objective. The Committee, therefore, had recommended that:

(i) It should be ascertained as to why the regulations of the CERC have not yielded the desired results and whether these regulations are conducive for the development of the market.

(ii) In what manner the sector can be eased from over regulations, and it is left to develop on its intrinsic strength.

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

"(i) In pursuance of the provisions contained in Section 66 of the Electricity Act, 2003 along with the overarching principles laid down in the National Electricity Policy, the CERC has taken a number of regulatory interventions to promote the development of power market. The regulatory interventions / initiatives by the CERC from time to time have resulted in significant development of the electricity markets. This is borne out by the facts given below:

1. The volume of electricity transacted through traders has increased from 21.92 BUs in 2008-09 to 34.56 BUs in 2014-15. The weighted average price of electricity transacted through traders declined from Rs.7.29/kWh in 2008-09 to Rs.4.28/kWh in 2014-15.

2. The volume of electricity transacted through power exchanges has increased from 2.77 BUs in 2008-09 to 29.40 BUs in 2014-15. The weighted average price of electricity transacted through power exchanges declined from Rs. 7.49/kWh in 2008-09 to Rs. 3.50/kWh in 2014-15.

3. Grid Code provided range of operation of frequency within specific band which is at present 49.9 Hz to 50.05 Hz. To supplement the Grid Code towards secure and reliable grid operation, the Commission has issued Deviation Settlement Mechanism (DSM) Regulations which provide inter alia for deterrents in the form of Unscheduled Interchange (UI) charges for deviation from schedule. The tightening of grid frequency and DSM Regulations issued by the Commission has improved grid discipline.

4. Thus, the regulatory initiatives taken by the CERC have resulted in providing conducive development of electricity markets.

(ii) Section 66 of the Electricity Act, 2003 provides that *'The Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner as may be specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard'.*

Accordingly, the Central Electricity Regulatory Commission (CERC) has created a conducive regulatory framework for development of short term market and also institutionalized trading avenues through traders and power exchanges. Prior to the regulatory initiatives taken by the Central Electricity Regulatory Commission, major bottlenecks that were hindering growth of the electricity

sector inter alia included absence of market access for buyers and sellers of electricity, evacuation infrastructure for seamless flow of electricity, safe and secure operation of the grid etc.

The CERC while drawing powers from the provisions Section 66 of the Electricity Act, 2003 for promoting and development of market (including trading) in power and adhering to the over-arching principles laid down in the National Electricity Policy, has taken a number of initiatives to strengthen the power markets.

The regulations issued by CERC have ensured that the market functions in a fair and transparent manner. The market intermediaries like electricity traders, market infrastructure like power exchanges are regulated through these regulations. The market rules, risk management are defined through these regulations. The CERC, through its regulations has ensured that Open Access becomes a reality.

The initiatives taken by the CERC cannot be termed as over regulation of the sector. A well functioning market ensures that the confidence of participants in market is built. The regulatory interventions of the Central Electricity Regulatory Commission have at pan-India level helped in resource optimization by facilitating the transfer of surplus power to deficit regions in the country."

17. **The Committee have been given an impression that the CERC's regulatory initiatives/interventions have resulted in significant development of the electricity market. It has been furnished that CERC has created a conducive regulatory framework and has ensured that the market functions in a fair and transparent manner, claiming that the CERC, though its regulations has ensured that open access becomes a reality.**

It has been asserted that the initiatives taken by the CERC cannot be termed as over regulation of the Sector and regulatory interventions of the CERC have, at pan India level, helped in resource optimization by facilitating the transfer of surplus power to deficit regions in the country.

The Committee agree with the view of the government that a well functioning market ensures that the confidence of participants in market is built. It is being stated that the regulatory initiatives taken by the CERC have ensured conducive and significant development of the electricity market and the major bottlenecks that were hindering growth of the electricity sector prior to these regulatory

initiatives have been removed. The Committee have been made to understand that CERC's Regulations have already achieved the desired results and the Sector has significantly developed because of them. The Committee are of the view that now there is no point in burdening the sector with these Regulations anymore, therefore, the Committee reiterate their recommendation that the sector should now be eased out of the over regulations and left to develop on its intrinsic strength.

Recommendation No. 15

18. The Committee had noted that regulations of grant of connectivity, long-term excess and mid-term open excess in inter-State transmission aimed at providing transmission products of different varieties, standardization of procedures, defining timelines and ensure level playing field among different categories of market players. CERC had also provided for deemed concurrence of SLDC for open excess if their decision was not given within a specified time frame. Grid code and deviation settlement mechanism regulations were also there for maintaining grid discipline. The Committee had been apprised that the Commission's initiative in regard to grid discipline, deviation settlement mechanism and grid security had resulted in improved reliability of power supply. However, close observance of these factors also led to the conclusion that denial of permission by the State Load Despatch Centers, delay in the name of grid discipline and non-transparent settlement mechanism had led to manipulation of the activities. The Committee, therefore, had recommended that:

(i) The necessity of prior permission from State Load Despatch Centre should be reconsidered and done away with.
(ii) It should be ensured that no malpractice is being resorted to in the garb of grid discipline.
(iii) Deviation Settlement Mechanism should be open and transparent.

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

"(i) As per information made available by CERC & CEA, each transmission system has got a capacity of transferring certain quantum of power, taking into consideration the line loading capacity, voltage stability and angular stability. These are reflected in Available Transfer Capacity determined by the appropriate load despatch centre. Therefore, before granting permission to the generators/ consumers for entering into transactions in power exchange, the State Load Despatch Centre (SLDC) would have to determine if there is sufficient transaction capacity for transfer of power through the state grid.

The State Load Despatch Centre is primarily an entity owned by the State Government. Operation of the State grid is also handled by the State Load Despatch Centre as per the operational norms specified in the IEGC and relevant State Grid Code. Prior permission of the State Load Despatch Centre is necessary to ensure safety and security of the grid while providing real-time access for executing the open access transaction. What is needed to ensure proper ring-fencing of SLDCs to ensure that such permissions are not unreasonably withheld.

(ii) The Indian Electricity Grid Code (IEGC) and the Deviation Settlement Mechanism (DSM) Regulations framed by the CERC provide for adequate deterrents against grid indiscipline. There are also provisions for penal action against instances of gaming. Further, the Central Commission initiates strong action against violations of grid discipline based on the instances brought before it.

(iii) As per CERC, the Deviation Settlement Mechanism Regulations provide for commercial deterrents against grid indiscipline. The commercial norms for deviations have been clearly specified in the Regulations and the energy accounting is done by the respective Regional Power Committees. The settlement is carried out at the level of Regional Load Despatch Centres. The mechanism is transparent and functioning smoothly to the satisfaction of all sellers and buyers involved in the transactions."

20. The Government, in its reply, has stated that the prior permission of the State load Despatch Centre is necessary to ensure safety and security of the grid while providing real time access for executing the open access transaction. However, it has been acknowledged that there is a need to ensure proper ring-facing of SLDCs to ensure that such permissions are not unreasonably withheld. It has also been stated that the deviation settlement mechanism is transparent and functions smoothly to the satisfaction of all sellers and buyers involved in the transactions.

The Committee would like to know about the steps taken to ensure proper ring fencing of SLDCs and the result thereof so that the prior permission of the State Load Despatch Centre is not unreasonably withheld.

Recommendation No. 16

21. The Committee had noted that there was an over-bearing presence of the Central Electricity Regulatory Commission in the electricity sector to regulate and promote it. In

pursuance of its duties, the Commission had framed guidelines, issued regulations, and formed committees to oversee the sector. CERC had also initiated some governance control mechanism at power exchanges. This was done through Risk Management Committee, Market Surveillance Committee, Annual IT System Audit for Data Security, Data Integrity and Operational Efficiency, Annual Report along with Audited Balance Sheet, Monthly Report on Data on Prices and Volumes, and Reviewing of the Power Exchanges, etc. The Committee also found that all functions, varying from framing of regulations, their execution, amendments and dispute resolutions, revolve around the regulator. It had appropriated functions which should have been divided and delegated to other bodies for fairness and transparency in the sector. It had assumed the role of Judge, Jury and Executioner and in such a situation it is but obvious that fairness and objectivity can be compromised. Execution of the regulations and dispute resolutions should have been with different entities to make this sector competitive and transparent. The Committee, therefore, had recommended that:

(i) Role and responsibilities of CERC should be reviewed thoroughly to make the system at the Power Exchanges fair and objective.

(ii) The functions of execution of regulations and dispute resolutions should be assigned to other bodies as the concentration of these powers in one entity compromises the principle of division of responsibilities for efficient and transparent functioning.

(iii) If need be, the CERC itself may be sub-divided and each individual unit may be made autonomous for due discharge of its differentiated responsibilities.

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

"(i) The Electricity Regulatory Commission Act, 1998 envisaged an independent role for the regulator in the electricity sector. The Electricity Act, 2003, further enlarged the Commission's role for discharging various regulatory functions which inter-alia include determination of tariff, licensing, maintaining grid discipline, development of electricity markets, promotion of renewable energy, adjudication on petitions etc.

As regards the Power Exchanges, the CERC closely monitors their functioning and issues monthly monitoring report and annual report on power markets. The Commission has already initiated special audit of the functioning of the power exchanges as also IT audit/third party audit of trading software of the power exchanges. The vigilance and proactive actions by CERC have helped ensure transparency and accountability in the power sector, and more so in the functioning of the short term market.

(ii) The functions, responsibilities of the Central Electricity Regulatory Commission have been well laid out in the Electricity Act, 2003.As per Section 79 (1) (f) of the Act, the CERC has been mandated to adjudicate upon disputes involving generating companies or transmission licensee in regard to matters connected with tariff and to refer any dispute for arbitration. Further, the orders issues by the CERC can be challenged in the APTEL and the Supreme Court. The proper checks and balances have already been provided in the Act.

(iii) The Electricity Act envisages CERC as a collegiate body. The Commission consists of one Chairperson and three full time Members who are experienced professionals in different areas closely related to the electricity sector. Chairperson CEA is the ex-officio Member of CERC.

It has been stated by CERC that the issues for consideration before it are multi-disciplinary in nature and therefore, the Act provides for appointment of Chairperson and Members with specialization in various disciplines like engineering, finance, law, economics, management etc.

Further, it has been informed by CERC that is has different divisions i.e. Legal, Finance, Engineering, Economics, Regulatory Affairs etc. to examine the issues from different dimensions and provide inputs / analysis for further consideration of the Commission."

23. In response to the recommendation of the Committee, the Government has stated that the Electricity Act, 2003 envisaged the Commission's role for discharging various regulatory functions which inter-alia include determination of tariff, licensing, maintaining grid discipline, development of electricity markets, promotion of renewable energy, adjudication on petitions etc. and as per section 79(1)(f) of the Act, the CERC has been mandated to adjudicate upon disputes involving generating companies or transmission licensee in regard to matters connected with tariff and to refer any dispute for arbitration.

