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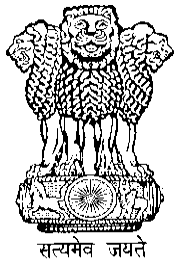
STANDING COMMITTEE ON ENERGY
(2021-22)

SEVENTEENTH LOK SABHA

MINISTRY OF POWER

REVIEW OF POWER TARIFF POLICY
- NEED FOR UNIFORMITY IN
TARIFF STRUCTURE ACROSS THE COUNTRY

TWENTY-SIXTH REPORT



LOK SABHA SECRETARIAT

NEW DELHI

July, 2022/ *Sravana*, 1944 (*Saka*)

STANDING COMMITTEE ON ENERGY
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(SEVENTEENTH LOK SABHA)

MINISTRY OF POWER

REVIEW OF POWER TARIFF POLICY
-NEED FOR UNIFORMITY IN
TARIFF STRUCTURE ACROSS THE COUNTRY

Presented to Lok Sabha on 02.08.2022
Laid in Rajya Sabha on 02.08.2022

LOK SABHA SECRETARIAT
NEW DELHI
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(2019-20)

MEMBERS

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh -Chairperson

2 Smt. Sajda Ahmed
3 Shri Gurjeet Singh Aujla
4 Shri Chandra Sekhar Bellana
5 Shri Thomas Chazhikadan
6 Dr. A. Chellakumar
7 Shri Harish Dwivedi
8 Shri S. Gnanathiraviam
9 Shri Sanjay Haribhau Jadhav
10 Shri Kishan Kapoor
11 Km. Shobha Karandlaje
12 Shri Ramesh Chander Kaushik
13 Shri Ashok Mahadeorao Nete
14 Shri Praveen Kumar Nishad
15 Shri Parbatbhai Savabhai Patel
16 Smt. Anupriya Patel
17 Shri Jai Prakash
18 Shri N. Uttam Kumar Reddy
19 Shri Naba Kumar Sarania
20 Shri Shivkumar Chanabasappa Udasi
21 Shri Akhilesh Yadav

RAJYA SABHA

22 Shri T. K. S. Elangovan
23 Shri Javed Ali Khan
24 Shri Surendra Singh Nagar ^
25 Dr. C.P. Thakur
26 Shri Ajit Kumar Bhuyan*
27 Shri Muzibulla Khan*
28 Shri Jugalsinh Mathurji Lokhandwala*
29 Shri Nabam Rebia*
30 Dr. Sudhanshu Trivedi*
31 Shri K.T.S. Tulsi*

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^ *Nominated to the Committee w.e.f. 04.02.2020 vice Shri Vijay Goel, resigned from membership of the Committee w.e.f. 21.11.2019.*

* *Nominated to the Committee w.e.f. 22.07.2020 against the existing two vacant posts since constitution of the Committee and vacancies arisen due to retirement from Rajya Sabha in respect of Shri S. Muthukaruppan on 02.04.2020, Smt. Viplove Thakur on 09.04.2020 and Shri B.K. Hariprasad and Dr. Prabhakar Kore on 25.06.2020.*

COMPOSITION OF THE STANDING COMMITTEE ON ENERGY
(2020-21)

Shri Rajiv Ranjan Singh alias Lalan Singh - Chairperson

MEMBERS

LOK SABHA

2. Smt. Sajda Ahmed
3. Shri Gurjeet Singh Aujla
4. Shri Chandra Sekhar Bellana
5. Dr. A. Chellakumar
6. Shri Harish Dwivedi
7. Shri S. Gnanathiraviam
8. Shri Sanjay Haribhau Jadhav
9. Shri Kishan Kapoor
10. Shri Ramesh Chander Kaushik
11. Shri Ashok Mahadeorao Nete
12. Shri Praveen Kumar Nishad
13. Shri Parbatbhai Savabhai Patel
14. Shri Jai Prakash
15. Shri Dipsinh Shankarsinh Rathod ^
16. Shri N. Uttam Kumar Reddy
17. Shri Shivkumar Chanabasappa Udasi
18. Shri P. Velusamy
19. Shri Akhilesh Yadav
20. Vacant@
21. Vacant@

RAJYA SABHA

22. Shri Ajit Kumar Bhuyan
23. Shri T. K. S. Elangovan
24. Shri Muzibulla Khan
25. Shri Maharaja Sanajaoba Leishemba
26. Shri Jugalsinh Mathurji Lokhandwala
27. Shri Surendra Singh Nagar
28. Dr. Sudhanshu Trivedi
29. Shri K.T.S. Tulsi
30. Vacant *
31. Vacant #

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^ Nominated as Member of the Committee w.e.f. 28.12.2020
@ Vacant vice Km. Shobha Karandlaje and Smt Anupriya Patel inducted in Union Council of Ministers w.e.f. 07.07.2021
** Vacant vice Shri Javed Ali Khan retired from Rajya Sabha on 25.11.2020*
 # Vacant since constitution of the Committee.

COMPOSITION OF THE STANDING COMMITTEE ON ENERGY
(2021-22)

MEMBERS

Lok Sabha

Shri Rajiv Ranjan Singh *alias* Lalan Singh - Chairperson

2. Shri Gurjeet Singh Aujla
3. Shri Devendra Singh Bhole
4. Shri Harish Dwivedi
5. Shri Sanjay Haribhau Jadhav
6. Shri Kishan Kapoor
7. Dr. A. Chella Kumar
8. Shri Sunil Kumar Mondal ^
9. Shri Uttam Kumar Reddy Nalamada
10. Shri Ashok Mahadeorao Nete
11. Shri Praveen Kumar Nishad
12. Shri Velusamy P.
13. Shri Parbatbhai Savabhai Patel
14. Shri Gyaneshwar Patil@
15. Shri Jai Prakash
16. Shri Dipsinh Shankarsinh Rathod
17. Shri Gnanathiraviam S.
18. Shri Bellana Chandra Sekhar
19. Shri Shivkumar C. Udasi
20. Vacant**
21. Vacant#

Rajya Sabha

22. Shri Ajit Kumar Bhuyan
23. Shri Rajendra Gehlot *
24. Shri Muzibulla Khan
25. Shri Maharaja Sanajaoba Leishemba
26. Shri S. Selvaganabathy *

27. Dr. Sudhanshu Trivedi

28. Shri K.T.S. Tulsi

29. Vacant[$]

30. Vacant [&]

31. Vacant^^

SECRETARIAT

1.	Dr. Ram Raj Rai	Joint Secretary
2.	Shri R.K. Suryanarayanan	Director
3.	Shri Kulmohan Singh Arora	Additional Director
4.	Shri Manish Kumar	Committee Officer

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^ Nominated as Member of the Committee w.e.f. 01.12.2021 vice Smt. Sajda Ahmed.
@ Nominated as Member of the Committee w.e.f. 07.02.2022 vice Shri Ramesh Chander Kaushik.
*** Shri Akhilesh Yadav ceased to be Member of the Committee consequent upon his resignation from membership of the Lok Sabha on 22.03.2022.*
 # Vacant since constitution of the Committee.
** Nominated as Member of the Committee w.e.f. 11.11.2021.*
$ Shri Jugalsinh Lokhandwala resigned from the membership of the Committee on 02.12.2021.
& Shri T.K.S. Elangovan ceased to be Member of the Committee consequent upon his retirement from the Rajya Sabha on 29.06.2022.
^^ Shri Sanjay Seth ceased to be Member of the Committee consequent upon his retirement from the Rajya Sabha on 04.07.2022.

LIST OF ABBREVIATIONS

AC	Alternating Current
ACoS	Average Cost of Supply
APP	Association of Power Producers
APPC	Average Power Procurement Cost
AT&C	Aggregate Technical and Commercial
BPTA	Bulk Power Transmission Agreements
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGS	Central Generating Station
CPSU	Central Public Sector Undertaking
CTU	Central Transmission Utility
DAM	Day Ahead Market
DBT	Direct Benefit Transfer
DIC	Designated Inter State Transmission System Customer
DISCOM	Distribution Company
EA	Electricity Act
FAC	Fuel Adjustment Charge
FCA	Fuel Cost Adjustment
FoR	Forum of Regulators
FY	Financial Year
GCV	Gross Calorific Value
GENCO	Generation Company
GST	Goods and Services Tax
GW	Giga Watt
HVDC	High Voltage Direct Current
ISTS	Inter State Transmission System
JERC	Joint Electricity Regulatory Commission
kV	Kilo Volt
kW	Killo Watt
kWh	Kilowatt Hour
LV	Low Voltage
MBED	Market Based Economic Despatch
MCP	Market Clearing Price
MNRE	The Ministry of New and Renewable Energy
MOD	Merit Order Despatch
MoP	The Ministry of Power
MU	Million Unit
MW	Mega Watt
MYT	Multi Year Tariff
NTP	National Tariff Policy
O&M	Operation and Maintenance
OTC	Over the Counter
PGCIL	Power Grid Corporation of India Limited
PLF	Plant Load Factor
PoC	Point of Connection

PPA	Power Purchase Agreement
RE	Renewable Energy
RLDC	Regional Load Despatch Centre
RoE	Return on Equity
RPO	Renewable Purchase Obligation
SCED	Security Constrained Economic Dispatch
SERC	State Electricity Regulatory Commission
SLDC	State Load Despatch Centre
TAM	Term Ahead Market
UDAY	Ujwal DISCOM Assurance Yojana

INTRODUCTION

I, the Chairperson, Standing Committee on Energy having been authorized by the Committee to present the Report on their behalf, present this Twenty-Sixth Report on the subject 'Review of Power Tariff Policy – Need for uniformity across the Country'.

2. The Committee had a briefing on the subject by the representatives of the Ministry of Power on 06th November, 2019. During the discussion, the Committee felt the need to examine various stakeholders relating to the subject. The Committee, therefore, held a series of discussions on the subject. On 06th January, 2020, the Committee held a discussion with the representatives of the State Regulatory Commissions (SERCs). On the same day, in post noon session, the Committee heard the views of the representatives of the State Governments. To know the views of the Independent Power Producers on the subject, the Committee held a discussion with the representatives of the Association of Power Producers (APPs) on 16th January, 2020. On 3rd September, 2020, the Committee called the representatives of the Power Generating Central Power Sector Undertakings (PSUs) for discussion. On 10th August, 2021, the Committee held a discussion with the representatives of the DISCOMS/ State Governments.

3. Finally, the Committee took the concluding evidence of the representatives of the Central Electricity Regulatory Commission (CERC), Central Electricity Authority (CEA) on 1st December, 2021. On the same day, the Committee also took the evidence of the representatives of the Ministry of New and Renewable Energy and the Ministry of Power. The Committee wish to express their thanks to the representatives of the above-mentioned organizations for appearing before the Committee and furnishing the information desired by the Committee in connection with the issues relating to the subject.

4. The Report was considered and adopted by the Committee at their sitting held on 26th July, 2022.

5. The Committee place on record their appreciation for the assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

6. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in Part-II of the Report.

NEW DELHI;
26th July, 2022
Sravana 4, 1944 (*Saka*)

Rajiv Ranjan Singh *alias* Lalan Singh,
Chairperson,
Standing Committee on Energy.

REPORT

PART I

NARRATION ANALYSIS

I. INTRODUCTORY

1.1 Electricity in India is under the concurrent list of the constitution at entry number 38 in the List III of the Seventh Schedule of the Constitution of India and is administered both by the Central and the State Governments. The Electricity Act, 2003 is currently the legislation governing the Indian Electricity Sector. Section 3(3) of the Electricity Act, 2003 provides that "*the Central Government may, from time to time, in consultation with the State Governments and the Authority, review or revise the National Electricity Policy and Tariff Policy*".

1.2 In compliance with the above provisions, the Tariff Policy was notified by the Central Government under Section 3 of the Electricity Act, 2003 on 6th January, 2006. The objective of the Policy was, inter alia, to ensure availability of electricity to consumers at reasonable and competitive rates, ensure financial viability of the sector, and attract investments and to promote transparency, consistency and predictability in regulatory approaches across jurisdictions.

1.3 As an evolving reform process, the provisions of Tariff Policy have been amended from time to time based on the experience gained and technological advancements made in the electricity sector. The Policy was first amended on 31st March, 2008 to align it with the Hydro Power Policy 2008. The Policy was further amended on 20th January, 2011 for fixing a minimum percentage of total consumption of electricity by Distribution utilities from solar energy in accordance with the National Solar Mission. It was again amended on 08th July 2011 to grant further exemption to hydro projects and certain transmission projects from tariff-based competitive bidding.

1.4 Based on the recommendations of the Working Group on Power for 12th Five Year Plan constituted by the erstwhile Planning Commission under the Chairmanship of Secretary (Power) and suggestions received from various divisions of Ministry of Power and stakeholders, revision of the Tariff Policy was again initiated. After extensive consultation with stakeholders on the proposed amendments to the Tariff Policy, the proposal of the Ministry of Power for amendments in the Tariff Policy was approved by Union Cabinet on 20th January, 2016 and the Resolution on Tariff Policy was notified in the Gazette of India on 28th January, 2016.

1.5 The focus of the Tariff Policy 2016 is on 4 Es: Electricity for all, Efficiency to ensure affordable tariffs, Environment for a sustainable future, Ease of doing business to attract investments and to ensure financial viability. Clause 1.3 of Tariff Policy, 2016 provides that it is equally necessary to ensure availability of electricity to different categories of consumers at reasonable rates for achieving the objectives of rapid economic development of the country and improvement in the living standards of the people.