It has also been stated that the CERC has different divisions i.e. Legal, Finance, Engineering, Economics, Regulatory Affairs etc. to examine the issues from different dimensions and provide inputs / analysis for further consideration of the Commission.

But, the Committee feel that the role of framing regulations/by laws, their execution and dispute resolution should not be concentrated in a single body and it appears that the regulator has appropriated functions which otherwise should

have been divided and delegated to other bodies for fairness and transparency in the Sector. It has assumed the role of Judge, Jury and Executioner and in such a situation it is but obvious that fairness and objectivity can be compromised. Execution of the regulations and dispute resolutions should have been with different entities to make this sector competitive and transparent. The Committee, therefore, reiterate their recommendation that:

(i) Role and responsibilities of CERC should be reviewed thoroughly to make the system at the Power Exchanges fair and objective.

(ii) The functions of execution of regulations and dispute resolutions should be assigned to other bodies as the concentration of these powers in one entity compromises the principle of division of responsibilities for efficient and transparent functioning.

(iii) If need be, the CERC itself may be sub-divided and each individual unit may be made autonomous for due discharge of its differentiated responsibilities.

CHAPTER II

OBSERVATIONS/ RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

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

Recommendation No.1

Need for the Power Exchange

1. The Committee note that the Energy Sector in the country is beset with multiple problems varying from disparity among electricity surplus-deficit regions, demand-supply mismatch, varied tariff for diverse nature of consumers coming from different categories, etc. To bring in some sort of uniformity and also for ensuring availability of electricity on demand at competitive price, it was felt that there should be some mechanism available to the stake holders of the power sector which would adequately cater to the requirements of persons/agencies concerned. In line with this, the Electricity Act, 2003 introduced the concept of the Power Market for the electricity sector. The Appropriate Commission (Regulatory Commission) was entrusted with the responsibility of development of the Power Market. The primary objective of the Act was to promote inter-State and intra-State power trading within the country and ensuring the development of a competitive market with efficiency and economy, while attracting new investments. Consequently, the Power Exchanges came into being and commenced their operations in the year 2008. However, the experience of the performance of the Power Exchanges in the country since then calls for proper scrutiny and appropriate modifications. It has neither revolutionized or galvanized the sector, nor has there been any indication that the Power Exchanges will usher in an era of competition, efficiency and growth of the Power Market. The Committee, therefore, recommend that:

(i) The concept of the Power Exchanges having a lead role in the development of the robust power market needs to be revisited.

(ii) The experience gained from the functioning of the Power Exchanges hitherto should be analyzed in an objective manner to assess as to how the Power Exchanges have helped in the development of the market.

(iii) The provisions of the Electricity Act, 2003 regarding the Power Market also require to be reviewed in the proper perspective.

Reply of the Government

(i) Section 66 of the Electricity Act, 2003 provides that *'The Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in*

such manner as may be specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard'. The relevant provisions of the National Electricity Policy, Para 5.7 are given below:

National Electricity Policy: Para 5.7 "Competition Aimed At Consumer Benefits

"5.7.1(d) Development of power market would need to be undertaken by the Appropriate Commission in consultation with all concerned."

"5.7.1(f) Enabling regulations for inter and intra State trading and also regulations on power exchange shall be notified by the appropriate Commissions within six months."

Accordingly, the Central Commission viz. the Central Electricity Regulatory Commission (CERC)has created a conducive regulatory framework for development of short term market and also institutionalized trading avenues through traders and power exchanges. The buyers and sellers choose a particular platform based on their requirements for standardized or customized contracts, ease of doing business, various charges payable/ receivable etc.

The volume of transactions in various segments of the short term market, namely through traders, bilateral transactions and power exchanges has been increasing consistently over the period. In so far as the power exchanges are concerned, their share as a percentage of total electricity generation has increased from 0.94% in 2009-10 to 3 % in 2015-16. Similarly, the share of traders as a percentage of total electricity generation has moved from 3.49% in 2009-10 to 4.1% in 2011-12 and to 3 % in 2015-16 and that of direct bilateral transactions has increased from 0.81% in 2009-10 to 2 % in 2015-16 as per data published by Central Commission.

The Market Monitoring Cell (MMC) of the Central Electricity Regulatory Commission (CERC) has been monitoring the market operations including in the power exchanges at regular intervals, through its monthly and annual market monitoring reports.

(ii) Power exchanges have helped in developing a market where power sector participants can buy and sell power that is not tied up in long term PPAs. The institution of power exchange has facilitated in re-distributing electricity from surplus regions to deficit regions of the country. It has also helped in price discovery of electricity in the Day Ahead market and price dissemination electronically in the country.

(iii) The objective of the Electricity Act, 2003 is to encourage competition with a view to ensuring quality supply of electricity to consumers at competitive rates. While this underlining vision is reflected through various provisions, section 66 of the Act specifically provides that-

'The Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner as may be specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard'.

The Act, therefore, provides responsibility to the Appropriate Commission for development of the market in electricity and in this regard will be guided by the National Electricity Policy. The Government of India as well as the CERC have taken a number of initiatives to encourage competition and facilitate power market development. As a result, the country today has generation capacity to the tune of 309GW, transmission capacity of 684454MVA (AC) and 16500MW (HVDC), inter-regional capacity of 62650MW. The number of participants in various segments of the power sector have increased substantially, i.e. around 600 generating stations, 30 transmission licensees, 70 distribution utilities, 2 power exchanges, 43 trading licensees, 1 NLDC, 5 RLDCs, different State LDCs etc.

[Ministry of Power
OM No.27/17/2015-R&R (Vol-II),
Dated:28/07/2017]

Recommendation No.3

The Committee observe that the Power Exchanges are an online platform that help generators and consumers to come together and discover prices of electricity, based on the demand-supply mechanism. It also fulfills the diverse needs of electricity consumers in the country. Large consumers with a requirement of 1 MW and above are primarily served by the Power Exchanges for buying electricity. The Power Market is now moving from a regulated one to a market driven regime and hence more and more buyers and sellers are opting to trade electricity through these Exchanges. However, the existence of only two Power Exchanges has been restricting the effective functioning of the sector. The monopoly of one Exchange has further eroded the spirit of the Electricity Act, 2003 and is impinging upon hassle-free trading activities in the electricity market. This has hampered alternative mechanisms to evolve and hindered further improvement in the performance of the Exchanges. It has also led to problems of power liquidity, non-transparent peak management, under-utilization of transmission capacity and optimal functioning of the market. The Committee, therefore, recommend that:

(i) Power Exchanges need to be made effective paving the way for a level playing field among themselves.

(ii) Power liquidity in the market should be in the public domain, leading to transparency.

(iii) Peak management of power should be overhauled and streamlined in an objective manner.

(iv) There should be real time declaration of transmission capacity so as to minimize any manipulation.

Reply of the Government

(i) There is no bar in the CERC Regulations for setting up power exchanges, provided each power exchange has a minimum of 20% market share, subject to a minimum of two

power exchanges. There is a level playing field for all the power exchanges as the Regulations for all of them are the same.
Further, CERC has taken steps to provide a level playing field to the power Exchanges. CERC vide order in Petition No.158/MP/2013, directed allocation of upto 10% of the constrained corridor to the smaller Power Exchange with the provision for review of the methodology after six months. Vide order in Petition No. 279/RC/2015 SLDCs are required to grant Exchange neutral NOC /Prior Standing Clearance to State Utility or an intra-State entity intending to participate in trading through Power Exchange(s).CERC vide Petition No. 246/MP/2015 stipulated an appropriate and reasonable methodology for allocation of "Operating Charges" under Regulation 17 of the Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations, 2008 ("Open Access Regulations") to be paid by the Power Exchange India Limited to NLDC for collective transaction.

In order to further competition and provide a level playing field, CERC notified Fourth Amendment of the Open Access in inter-State Transmission Regulations on 22nd June 2016, wherein NLDC operating charges have been reduced and are now payable by each of the successful buyer and seller on the basis of its energy scheduled (MWh) at regional periphery.

(ii) Market oversight is required to maintain the market integrity and credibility and to ensure that the market is fair and efficient. The Commission has always accorded importance to transparency in functioning of the Power Exchanges. In accordance with the CERC Regulations, the aggregate buy and sell bids, along with the bid price, but without mentioning the name of the bidders, is being put in the public domain. It has also been enshrined in the Power Market Regulations that a Power Exchange shall function with the objective to ensure fair, neutral, efficient and robust price discovery. The Power Exchanges are required to comply with the provisions of the Regulations and their status of compliance is monitored regularly. Further, the power liquidity position is closely monitored by the Commission and the status is published through its Monthly Monitoring Reports / Annual Reports.

(iii) It may be stated that the mechanism for arriving at the uniform clearing price is used for every 15-minute time block, whether during off-peak hours or peak hours, and put on the website of the power exchange. Therefore, there is a transparent way of arriving at the peak power prices also. Since there is more demand during peak hours than during off peak hours, the market principles would dictate that peak power is valued more and therefore traded at a higher price, as compared to power during off peak hours.

Further, the peak management forms part of the overall power procurement portfolio of the distribution licensees and is managed by such licensees themselves. As per information made available by CERC, the Power Exchanges operate 24X7 as per the

orders of the Central Commission and distribution utilities meet their short term power requirement (including for peak hours) through power exchanges as well.

Further, the Commission, through IEGC has mandated as per the following:

"5.3(d)Each SLDC shall carry out its own demand estimation from the historical data and weather forecast data from time to time. All distribution licensees and other concerned persons shall provide relevant data and other information as required by SLDC for demand estimate.

(e) While the demand estimation for operational purposes is to be done on a daily/weekly/monthly basis initially, mechanisms and facilities at SLDCs shall be created at the earliest but not later than 1.1.2011 to facilitate on-line estimation of demand for daily operational use for each 15 minutes block.

(f) The monthly estimated demand by the SLDC shall be provided to RLDC and RPC for better operation planning."

(iv) Transmission capability is determined through "Available Transfer Capability (ATC)", which is initially estimated and publicly displayed on the website of the system operator for all inter-regional/inter bid areas, three months in advance. This is revised on a monthly basis, depending on actual situation on the ground, with respect to outage/restoration of generating units/lines/other power system elements, and again revised during the day in case of further outage/restoration. There is no system of real time declaration on a minute to minute basis, since system operation is planned on day-ahead basis in accordance with the CERC's Indian Electricity Grid Code Regulations and revised during the day, due to change in schedule, with actual implementation at a minimum gap of one hour/one and a half hours ahead basis. However, this can be attempted in a shorter interval through online load flow /stability studies once the same is operationalized. However, this would not be useful for collective transactions which are finalized on day ahead basis, but would be useful for intra-day/contingency contracts on the power exchange.