1.6 The Ministry of Power has stated that over the years, the tariff structure across the States has become very complex and the consumer tariff categories are

observably large in numbers. In this regard, it is often argued that the high complexity of tariffs for each segregated category prevents consumers from fully responding to tariffs due to the high cost of processing the price information. Further, the basis for making such classifications has not been uniform across the country. Therefore, a need is felt to not only simplify and rationalize the tariff structure but also make it harmonious across all States. Simplification of tariffs is expected to improve transparency in setting tariffs and may well yield benefits including enhanced consumption, collection efficiency, along with bringing in governance benefits.

1.7 The Economic Survey (2015-16) has suggested a model on "Progressivity of Tariff", which broadly advocates for rationalizing the sub-categories / slabs to a small number within the domestic consumer category. The model also suggested to make domestic consumer category self-reliant by effectively managing the requirement of cross-subsidy of a few sub-categories within the category itself.

1.8 In regard to the bottlenecks that are hampering the achievement of the goals of Tariff Policy, the Ministry of Power have enumerated the followings:

(i) Tariff policy is only the guiding principles for the Appropriate Regulatory Commission.
(ii) The stipulation that retail tariff for any class of consumer should be within the band of +/- 20% of the cost of the supply is not being adhered to. As a result, certain classes of consumers like commercial consumers and industrial consumers are paying a much higher tariff, which is making them non -competitive.
(iii) Delay in timely cost recovery to electricity generators.
(iv) Various interpretations of the provisions of the Electricity Act and Tariff Policy are observed in the orders of various regulatory commissions.
(v) Some States are providing free power to certain categories of consumers, *viz*. agricultural consumers which is not a good practice and this also affects the groundwater levels in the country because of excess pumping.
(vi) One of the tenets of the tariff policy is open access which ensures competition into the sector. In most of the States, open access is not really the possibility for consumers since the Regulatory Commission have stipulated very high open excess charges.
(vii) Even today, most of our agricultural consumers and in some cases, certain domestic consumers remain un-metered and they are being billed on a normative basis. The absence of meters affects the revenue collection of the utility.
(viii) The trajectory for the reduction in AT&C losses is not being adhered to by the distribution companies which lead to loss of revenue. In many distribution companies, consumers have not been indexed and thereafter, it is difficult to identify the high loss areas.
(ix) The RPO trajectory which is being laid down by the Regulatory Commission are not being adhered to by the distribution companies.

II. Power Tariff Structure

A. Provisions related to Power Tariff

2.1 The Electricity Act, 2003 provides the Central Government to publish the National Electricity Policy and tariff policy, for the development of the power system based on optimal utilization of resources. The Tariff Policy is meant to provide guidance to Regulators in tariff fixation. This is borne out by specific provisions contained in Sections 61(i), 79(4) and 86(4) of the Electricity Act, 2003.

2.2 The Tariff Policy provides only the broad contours of tariff principles which act as guiding principles to the Appropriate Regulatory Commission. However, the Appropriate Commission while considering the guiding principles as outlined in the Tariff Policy goes into details of technical and financial parameters for tariff determination.

2.3 Tariff functions of Central Electricity Regulatory Commission (CERC) under Section 79(1) include:

- *To regulate tariff of generating companies owned or controlled by the Central Government*
- *To regulate tariff of generating companies other than those owned or controlled by the Central Government specified in clause (a), if such generating companies enter into or otherwise have a composite scheme for generation and sale of electricity in more than one State*
- *To determine tariff of inter-State transmission of electricity*

2.4 Tariff functions of State Electricity Regulatory Commission (SERC) under Section 86(1) include:

- *Determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State*
- *Regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State*

2.5 The primary methods of tariff determination and the multi-year tariff (MYT) principles are provided under Section 61, 62 and Section 63 which includes regulated tariff under Section 62 and tariff determined through competitive bidding under Section 63.

2.6 Section 61 of the Electricity Act, 2003 provides Appropriate Commission for determination of multi-year tariff principles, safeguarding of consumer's interest and at the same time, recovery of the cost of electricity in a reasonable manner. The provisions also mandate that the tariff progressively reflects the cost of supply of electricity.

2.7 Section 62(3) of the Electricity Act, 2003, provides that *Appropriate Commission shall not, while determining the tariff under this Act, show undue preference to any consumer of electricity but may differentiate according to the consumer's load factor, power factor, voltage, total consumption of electricity during any specified period or the time at which the supply is required or the geographical position of any area, the nature of supply and the purpose for which the supply is required*.

2.8 Section 63 of the Electricity Act, 2003 provides that *notwithstanding anything contained in section 62, 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 the Central Government.*

2.9 Accordingly, the Commissions in accordance with the provisions in Section 64 (1) of the Electricity Act 2003 issue tariff Orders. The said section provides that "*An application for determination of tariff under Section 62 shall be made by a generating company or licensee in such manner and accompanied by such fee, as may be determined by regulations".*

2.10 Hence, Section 79 and Section 86 read with Section 61, 62, 63 and 64 of the Act, empower the Appropriate Regulatory Commission to determine and adopt tariff for generation, transmission and distribution, as the case may be.

2.11 CERC, as mandated above has promulgated the MYT principles through a process of stakeholder consultation. The tariff petitions are scrutinized in the light of the operational and financial parameters laid down in the MYT Regulations.

2.12 Financial parameters include:

- capital cost,
- interest on loan capital,
- depreciation,
- interest on working capital,
- O&M expenses,
- return on investment,
- landed fuel cost,
- transportation costs,
- losses,
- GCV of primary fuel,
- cost of secondary fuel oil consumption,
- cost of consumables etc.

2.13 Operational parameters include:

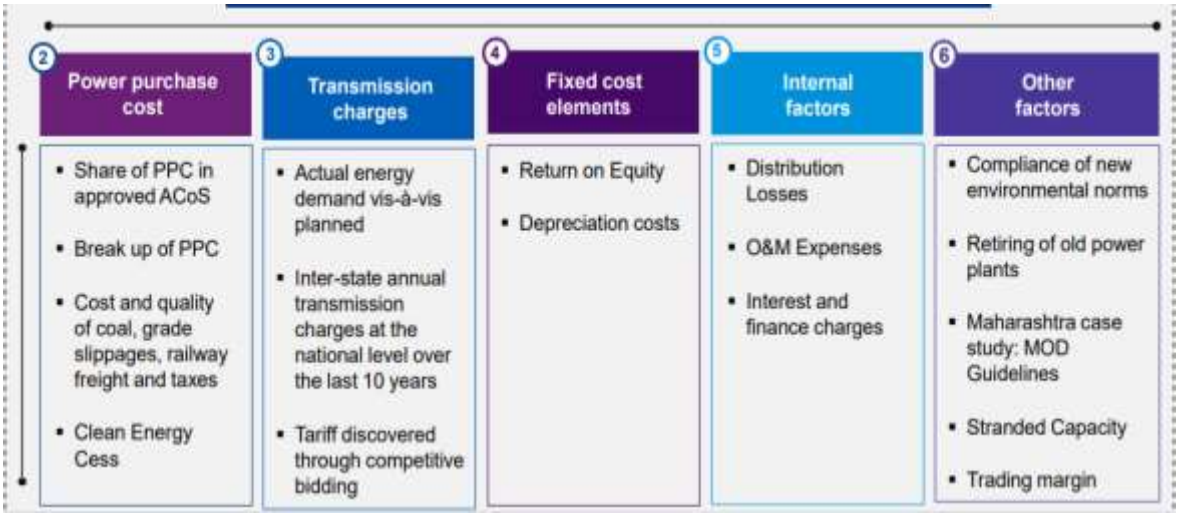
- Annual plant availability factor,
- annual plant load factor,
- gross station heat rate,
- secondary fuel oil consumption,
- auxiliary energy consumption,
- annual transmission system availability factor etc.

2.14 CERC MYT Regulations also provide for truing up exercise in respect of:

- Capital expenditure including additional Capex incurred upto the end of the control period including on account of Force Majeure and Change in Law after prudence check.
- interim truing up after completion of 2 years of control period if the annual fixed cost increases by more than 20% over the annual fixed cost as determined by Commission for respective years.

2.15 Section 65 (Provision of subsidy by State Government) provides that *If the State Government requires the grant of any subsidy to any consumer or class of consumers in the tariff determined by the State Commission under section 62, the State Government shall, notwithstanding any direction which may be given under section 108, pay, in advance and in such manner as may be specified, the amount to compensate the person affected by the grant of subsidy in the manner the State Commission may direct, as a condition for the licence or any other person concerned to implement the subsidy provided for by the State Government: Provided that no such direction of the State Government shall be operative if the payment is not made in accordance with the provisions contained in this section and the tariff fixed by State Commission shall be applicable from the date of issue of orders by the Commission in this regard*

2.16 As per the Report of the Forum of Regulators (FoR) on "Analysis of Factors Impacting Retail Tariff and Measures to Address Them", the following are the components of Average Cost of Supply for any State/DISCOM:



B. Concept of Uniform Tariff

2.17 Though CERC fixed different tariff rates for different generating stations depending on their capital cost, base fuel price, GCV, efficiency norms, station heat rate, secondary oil consumption, PLF, varying financial and operational costs, the technology of the plant, vintage of the plant etc, such tariff is uniform for all those distribution companies who have a share / PPA with the said generating company.

2.18 Further, a uniform tariff is also discovered on the Power Exchanges for a specific time block of the day under the short-term trading where a uniform market clearing price is discovered for all buyers and sellers who are cleared. Accordingly, to the extent of short-term power procured by the distribution utilities for a specific time-block of the day, the price of electricity remains uniform, except in the case of market splitting.

2.19 Another method of tariff rationalisation has been by way of 'Merit Order Dispatch' of electricity by the load dispatch centres. CERC issued an Order for pilot operation of 'Security Constrained Economic Dispatch' with the scope covering optimization after the unit commitment has taken place at a day-ahead level. The optimization model dispatches the cheapest available generator to its full declared capacity followed by the next higher variable cost generator (honouring the technical minimum and Declared Capability constraints besides ramp rates, network congestion etc.) and so on till the entire requisition is met. The results so far have indicated optimization of the generation across the country thereby reducing the production cost.

2.20 The Ministry of Power has also held consultations with the stakeholders and has finalised the construct for the introduction of Market Based Economic Despatch (MBED). CERC has been requested to put in place the regulatory framework so that it can be implemented from 01.04.2022. This would ensure a single price in a given time slot for all buyers in that time slot and would be a step forward toward one nation one tariff.

2.21 The Committee sought the opinion of various stakeholders on various issues related to the subject by sending a 'Discussion Paper' to them. On the issue of having a uniform tariff across the country, the Committee has asked whether it is a viable exercise or impracticable proposition due to difficulties inherent in it and also whether the difficulties are insurmountable. In response to that the Association of Power Producers (APP) have stated their view as under:

> *"**A. Uniform tariff at the generator level:** A uniform tariff for procurement of power by the DISCOMS is certainly possible and would be a welcome step as long as it is discovered through an open and transparent market mechanism based on supply and demand bids on a given day. This is possible by pooling power at the national level and adopting Merit Order Dispatch (dispatch of least cost power first) at the national level. Presently, the distribution utilities prepare their schedule from their portfolio of contracts to meet the expected demand. This process is not cost effective as many low cost power plants outside the state domain may remain unscheduled as the DISCOMS can only schedule plants with whom they have entitlements/contracts. A National Pool as conceptualized by CERC*

in its discussion paper on Market Based Economic Dispatch aims to help distribution utilities to save their power procurement costs by ensuring that that the most economical set of generating stations are despatched first, irrespective of contracts. Given that most bilateral contracts are long term, with pre-specified variable charges during the tenure of the contract, the Discussion Paper lays down an elaborate pricing, clearing and settlement mechanism. The market based system expects DISCOMS to cede the State specific procurement of power and dispatch functions to a centralized market mechanism. The system as envisaged will no doubt result in lowering the procurement cost but it may remain sub-optimal if requisite policy changes are not made in the other sub segments of generation – fuel and transportation, which constitute a major component of generation cost (cost of coal itself constitutes about 60-70% of generation cost). Therefore, to maximize the benefits of centralized pool, it is imperative that the fuel allocation too is streamlined to ensure that fuel is allocated on the basis of plant efficiency, i.e on 'least energy cost basis'. To this end, the link between coal supply and PPA needs to be broken and the present discriminatory coal allocation framework would need revisiting. Likely Difficulties with this Proposition: Pooling and centralized dispatch of power at a national level amounts to a complete overhaul of the present power market system and though it is a desirable change, there are many important issues which need to be considered and addressed appropriately in order to make an effective transition. Some of the important issues to be considered are:

• ***Legal and jurisdictional issues*** *- The Electricity Act, 2003 carves out specific domains for the Central Commission and the State Commissions, in due cognizance of electricity being in the Concurrent List of the Constitution of India. The authority to regulate various aspects of electricity business is clearly demarcated in the statute and there is no overlap area in the statute for exercise of such authority by the regulatory bodies. Therefore, the EA 2003 may need to be modified. Some examples of disconnect between the present Act provisions and a proposed pooling mechanism are outlined as follows:*

❖ *Distribution businesses are under the jurisdiction of the State Commissions and are cognizant of State-specific issues. The powers of regulating their electricity purchase is also fully under the jurisdiction of the State Commissions, through operation of various sections of the Electricity Act, 2003 inter alia through Sections 86(1)(a) and 86(1)(b). In the absence of such specific powers granted to the Central Commission by the mother Act, the necessary legal authority for mandating power purchase through a specific route by distribution licensees appears to be absent.*

❖ *Sections 28(3)(a) and 33(2)(a) mandates RLDCs and SLDCs for optimum scheduling and despatch of electricity within Region and within State respectively. Proposed pooling mechanism would take away this statutory function (optimum scheduling) of statutory bodies (RLDC & SLDC) and give the responsibility to some proposed 'Market Operator'. This is not permissible under the present legal frame work.*

• *Any such pooling should include all generation capacities, including those of the Centre and States. The pooling mechanism cannot remain voluntary – it should be mandatory for all generators to participate, without*

which the inefficiencies inbuilt in the present scheduling and dispatch mechanism will continue to remain.