The responsibility of declaration of availability of transfer capability on real-time basis lies with the system operator /NLDC/SLDCs. The NLDC provides information related to availability of transfer capability, through its website. It is recognized that the prior knowledge of congestion could influence bidding strategies and cause variation in prices.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Recommendation No.4

Short Term Contracts

The Committee note that the Power Market is largely dominated by long-term power purchase agreements. However, these long-term contracts have been found to create problem of peak demand as either the buyer is stuck with excess capacity or there is a shortfall in supply. Besides, the storage capacity of electricity is very limited, adding to the

problem. To address these shortcomings of the Power Market, there is a need to emphasize short-term and Day Ahead Markets. Before the Power Exchanges, short-term contracts were driven by either direct contract between parties or through power traders. The Exchanges have restructured the unorganized short-term market, especially Day Ahead Contracts. The new market structure that has evolved over the last few years provides distribution utilities with avenues to optimize their power purchase portfolio and reduce overall power purchase cost. This has brought in real time competition and helped the Power Market in balancing its sale and purchases. However, a lot more needs to be done so as to instill confidence in the fair functioning of the Power Exchanges. The Committee, therefore, recommend that:

(i) A mechanism should be evolved to ensure that electricity trading at the Power Exchanges is being done in a proper and effective manner.

(ii) The short-term contracts need to be redefined so as to make them fit for contracts other than Day Ahead Market.

(iii) The bulk purchasers of power, i.e., distribution utilities should have some say in the wheeling of the Powers Exchanges.

Reply of the Government

(i) Electricity trading on power exchanges is based on the fair and scientific principle of price discovery. Price discovery mechanism is the process of determining a price which the buyers and sellers at the power exchange have to pay for purchasing or selling electricity in a specific product category.

Different prices in different regions reflect information about demand and supply, generation capacity and transmission capacity. Member of the power exchanges can also bid for 15 minutes contracts. Over the years, there has been an increase in volumes and decrease in prices of electricity through transactions on power exchanges.

Adequate provisions for market surveillance have been provided in the Power Market Regulations, 2010. CERC has taken due cognizance of any abnormality in the market operations to ensure integrity and transparency of the market transactions. In a recent development, vide order dated 30thDecember, 2016 in the Suo-Motu Petition No. 12/SM/2016, the CERC has issued show cause notice under Section 142 of the Act read with Regulation 14 B (1) of the Trading License Regulations to a trader for contravention of the provisions of the Power Market Regulations and Trading License Regulations. CERC has also enquired whether the Power Exchange has put in place mechanism to detect such abnormalities and undertake corrective actions with suitable penalties.

Further, to ensure effective functioning of the power exchanges, review of regulatory compliance and IT audit of the Power Exchanges have been initiated by Central Commission.

(ii) The Central Commission has created a conducive regulatory framework for development of short term market and also institutionalized trading avenues through

traders and power exchanges. The buyers and sellers choose a particular platform based on their requirements for standardized or customized contracts, ease of doing business, various charges payable/ receivable etc.

The Commission has already allowed contracts other than Day Ahead Market in order to cater to the needs of buyers and sellers. Contracts such as Term Ahead Contracts(TAM) and Intraday Contracts / Contingency Contracts are also being traded on Power Exchanges. Extended Market Session has been enabled on both Power Exchanges. Therefore, CERC has made a effort to enable multiple products to be traded on Power Exchanges.

(iii) Distribution utilities also participate in power exchanges for purchase and sale of power. In so far as transmission / wheeling of power contracted through power exchanges is concerned, it is governed by the relevant regulations of CERC.

It may be mentioned that power exchanges at present facilitate contracts on account of variations of demand/generation availability of the States closer to the real time, for e.g. due to certain weather changes or tripping/restoration of the States owned generators. Planning for procurement of power over the longer term i.e. for upto a month, three months in advance, is through bilateral trades, either directly or through power traders. With effect from 1st April, 2016, the Ministry of power has launched 'DEEP' power portal, through which state distribution utilities can also procure power for Short term (procurement period of one day to one year) and also for procurement of power for medium term (procurement period more than one year to five years).More than 1, 20,000 MW of electricity has been bided using DEEP portal for short term by State Utilities from April 2016 to April, 2017.

It may also be mentioned here that the transmission corridor gets filled up first through long term contracts (7 years to 25 years), the medium term contracts (one year to 7 years) and then for short term contracts, in the order of longer duration contracts first, gradually coming down to day ahead contracts. Therefore, the transmission corridor remaining for day ahead through power exchanges is only the balance transfer capability, after the longer duration contract have been considered.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated28th July, 2017]

Recommendation No.5

The Committee note that the Power Exchanges were set up to mitigate the volatility of power supply and to facilitate the flow of power from surplus to deficit regions. An equilibrium in pricing as well as demand/supply with low transaction cost and efficiency gains is to be maintained by the Power Exchanges. The Central Electricity Regulatory Commission had notified the Power Market Regulations 2010, creating a comprehensive market structure wherein inclusion of all types of products in electricity market has been

ensured. The objectives of the Regulations are to ensure fair, neutral, efficient and robust price discovery, provide extensive and quick price dissemination, design standardized contracts and work towards increasing liquidity in such contracts. The primary role of the Power Exchange is to fill the gap in the demand/supply of electricity through trading in the Day Ahead Market. Price discovery is done on the basis of demand and supply bids submitted by participants. In the Day Ahead Market, prices are discovered for every 15 minutes for next day delivery and in case of congestion, Market Splitting Mechanism is adopted. The Committee find that although short-term electricity demands are being met through the Power Exchanges in a structured manner, yet there are scope for human intervention and manipulation. Availability of transmission corridors, real time declaration of transmission capacity, availability of liquidity in the Power Exchanges are some of the areas which indicate the possibility of scope for preferences and choices in the Power Exchanges. The Committee, therefore, recommend that:

(i) Availability of transmission corridor should be notified in advance to make power trading more meaningful.

(ii) Efforts should be made to indicate a timeline to ensure that electricity traded will be transmitted within the given time.

(iii) The Price Discovery Mechanism should be streamlined in such a way that there is no scope for any extraneous intervention.

Reply of the Government

(i) National Load Despatch Centre (NLDC) publishes monthly Total Transfer Capability (TTC), Available Transfer Capability (ATC) on its website. The ATC details are categorised into Inter country ATC, Intra regional ATC and Inter regional ATC. In all the three categories Total Transfer Capability (TTC), reliability margins, ATC for long term and short term is specified for specific time periods. Any change in the corridor availability is also notified on the website periodically. Central Transmission Utility (CTU) also publishes the TTC/ATC details in advance in its website

So far as real-time availability of transmission capacity is concerned, responsibility of declaration of availability of transmission capacity on real-time basis lies with the system operators (NLDC/RLDCs/SLDCs).The NLDC provides information related to availability of transmission capacity, through its website. It is recognized that the prior knowledge of congestion could influence bidding strategies and cause variation in prices.

To further streamline the process, the Central Electricity Regulatory Commission is currently working on an “Open Access Registry” automated framework. This is aimed at facilitative transactions through open access including dissemination of real-time availability of transmission capacity.

(ii) Power Exchanges have standardized delivery based contracts with fixed timelines and these timelines are adhered to by Power Exchanges and also ensure that the contracts settled are scheduled as per the timeline of the contract. In case there is

congestion in the network and the contracts cannot be settled as decided in the contract, NLDC carries out curtailment to maintain stability of the power system.

(iii) The price discovery mechanism has already been streamlined and takes place through an automated process, which is approved by CERC. The same is also displayed transparently on the website of the respective Power Exchanges.

The provisions for ensuring fair and transparent price discovery have already specified by CERC in its Power Market Regulations to ensure that there are no extraneous interventions. However, to ensure that these provisions are complied with, CERC initiated and completed the exercise of carrying out review of Power Exchanges. The auditors, M/s KPMG and M/s Deloitte were engaged for review of Power Exchanges PXIL and IEX respectively. CERC has received a report from both the auditors and based on the report CERC is taking actions to ensure transparency and compliance to Power Market Regulations. The Commission has also initiated IT audit of Power Exchanges.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Recommendation No.6

The Committee note that functions of the Power Exchanges, among others, include:

(i) Providing fair, transparent and neutral platform for trading of electricity;
(ii) Matching algorithm on the principle of social welfare maximization;
(iii) Scheduling power through merit order dispatch across the country;
(iv) Splitting of market to alleviate congestion for delivery of power;
(v) Providing access to smaller consumers located in remote corners;
(vi) Having provisions of clearing and settlement mechanism;
(vii) Round the clock access with introduction of contracts which operate as close as 3 hours to the actual delivery;
(viii) Monthly operation of renewable energy certificate market;
(ix) Information dissemination regarding prices discovered for the next day;
(x) Providing pan India electronic platform for anonymous bids by buyers and sellers;
(xi) Portfolio optimisation by distribution utilities;
(xii) Facilitating open access as envisaged in the Electricity Act, 2003;
(xiii) Ensuring a robust payment security mechanism.

The functions are varied and are meant for development of fair and transparent system. However, it has also led to various problems which are inherent and related to the working of the Power Exchanges. The temporal nature of prices, seasonality of supply and demand dynamics, inadequate transmission network, scope of participant's ability to influence prices, etc. have also been brought to the fore which require immediate remedial attention. The Committee, therefore, recommend that:

(i) The areas of functioning of the Power Exchanges need to be safeguarded from external interventions.
(ii) Functioning of the Power Exchanges should be thoroughly reviewed.
(iii) Clearing and settlement mechanism needs to be more simple and transparent.

Reply of the Government

(i) It is mentioned that power exchanges should be safeguarded from external interventions, for e.g. a participant's ability to influence prices. It may be stated that whenever any rules are made, there is always a scope for gaming by participants, whether in India or in any other country. Regulations for adequate safeguards have been provided through market oversight. In case it is detected that some participant is trying to influence market prices for its own benefit, there are provisions for taking action against the same, including cancelling of the Membership of the member of the Exchange and in case of malpractice of the Exchange, cancellation of the Registration of the Exchange by CERC.

CERC Regulations provide for such safeguards. Part 4 of Power Market Regulations spells out the principles of Market and Market Design. Under regulation 25(iii) of Power Market Regulations, the Power Exchanges constitute a Market Surveillance committee headed by an independent director of the board and having members from the executive team of the Power Exchange. No member of this committee is a Member of the Power Exchange. The exchanges submit a surveillance report quarterly to CERC. The report is analysed by CERC and exceptions in the functioning of power exchanges, if any, are taken up with the power exchanges for suitable corrective measures.

(ii) As per information made available by CERC, it has initiated and completed the exercise of carrying out review of Power Exchanges. The auditors, M/s KPMG and M/s Deloitte were engaged for review of Power Exchanges PXIL and IEX respectively. CERC has received a comprehensive report from both the auditors and based on the report CERC is taking actions to ensure transparency and compliance to Power Market Regulations. The Commission has also initiated IT audit of Power Exchanges.