• Fixed cost payments arising out of existing contracts must continue to be honored by the procurers with whom the contracts have been signed. • Such pooling must take into account that RE should continue to have a must run status.

• Transmission bottlenecks may affect the efficient discovery of a centralized market clearing price. A pooling mechanism would require extensive changes to the present transmission planning and congestion management processes. • Merit order based solely on variable cost may not give correct results and incremental costs of transmission charges and losses should also be considered.

• BPTA (Bulk Power Transmission Agreements) signed by PPA holders may have to be re-looked at and flexibility introduced for transmission payment based on usage.

• As power is a concurrent subject, it would need to be ensured that pooling should not lead to pancaking of costs by adding regional costs to the state level costs.

• Capacities embedded in State systems may be a natural disadvantage as compared to those on inter-state transmission systems.

• The discovery of a national pooled Market Clearing Price may not be beneficial for all States. Such a price may be more than the average cost of power procurement for some States at present. For example, if we consider CERC's order dated 07.05.2019 which calculated the Average Power Purchase Cost from non-RE sources as Rs 3.6/kwh at a national average level, however 19 States have their average cost of non-RE power lower than this average. Essentially, a transition to the pooling mechanism would be similar to the transition to the GST mechanism, where State Governments gave up their individual indirect taxation powers to create a common market for goods and services in the country. This would require extensive consultations and discourse between the Centre and States in order to bring about consensus and agreement.

• Various existing Regulations and codes (Indian Electricity Grid Code, State Grid codes, etc) would need to be modified.

• In order to incentivize the construction of new generation capacity when required, the construct of a separate Capacity Market will have to be considered. This is important to avoid supply side constraints in the future. At the same time, centralized Resource Adequacy Planning will have to be strengthened significantly to include visibility of State and Regional resource optimization.

Therefore, while supporting the concept of a variable cost based national pooled market, we suggest that an Expert Group may be constituted, comprising of power sector experts and representatives of Ministry of Power, Regulators, CEA, Distribution utilities, Generators, power exchanges, traders etc, to discuss and flesh out the difficulties and concerns associated with associated legal/jurisdiction, financial, operational and settlement issues.

***B. Uniform tariff at the retail level**: Uniform consumer tariff though desirable by some, is difficult to achieve. Historically, power is a concurrent subject and the states have exercised their legislative powers to determine both the principles of tariffs and tariffs for their consumers based on (1) consumer mix; (2) ability to pay subsidy; (3) regulatory assets; (4) different generation mix of their own states/ procurement mix; (5) different voltage levels and losses etc. However, if uniform tariff must happen, then the same may be implemented gradually in a step-wise manner and over a period of, say, 10 years as elaborated below:*

1. Load-wise and voltage-wise categorization of consumers across the country – in response to a MOP proposal on tariff rationalization we had suggested tariff categories as 0-5 kW, 5-10 kW, 10-25 kW, 25-100 kW and >100 kW.

2. The aim to determine each load wise category tariff and to restrict to within +/- 20% of ACoS for that voltage level should be adhered to strictly. This has been proposed in EA amendments.

3. The simplification of tariff categories and rationalization of retail tariff should also factor in promoting demand-based and time-of-day based tariffs electricity as demand during a day is not constant.

4. Along with the above simplification and rationalization of retail tariff, it is also required to ensure complete FAC recovery and the mechanism to recover it across all categories.

Further, the factual position at present is that there is significant differential between the States in terms of domestic retail power tariff.

Aiming for a uniform retail electricity tariff would imply that the tariff would lie somewhere in the middle of this range, further implying that this would result in significant increase in tariff level for some States and on the other hand, decrease in tariff levels for other States. Therefore, all States would not have similar incentive to work towards such a proposal, and extensive discussions and deliberations with the States would be required."

2.22 During the Sitting on the subject, on the issue of uniformity in tariff, the Director and Group CEO of BSES Rajdhani Power Limited, Delhi stated as under:

"State regulator may be empowered to determine the distribution cost for the State so that there would be uniformity in a graded approach. Initially, the power purchase cost could be uniform and then, at a later stage when all the T & D losses of various States are brought to a reasonable level, for example, less than 15 per cent, then the distribution cost can also be put in a uniform structure."

2.23 In regard to the concept of Uniform Tariff, the views of some of the States are as under:

<u>Andhra Pradesh:</u>

Each and every state and DISCOM has unique cost structure in the Country. Power purchase costs account for 85% in the entire cost portfolio of a

Distribution Companies depending on sources and nature of power procurement.

Keeping in view of the varied diversity of States, disposition of Generation resources in the States, welfare measures implemented in the States, discretion to the States available under section 65 of the Electricity Act-2003 to extend tariff subsidy to different category of consumers, it is impractical to maintain uniform retail supply tariffs in the Country.

However, these difficulties can be addressed at Union Government level in advance through conversations or other means in developing the policy itself.

Delhi:

The concept of uniform or pooled tariff is a welcome step. However, the success of this proposition would be subject to protection of interest of consumers, Distribution Companies and Generating companies and overcoming the challenges associated with it, without any hike in retail tariff.

Gujarat:

It is submitted that considering the complexity of issues being diverse nature of power purchase cost, distribution and operational efficiencies, cost parameters etc. across the Country, it would be difficult to adopt the principle of uniform tariff across the country.

Further, the idea of uniform tariff across the Country would be against the principle of encouraging efficiency, economic use of resources, good performance and optimum investment, recovery of cost of electricity in a reasonable manner, and the principle rewarding efficiency in performance. The idea of uniform tariff across the Country would require cross subsidization wherein certain efficient States would be cross subsidizing the other States.

Haryana:

Issues like tariff determination have become cumbersome due to involvement of multiple stakeholders and uncertainty in the pricing of power. However, instead of uniform tariff, broader guidelines for determination of tariff as deemed appropriate may be fine-tuned in the National Tariff Policy (NTP) so the process of tariff determination may be rationalized further across the country. Further, the uniform tariff or near uniform tariff across the country can be possible in a gradual manner.

The cost of power which contributes 80% part in the tariff determination and needs to be rationalized and once parity is achieved, it will be possible to have near uniform tariff payable by the electricity consumers at three voltage levels.

Karnataka:

The utilities have entered into long term PPAs' of varying power purchase cost. Until the PPAs' are modified to have a uniform power purchase cost across the Country, uniform tariff may not be a viable proposition.

Madhya Pradesh:

Uniform tariff across the country is a difficult proposition. However, the Tariffs across the country can be simplified and rationalized into some broad categories mainly based on their load pattern and voltage levels.

Odisha:

There should be uniformity on the power purchase cost of the DISCOMS to bring a uniform Retails Supply Tariff (RST) across the country.

Rajasthan:

The concept of uniform tariff can be achieved by reallocating the power purchase costs in a manner that the difference in other cost aspects on account of consumer mix loss levels cost structures of the distribution licensees are factored in. One of the suggested methodologies which may be adopted is Differential Bulk Supply Tariff (DBST), as present in states like Gujarat and Odisha.

Telangana:

Uniform tariff across the country is a difficult proposition given differing cost structures and revenue centers for different DISCOMS.

However, tariffs can be simplified and rationalized across the country.

III. NEED FOR UNIFORMITY IN TARIFF STRUCTURE – ISSUES

A. Cost of Power Purchase – fixed and variable

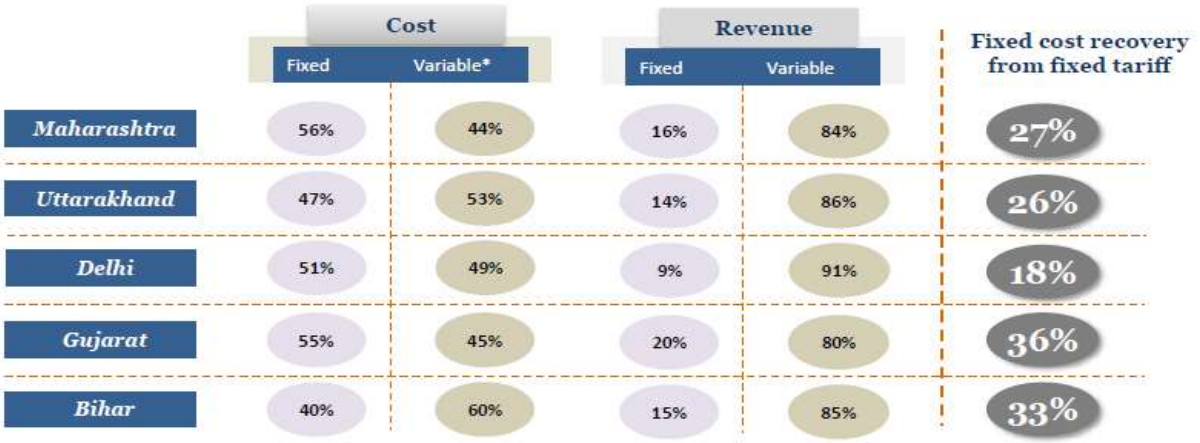
3.1 As per Tariff Policy, Two-Part tariff Structure comprising fixed and variable charges has been adopted for power procured under medium and long term contracts by DISCOMS from Generating Stations. The fixed charges are reflective of capital investments and are paid based on the availability of the Power Station. The variable charges are the cost of fuel used for the generation of electricity. At the generation level, the fixed and variable charges are function of input cost, and are specific to the geographical site, power generation equipment and fuel.

3.2 The Ministry of Power has stated that Section 61(e) of the Electricity Act, 2003 mandates determining principles rewarding efficiency in performance. In view of this, the tariffs of generating stations vary owing to efficiency in operation besides other parameters. For consumers also, apart from certain special category of consumers (mainly Agriculture or Below Poverty Line consumers), two-part tariff structure comprising fixed and energy charges is in place.

3.3 In regard to the issue of fixed and variable charges of electricity by the Power Plants, the Central Electricity Regulatory Commission (CERC) have stated as under:

> *"Regulated tariff of a generating station depends upon various operational and financial parameters, which include capital cost, return on equity, interest on loan capital, depreciation, interest on working capital, operation & maintenance expenses, landed fuel cost of primary fuel (including transportation costs and losses), GCV of the primary fuel, cost of secondary fuel oil consumption, cost of limestone or any other reagent, as applicable etc. The operational parameters which affect the tariff of a generating station include, annual plant availability factor, annual plant load factor, gross station heat rate, secondary fuel oil consumption, auxiliary energy consumption etc.*
> *Section 61(e) of the Electricity Act, 2003 mandates determining principles rewarding efficiency in performance. Accordingly, the tariff regulations notified by the Central Commission incentivize efficient operation of the generation stations. In view of this, tariff of generating stations vary owing to efficiency in operation besides other parameters. The Commission determines tariff under Section 62 of the Electricity Act, 2003 for each generating station separately."*

3.4 In regard to inadequate fixed cost recovery from corresponding demand tariff, the Ministry of Power, during the Sitting on the Committee on 06.11.2019 have furnished the following information:



3.5 When the Committee asked for the views of the Association of Power Producers (APP) on the issue of fixed and variable charges of a Power Plant, the following information was furnished:

> *"Variable charges for generating plants depend on several factors such as the type of fuel, source of fuel, transportation and handling charges for the fuel etc. These factors can be very different for each plant. Fixed cost for a generating plant also depends on many factors which are unique to the particular plant – technology, cost of land, financing cost, operational costs etc.*
> *As these factors are inherently unique to a plant, trying to introduce uniformity in the variable and fixed charges for a plant is an impractical proposition.*
> *Even for a national pooling mechanism (for power procurement at the Discom level), the mechanism would involve the generators placing their bids on their variable/marginal cost of generation while fixed cost would be paid separately based on availability as per the current practice.*
> *Trying to implement uniformity in fixed costs would mean either raising some costs to match that of the others or lowering costs to match the lowest common denominator. This would be detrimental to the interests of the consumer and generator respectively. The various Commissions, while determining tariffs for stations under their jurisdictions, have set out norms which balance out efficiency and cost recovery concerns of the various generators. These norms based on factors like vintage and technology are not uniform. It would indeed be very difficult to have uniform tariffs when the operating parameters and technologies and the norms themselves are not uniform."*

3.6 During the Sitting on the subject, the representative of a DISCOM raised the issue of high rate of Return on Equity (RoE) i.e. 15.5% for the power plants for which the DISCOMS have to pay this amount in one form of fixed charges. Therefore, demanded that the same should be reduced to match present low interest rate regime. In response, the Ministry of Power has stated as under:

> *"The matter may be considered by the CERC after completion of due process of consultation and make suitable revision in the tariff regulations. RoE needs to be kept aligned with prevailing interest rates.*

3.7 In regard to the element of variable and fixed charges within the tariff, the views of some of the States are as follows:

Andhra Pradesh:

A policy should be evolved where power purchase costs are determined only through competition by multiple buyers and sellers. An agency should be set up to induce competition in the consumer business and prevent monopoly.

Karnataka:

- *In a two part tariff system, the fixed cost is introduced to recover the investment made by the generator and the variable cost is introduced to recover the cost of the fuel.*
- *The fixed cost is dependent on the amount of investment for the project. This cost should be factored in the tariff to facilitate debt servicing by the generator and should be spread throughout the life of the plant subject to the fixed annual PLF. The fixed cost should be reviewed and fixed every year based on PLF.*
- *For fixing of variable cost, the cost of fuel for the farther located plants should be fixed lesser compared to the plants located nearby the coal mines.*

Madhya Pradesh:

The fixed cost of a Utility needs to be recovered through the tariff for which a component of fixed charges has to be incorporated in retail tariff.

Rajasthan:

Pertaining to tariff determination of generating plants, the regulatory due diligence needs to be carried out to check whether only prudent fixed costs of running the plant are being recovered through fixed charges. For old and inefficient plants which have been backed down boxed up (because of variable cost not falling under the Merit order of Dispatch), the fixed charges should cover only the cost of repayment of outstanding loans, if any and no other cost should be allowed.

Telangana:

The elements of variable and fixed charges in the tariff such as load factor and power factor are based on the type of load and requirement of consumers. Thus, there should be fixed, and variable charges applied in tariff. The structure should be rationalized based on cost of service of each category. The tariff shall be designed in such a way that the fixed cost incurred shall be recovered entirely in the form of fixed charges and the extent of variable cost to be recovered in the form of energy charges. Besides this, going for oversimplification would result in non-uniform bearing of charges by consumers.

B. Renegotiation of Power Purchase Agreements (PPAs)

3.8 Power Purchase Agreements (PPAs) are entered into between the generating companies and the load-serving entities. The PPAs are commercial in nature and mutually agreed by the parties and are binding on them.

3.9 Electricity Act, 2003 specifies the duties of DISCOMS where they are obligated to fulfill the requirements and demands of consumers. Electricity generation was made de-licensed activity in the Electricity Act 2003. Competition was introduced in power procurement by DISCOMS. This competition is for power procurement done/ to be done for long term, medium term or short term power requirements. Power Exchanges came into existence in the last decade and provided a platform where competitive power can be procured by DISCOMS on day-ahead basis to meet short term requirements of power. Hence the structure of the sector is like having:

i) **Long Term PPAs (7 years and above)** – to have certainty in quantum and price over long term and power stations are build based on it and either full or major share of power is contracted

ii) **Medium Term PPAs (more than 1 year upto 5 year)** - to have certainty in price and quantum over medium term, it reduces the risk of both parties in case of volatile fuel market. Some part of power from Power Stations is generally offered under this.

iii) **Short term PPAs (1 day to 365 Days) -** To meet the short term requirements of power. The prices in short term are reflective of the market position (excess/shortage, demand or supply). Generally power is being sold at marginal energy price (during low demand) or market condition. The share of long term PPA is around 89% of the total power purchase across country.

3.10 However, the Ministry of Power have stated that there is a need to deepen the short term electricity market including exchanges so that volatility in electricity prices can be controlled.

3.11 Regarding the issue of renegotiation of Power Purchase Agreements (PPAs), the Committee in their 'Discussion Paper' had observed that most of the electricity being supplied is tied up between generators and purchasers, i.e., DISCOMS on the long-term PPA basis. This situation is a factor that deters us from any thinking in the direction of uniform tariff. Therefore, they had asked whether already entered PPA can be renegotiated again among the contracting parties and what would be the legal, financial and contractual implications of such negotiations.

3.12 In regard to the re-negotiation of the present PPAs, the Ministry of Power have stated that maintaining the sanctity of contracts is one of the main pillars which attracts the confidence of both buyer and seller and is fundamental to bring investment into the sector. Re-negotiation of PPAs unless mutually decided by the contracting parties is not desirable as it sends adverse signals to future investment. Re-negotiating PPAs may have significant and cascading negative consequences for investments under a monophony regime. However, if at the national level, a fair and transparent mechanism is developed for transferring existing PPAs that protects both investor and consumer interest, it could become the new benchmark.

3.13 In regard to the issue of renegotiation of present Power Purchase Agreements (PPAs), the Central Electricity Regulatory Commission (CERC) have stated as under:

" A discussion paper has been prepared by the staff of the Commission on "Market Based Economic Dispatch of Electricity: Re-designing of Day-Ahead Market (DAM) in India". The paper has proposed centralized dispatch of generation on day-ahead basis, based on merit order.

Comments from the stakeholders on the discussion paper have been received and the same is currently under consideration of the Commission."

3.14 The Association of Power Producers (APP) has furnished their views on the issue of renegotiation of present Power Purchase Agreements (PPAs) as under:

"Renegotiating PPAs would cause major upheaval in the sector. Some of the major implications would be as follows:

State Governments have entered into PPAs for procurement of power for their states as per powers vested in them by the Constitution (Schedule VII which is also a part of the Basic Structure of the Constitution) and the Electricity Act, 2003. Renegotiation of PPAs will disturb the policy certainty with respect to the nature of the contract as well as the sanctity of the contracts

Apart from policy certainty, sanctity of contracts is important. A government, based on a policy change, annulling a contract impacts the country's image badly, no matter how much we improve our 'ease of doing business' ranking. India ranks 163rd in enforcing contracts out of 190 countries as per the World Bank Doing Business 2020 report press release. Companies commit their resources based on the plan and assessments made while entering into the contract. A government contract is a public contract in which larger interests are involved. This would lead to both the governments and the companies, both in the public and in the private space, expending wastefully huge resources on court litigations, which are likely to be long drawn out and may lead to derailment of growth of the sector.

This move would be particularly detrimental for existing RE PPAs. State governments would find an excuse to reopen the RE PPAs, particularly of older vintage when RE plants with high tariffs to reflect higher costs were set up."

3.15 In regard to the issue of renegotiation of Power Purchase Agreements (PPAs), the view of some of the States are as follows:

Andhra Pradesh:

As it is leant from various judgments rendered by various judicial fora, we cannot back out from the long term PPAs unless there are valid & tenable defaults under law by either party. Almost above 90% of power procurement is tied up through Long Term PPAs including that from Renewable Energy Sources.

It is seen that a large number of pit head power plants are stranded whereas coal plants far away from mines are being operated. This involves huge coal transportation costs and generation of green house gases. The country will benefit if a policy is brought where it is mandated that no pit head coal plant shall ever remain stranded. For a capacity of about 350 GW, India does not use more than 175 GW at any point of time. This shows that a large number of power plants have to be kept shut down continuously till the countries peak demand reaches say 300 GW at least.

There should be a pooling of all the wind/solar across the country by a central agency in order to stabilize the variable energy. The stabilized Variable Renewable Energy may be re-allotted to the contributing states on pro- rata basis. Balance may be sold in market and the unsold energy may be given back to the states on real time basis.

There should be provision for review of agreements periodically with mutual understanding.

Delhi:

Further, instead of new PPAs, it would be in national interest to reallocate surplus PPAs to other needy States instead of constructing new Power Plants especially when a large numbers of existing Power Plants are idle. This will optimally utilize the stranded assets in the sector.

Gujarat:

Any negotiation or renegotiation of already signed contracts will be detrimental to the States who have taken adequate steps and acted due diligently for maintaining power supply at reasonable rate.

Haryana:

This (re-negotiation of PPAs) also introduces an element of regulatory uncertainty in the sector and adversely affects the lending agencies. Further, Electricity is a concurrent subject and States may not find it appropriate to give away their operational advantage by socializing cheaper PPAs.

Karnataka:

The generators may not agree for reduction of power purchase cost even after negotiation. The generator has to recover the investment made by him for the project with a profit. The legal implications of PPAs' have to be considered and if necessary, a legislation may be required.

Madhya Pradesh:

This is high time for enabling a legal framework for renegotiation among the contracted parties so as to protect the interest of Generators as well as of DISCOMS in respect of Power Purchase Agreements. The legal framework should be such that it ensures optimal utilization of Generating Station and at the same time reduces fixed cost burden of DISCOMS.

Odisha:

There is no such 'Exit Clause' or 'Renegotiation Provision' in the existing PPAs between the Generators and the DISCOMS. When both Generators and the DISCOMS are contractually obligated to honor the PPAs, Exit from such PPAs and Re-negotiation is not possible as per the existing arrangements.

Hence, the Rationalization of Generation Tariff can be further simplified and can be made reasonable only by bringing in transparency and Cost-Effective Tariff Regulations by the Central and State Commissions with proper Truing-up Exercise on each component of Tariff based on Audited Accounts including Energy Audit & Cost Audit of all the Utilities.

As per present Regulations 70% of total Capital Investment, baring salvage value, is recovered by the Generator in form of Depreciation in the first 12 years. Therefore, a provision for re-negotiation of PPAs after 12 years should

be introduced in line with Regulation-18 of CERC (Grant of connectivity, long-term access and medium-term open access in inter-State transmission and related matters) Regulations, 2009.

Rajasthan:

From buyer (DISCOM) perspective, long term PPA ensures availability of power for a long period at a pre-decided tariff to meet the projected demand while for a Power Producer, it ensures a secure revenue stream from the generating station for meeting the financial obligations. Hence renegotiating such contractual instrument will adversely impact the long-term arrangements of both the parties.

However, it is to be noted that the DISCOMS, in today's muted demand scenario, are saddled with the fixed cost burden of the stranded capacity. This is resulting in significant crunch on the already stressed financial position of the DISCOMS.

Tamil Nadu:

The term of the PPAs shall be reduced to five years, with a provision to extend / negotiate at the end of the term.

Telangana:

There is no clause in the PPAs for renegotiation. DISCOMS have burden of fixed cost under PPA.

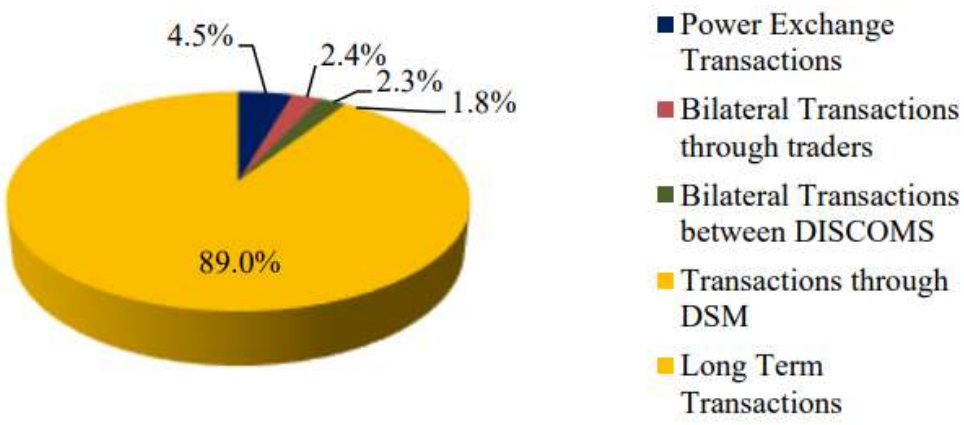
Uttar Pradesh:

Such a measure (re-negotiation of PPAs) is likely to be viewed by the Private Sector investors with negative view and it may have adverse impact on future investments in Indian Power Sector. However, such a measure will help financially distressed DISCOMS to reduce their costs, optimize power purchase cost and benefit the consumers in short to medium term.

C. Power Exchanges

3.16 The procurement of power by DISCOMS can be done using long-term, medium-term and short-term power purchase contracts as per their power purchase portfolios. The long-term contracts are entered through Power Purchase Agreements (PPAs) for duration of up to 25 years. The long-term contracts are essentially capacity plus energy contracts and ensure availability of capacity for the duration of long-term. The total price of power procured under this route includes fixed and energy costs. The long term contracts constitute approximately 90% while the remaining is met through Medium Term and Short Term contracts.

3.17 Below is the pie-chart showing share of market segments in Total Electricity Generation during the year 2019-20.



(Source: CERC's Report on 'Short-term Power Market in India, 2019-20')

3.18 The Committee in their 'Discussion Paper' on the subject had observed that the tariff of electricity, being traded at the power exchanges, is significantly reasonable as compared with other mode of supplies. The rate at which it is being done logically raises the question as to the cost of generation and supply of electricity through other modes. Simply because a structured system has been at work does not mean that competition cannot usher in.

3.19 In response to the issue of Power Exchanges, the Central Electricity Regulatory Commission (CERC) have stated as under:

a. *"The long-term contracts are essentially capacity+energy contracts and ensure availability of capacity for the duration of long-term. The total price of power procured under this route includes fixed and energy costs.*

b. *However, the power procured through power exchanges is less than 5% of the total electricity generated in the country. These transactions are essentially energy contracts and DISCOMS get power only if their bids get cleared in the power exchange market. Therefore, guaranteed availability of power under this route is uncertain.*

c. *Accordingly, difference in price of power under long-term and short-term routes lies due to the fundamental differences in long-term and short-term contract structures, quantum of power transacted as well as the degree of certainty of availability of power.*

d. *However, to encourage efficiency in short-run dispatch of electricity and to increase the depth of market, a discussion paper has been prepared by the staff of the Commission on "Market Based Economic Dispatch of Electricity: Re-designing of Day-Ahead Market (DAM) in India". Comments from the stakeholders on the discussion paper have been received and the same are currently under consideration of the Commission."*

3.20 In regard to Power Exchanges, the Association of Power Producers (APP) have submitted their views as under:

"A comparison of APPC and average price traded at Power Exchanges for last few years is as follows:

Year	***Price of Electricity transacted through Power Exchanges (DAM+TAM) (/kWh)***	***Average Power Purchase Cost (APPC)***
2014-15	*3.50*	
2015-16	*2.72*	*3.40*
2016-17	*2.50*	*3.40*
2017-18	*3.45*	*3.48*
2018-19	*4.26*	*3.53*

The following points may be noted:

1. It may be noted that the power exchange price of electricity in FY18 was similar to the APPC while in FY 19 it was actually higher. Therefore, it would be wrong to state that the power being traded at the exchange is always cheaper.