(iii) The clearing and settlement mechanism of both Power Exchanges is as per the bye laws and business rules as approved by the Commission. Multiple clauses of the Bye Laws of IEX (one of the exchanges) spell out the Clearing and settlement process undertaken by IEX as approved by CERC. Chapter 5 of the Business rules of PXIL (one of the exchanges) explains the clearing and settlement of funds at PXIL as approved by CERC. Vide Order in Petition No. 175/RC/2015, CERC has approved a modified trading platform for PXIL called P-NEST.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Comment of the Committee

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

Recommendation No.7

The Committee note that the Power Exchanges offer limited portfolios in the form of Day Ahead Market, Term Ahead Market, Renewable Energy Certificates, etc. Of this, the Day Ahead Market in electricity trading is a vital component and most of the trading revolves around this portfolio. It consists of round the clock, 15 minutes, block-wise, bidding for the next day and the trading is done on all days, irrespective of holidays.

The Term Ahead Market includes products for delivery of electricity for duration upto 11 days, and enables participants to purchase electricity for the same day through intra-day contracts. There is also a provision of Day Ahead Contingency Contract in which trading for a day before delivery after the Day Ahead Market auction is done. In daily contracts, trading upto one week in advance is done for any calendar day. The Committee find that there is some overlapping in the Day Ahead Market and Day Ahead Contingency Contracts. Similarly, daily contracts and weekly contracts are also on the same footing, as the first contract allows trading upto one week in advance, while the weekly contracts goes upto 11 days in advance. The Committee feel that these contracts should have clear and identifiable distinctions as it is difficult to ascertain and comprehend as to how trading in Day Ahead Market is different from Day Ahead Contingency Contract, more so when the bidding is done every 15 minutes in the Day Ahead Market. For any contingency, intra-day contracts can be taken recourse to. Similarly, daily and weekly contracts can also be seen to be overlapping; there is scope for some improvement as there is hardly any justification for having different portfolios for trading upto a week and upto 11 days. Moreover, no figures have been given regarding the volume of electricity traded under these products separately. The Committee, therefore, recommend that:

(i) The portfolios for trading at the Power Exchanges should be devised in such a way so as to minimize the scope for manipulation and overlapping.

(ii) Day Ahead Market and Day Ahead Contingency Contract need to be synchronized for better functioning of the Power Exchanges or the conditions for the operation of Contingency Contracts should be spelt out clearly.

(iii) Similarly, daily and weekly contracts should be reviewed, and, if needed, conjoined for better and efficient functioning of the Exchanges.

Reply of the Government

(i) As per the Power Market Regulations, the Power Exchanges need to obtain approval of the Commission before introducing any product or contract. The Commission considers the proposal received from the Power Exchanges in this regard based on the

requirements of, and impact on power market operations. While granting approval, the Commission ensures that there is no overlap between the products.

The methodology for trading of all these products is also approved by the Central Commission by considering the needs of the market and avoiding any scope of manipulation and overlapping. For instance, the broad procedure followed for Day Ahead Market includes, acceptance of Closed Double sided Bids by the exchange in the stipulated time window dedicated for bidding (10 am to 12 noon each day for day ahead market); matching of the buy bids to the sell bids and discovery of Marginal Cleared Volume and Marginal Cleared Price; checking availability of corridor and funds availability in order for the trade to be executed smoothly; and finally after obtaining confirmation, settling the trades and scheduling of power.

This procedure of trade execution is carried out independently on both PXs.

(ii) The Day Ahead Market (DAM) is the electricity trading market for delivery of power on the next day. The trading is carried out from 10.00 hrs to 12.00 Hrs. on day ahead basis for delivery of power on the next day.

In order to address further balancing requirements of buyers and sellers in their power portfolios subsequent to the closure of the Day Ahead Market, the buyers and sellers are provided with another opportunity to trade power through "Day Ahead Contingency Market" for the next day.

The Day Ahead Contingency Market is available on the Power Exchanges from 15.00 Hrs. upto the end of the day for delivery of power on the next day.

Accordingly, these two products are mutually exclusive, yet complementary to each other.

(iii) Apart from the Day Ahead Market, Day Ahead Contingency Market and Intra-Day Contracts, the Power Exchanges offer Daily Contracts and Weekly Contracts. The product "Daily Contract" facilitates trading upto one week in advance for any calendar day, while the "Weekly Contract" allows trading upto eleven days in advance.

These two products are designed to provide the buyers and sellers with necessary option to choose from the portfolio to appropriately meet their power balancing requirements.

The Power Exchanges are offering a wide range of products including the daily and weekly contracts to facilitate the buyers and sellers to effectively balance their power portfolios.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Recommendation No.8

The Committee find that the volume contracted on the Power Exchange platform through Day Ahead Market constitutes about 95 per cent of the electricity traded, while the Term Ahead Market constitutes rest of the 5 per cent of the electricity traded at the Power

Exchanges. The Term Ahead Market consists of contracts which are Intra-Day Contract, Day Ahead Contingency Contract, Daily Contracts and Weekly Contracts. The Committee also find that there has been a consistent increase in the trading of electricity under the Day Ahead Market since 2009-10, except for the year 2014-15. Also, this is the portfolio which has the most liquid product. The Term Ahead Market, though increasing, is not so consistent. While there has been increase in the trading volume of electricity at the Power Exchanges, yet it has been only 3.11 % of the total generation of electricity, which speaks about the functioning and performance of the Power Exchanges. Although there have been long-term PPAs, the DISCOMs have been buying electricity through the Power Exchanges to meet their requirements. The Committee note that the functioning of the Power Exchanges is still not very transparent and lacks promptness in delivery. The Committee, therefore, recommend that:

(i) Reasons as to why the portfolio under the Term Ahead Market is not getting appropriate response should be identified and measures put in place to improve trading through this portfolio.

(ii) Steps should be taken to popularize the concept of the Power Exchanges so as to make people aware about their role and usefulness in making electricity rates more competitive and transmission efficient.

Reply of the Government

(i) Trading for Power in Term ahead is only for upto 11 days which is a restricting factor. Currently, the PXs cannot offer any contract having delivery greater than '11' days. This is due to the matter being *sub-judice* before the Supreme Court. Further, there are other avenues for buyers and sellers for purchase and sale of electricity for a duration exceeding one day; as for example, through traders for a duration upto 3 months in advance under short term open access etc. The responsibility of the Commission is to create various avenues for trade and choice for a particular product depends upon the specific requirements, ease of doing business of the market players etc.

(ii) The PXs have been in existence since 2008 and the volume of electricity traded has been increasing over the years. PXs also have 3000 Open Access consumers as their members and trade on PXs regularly.

The power exchanges display all relevant information about trades in the website. The Commission, in order to ensure greater transparency had mandated the power exchanges to display the aggregate demand and supply curves in their websites. The information to this extent is also being displayed by the power exchanges. Further, the market monitoring cell of CERC compiles the Market Monitoring Report. CERC makes information regarding power exchanges freely available on its website. The MMC report gives details about prices and volume of power transacted, details of congestion etc.

CERC also publishes Annual Report on Short Term Power Market in India. Monthly trends and daily trends are also a part of this report. Time of the day variation in volume

and price of electricity, effect of congestion on volume of electricity transacted and tariffs of Long term sources of Power for various distribution companies are some of the areas which are analyzed and mentioned in the report.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Recommendation No.9

Price Discovery Mechanism

9. The Committee note that the Price Discovery Mechanism for the Day Ahead Market is governed by Regulation 11 of the Power Market Regulations 2010. The Regulation provides for the economic principle of social welfare maximization and to create buyer and seller surplus. It is determined by the Price Discovery Mechanism in which the buyers and sellers at the Power Exchanges have to pay for purchasing or for selling electricity in a specific product category. Price discovery in the context of the Day Ahead Market is done by auction for all the 24 hours which is sub-divided into 15 minutes contracts. It allows simultaneous buy and sell bids and demand-supply curves are formed. The intersection of the two curves is the price for the market which is referred to as the Market Clearing Price. Afterwards, the bids matched are included in the day ahead schedules. Buy trades are settled at below the quoted price and sell trades are settled at above the quoted prices ensuring maximum benefits to both buyers and sellers of electricity. It has also been informed that there is complete anonymity of the bids between members. The congestion management is done through market splitting and financial settlement/ clearing is done by the Exchanges. The Committee find that there is no clarity and transparency with regard to formation of curves; besides it is not known as to what principle is adopted for this when there are multiple buyers and sellers. In what manner will the prior knowledge of quoted price for buying and selling impact the curve making process? The Committee observe that as per the current practice, the Power Exchanges receive Buy Bids and Sell Bids and follow the double sided closed bidding process. As part of the process, the Power Exchanges process the bids for Day-Ahead transactions at the designated time, through a specific algorithm to arrive at Market Clearing Volume (MCV) and Market Clearing Price (MCP). Subsequently, the availability of transmission corridor is verified and bids are re-run in case of congestion to determine market splitting as per requirement and then the final Market Clearing Volume and Market Clearing Price for the surplus and the deficit zones are arrived at separately. The information about the availability of transmission corridor being not known, the bidders are unable to take well-informed decisions before placing their bids. Further, the stakeholders have complained about lack of transparency in the process. Quoting of different prices for trading becomes irrelevant after the price discovery through curve formation which, besides being non-transparent also creates some scope for genuine apprehensions. The Committee are not against the Price Discovery Mechanism, per se, but are of the considered view that the process involved requires improvement.

Therefore, in order to make the bidding process more transparent and to avoid human intervention at multiple points, the Committee recommend that:

(i) The Price Discovery Mechanism should be an open ended process.

(ii) The process of curve formation should be brought within the public domain.

(iii) Some alternative mechanism for discovery of prices should be considered which is holistic in nature.

(iv) The Ministry of Power should expeditiously look into the expansion of transmission network and augmenting transmission capacity/ transformation capability, so that transmission congestion and resultant market splitting are avoided.

(v) POSOCO/NLDC may be directed to declare the availability of transmission corridor in advance, to enable more informed decision making and robust price discovery in the Power Exchanges.

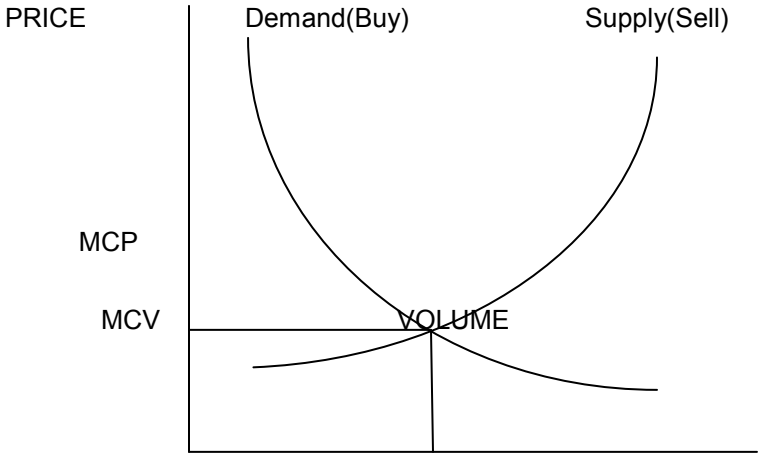
(vi) The Price Discovery Mechanism needs to be verified to make sure that matching of bids and the resultant prices discovered are fair and not manipulated. While stringent regulatory oversight is the need of the hour, one alternative is to assign the responsibility of price discovery to a neutral Third Party.