2. Power exchange price is a function of demand and supply on day ahead basis. Hence, the prices being discovered on power exchange are for deliveries the very next day and hence, reflect the short-term nature of such price discovery. The power contracts through other modes have a longer tenor and hence, must factor in additional cost towards uncertainties like risk of disruption of fuel supplies & transmission and associated inflation during the term of the contract thus increasing the cost of power.

3. The power exchange prices are determined at the Regional Periphery and hence, do not reflect the cost of transmission [~ INR 0.60 - 1.00 per kWh] of such power to the distribution utility. The power contracts through other modes of supplies are typically delivery contracts and hence, factor the cost of transmission.

4. Most of the power being traded in exchange usually belongs to untied capacities from plants which have some portions of their capacities tied up. Such plants, in order to reap efficiency benefits, are likely to quote tariffs marginally above their variable costs on the exchanges so that their plant level utilization goes up. Such prices, therefore, may not be truly reflective of actual cost of generation and may not obtain for the generator a reasonable return to ensure long term sustained operations."

3.21 In regard to power exchanges, the view of some of the States are as under:

Andhra Pradesh:

Even after operationalization of Exchange for quite some time, the percentage electricity traded in the exchanges is around 6% only. This requires to be enhanced and to reach to 1/10th level. The rates discovered in the exchange are also reasonable. DISCOMS are finding it difficult to transact with multiple exchanges operated by different entities. This situation also resembles transacting and Coordinating with Traders in a OTC platforms. If one Exchange is operational it would be advantageous to the utilities.

In order to increase the trading in exchange, the DISCOMS should be freed from the long term power purchase agreements.

Delhi:

In the current scenario, most of the electricity demand of DISCOMS is tied up in long term PPAs with GENCOs (usually 25 years). Due to this the volume of electricity sold/purchased through market mechanisms is very limited.

The electricity traded power is competitively price. The system is transparent and efficient. However, many times, distress bid is put by generating stations so as to keep plant running at technical minimum. Competition in the sector will reduce the flab, help the consumers and therefore must be encouraged.

Gujarat:

It is usually observed that other than monsoon and lean demand period, rate in the Power Exchanges increases due to increase in overall buy volumes. During calendar year 2018 & 2019, the average Round The Clock price in Power Exchange is Rs. 3.90/unit & Rs. 3.10/unit respectively whereas average price during peak period has remained at Rs. 4.74/unit & Rs. 3.74/unit respectively.

It is also to highlight that availability of power in Power Exchanges is limited i.e. about 5000-8000 MW as against State's requirement of about 17000 MW. Thus, the entire power demand cannot be meet through Power Exchange at prevailing tariff. Further, the availability of power in the power exchange is uncertain and is subject to availability of transmission corridor. DISCOMS which are under Universal Supply Obligation cannot rely solely on Power Exchanges by shutting down local generation which is otherwise required as per Grid requirement.

Karnataka:

There should be separate portal for sale of RE power to give premium price to this category which it deserves. RPO deficit States should be required to purchase RE power from RPO surplus States.

Madhya Pradesh:

At present 80-85% of power purchase is being done through bilateral agreements, there is little chances of any significant changes in trading quantum of power through exchanges. The power exchanges are expected to play greater roles once the Utilities are liberated from the existing long-term PPAs and concept of national pooling of power is implemented.

Odisha:

On the other hand the power exchanges may play a bigger role once the utilities are liberated from the commitment of long term PPAs.

Puducherry:

A discount on Trading of Power from exchanges cannot be a reliable option as the market rate are swinging alarmingly and may affect economics of Discom adversely. It can only be utilized for short term period and therefore power purchase through Long Term PPA is the only reliable option.

Punjab:

The Real Time Market of Power Exchanges commencing w.e.f. 1st June, 2020 shall fully exploit this trading platform for trading and settlements in real time. As such, trading through power exchanges should be promoted for exchange of power between buyers and sellers at reasonable rates and to cater surplus/deficit of the sellers/buyers on real time basis.

Tamil Nadu:

- Market coupling mechanism should be implemented to ensure uniform pricing among power exchanges.
- By adopting market coupling mechanism whereby collected bids from all the Power Exchanges are matched, after taking into account all bid types, uniform market clearing price (MCP) can be discovered and market will be stable. Such mechanism will avoid ambiguity among sellers and buyers which may encourage the market participants for more dependence.
- More number of power exchanges should be established to enhance the number of participants.

D. Pooling of Electricity at Central Level

3.22 Below is the All India Installed Capacity (MW) Region-wise as on 30.09.2021:

	Thermal					Nuclear	Hydro	RES**	Grand Total
Region	Coal	Lignite	Gas	Diesel	Total				
Northern	54747.31	1580.00	5781.26	0.00	62108.57	1620.00	20433.77	21956.74	106119.08
Western	74616.27	1400.00	10806.49	0.00	86822.76	1840.00	7562.50	31848.73	128073.99
Southern	44904.52	3640.00	6491.80	433.66	55469.99	3320.00	11819.83	45573.63	116183.45
Eastern	26956.38	0.00	100.00	0.00	27056.38	0.00	4752.12	1691.84	33500.34
North-East	770.02	0.00	1719.96	36.00	2525.98	0.00	1944.00	423.90	4893.87
Islands	0.00	0.00	0.00	40.05	40.05	0.00	0.00	38.01	78.06
ALL INDIA	201994.50	6620.00	24899.51	509.71	234023.72	6780.00	46512.22	101532.85	388848.78

** RES as on 28.02.2021

(Source: Central Electricity Authority)

3.23 The Plant Load Factors (PLF) of Coal & Lignite based power plants in the country from 2009-10 to 2021-22 is as under:

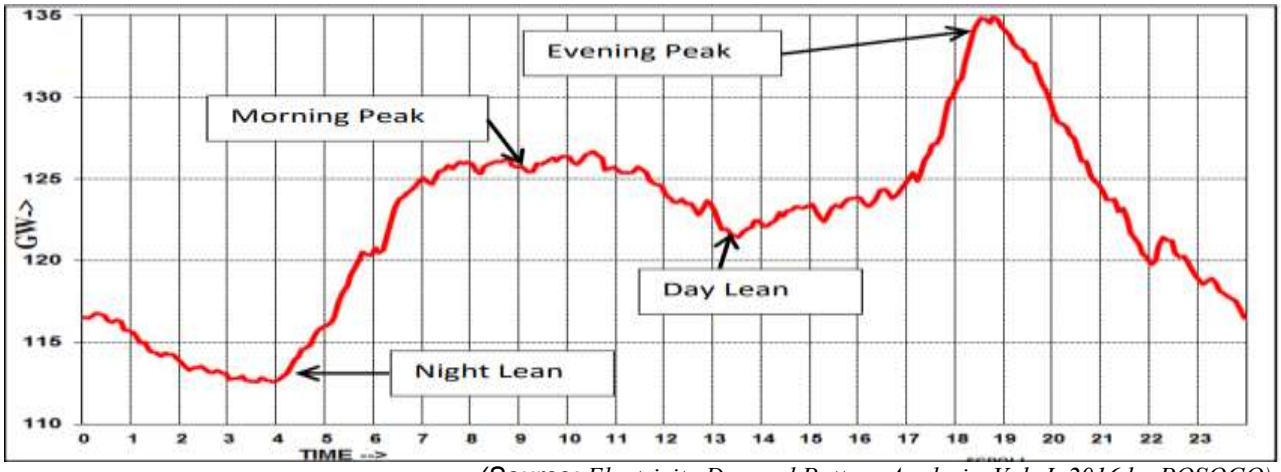
Year	PLF	Sector-wise PLF (%)		
	%	Central	State	Private
2009-10	77.5	85.5	70.9	83.9
2010-11	75.1	85.1	66.7	80.7
2011-12	73.3	82.1	68.0	69.5
2012-13	69.9	79.2	65.6	64.1
2013-14	65.60	76.10	59.10	62.10
2014-15	64.46	73.96	59.83	60.58
2015-16	62.29	72.52	55.41	60.49
2016-17	59.88	71.98	54.35	55.73
2017-18	60.67	72.35	56.83	55.32
2018-19	61.07	72.64	57.81	55.24
2019-20	55.99	64.21	50.24	54.64
2020-21	53.37	61.78	44.68	54.27
2021-22*	57.51	68.65	50.57	54.32

* Upto Oct. 2021 (Provisional), Source: Central Electricity Authority (CEA)

3.24 According to a study carried by Central Electricity Authority on Optimal Generation Capacity mix for 2029-30, the likely All India installed capacity in 2029-30 is as follows:

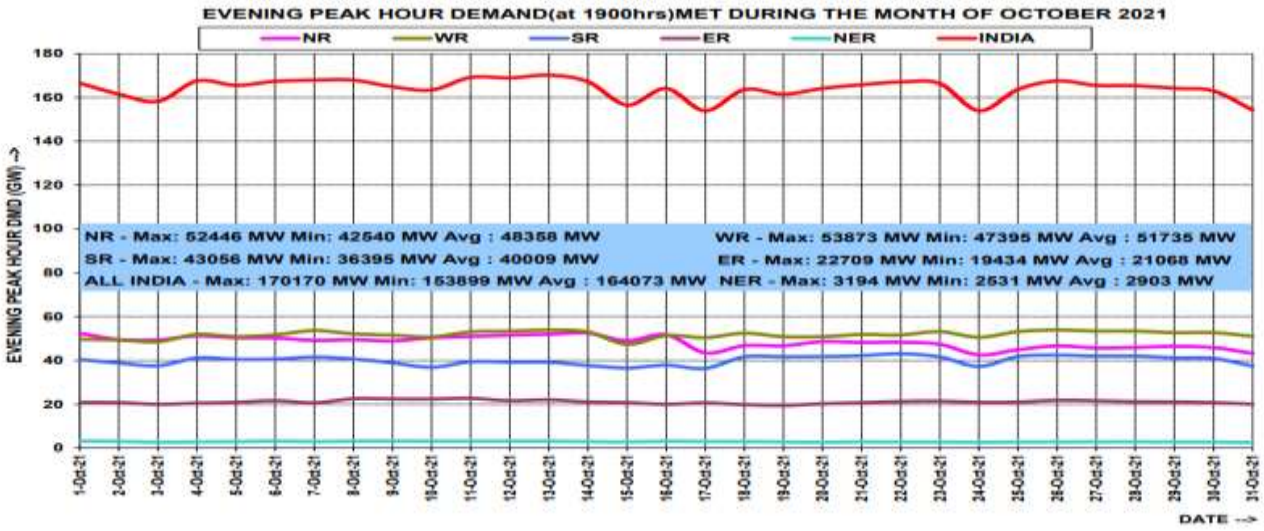
Fuel Type	Capacity in MW	% mix
Hydro	71,128	8.70
Coal+ Lignite	2,66,911	32.66
Gas	25,080	3.07
Nuclear	18,980	2.32
Renewable capacity	4,35,155	53.25
Total Capacity	8,17,254	100.00

3.25 A plot showing the variation in demand met with respect to time is known as the load curve. If this curve is plotted over a period of time for 24 hours, it is known as daily load curve. If it is plotted for a week, month or a year it is named as weekly, monthly and yearly load curve respectively. The load curve reflects the activity of a population of society with respect to electric power consumption over a given period of time. Below is the Typical All India Load Curve:



(Source: Electricity Demand Pattern Analysis, Vol.-I, 2016 by POSOCO)

3.26 Below is the evening peak hour demand (at 1900hrs) met during the month of October 2021:



(Source: Monthly Operation Report, October, 2021, POSOCO)

3.27 The Committee in their 'Discussion Paper' on the subject raised the following issues regarding the need for pooling of Power at the central level:

i) In what manner pooling of electricity will help in the achievement of rationalization of tariff in making it uniform or near-uniform?

ii) Whether it is a feasible and attractable proposition?

iii) What will be its impact on the current system of electricity generation and supply?

iv) Whether pooling of electricity will also incentivize inefficiency?

3.28 In response, the Ministry of Power have stated that the concept of pooling of power of various generating stations at the national level, irrespective of their efficiency on operational and financial parameters may lead to cross-subsidization of the inefficient plants by the efficient plants. Further, the pooling of electricity at national level, may also act as a disincentive to the plants operating efficiently on technical and financial parameters. The other issue of having a common uniform tariff for all plants is also inconsistent with varying fuel prices throughout the country. Even if fuel prices are uniform, the efficiency of plants would vary & a common uniform tariff for all plants would be detrimental to encouraging economy and efficiency. Currently, the distribution companies enter into PPAs with specific generating stations. As such, pooling of generation may result in higher tariff for those distribution companies who have entered into PPAs with low cost generating stations.

3.29 In regard to the concept of pooling of power, the Central Electricity Regulatory Commission (CERC) has furnished their views which are as under:

"The concept of pooling of power of various generating stations at national level, irrespective of their efficiency on operational and financial parameters may lead to cross-subsidization of the inefficient plants by the efficient plants. Further, pooling of electricity at national level, may also act as a disincentive to the plants operating efficiently on technical and financial parameters. Currently, the distribution companies enter into PPAs with specific generating stations. As such,

pooling of generation may result in higher tariff for those distribution companies who have entered into PPAs with low cost generating stations."

3.30 The views of the Association of Power Producers (APP) on the issue of pooling of electricity at the central level are as under:

> "Pooling of electricity is already being done at the retail State level where the State DISCOMS pool all their sources of electricity – through self-scheduled generation from their portfolio of long-term contracts, bilateral transactions, power exchanges or through trades. Retail electricity tariff for each State is then determined based on this pool.
>
> Having a uniform tariff for electricity at the retail level through pooling would be difficult to achieve owing to Legislative issues involved as each State has been given legislative power to determine tariffs for their consumers.
>
> However, pooling of electricity at the national level for power purchase made by DISCOMS, i.e, to discover a uniform tariff for procurement of power by the DISCOMS, is certainly possible and would be a welcome step as long as it is discovered through an open and transparent market mechanism based on supply and demand bids on a given day. This is possible by pooling power at the national level and adopting Merit Order Dispatch (dispatch of least cost power first) at the national level. Such a mechanism would involve the generators placing their bids on their variable/marginal cost of generation while fixed cost would be paid separately based on availability as per the current practice.
>
> Presently, the distribution utilities prepare their schedule from their portfolio of contracts to meet the expected demand. This process is not cost effective as many low cost power plants outside the state domain may remain unscheduled as the DISCOMS can only schedule plants with whom they have entitlements/contracts. A National Pool as conceptualized by CERC in its discussion paper on Market Based Economic Dispatch aims to help distribution utilities to save their power procurement costs by ensuring that that the most economical set of generating stations are despatched first, irrespective of contracts.
>
> Given that most bilateral contracts are long term, with pre-specified variable charges during the tenure of the contract, the Discussion Paper lays down an elaborate pricing, clearing and settlement mechanism.
>
> The market based system expects DISCOMS to cede the State specific procurement of power and dispatch functions to a centralized market mechanism. The system as envisaged will no doubt result in lowering the procurement cost but it may remain sub-optimal if requisite policy changes are not made in the other sub segments of generation – fuel and transportation, which constitute a major component of generation cost (cost of coal itself constitutes about 60-70% of generation cost).
>
> Therefore, to maximize the benefits of centralized pool, it is imperative that the fuel allocation too is streamlined to ensure that fuel is allocated on the basis of plant efficiency, i.e on 'least energy cost basis'. To this end, the link between coal supply and PPA needs to be broken and the present discriminatory coal allocation framework would need revisiting.

Whether pooling of electricity will also incentivize inefficiency?
To answer this, one would have to understand what kind of a pooling mechanism is being envisaged. Would there be some kind of a weighted average national tariff based on source of generation (conventional/ non-conventional)? Or would there be a national pool where the variable cost alone would be bid (as proposed by CERC in their Discussion paper on Market Based Economic Despatch)? According to us, In the case of the former, there will not be any incentive to improve efficiency and to that extent, yes, it will incentivize inefficiency. In the latter case, there would be an incentive to improve efficiency to enable and ensure dispatch."

3.31 During the evidence held on 1st December, 2021, the Committee pointed out that the States are getting electricity at different rates and asked why cannot it be made uniform, the Chairperson, CERC deposed before the Committee as under:

"State source power or they have power from hundreds of these things. One thermal power station of NTPC of say 2000 MW supplies to five States. It is because power is allocated from each thermal generation station. Every thermal station is different. Even in the same station it is unit-wise different. So, you will have 30 or 40 or 100 sources…..Transmission charges are there on that…..Then, losses are depending on the distance. So, these are the issues that are there. We need to address all these issues. Sometimes the Act will come in the way"

3.32 The Secretary Power, during the Sitting of the Committee held on 1st December, 2021, also elaborated upon the issue as under:

"State like Bihar, power is expensive as compared to other States. The most important reason is that Bihar has seen the increasing demand only in the recent years that is for the last 10- 15 years. So, their assets with which they have entered into PPA are comparatively young. Any power plant has to serve the debt repayment in the initial 12-15 years. So, its cost is high. Whereas the States which have seen the increased demand many decades before like Maharashtra, their assets have depreciated. Their fixed costs have come down. More recently, with the price escalation, the cost of the new asset is also high. Now, new coal-based power plant is costing around Rs. 9-10 crore per megawatt whereas earlier it used to be Rs. 3-4 crore per megawatt. The cost is going up because of the general price increase in the economy and also by increasingly stringent standards for emission control etc…..Our approach has to be that when PPAs expire, then that power goes to the market pool and then all the States procure from that pool, then prices will be similar. That is the approach going forward."

3.33 In regard to Pooling of Electricity, the Secretary, the Ministry of New and Renewable Energy deposed before the Committee during the evidence held on 1st December, 2021, as under:

"

जो कांट्रेक्ट्स की बात हुई, उसमें यह प्राब्लम रिन्युएबल एनर्जी में भी आ रही है क्योंकि सोलर एनर्जी के प्राइसेज गिरते रहे हैं। हमें राज्यों में मुश्किल आ रही है कि वे कांट्रेक्ट्स को ऑनर नहीं कर रहे हैं या टैरिफ्स को रीनेगोशिएट करने के प्रयास किए गए हैं। हम उसमें अल्टरनेटिव्स एक्सप्लोर कर रहे हैं कि किस तरह से समस्या पर काबू पाया जा सकता है। एक अल्टरनेटिव यह है कि सप्लाई साइड में हम पूलिंग कर दें। इसका मतलब यह हुआ कि जैसे-जैसे हमारी बिड आती रहेगी और उसमें प्राइस पता चला तो सप्लाई एनर्जी का वेटेड एवरेज निकाल लिया जाएगा और डिस्कॉम को सोलर एनर्जी एक पर्टिकुलर पाइंट पर एक ही प्राइस पर मिलेगी। सोलर के लिए अलग और विंड के लिए, यह प्रपोजल बहुत एडवांस स्टेज पर है। पावर मिनिस्ट्री से कंसल्ट करके, स्टेक होल्डर कंसल्टेशन करके हम लोग कुछ लीगल ओपीनियन ले रहे हैं। यदि संभव हुआ तो हम इसे लागू करेंगे। इससे सप्लाई साइड पर टैरिफ्स की एकरूपता पूरी कंट्री में हो जाएगी। So, that is all I want to

3.34 On the same issue, the Chairman & Managing Director, NTPC submitted before the Committee as under:

श्री गुरदीप सिंह : सर, कोशिश यही है। जितने भी पावर प्लांट शुरू हुए हैं, शुरू होने से पहले पावर परचेज एग्रीमेंट साइन किए गए थे। ओवर ए पीरियड ऑफ टाइम ऐसा हुआ है कि जिन लोगों के पुराने पीपीए हैं, उनकी पावर सस्ती है और जिनके पीपीए बाद में साइन हुए हैं, उनकी पावर थोड़ी सी महंगी है। इंसिडेंटली नॉर्थ-ईस्टर्न पार्ट और ईस्टर्न पार्ट के पावर परचेज एग्रीमेंट्स तकरीबन बाद में हुए हैं, इसलिए उनकी कॉस्ट ज्यादा है। इसी को नजर में रखते हुए हमने फिक्स्ड कॉस्ट पूलिंग की बात सामने रखी थी, लेकिन जब तक सभी स्टेट्स इसमें नहीं आएंगे, यह एक कांट्रेक्चुअल एग्रीमेंट है। मिस्टर घनश्याम, जिसने प्रजेंटेशन दी थी, he was also involved in that Security Constrained Economic Dispatch. So, we are trying to find the solution as to how to decrease it.

3.35 In regard to Pooling of Electricity, the views of some of the States are as under:

Delhi:

Pooling of electricity by way of annulment of existing PPAs and bringing all electricity generated on a common platform would lead to determination of a single pooled tariff- uniform tariff across country.

However, the above mechanism will have a negative impact on States which already have access to low cost generation. In such a scenario, the Central Government may need to intervene and create a fund for providing compensation to such States, in-order to promote uniform tariff.

Since a suitable average pooled price (combination of both fixed and energy cost of all individual generators) would be determined on a day ahead basis, based on the energy demand/ requirement for the subsequent day and the cost of generation arranged in an order from cheapest available power to mostly costly power, therefore it will not incentivize efficiency.

Gujarat:

Gujarat have over the period planned for procurement from various sources even through competitive bidding process. In such instances, pooling of electricity at national level may lead to sharing of inefficiency by various Utilities amongst efficient Utilities.

Haryana:

The formation of power pools may help in reducing operational costs, reserve requirement and reliability of system.

The states with low cost of power purchase may not find it lucrative to enter into the pool.

In the first phase, plants of NTPC/CGS may be considered for pooling. Variation of interstate transmission charges in lieu of pooling also needs to be addressed.

Karnataka:

- Pooling of Electricity at National level may benefit consumers if it brings down the cost with increased reliability and quality of power.
- This will help in utilizing the stranded generation capacity and also achievement of RPO obligations in non-renewable energy States.
- With high penetration of RE and reduction in storage costs, thermal power may soon become redundant to a great extent and coal plants may face retirement. The proposed uniform tariff policy should help this inevitable factor in mind.

The State, Central and Private generators should be properly regulated to run the units at higher PLF. All the Renewable Energy and Solar power units have must-run status which affects merit order dispatch in strict compliance in letter and spirit.

Madhya Pradesh:

Pooling of electricity will surely optimize the stranded capacity of Generators and ensure better utilization of fuel thereby reducing the power purchase cost of DISCOMS.

The States with shortage of Power shall definitely get significant benefits in terms of reduced power purchase cost. There must be some mechanism that the States gaining on such arrangements should share the fixed cost of Generators also so that the States with surplus power may also get some relief on account of fixed cost payment.

It is felt that with evolving market, national pooling will encourage efficiency.

Odisha:

If pooling is done, the States having low-cost electricity sources will cross-subsidize the States, which are deficit in low-cost energy sources. Not only pooling of generation sources is required, but also transmission assets are also to be pooled to reach at a Uniform Tariff.

Some transmission lines may not be adequate to evacuate those powers. It will require realignment of transmission line with huge investment and will ultimately be passed on to the consumers increasing their Tariff.

Puducherry:

Pooling of electricity is feasible only in Renewable Energy area as it is scattered in nature and the Power Tariff can also be made uniform.

Punjab:

For running the lowest cost plants at full first, will not only help to reduce overall cost of electricity but also rationalization of tariff in making uniform and incentivize in efficiency.

Rajasthan:

The concept of power pooling may provide:

a. More reliable operations
b. Reduction in operational cost of plants
c. Optimization of the reserve capacity requirements
d. Reduction in cost of maintenance scheduling of power plants.

Power pooling may have potential advantages on overall cost optimization and asset utilization of the existing power plants. Plants which were backed down for high variable cost could be utilized through optimization of fuel cost and a central Merit Order Despatch (MoD). Hence, it may positively impact the electricity generation and supply businesses.

E. Point of Connection (PoC) Charges in Transmission Sector

3.36 National Electricity Policy, 2005 and Tariff policy, 2006 mandates transmission charge sharing mechanism to be sensitive to distance, direction and quantum of flow. Presently, for inter-state system, Point of Connection (PoC) mechanism has been introduced, which is sensitive to distance, direction and quantum of flow. PoC mechanism is meant to recover yearly transmission charges for inter-State transmission licensees as approved by the Commission under Section 62 of the Act or adopted by the Commission under Section 63 of the Act.

3.37 The Yearly transmission charges are calculated based on CERC Tariff regulations or are based on discovered price through competitive bidding. The yearly transmission charges are to be recovered from users of ISTS based on a sharing mechanism which is currently PoC mechanism. Due to inherent considerations of distance/ direction and quantum, these PoC charges vary for different injection/ drawal points.

3.38 The Committee in their 'Discussion Paper' had observed that PoC Charges are variable and different from State to State and point to point. The doctrine of direction, distance and quantum seems inexplicable. This has also contributed greatly in tariff differentials. And asked whether this system (PoC Charges) can be rationalized and replaced with a voltage-wise system and whether voltage-wise technical losses can be made uniform.

3.39 In reply, the Ministry of Power has stated as under:

> "Over the years the stakeholders have sought review the PoC mechanism. Hence the present mechanism of transmission tariff through PoC charges mechanism is under review by MoP and CERC."

3.40 In regard to Point of Connection (PoC) charges, Central Electricity Regulatory Commission (CERC) have state as under:

“The total transmission charges are allocated to users of ISTS under following components:

PoC charge - POC is Point of Connection charge which indicates cost of transmission for a particular User (mainly generator or distribution company) in Rs./MW/month. The methodology of allocation of charges is based on load flow studies.

HVDC Charge - The transmission charges for HVDC systems are allocated based on planning and are allocated to drawing regions for whom the HVDC was planned. They are calculated as Rs./MW/month.

Reliability Support Charges- All users get reliability benefits which accrue to the ISTS customers by virtue of operating in an integrated grid. 10% of Yearly Transmission charges are allocated as Reliability support charges on all India ISTS customers. It is specified as Rs./MW/month.

As stated above, the PoC charge is determined through load flow studies and indicates the extent of utilisation of transmission system by the ISTS Customer. The allocation of charges on each State depends on generation within the State, its drawal from inter-State transmission system and the distance from generating station from where it is drawing the power. The charges vary from quarter to quarter for each State depending on load and generation for the particular quarter.

The prevailing PoC Regulations were notified on 15th June 2010 and were effective from 1st July 2011. Over the years the stakeholders have sought review the POC mechanism. Recently, draft CERC (Sharing of inter-state transmission charges and losses) Regulations, 2019 have been published by CERC, wherein there is a proposal of allocation of a portion of transmission charges based on distance, direction and quantum of flow and another portion on contracted long term access and Medium term Open Access basis.