(vii) The Third Party, before initiating the bid process, should consider the availability of transmission corridor and then run the bids through the matching engine to arrive at MCV and MCP. The structure, functional responsibilities, over-sight mechanism, etc. for the Third Party service provider may be decided by the CERC.

(viii) Such an arrangement would enable greater social welfare maximization as the number of bids for price matching will increase (as a result of combining the bids of all the Power Exchanges). This will also encourage establishment of multiple the Power Exchanges and bring in more competition in this segment of the Power Market. The Power exchanges will then compete, based on the services they provide.

Reply of the Government

(i& ii) For Price discovery, the buy and sell volumes are pooled and prices are discovered through a double sided closed auction mechanism. In day ahead market, prices are discovered through a matching mechanism which is based on a software algorithm. The aggregate demand/supply curve of both power exchanges are displayed on their respective websites. The process of the curve formation and arriving at MCP and MCV is provided on the websites of both power exchanges.



It is recognized that the various stakeholders with different bidding portfolios and strategies have to make their offers at a single point i.e. the power exchange. Also, a single trader may have multiple clients competing with each other for transmission corridor as well as price. Adequate provisions have been made in the Power Market Regulations, 2010 to secure and maintain the confidentiality of the bids by all stakeholders. Adequate measures are being undertaken through market surveillance and monitoring activities. Improvements are being attempted through review of regulatory compliance and IT audit of the Power Exchanges initiated by CERC.

(iii) Different contracts in the power exchange follow different methods of price discovery. As far as collective transactions are concerned, the mechanism is the same as is being followed by Nordic countries and has been working satisfactorily. This was debated through a staff paper published by the staff of CERC and finalized after hearing all stakeholders. In any case, the aggregate demand and supply curves are displayed transparently on the website of the power exchange for every 15 minutes-time block.
Further, the Central Commission has undertaken review of the functioning of the power exchanges, as also initiated action on IT audit / third party testing of trading software of the power exchanges. Suitable corrective action would be taken by the Commission after such audit / third party testing has been completed.

(iv) As per the Electricity Act 2003, the Central Electricity Authority(CEA) does the planning and coordination relating to inter-state transmission system with the Central transmission Utility, to ensure development of an efficient, co-ordinated and economical system of inter-State transmission lines for smooth flow of electricity from generating stations to the load centres.

It is stated that in order to ensure reliability of power supply, about 80-85% the power purchased by States should be through long term contracts. However, a number of States have not signed long term contracts for sufficient generating capacity and therefore depend upon short term contracts for meeting their balance demand, which causes congestion in the transmission system.

It may be submitted here that as part of formation of National Grid & strengthening the regional grids, various transmission lines/elements in all the regions are being implemented by Central, State & Private utilities. As per information made available by POSOCO, the transmission lines expected to be commissioned in near future to relieve Congestion are as follows:

- WR-NR Corridor
  - ±800 kV Champa Pooling Station - Kurukshetra HVDC Bipole
  - 765 kV Jabalpur-Orai D/C and 765 kV Orai-Aligarh D/C
- WR-SR Corridor
  - 765 kV Wardha – Hyderabad D/C
- ER-SR Corridor
  - 765 kV Angul - Srikakulam D/C

(v) Responsibility of declaration of availability of transfer capacity on real-time basis lies with the system operation / NLDC / SLDCs. NLDC declares the total transfer capability of various corridors and this information is available transparently for all stakeholder in the public domain as per the CERC (Measures to Relieve Congestion in Real Time) Regulations, 2009. The details of Long term access and Medium term Open access granted by the CTU are displayed at the website of CTU on regular basis. Further, the information of the bilateral transactions accepted by the nodal agency is also displayed by the RLDCs at their website as per the Clause: 27 of CERC (Open access in inter-state transmission) Regulation, 2008 and further amendments thereof.

As informed, to further streamline the process, the Central Electricity Regulatory Commission is currently working on an “Open Access Registry” automated framework. This is aimed at facilitative transactions through open access including dissemination of real-time availability of transmission capacity.

(vi, vii & viii) A well-functioning electricity market requires an effective market monitoring process. As a part regulatory oversight, CERC publishes the Monthly Market Monitoring Cell report on short term transactions of electricity.

As stated the Commission has initiated the IT audit / 3rd party testing of trading software of the power exchanges. Suitable corrective action will be initiated based on the report of such audit/third party testing. As regards the alternative price discovery mechanism, the Commission while disposing of the petition No. 158/MP/2013, in its order dated 4.4.2016, deliberated upon one of the recommendations of the expert committee constituted, for introduction of merging of bids (market coupling method). The Commission felt that various practical issues need be resolved before considering such a proposal, for instance, addressing the issues around market design including transmission access methodology besides requirement of infrastructure, logistics etc.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28thJuly, 2017]

Recommendation No.11

The Committee note that cross border trading of electricity has now become a reality in view of cooperation in the sector with neighboring countries like Bangladesh, Nepal and Bhutan. About the expected size and implications, and how these tradings may help India, the Committee have been apprised that out of 500 MW of inter-connectivity with Bangladesh, 50 MW can flow on the Exchanges. With Nepal, one transmission line is being strengthened which can have a maximum of 50 MW of transaction while with Bhutan a maximum of 120 MW can come through the Exchanges. It has also been reported that optimal utilization of resources is the potential gain of cross border transactions. Hydro resources of the neighboring country could be utilized to balance load/generation variations and also for handling intermittent renewable energy sources of the country. The Committee have been informed that trade in electricity can help bring down energy prices, mitigate power shocks, relieve shortages, facilitate decarbonization and provide incentives for market extension and integration. Regions with low cost generation resources could become net exporters of power, while electricity customers in high cost areas could benefit from cheaper imports. The Committee note that Cross Border Trade may provide an emergency back-up for the existing system during shortages or plant outages and may also facilitate developing countries to opt for more Renewable Energy. Therefore, the Committee recommend that:

(i) India should play a leading role in facilitation of Cross Border Electricity Trade among its neighbours, without compromising on the Energy Needs of its own people, and should ensure that such a system does not worsen initial distortions in regional markets.

(ii) The Ministry and the CERC must formulate policies and regulations related to pricing of Electricity as a commodity for transmission, in coordination and harmonization with the neighbouring countries as different countries follow different regulatory practices which lead to difference in electricity pricing in the Indian Subcontinent.

(iii) The pricing of electricity coming from across the border should also be congenial and amenable to our market.

Reply of the Government

(i) As per the information available by CERC/POSOCO, at present cross border transactions in electricity between India and neighbouring countries of Bhutan, Bangladesh, Nepal and Myanmar is being done through Long-term, Medium term and Short term contracts under bilateral agreements. Around 1450 MW is imported from Bhutan, 500-600 MW exported to Bangladesh, about 300 MW exported to Nepal and around 1-3 MW export to Myanmar.

Government of India has initiated the first step in the direction of cross border cooperation in electricity the SAARC region. In order to facilitate and promote cross border trade of

electricity with greater transparency, consistency and predictability in regulatory approaches across jurisdictions and minimise perception of regulatory risks, the Guidelines on Cross Border Trade of Electricity have been issued by Ministry of Power vide OM No.14/1/2016-Trans dated 5th December 2016. The objectives of these guidelines are to:

(a) Facilitate cross border trade of electricity between India and neighbouring countries;
(b) Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimise perceptions of regulatory risks;
(c) Meet the demand of the participating countries by utilizing the available resources in the region;
(d) Reliable grid operation and transmission of electricity across the borders;
(e) Evolve a dynamic and robust electricity infrastructure for cross border transactions.

(ii) As per the Guidelines issued, there will be an Authority (Designated Authority) designated by the Ministry of Power, Government of India for facilitating the process of approval and laying down the procedure for cross border transaction and trade in electricity. Ministry of Power vide OM No. 14/1/2016-Trans dated 14th December 2016 has notified Member (Power System), CEA as per the provisions under sub-clause (1) of Clause 5 of the Guidelines on Cross Border Trade issued by the Ministry of Power. The cross border trade of electricity shall be regulated by the Rules and Regulations framed or to be framed for the purpose of its implementation. Central Electricity Regulatory Commission (CERC) of India has been mandated to frame appropriate regulation for facilitating cross border trade of electricity with neighbouring countries in accordance with these guidelines.

(iii) The Guidelines have specified the provisions for tariff determination for Cross border transaction of electricity through Government to Government negotiations and through arrangements other than Government to Government negotiations.

In case of hydro projects, the tariff will be determined by the Central Commission, if approached by the generator through the Government of the neighbouring country and agreed by the Indian entities, including Public Utilities/Discom(s).

The tariff for export of electricity to entities of neighbouring countries by Indian entities through long term/ medium term/ short term agreements may be as mutually agreed or through competitive bidding, subject to payment of the charges as applicable for transmission / wheeling of electricity through the Indian grid.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Recommendation No.12

Renewable Energy Certificates

The Committee note that trading of Renewable Energy Certificate has been introduced with a view to ensuring the fulfillment of RPO by the DISCOMs and State utilities. However, the mechanism adopted to achieve the objective is not transparent. It has been stated that the total quantity of certificates (solar and non-solar separately) placed for dealing at the Power Exchanges by the eligible entity shall be less than or equal to the total quantity of valid certificates held by eligible entity as per the records of the central agency, i.e., the National Load Dispatch Centre, and will be dealt with by the Power Exchanges within the price band specified by the CERC from time to time. It is done through bidding; the eligible entities place their offers and the buyers shall place their bids through the trading platform of the respective Power Exchange. Thereafter, the Power Exchange shall send the maximum bid volume for each of the eligible entity which has placed offer on that Exchange to the central agency for verification of the quantity of valid REC available with the eligible entity concerned. The central agency then checks the combined maximum bid volume in the Power Exchange for each eligible entity against the quantity of valid RECs for that entity and thereafter send a report to the Power Exchange confirming the availability of valid REC with the eligible entity. Market Clearing Price and Market Clearing Volume are worked out taking into account the advice from the central agency and then the final clear trades are sent to the central agency for extinguishing of RECs sold in the records of the central agency. The Committee find that although the process of trading in REC appear to be transparent, yet there is scope for vested interventions, as RPO is decided by Regulatory Commissions and are to be complied with by the DISCOMs. Ensuring compliance is the responsibility of the regulatory bodies. The availability of certificates is ascertained only after the receipt of the bids. This system need to be reviewed particularly in the context that this mechanism has not yielded the desired results and to examine whether this system is at all required to meet our renewable commitments. It is nothing but a process involving exchange of money to fulfill the commitment, and to achieve this, having the involvement of multiple agencies like CERC, NLDC, power exchanges etc. does not appear to be logical. Can there not be some price adjustment mechanism without the involvement of multiple agencies? After all, the target of this entire process is achieved only through the money changing hands for the intended purpose. The Committee, therefore, recommend that:

(i) To meet the RPO, some alternative mechanism should be explored immediately without involving RECs.