The inter-State transmission system largely comprise of 765 kV lines, 400 kV lines and 220 kV lines. These lines are utilised by users of transmission i.e. generating entities and drawing entities as a meshed network. Open Access is provided on the entire transmission system without any voltage-wise segregation. A generating station connected at 220 kV and sending power to another State may be utilising 765kV system or 400 kV systems to transmit such power. Distribution companies also utilise the entire transmission network to draw power from various sources across the Country. Hence voltage-wise system may not be possible for sharing of charges of inter-state transmission system.

Voltage wise Technical losses

Indian power system consists of transmission system of various AC voltage levels such as 132 kV, 220 kV, 400 kV, 765 kV which is a meshed network. Losses in a transmission system are due to inherent resistance in the system. The losses are calculated as total injection into the grid minus total drawal from grid for each Electrical region *viz* Northern Region, Western region, Southern region, Eastern Region and North-Eastern region. These losses are not determined voltage-wise as explained in the point above and that voltage-wise segregation of transmission charges is not possible. Similarly voltage-wise segregation of losses is not possible

and rather it is not desirable to do so because the objective is to transmit power from one point to other point and voltage level is decided based on techno-economic analysis. A State drawing power from various sources makes use of entire system and segregation of losses voltage-wise is not possible. CERC vide its draft CERC (Sharing of inter-state transmission charges and losses) Regulations 2019 has proposed that single loss for inter-State transmission system should be determined on All India basis."

3.41 The Association of Power Producers (APP) have expressed their views on the issue of PoC mechanism as under:

"It may be noted that characteristic of transmission pricing is that the transmission charges have to be recovered in full. The sharing of these charges will change within the set of payees depending upon the mechanism used for computation. Hence, any decrease of charges for one payee will definitely lead to increase of charges for other payees. This makes it difficult to satisfy all the stakeholders.

Moreover, Electricity generated by a generator reaches a drawee customer not through a single line but through the meshed network of transmission lines. As the meshed network is set up for system reliability it is essential that the transmission charges are charged for the entire system and not only for the voltage of lines which are used.

Further, the National Electricity Plan and the National Tariff Policy mandates that the tariff mechanism should be sensitive to distance, direction and quantum of flow. As there is bound to be tariff differences in the pricing of various stakeholders it would be helpful if the components of the tariff are explicitly mentioned. This gives a clarity to the payee on which charges are borne on account of reliability of system and which charges are borne on account of usage of the system. CERC's draft regulation on Sharing of Transmission Charges and Losses, 2019 has broken down the transmission charges into four components, namely, National Component, Regional Component, Transformers Component and AC System Component. The AC system component is associated with the usage of the transmission lines and the other three are rationalized to the DICs identified in these components.

As the technical losses in the transmission system are comparatively less than the distribution network, an all India Average Transmission losses for ISTS can be calculated for ease of calculation of transmission losses. The same is mentioned in the CERC draft regulations.

Hence, POC charges, to a large extent – that for the AC component – shall be usage dependent and will not forge uniform tariff. According to us, this approach is rational. Costs should be recovered from the Designated Users depending on the level of usage."

3.42 In regard to the issue of Point of Connection (PoC) charges, the views of some of the States are as under:

Andhra Pradesh:

In the meshed network of Indian Grid, an embedded generator with dedicated and adequate transmission capacity in interior SR may have to pay for addition of an element in Tripura or Amritsar.

Electricity / current by its character will choose least resistant path hence the embedded generator power may take alternate path in spite of having dedicated own path. Due to this embedded generator customer has to bear dedicated line cost and alternate path cost.

There is lack of transparency and no natural justice, in the existing methodology and hence it should be rationalized and replaced with voltage-wise system and technical losses can be made uniform.

Delhi:

It is felt that POCs like a black box, and the DICs are not given much information about the methods and the input data which is fed in the Webnet software.

An alternative mechanism which is simple enough for the DICs to understand with complete sharing of input data must be explored for benefit of all the stakeholders.

Presently, DISCOMS are forced to pay the transmission charges based on their Long term and medium term access for the transmission assets which are not being used by them but reserved by the CTU for them.

Further, in regard of the distance sensitivity at present for example the 2 states having same quantum of power drawl, from the same distance and voltage level of the transmission network, may end up paying different amounts due to the fact that the tariff of the lines used by one state may be higher or lower compare to other state. The voltage level wise tariff needs to be pooled for uniformity of transmission charges.

Haryana:

The Cost of Transmission contributes significantly in the Annual Revenue Requirement of Distribution Licensee. Therefore, the cost of transmission has huge impact on the distribution and retail supply tariff.

Rationalization of POC Charges will definitely results in bridging the gap of distribution and retail supply tariff across the country.

Karnataka:

- The transmission charges per MW of the Central Transmission Utility should be calculated by considering the total transmission MW capacity transmitted and the total cost of the asset investment.
- In a One Nation – One Grid scenario, there should not be any PoC charges ideally.

Madhya Pradesh:

There is strong need of rationalization of POC charges as it lacks in transparency. CERC has already proposed a regulation on sharing of Transmission Charges and Losses which is expected to simplify the regime of POC charges. Since the national grid is owned and operated by

PGCIL, voltage wise technical losses can be considered and made uniform (i.e. same losses for same voltage level).

Odisha:

POC Calculation Methodology through changes in existing Regulations can bring fairness and transparency in the determination of Transmission Charges for Users / Designated ISTS Customers (DICs).

Punjab:

The matter primarily comes under the purview of CERC (as far as the Inter-state Charges and losses are concerned) and State commission (as far as the Intra-state charges and losses are concerned). The major component of POC charges applicable for Inter-state system is presently being determined by CERC based on projected utilization for the upcoming quarter (3 months) and in future, this utilization/usage based component is proposed to be determined on the basis of actual utilization for past month.

Rajasthan:

The current POC mechanism needs an overhaul as it currently does not encourage efficiency in the transmission activity and does not address the various concerns, including that of the RE rich states bearing the cost of transmission of electricity while not consuming the power transmitted using ISTS network itself.

F. Reduction in Cross subsidy

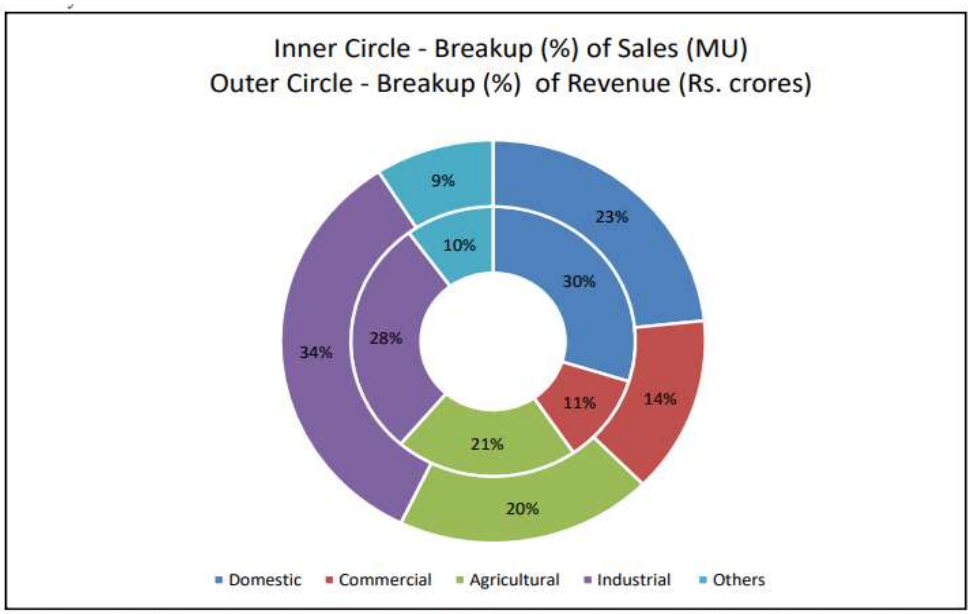
3.43 Cross-subsidies result in lower tariffs for marginalized/poor consumers while having higher tariffs for Industries/commercial establishments. Tariff Policy issued by the Government of India provides that the Appropriate Commission shall be guided by the objective that the tariff progressively reflects the efficient and prudent cost of supply of electricity. It further provides that the consumers below the poverty line who consume below a specified level, as prescribed in the National Electricity Policy may receive special support through cross-subsidy. Tariffs for such designated group of consumers will be at least 50% of the average cost of supply. For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the Appropriate Commission would notify a roadmap such that tariffs are brought within ±20% of the average cost of supply. The road map would also have intermediate milestones, based on the approach of a gradual reduction in cross-subsidy.

3.44 Below is the information on non-reflective tariffs in respect of various States as provided by the Ministry of Power during the Sitting of the Committee on 06.11.2019.

State	Utility	FY	ACoS (Rs./kwh)	ABR* (Rs./kwh)					ACoS coverage				
				Domestic	Agricultural	Industrial	Commercial	Overall	Domestic	Agricultural	Industrial	Commercial	Overall[1]
Uttarakhand	UPCL	FY17	4.70	3.56	1.55	5.17	5.44	4.70	76%	33%	110%	116%	100%
Punjab	PSPCL	FY17	5.98	5.54	4.58	6.41	6.71	5.76	93%	77%	107%	112%	96%
Gujarat	DGVCL	FY17	6.35	3.83	2.07	6.04	4.87	6.59	60%	33%	95%	77%	104%
Maharashtra	MSEDCL	FY16	6.03	5.83	3.12	7.64	10.97	5.96	97%	52%	127%	182%	99%
Uttar Pradesh	DVVNL	FY 17	5.91	3.70	2.38	7.43	7.62	5.13	63%	40%	126%	129%	87%
Bihar	NBPDCL	FY17	5.74	5.25	5.76	6.53	6.01	5.38	91%	100%	114%	105%	94%
Andhra Pradesh	SPDCL+ EPDCL	FY17	5.33	3.66	3.54	6.81	9.43	5.33	69%	66%	128%	177%	100%
Delhi	TPDDL	FY16	7.35	5.55	3.32	9.28	10.65	7.80	75%	45%	126%	145%	106%
Telangana	TSSPDCL+ TSNPDCL	FY17	5.94	4.95	3.19	7.03	9.32	5.94	83%	54%	118%	157%	100%
Tamil Nadu	TANGEDCO	FY 15	5.77	4.02	2.96	7.81	9.19	5.74	70%	51%	135%	159%	99%

[1] Inclusive of other categories * Inclusive of Govt. Subsidy

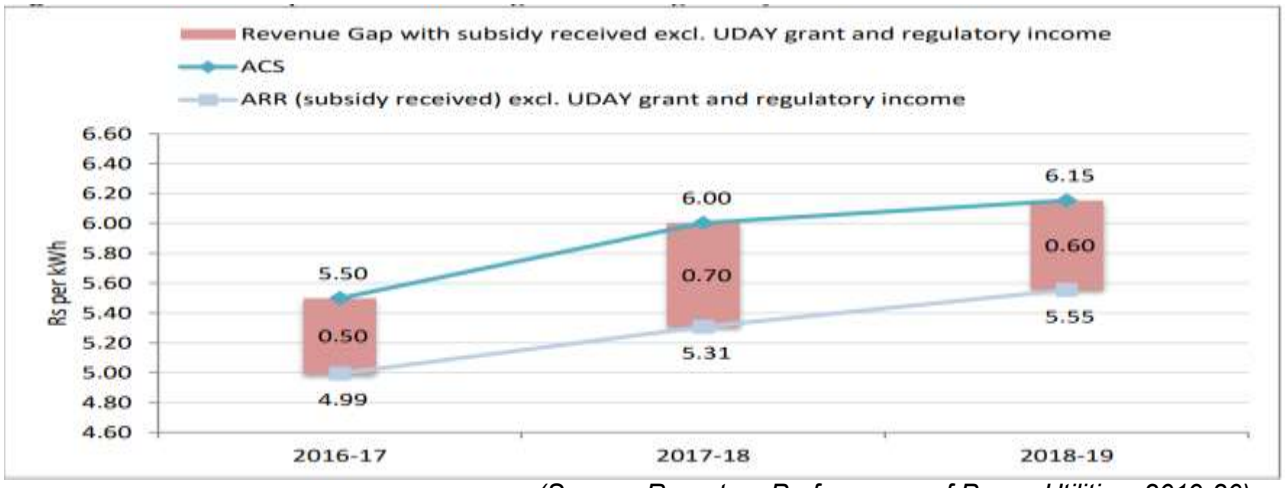
3.45 Below is the Consumer Category-wise Sale (MU) vis-à-vis Revenue from Sale of power including subsidy booked for FY 2019-20:



Note: Details of consumer category-wise subsidy booked are not available. For the purpose of analysis, it has been assumed that 10% of subsidy booked is on account of domestic consumers and remaining 90% of subsidy booked is on account of agricultural consumers.