(ii) If the current system is continued, then it should be ensured that it functions with integrity in an open manner. There should be no scope for manipulations in the trading of RECs and the involvement of agencies should be minimized to the bare minimum.

Reply of the Government

(i) There already exist various alternatives for Renewable Purchase Obligation (RPO) compliance by the obligated entities, as for example, (i) by procuring RE power under feed-in-tariff (FiT route)/regulated tariff route; (ii) by procuring RE power through competitive bidding route; (iii) by procuring renewable energy certificates (RECs). The objective is to enable an obligated entity to choose a specific alternative keeping in view the cost implication under various alternatives.

(ii) To ensure proper monitoring and tracking of REC trade, CERC has informed that at present allowed trade of RECs only through power exchanges. The processes are well defined to avoid any scope for manipulation in the trade of RECs, the roles and responsibilities of various agencies involved in the accreditation, registration, issuance and exchange of RECs have been clearly articulated in the detailed procedure approved by the Commission. The CERC Regulations also provide for appointment of compliance auditor for ensuring compliance of these provisions of the Regulations by all such entities. The Commission has also appointed compliance auditors. The reports submitted by the auditors through POSOCO (i.e. the Central Agency for RECs) are under examination in the Central Commission.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Recommendation No.13

The developers generate revenue through sale of Renewable Power to the utilities at the pooled cost of power purchase of such utility as determined by the Appropriate Commission or to any other licensee or to an open access consumer at a mutually agreed price, or through the power exchange at market determined price. The developers also generate revenue from the sale of environmental credits in the form of Renewable Energy Certificates issued to them as per the terms and conditions provided for in the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 (and amendments notified from time to time). The Committee were informed that Obligated entities such as DISCOMs; Open Access & captive users; Generators, that generate power from renewable sources of energy; State Agency, such as State Load Dispatch Centre; Central Agency, such as POSOCO; and the Power exchanges, where the transactions take place are involved in the REC mechanism. However, the Committee note that most of the States are not enthusiastic about meeting their Renewable Purchase Obligations. As per data provided by the Ministry, while the North-Eastern States like Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, etc. and Tamil Nadu and Karnataka have achieved their Renewable Energy Targets, other States have not been

able to comply fully with their Renewable Purchase Obligations. The Committee were also informed that on 16th March, 2015, the Ministry of Finance had released an incentive grant of around Rs. 5000 crores for incentivizing RPO compliance to the States. Despite such incentives, it seems that States are not willing to comply with their Renewable Purchase Obligations which *prima-facie* points to a systemic flaw in the working of the concept of Renewable Energy Obligations. Keeping in view the importance of Renewable Energy and the utmost need to increase the share of Renewable Energy in India's Energy mix, the Committee recommend that:

(i) The Ministry should devise some awareness programme to encourage States to fulfil their RPO targets and help them to comply with reasonable RPO requirements so as to enable the country to meet International Commitments.

(ii) If need be, for ensuring stricter compliance with the Power Market Regulations, the Ministry may come up with some Penal Provisions for non-complying States so that such States may fall in line and make every effort to fulfill their Renewable Energy Obligations.

(iii) Reasons should also be analyzed as to why the incentive scheme of the Government has not been successful in getting proper response from the States.

Reply of the Government

(i) Electricity Act, 2003 provides for promotion of efficient and environmentally benign policies and for matters connected therewith or incidental thereto. In particular, Section 86(1)(e) of the Electricity Act, 2003, mandates State Electricity Regulatory Commissions (SERCs)/Joint Electricity Regulatory Commissions (JERCs) to specify Renewable Purchase Obligation (RPO) target for the obligated entities in their state. Extract from the said section is reproduced as under:

86(1) The State Commission shall discharge the following functions, namely:-

"(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licence;"

Monitoring compliance of RPO by the obligated entities is the responsibility of the concerned SERCs/ JERCs and the Appropriate Government in this regard are the State Governments. Further, the revised Tariff Policy has been notified by Ministry of Power on 28.1.2016with the objectives inter-alia to promote renewable energy which will help the obligated entity to fulfill their RPO obligations.

Forum of Regulators (FOR) Secretariat has also been raising the of RPO compliance in FOR meetings at regular intervals. The model Regulations evolved by the FOR have in

fact, already provided for various measures for ensuring RPO compliance. For instance, there are provisions requiring creation of a separate fund and requiring the obligated entity to deposit in the fund an amount of money equivalent to the shortfall in the RPO compliance (shortfall energy multiplied by the forbearance price of REC) in any particular year. It further provides that this fund could be used by an agency designated by the SERC to purchase RECs, thereby ensuring deemed compliance of RPO in the state. Some SERCs have adopted this provision in their State Regulations.

(ii) There are provisions in the Electricity Act, 2003 for imposing penalty for non-compliance of any of the regulations of the Appropriate Commission. Further, in the proposed Electricity (Amendment) Bill, 2014, stricter provisions have been made to ensure strict compliance of RPO.

(iii) The basic problem of state distribution companies of not being able to fulfill their RPO targets is that most of the state distribution companies are running into financial losses. This is a chronic problem and has to be solved at the root. Government of India has already taken steps through the UDAY scheme to make the state governments accountable for the state distribution companies. However, in order to make the State Distribution companies sustainable, the governance of state distribution companies would have to be ensured, under the overall responsibility of the state government. Further, the SERCs are not inclined to take action against the state distribution companies for non-compliance of the RPOs.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Recommendation No.15

The Committee note that regulations of grant of connectivity, long-term excess and mid-term open excess in inter-State transmission aim at providing transmission products of different varieties, standardization of procedures, defining timelines and ensure level playing field among different categories of market players. CERC has also provided for deemed concurrence of SLDC for open excess if their decision is not given within a specified time frame. Grid code and deviation settlement mechanism regulations are also there for maintaining grid discipline. The Committee have been apprised that the Commission's initiative in regard to grid discipline, deviation settlement mechanism and grid security has resulted in improved reliability of power supply. However, close observance of these factors also lead to the conclusion that denial of permission by the State Load Despatch Centers, delay in the name of grid discipline and non-transparent settlement mechanism have led to manipulation of the activities. The Committee, therefore, recommend that:

(i) The necessity of prior permission from State Load Despatch Centre should be reconsidered and done away with.

(ii) It should be ensured that no malpractice is being resorted to in the garb of grid discipline.

(iii) Deviation Settlement Mechanism should be open and transparent.

Reply of the Government

(i) As per information made available by CERC& CEA, each transmission system has got a capacity of transferring certain quantum of power, taking into consideration the line loading capacity, voltage stability and angular stability. These are reflected in Available Transfer Capacity determined by the appropriate load despatch centre. Therefore, before granting permission to the generators/consumers for entering into transactions in power exchange, the State Load Despatch Centre (SLDC) would have to determine if there is sufficient transaction capacity for transfer of power through the state grid.

The State Load Despatch Centre is primarily an entity owned by the State Government. Operation of the State grid is also handled by the State Load Despatch Centre as per the operational norms specified in the IEGC and relevant State Grid Code. Prior permission of the State Load Despatch Centre is necessary to ensure safety and security of the grid while providing real-time access for executing the open access transaction. What is needed to ensure proper ring-fencing of SLDCs to ensure that such permissions are not unreasonably withheld.

(ii) The Indian Electricity Grid Code (IEGC) and the Deviation Settlement Mechanism (DSM) Regulations framed by the CERC provide for adequate deterrents against grid indiscipline. There are also provisions for penal action against instances of gaming. Further, the Central Commission initiates strong action against violations of grid discipline based on the instances brought before it.

(iii) As per CERC, the Deviation Settlement Mechanism Regulations provide for commercial deterrents against grid indiscipline. The commercial norms for deviations have been clearly specified in the Regulations and the energy accounting is done by the respective Regional Power Committees. The settlement is carried out at the level of Regional Load Despatch Centres. The mechanism is transparent and functioning smoothly to the satisfaction of all sellers and buyers involved in the transactions.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Comment of the Committee

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

Recommendation No.17

The Committee observe that the determination of tariff by the regulator has not helped the market in its proper growth. The Committee were apprised that the regulator has fixed the tariff at Rs. 7.90 which is not compatible with the concept of open and competitive

economy and the Committee find no rationale behind fixation of tariff by the regulator. When asked about it, the Committee was informed that Section 62 of the Electricity Act provides for determination of tariff by the Electricity Regulatory Commission. Further, as per Section 63 of the Act, the appropriate Commission shall adopt the tariff if such tariff is determined through a transparent process of bidding. The Electricity Act, 2003 does not provide for determination of tariff for short-term power as it varies from the tariff determined under Section 62 and Section 63 of the Act. This is due to the inherent differences in these products in terms of duration and certainty of contract, besides need for hedging against market risks. On being queried about how and from where the regulator arrives at these prices and what is the methodology used to arrive at the price, the Committee was informed that CERC determines the tariff in accordance with Section 62 of the Electricity Act, 2003. The Committee find that this exercise of determining tariff by the CERC is not helpful in the development of the Sector. Fixation of the tariff at Rs.7.90 is beyond comprehension when electricity is being traded at a much lower tariff. Moreover, the high tariff is also detrimental to growth as the consumer may desist from buying electricity at a higher rate. The Committee, therefore, recommend that:

(i) The determination of tariff of electricity by the CERC under various provisions of the Electricity Act, 2003 should be reviewed.

(ii) Tariff determined by the regulator should reflect the market sentiments and support the market, involving all the stakeholders, i.e. generator, consumer, etc.

(iii) The ultimate benefit of tariff determination should accrue to the consumers and should also benefit the generators to strive for increased generating activities.

Reply of the Government

(i) As per the provisions given in section 61 to 64 Electricity Act, 2003, the Electricity Regulatory Commissions has been entrusted with the functions of determination of Tariff for generation, transmission and distribution. The tariff of generation and Transmission companies owned by Central Government is regulated by the Central Electricity Regulatory Commission, whereas the tariff for generation, transmission and distribution within the state are determined by the State Electricity Regulatory Commission. Under Section 62 of the Act, the Appropriate Commission shall determine the tariff if it is supplied from a generating company to a distribution licensee, while under section 63 the Appropriate Commission shall adopt the tariff if such tariff has been determined through transparent process of bidding in accordance with the guidelines issued by Central Government.

As per information made available by CERC, after the enactment of the Electricity Act, 2003 (which repealed *inter-alia* the Electricity Regulatory Commissions Act, 1998) the Commission notified Terms & Conditions of Tariff in March, 2004 for five-year period from

2004 to 2009 and then in March, 2009 for a further five year period 2009-14. These notifications provide for determination of generation tariff (station/unit wise) and transmission tariff (line or system-wise). It has been further informed that the Commission vide notification dated February 21, 2014 issued Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 to be effective from 1.4.2014.

The tariff is determined as per the Regulations on Terms & Conditions of tariff as applicable from time to time. The terms and conditions contain the financial norms and technical norms.

(ii) Transparency and objectivity are the hallmark of the regulatory processes adopted by CERC, including the processes involved in the tariff fixation. The regulations are finalised after following the due process of public consultation at various stages involving seeking public comments on staff paper, draft regulation and oral submissions made during the public hearing. Market realities are discussed and analysed since the staff paper stage, and the Commission takes final decision based on the comments received from wide ranging stakeholders and with due regard to the need for balancing the interests of consumers and investment needs of the sector.

(iii) As stated the role of the regulator as envisaged in the Act is to balance the interests of the consumer while at the same time ensuring recovery of reasonable costs to generators and licensees. The Regulations of CERC are crafted with these cardinal principles in mind. The various technical and financial norms specified by the Commission are aimed at inducing efficiency in operation and also provide sharing of efficiency gains between the generators and the buyers.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

CHAPTER III

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

Nil

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

Competition in the Power Market

The Committee were informed that one of the objectives behind the setting up of the Power Exchanges was to promote competition in the power market. The Electricity Act, 2003 envisages development of a competitive power market for promoting efficiency, economy and for mobilization of new investments in the Power Sector. However, the Committee note that there are only two Power Exchanges in the country of which one has monopoly in the Power Trading, which according to the Committee, is not in the interest of the sector. 96 per cent of the Power Market is owned by one Exchange i.e. IEX and the owner of this very Exchange has been debarred from the Commodity Exchanges. This is undoubtedly a very anomalous situation as the Exchange against which action has to be taken is, in fact, running the whole Power Market.

The Committee find that the objective of ensuring competition in the Power Market has not been followed scrupulously. Rather, consciously or otherwise, one Exchange has been allowed to monopolize the Market. This has led to perception that the Regulations, Contracts and other Guidelines have been tailor-made to suit the requirements of one Power Exchange.

With a view to addressing the need for elimination of this anomaly in the Power Market which is not conducive to the concept of competitive economy, the Committee recommend that:

(i) The Ministry and the CERC must come up with clear and effective Guidelines so as to ensure healthy competition in the Power Market and also to eliminate the monopoly of one Power Exchange so that the diminishing trust of the stakeholders in the system can be restored.

(ii) The Ministry should work out an Action Plan on setting up of the Power Exchanges in every zone (North Zone, South Zone, East Zone, West Zone, Central Zone and North East Zone) of India, to facilitate competition in the Market which will benefit the consumer.

Reply of the Government

(i) The over-arching objective of the Electricity Act, 2003 is to encourage competition, induce efficiency improvements, with a view to ensuring quality supply of electricity to consumers at competitive rates. The Central Commission evolved an enabling framework

for operation of power exchanges through its Power Market Regulations, 2010. The power exchange is a platform which can be located anywhere, irrespective of the geographical area where physical power transactions are being done, there would be no need to have regional power exchanges physically. If it is seen by the CERC that there are sufficient regional transactions within a region, the regional power exchange can also be operated in the existing power exchanges, which would save in infrastructure cost, or, could be set up on Region-wise basis. At present, since the day ahead transactions are to an average extent of about 4,000 MW, out of a total all-India peak demand of about 1,50,000 MW, it is felt that if regional exchanges are implemented, the transactions per exchange would go down and this would lead to non-optimization of the available surplus power being bought by deficit states.

The framework for operation of power exchanges through its Power Market Regulations, 2010addresses the issues around monopoly of a single power exchange. The relevant extracts of the Power Market Regulations, 2010, the Explanatory Memorandum and the Statement of Reasons to the said Regulations are reproduced below:-

"CERC (Power Market) Regulations, 2010

35. A Power Exchange which has less than 20 % market share for continuously two financial years falling after a period of two years of commencement of its operations shall close operations or merge with an existing Power Exchange with in a period of next six months. (For this purpose Market size is defined as the total Annual Turnover in Million Units of all contracts transacted in all the Power Exchanges in each financial year) Provided that this regulation shall not apply if there are only two Power Exchanges in operation."

"Explanatory Memorandum – Power Market Regulations

9. After two years of operations, any exchange with a market share less than 20 % for a continuous period of 2 years shall need to close or merge with other exchange. This will not be applicable in case there are only of two exchanges operational. The rationale behind this stipulation is to concentrate liquidity for improved pricing of contracts while at the same time avoiding monopoly of a single exchange."

"Statement of Objects and Reasons – CERC (Power Market) Regulations, 2010

8.19.2. The rationale behind this provision in the regulations is to concentrate liquidity in Power Exchanges for improved pricing of standardised contracts. Numerous spot prices with low volume will provide confusing signals and not serve the intended purpose of Power Exchange providing investment signals. It shall also complicate corridor allocation process adopted by NLDC and have a negative impact on social welfare maximization. Sufficient care has been taken to ensure that a situation where monopoly of a single Power Exchange occur does not happen by allowing two Exchanges to always co exist…..".

- CERC issued the Second Amendment to the Open Access Regulations on 11.09.2013, wherein, SLDCs were asked to provide an exchange neutral NOC to the market participants to help creating a level playing field between the two power exchanges.
- CERC notified Third Amendment of the Open Access Regulations on 12.05.2015 reducing the NLDC operating charges payable by the participants of power exchanges from Rs 5000 to Rs 2000.This was also done to create a level playing field between the two power exchanges.
- Further, CERC vide order in Petition No.158/MP/2013, directed allocation of upto 10% of the constrained corridor to the smaller Power Exchange with the provision for review of the methodology after six months.
- In order to further competition between the Power Exchanges, CERC notified Fourth Amendment of the Open Access in inter-State Transmission Regulations on 22nd June 2016. The NLDC operating charges have been reduced and are now payable by each of the successful buyer and seller on the basis of its energy scheduled (MWh) at regional periphery by NLDC for transactions in the respective power exchange. The rate of NLDC operating charges is Re 1/MWh for collective transactions. NLDC operating charges payable by each of the successful buyer and seller in case of collective transaction, for a day, shall be capped to a maximum ceiling of Rs 200 per day.

(ii) The Electricity Act 2003 provides that development of the market is vested with the Appropriate Commission. The CERC (Power Market) Regulations allow the setting up of multiple power exchanges, subject to the provision that each power exchange must have a market share of at least 20% and subject to at least two power exchanges being in operation, for which this provision of 20% market share does not apply. For the 20% condition, if the market share remains less than 20% for two continuous financial years falling after a period of two years of commencement of operation, then it is to close its operations or merge with the existing power exchange. This therefore means that competition in power exchanges is encouraged by the CERC Power Market Regulations to ensure that there are at least two power exchanges in operation. Worldwide, it is seen that there is normally one power exchange for a country, which is regulated by the appropriate Regulator.

Further, the Central Commission vide CERC's Power Market Regulations and related orders do not prohibit setting up of Power Exchanges in every zone. Regulation 3(ii) of Power Market Regulations defines Power Exchange Market and part 3 of the Power Market Regulations provides for Approval/suspension of the contracts by the Commission. Any eligible entity fully compliant to the regulations notified by CERC can set up and run a Power Exchange, with prior approval of the Commission.

In India, CERC has provided for multiple Power Exchanges to exist simultaneously in one physical market. This allows for competition amongst the existing Power Exchanges and an automatic system of checks and balances. The market participants stand to benefit from the innovative process of Exchanges vying with each other for providing superior quality of service. A stakeholder located in any corner of the country can transact locally on the pan-India power exchange platform. Worldwide, it is seen that there is only one power exchange in a country such as European Energy Exchange (EEX) in Germany, Power next in France and Belgium Power Exchange (Belpex) in Belgium etc. Also, a single exchange named Nord Pool operates Spot and Balancing Market segments in three countries namely Norway, Sweden and Finland.

Two power exchanges viz. Indian Energy Exchange (IEX), Delhi and Power Exchange India Ltd (PXIL), Mumbai commenced operations from 27.06.2008 and 22.10.2008 respectively after approval of CERC.

Pursuant to the application filed by NTPC Ltd. seeking permission to set up and operate Power Exchange, the CERC granted in-principle approval to establish a National Power Exchange, subject to compliance of certain directions vide Order dated 1.7.2009 in Petition No. 91/2007. Thereafter, CERC approved the Rules, By-laws and Business Rules of National Power Exchange Limited (NPEX) for setting up and operation of Power Exchange on 24.2.2012. Thereafter, NPEX Board approved the 'Business Plan' for setting up of Power Exchange and 'Vision Document' was prepared encompassing various future market scenarios.

NPEX was engaged in a process to ascertain the 'business viability' under changed market scenario and the promoters were in the process of revisiting the issue to study feasibility of 3rd Power Exchange in the Indian power market. In the meantime, NTPC, one of the promoters of NPEX, decided to exit from NPEX deriving no strategic advantage by investing in the power exchange. Thereafter, the group of promoters of NPEX has voluntarily recommended for winding up of the Company. Therefore, the Commission vide Order dated 17.4.2014 in Petition No. 262/SM/2014 has withdrawn the approval of National Power Exchange with effect from 1.4.2014.

Also, in November, 2011, Marquis Energy Exchange Limited filed application under CERC (Power Market)Regulations, 2010 seeking permission for setting up and operation of a Power Exchange. Vide order dated 16.01.2013 in the Petition No. 216/PX/2011, CERC rejected the application of Marquis Energy Exchange Limited as the company did not meet the net worth criteria required under the Power Market Regulations for registration for setting up and operation of a Power Exchange.
However, the recommendation of the Committee has been noted.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July; 2017]

Comment of the Committee

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

Recommendation No.10

Shareholding Pattern

The Committee note that Regulation 22 of the Power Market Regulations, 2010 govern the broad structure of the Power Exchanges and Regulation 19 of the Power Market Regulations, 2010 specifies the share holding pattern of the Power Exchanges. Regulation 19 notes that any shareholder other than a member of the Power Exchanges can have a maximum of 25 per cent shareholding; for a member, the limit has been fixed at 5 per cent. In total, a Power Exchange can have a maximum of 49 per cent of its total shareholding owned by entities (whether directly or indirectly) which are members of the Power Exchanges. The reason given for share holding pattern is that the Power Exchange should be a demutualised and ring fenced organization and hence a power sector participant may have the stake in the power sector only upto 5 per cent of the total shareholding. The Committee find that despite precautions, the Regulations for share holding pattern of the Power Exchange provide an opportunity for control of the Exchanges and have led to their mutualisation. The over-bearing presence of one exchange in the electricity sector and its complete command and control exemplifies that the rationale behind the Regulations for share holding pattern of the Power Exchange did not deliver the desired results. The Committee, therefore, recommend that:

(i) Regulation 19 of the Power Market Regulations, 2010 should be revised to find out as to why it has failed in its objective.

(ii) Share holding pattern of the Power Exchanges need to be made wide ranging and demutualised with the involvement of stake holders of every segment of the electricity sector.

Reply of the Government

The provisions of the Power Market Regulations already ensure de-mutualisation and enables involvement of any stakeholder of electricity sector subject to the conditions specified therein.

Regulation 19 of the Power Market Regulations, 2010 specifies the shareholding pattern of the power exchanges. There it is specified that any shareholder other than the member of the power exchange can have a maximum of 25% shareholding. For a member the limit has been fixed at 5%. The relevant extract is excerpted below:-

"19. Shareholding Pattern of Power Exchange

(1) The shareholding pattern for equity holders in the Power Exchange shall be as follows:

- *Any shareholder other than a Member of the Power Exchange can have a maximum (whether directly or indirectly) of 25% shareholding in the Power Exchange.*
- *A Member of the Power Exchange can have a maximum (whether directly or indirectly) of 5 % shareholding in the Power Exchange.*
- *In total, a Power Exchange can have a maximum of 49% of its total shareholding owned by entities (whether directly or indirectly) which are Members of the Power Exchange.…"*

The statement and object of reasons for Power Market Regulations.2010 provides the rationale for these limits. It is reproduced below for clarification:

"8.5.2. Decision and rationale

(i) The Commission has considered the views of all stakeholders. The Commission maintains the view that Power Exchange is market based institution and hence should be a widely held organization. The commission is also of the view that Power Exchange should be fully demutualised and ring fenced organization and hence a power sector participant may have equity stake in the Power Exchange (as is an internationally practice) but limited to 5 % of total shareholding. …

8.5.3. In view of the reasons given in the above paragraphs, the shareholding pattern in the final version of the regulations is as briefly described below:-

(i) Any shareholder (in case of a corporate this is including its subsidiaries and cross holding in other companies and associate companies) other than member of the Power Exchange can have a maximum of 25% shareholding in the Power Exchange. (Earlier in guidelines it was required that 51 % of the equity share capital of the PX should be held by the public other than the shareholder having trading rights in the Exchange).

(ii) A member of the Power Exchange can have maximum of 5 % shareholding in the Power Exchange. (Earlier there was no limit on individual member's shareholding in the Power Exchange).

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II)
Dated 28th July, 2017]

Comment of the Committee

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

Recommendation No.14

Role of Regulators

The Committee note that the regulators have been entrusted with the responsibility of development of the Power Market as laid down in the Electricity Act which specifies that

the appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such a manner as may be specified, and shall be guided by the National Electricity Policy. The National Policy enjoins upon the appropriate Commission to undertake consultation for the development of market and to provide regulation for the Power Exchanges. Accordingly, the Commission has taken a series of steps, including issuance of guidelines and notification of market regulations. These regulations also provide for qualification and disqualification for the appointment of Director in the Board of a Power Exchange. It *inter alia* includes Risk Management Mechanism Requirement and framework for market oversight and surveillance. The regulations of the regulator are extended to Day Ahead Markets, Term Ahead Markets, Renewable Energy Certificates, etc. The Committee has been apprised that these regulations have ensured that the market functions in a fair and transparent manner. The market intermediaries like electricity traders and market infrastructure like the power exchanges are regulated through these regulations. In addition, the CERC has notified a series of enabling regulations for the development of the Power Market and for promoting power trading. The Committee have also been apprised that absence of market access for buyers and sellers of electricity, evacuation infrastructure for seamless flow of electricity, safe and secure operation of the grid are some of the major bottlenecks that are hindering the growth of the electricity sector. The Committee find that despite wide ranging regulations in this regard, the problems afflicting the sector are very evident. Inaccessibility to the market for buyers and sellers, evacuation inadequacy, etc., are not insurmountable problems. If this is hampering the growth of the market, then the regulations of the CERC seems to have failed in achieving the desired objective. The Committee, therefore, recommend that:

(i) It should be ascertained as to why the regulations of the CERC have not yielded the desired results and whether these regulations are conducive for the development of the market.

(ii) In what manner the sector can be eased from over regulations, and it is left to develop on its intrinsic strength.

Reply of the Government

(i) In pursuance of the provisions contained in Section 66 of the Electricity Act, 2003 along with the overarching principles laid down in the National Electricity Policy, the CERC has taken a number of regulatory interventions to promote the development of power market. The regulatory interventions / initiatives by the CERC from time to time have resulted in significant development of the electricity markets. This is borne out by the facts given below:

1. The volume of electricity transacted through traders has increased from 21.92 BUs in 2008-09 to 34.56 BUs in 2014-15. The weighted average price of electricity

transacted through traders declined from Rs.7.29/kWh in 2008-09 to Rs.4.28/kWh in 2014-15.

2. The volume of electricity transacted through power exchanges has increased from 2.77 BUs in 2008-09 to 29.40 BUs in 2014-15. The weighted average price of electricity transacted through power exchanges declined from Rs. 7.49/kWh in 2008-09 to Rs. 3.50/kWh in 2014-15.
3. Grid Code provided range of operation of frequency within specific band which is at present 49.9 Hz to 50.05 Hz. To supplement the Grid Code towards secure and reliable grid operation, the Commission has issued Deviation Settlement Mechanism (DSM) Regulations which provide inter alia for deterrents in the form of Unscheduled Interchange (UI) charges for deviation from schedule. The tightening of grid frequency and DSM Regulations issued by the Commission has improved grid discipline.
4. Thus, the regulatory initiatives taken by the CERC have resulted in providing conducive development of electricity markets.

(ii) Section 66 of the Electricity Act, 2003 provides that *'The Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner as may be specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard'*.

Accordingly, the Central Electricity Regulatory Commission (CERC) has created a conducive regulatory framework for development of short term market and also institutionalized trading avenues through traders and power exchanges. Prior to the regulatory initiatives taken by the Central Electricity Regulatory Commission, major bottlenecks that were hindering growth of the electricity sector inter alia included absence of market access for buyers and sellers of electricity, evacuation infrastructure for seamless flow of electricity, safe and secure operation of the grid etc.

The CERC while drawing powers from the provisions Section 66 of the Electricity Act, 2003 for promoting and development of market (including trading) in power and adhering to the over-arching principles laid down in the National Electricity Policy, has taken a number of initiatives to strengthen the power markets.

The regulations issued by CERC have ensured that the market functions in a fair and transparent manner. The market intermediaries like electricity traders, market infrastructure like power exchanges are regulated through these regulations. The market rules, risk management are defined through these regulations.

The CERC, through its regulations has ensured that Open Access becomes a reality.
The initiatives taken by the CERC cannot be termed as over regulation of the sector. A well-functioning market ensures that the confidence of participants in market is built. The

regulatory interventions of the Central Electricity Regulatory Commission have at pan-India level helped in resource optimization by facilitating the transfer of surplus power to deficit regions in the country.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Comment of the Committee

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

Recommendation No.16

The Committee note that there is an over-bearing presence of the Central Electricity Regulatory Commission in the electricity sector to regulate and promote it. In pursuance of its duties, the Commission has framed guidelines, issued regulations, and formed committees to oversee the sector. CERC has also initiated some governance control mechanism at power exchanges. This is done through Risk Management Committee, Market Surveillance Committee, Annual IT System Audit for Data Security, Data Integrity and Operational Efficiency, Annual Report along with Audited Balance Sheet, Monthly Report on Data on Prices and Volumes, and Reviewing of the Power Exchanges, etc. The Committee also find that all functions, varying from framing of regulations, their execution, amendments and dispute resolutions, revolve around the regulator. It has appropriated functions which should have been divided and delegated to other bodies for fairness and transparency in the sector. It has assumed the role of Judge, Jury and Executioner and in such a situation it is but obvious that fairness and objectivity can be compromised. Execution of the regulations and dispute resolutions should have been with different entities to make this sector competitive and transparent. The Committee, therefore, recommend that:

(i) Role and responsibilities of CERC should be reviewed thoroughly to make the system at the Power Exchanges fair and objective.

(ii) The functions of execution of regulations and dispute resolutions should be assigned to other bodies as the concentration of these powers in one entity compromises the principle of division of responsibilities for efficient and transparent functioning.

(iii) If need be, the CERC itself may be sub-divided and each individual unit may be made autonomous for due discharge of its differentiated responsibilities.

Reply of the Government

(i) The Electricity Regulatory Commission Act, 1998 envisaged an independent role for the regulator in the electricity sector. The Electricity Act, 2003, further enlarged the

Commission's role for discharging various regulatory functions which inter-alia include determination of tariff, licensing, maintaining grid discipline, development of electricity markets, promotion of renewable energy, adjudication on petitions etc.

As regards the Power Exchanges, the CERC closely monitors their functioning and issues monthly monitoring report and annual report on power markets. The Commission has already initiated special audit of the functioning of the power exchanges as also IT audit/third party audit of trading software of the power exchanges. The vigilance and proactive actions by CERC have helped ensure transparency and accountability in the power sector, and more so in the functioning of the short term market.

(ii) The functions, responsibilities of the Central Electricity Regulatory Commission have been well laid out in the Electricity Act, 2003.As per Section 79 (1) (f) of the Act, the CERC has been mandated to adjudicate upon disputes involving generating companies or transmission licensee in regard to matters connected with tariff and to refer any dispute for arbitration. Further, the orders issues by the CERC can be challenged in the APTEL and the Supreme Court. The proper checks and balances have already been provided in the Act.

(iii) The Electricity Act envisages CERC as a collegiate body. The Commission consists of one Chairperson and three full time Members who are experienced professionals in different areas closely related to the electricity sector. Chairperson CEA is the ex-officio Member of CERC.

It has been stated by CERC that the issues for consideration before it are multi-disciplinary in nature and therefore, the Act provides for appointment of Chairperson and Members with specialization in various disciplines like engineering, finance, law, economics, management etc.

Further, it has been informed by CERC that is has different divisions i.e. Legal, Finance, Engineering, Economics, Regulatory Affairs etc. to examine the issues from different dimensions and provide inputs / analysis for further consideration of the Commission.

[Ministry of Power
OM No. 27/17/2015-R&R (Vol-II),
Dated 28th July, 2017]

Comment of the Committee

(Please see Para No. 23 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

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

RAJYA SABHA

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

SECRETARIAT

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

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

i.) Draft Report on 'Stressed /Non-performing Assets in Electricity Sector'.

ii.) Draft Action Taken Report on the recommendations contained in the Fourteenth Report (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 X X

5. X X X X X X X X X X X X X

6. X X X X X X X X X X X X X

7. X X X X X X X X X X X X X

8. X X 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 FOURTEENTH REPORT (16TH LOK SABHA) OF THE STANDING COMMITTEE ON ENERGY

(i)	Total number of Recommendations	17
(ii)	Observations/Recommendations which have been accepted by the Government:	
	Sl.Nos.1,3,4,5,6,7,8,9,11,12,13,15 and 17.	
	Total: Percentage	13 76.47%
(iii)	Observations/Recommendations which the Committee do not desire to pursue in view of the Government's replies:	
	Nil	
	Total: Percentage	00 00
(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, 10, 14 and 16	
	Total: Percentage	04 23.53%
(v)	Observations/Recommendations in respect of which final replies of the Government are still awaited:	
	Nil	
	Total: Percentage	00 00