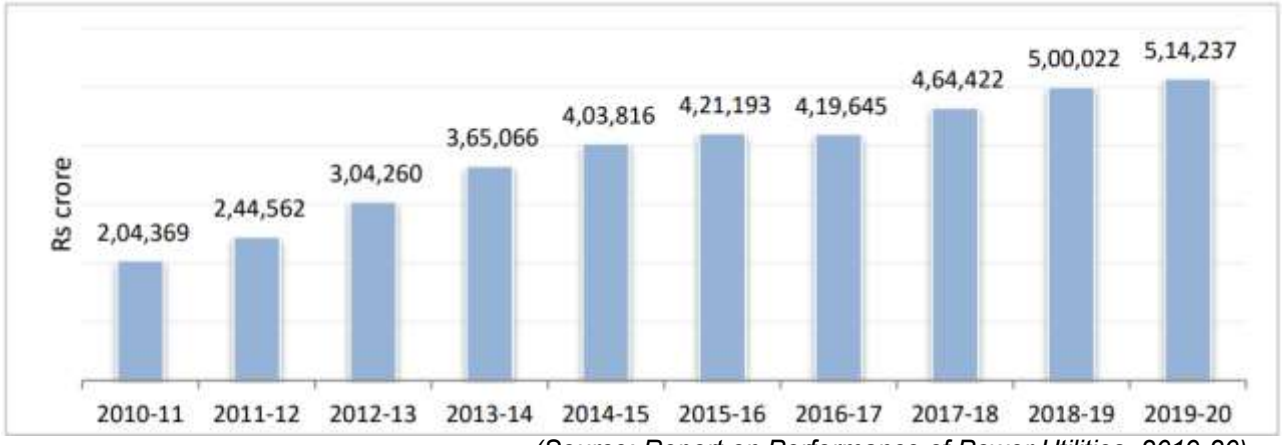
(Source: Report on Performance of Power Utilities, 2019-20)

3.46 Below is the Revenue Gap without UDAY grant and Regulatory Income:



(Source: Report on Performance of Power Utilities, 2019-20)

3.47 Total Borrowings for distribution utilities since 2010-11 (Rs.crore):



(Source: Report on Performance of Power Utilities, 2019-20)

3.48 Billing Efficiency, Collection Efficiency and AT&C Loss:

(Source: Report on Performance of Power Utilities, 2019-20)

3.49 As per the 'Report on Performance of Power Utilities, 2019-20' Tariff Subsidy billed by distribution utilities increased from Rs 1,10,989 crore in 2018-19 to Rs 1,19,921 crore in 2019-20. As a percentage of total revenue, the tariff subsidy billed by the utilities increased from 15.99% in 2018-19 to 16.45% in 2019-20. However, Tariff subsidy released by State Governments as a percentage of tariff subsidy billed by distribution utilities increased from 89.21% in 2018-19 to 94.65% in 2019-20.

3.50 The Committee in their 'Discussion Paper' had observed that Cross subsidy of the various categories of electricity consumers is a reality of the day. It has encouraged tariff differentials of disproportionate nature. Therefore, had asked various stakeholders the manner in which this cross-subsidy can be handled so as to protect the interest of the subsidized section of consumers as well as the financial health of the Discom.

3.51 In a written reply, the Ministry of Power have stated as under:

> "Higher cross subsidy levels affect cross subsidizing categories adversely. Commercial/Industrial category of consumers results in paying higher tariffs affecting their competitiveness. Cross Subsidy to subsidized consumers results in inefficient use of electricity because of lower tariffs. The issue of cross subsidy can be effectively dealt is Appropriate Commissions determine the tariff within +/- 20% of cost of supply for all consumers. Direct subsidy can be provided by the Government, if it wants to provide support to any consumer or class of consumers."

3.52 In regard to the issue of cross-subsidy, the Central Electricity Regulatory Commission (CERC) submitted their view as under:

> "The Forum of Regulators commissioned a study on "Roadmap for Reduction in Cross-Subsidy". The key recommendations of the study as approved by the Forum include the following:
>
> a. There is also a need to move from average cost of supply to category-wise cost of supply to measure the cross subsidy coverage as mandated by the Electricity Act, 2003.
>
> b. In order to assess the true impact of cross subsidy erosion and to take remedial measures, the first step towards addressing the cross subsidy issue is to determine voltage-wise and/or category-wise cost of supply for all States.
>
> c. Going forward, it is suggested that greater transparency be introduced in the methodology for publishing cross subsidies. The Universal Charge Model is suggested to implement winding down of cross subsidies and to make up for any shortfalls in revenue that it may impose upon the utilities. Such shortfalls may need to be funded by the Government."

3.53 In regard to the issue of cross-subsidy and tariff categories the Association of Power Producers (APP) submitted their views as under:

> "**Current Scenario:**
> Till now, cross subsidization in power sector has always been distorted in the sense that neither group is paying the correct price for power. As a result, there is a possibility that two consumers having same levels of consumption may have to pay two different tariffs despite consuming the same amount of power. For eg., an agricultural consumer and a LV commercial consumer having same levels of consumption may end up paying different tariffs. This is because different categories are maintained by the Distribution Companies and different tariffs are approved by SERCs for such different categories. In the above example, agricultural consumer is the subsidized consumer i.e. its tariff is lower than the Average Cost of

Supply ("ACoS"), let's assume it to be currently at a tariff of 60% of ACoS, whereas, the LV commercial consumer is the subsiding consumer i.e. its tariff is higher than the Average Cost of Supply, let's assume it to be currently at a tariff of 120% of ACoS.

Proposed Scenario:
Subsequent to rationalization of cross-subsidization, both these consumers would fall under the same category and hence the tariff for both these consumers would work out to be equal. In such case, there can be two outcomes:

Outcome 1: to keep the tariffs of agricultural consumer at the existing levels, the tariffs of LV commercial consumer would also get reduced. In such a scenario, the consumption of subsidized category would increase in the total consumer mix of the Licensee. Accordingly, to meet the ARR of the Licensee, either the number of subsidizing consumers has to increase, or the tariffs of subsiding category has to increase. This implies that there would be further divergence of the tariffs of subsidizing categories from ACoS, which would not be in line with the National Tariff Policy and Draft Amendments proposed in Electricity Act.

Outcome 2: the other option could be to increase the tariffs of this entire category of agricultural consumers and LV consumer category. In this case, there would be a sudden tariff shock for such agricultural consumers, which might lead to issues like theft etc.

Probable Solution:
As mentioned above, in the event of tariff rationalization, it is expected that both such consumer categories would come to same tariff levels either subsidizing category or subsidized category. For our demonstration, let's assume that such consumer category is considered to have tariff @ 80% of ACoS.

In such scenario, A solution could be that till certain no. of years (may be 10 years) from now, the existing structure of tariff categories may continue to operate till the tariffs of such consumers are brought progressively towards the desired level of cross subsidy i.e. in such transition period, tariff for agricultural consumer may be brought from current levels of 60% of ACoS to 80% of ACoS and that of LV commercial consumer may be brought from 120% of ACoS to 80% of ACoS. This transition from current levels of cross subsidy to desired levels of cross subsidy is to be achieved for each existing category of consumer in all states by SERCs under supervision of Govt. of India/respective SERCs.

The proposal below may be considered:

• The load categories may be adopted as 0-5 kW, 5-10 kW, 10-25 kW, 25-100 kW and >100 kW across the board.

• The simplification of tariff categories and rationalization of retail tariff should also factor in promoting demand-based and time-of-day based tariffs electricity as demand during a day is not constant.

• Along with the above simplification and rationalization of retail tariff, it is also required to ensure complete FAC recovery and the mechanism to recover it across all categories."

3.54 In regard to the issue of cross-subsidy of the various categories of electricity consumers, the views of some of the States are as under:

Andhra Pradesh:

The Government shall adopt Cost-to-Serve approach while determining cost of supply for each category of consumers. The tariff should progressively reflect the cost of supply of electricity and also reduce and eliminate cross- subsidies within the period specified.

Indian industry needs cheap power in order to compete internationally. Cross subsidy surcharge should be removed for any industry seeking to buy power from the market (short term or long term). They should not be charged anything more than the realistic transmission charges.

The subsidised sectors are domestic, agriculture and partly industry. The state governments wanting to subsidise any category of consumers may be allowed to do so through Direct Benefit Transfer.

A reduction in the gap can be done by lowering power theft which gets classified as power losses.

Delhi:

The amendments to Electricity Act 2003 (EA'03) and national Tariff Policy (NTP) suggest capping the cross subsidies to 20%.

The need for reduction in cross subsidies has been fully recognized, however, cross subsidy is also essential to meet the objectives of the Act.

Gujarat:

The electricity being a commodity, the retail tariff shall be cost reflective in nature. However, the reasonability of tariff to any category of consumer would be contingent to consumer demography, load profile, paying capacity, socio-economic situation and availability of generation resources with the State. Alternatively, the option may be explored for direct subsidy benefit transfer to the needy section of society by Government.

Haryana:

The Section 42(2) of the Electricity Act, 2003, initially provided that cross subsidy surcharge and cross subsidy shall be progressively reduced and eliminated.

But subsequently, it was realized that it would not be possible to eliminate cross subsidy. Accordingly, third proviso of section 42(2) was amended vide amendment in the Electricity Act dated 15.06.2007, to provide that such surcharge and cross subsidies shall be progressively reduced in the manner as may be specified by the Commission'

As of now, efforts need to be made to reduce the cross subsidy to the extent possible and not to eliminate it. The Government may, however, provide in the NTP that the cross subsidy level in the consumer tariff should be further brought down to ±15% from the present level of ±20% in a time bound manner.

Karnataka:

- Cross subsidy can be handled by assigning a definite quantum of units to the subsidized category. Over and above the consumption of the

assigned units they should be charged as per the average cost of supply.

- The Direct Benefit Transfer of subsidy amount may be considered if all the subsidized category of consumers including agriculture are metered, which may have to be legislatively mandated to make the goal achievable.

Mizoram:

Reduction in cost of supply, reduction of losses (technical & commercial) & rationalized tariff structure may help reduce cross subsidy while protecting the interest of consumers as well as DISCOMS.

Rajasthan:

In order to make DISCOMS more efficient, as highlighted by Niti Aayog in the energy policy, DISCOMS should pay full market determined price to power procedures and receive the same from customers. Subsequently, the consumer can be compensated through Direct Benefit Transfer (DBT).

Tamil Nadu:

The uniform tariff could not be implemented without abolishing cross subsidy which varies between different states and different categories of consumers.

The National Tariff Policy prescribes that the cross subsidy should be restricted with ± 20% of Average Cost of Supply. However, in states like Tamil Nadu, cross subsidy varies from up to 70% of Average Cost of Supply.

However the Cross subsidy shall be eliminated in a phased manner without tariff shock to consumers.

Telangana:

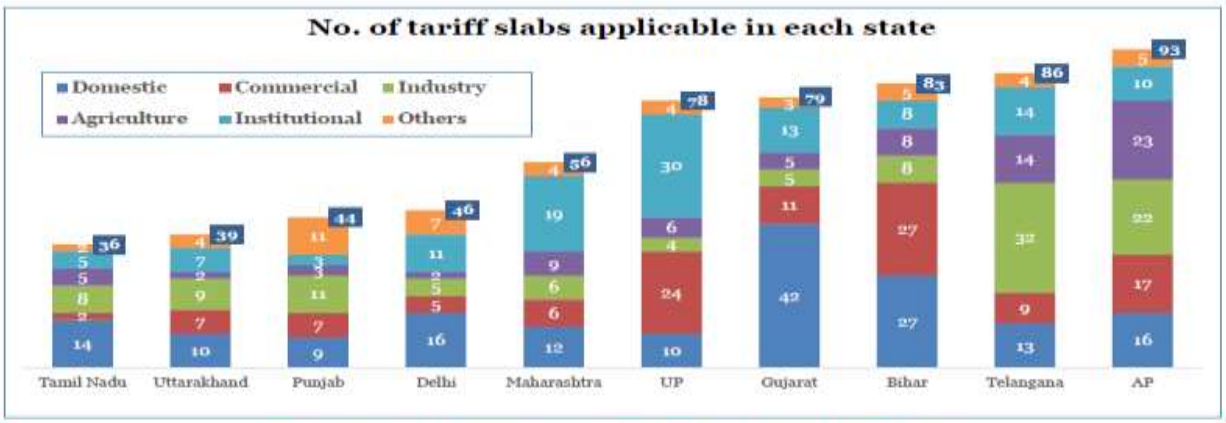
Whichever consumer categories are to be subsidized, should be given a direct transfer of subsidy while the consumers pay the electricity bill out of pockets. This would also result in responsible consumption thereby reducing the burden of cross subsidies on other consumers. The gap arrived due to the provision of lower tariffs to the needy consumers shall be entirely borne by the Government.

G. Rationalization of Tariff Categories

3.55 Section 62(3) of the Electricity Act, 2003, provides that the Appropriate Commission shall not, while determining the tariff under this Act, show undue preference to any consumer of electricity but may differentiate according to the consumer's load factor, power factor, voltage, total consumption of electricity during any specified period or the time at which the supply is required or the geographical position of any area, the nature of supply and the purpose for which the supply is required. In the light of this provision, the SERCs/ JERCs create different categories of consumers for the purpose of tariff.

3.56 Over the years, the tariff structure across the States has become very complex and the consumer tariff categories are observably large in numbers. In this regard, it is often argued that high complexity of tariffs for each segregated category prevents consumers from fully responding to tariffs due to high cost of processing the price information. Further, the basis for making such classifications has not been uniform across the country.

3.57 The Ministry of Power during the Sitting of the Committee on 06.11.2019 had furnished the tables given below that shows multiple categories and tariff slabs across states and inconsistency in categorization of consumers across the States respectively:



No. of categories as per tariff schedule

Tamil Nadu	Uttarakhand	Punjab	Delhi	Maharashtra	UP	Gujarat	Bihar	Telangana	AP
18	11	11	10	14	14	21	17	17	9

S. No.	State / Type of Consumer	Maharashtra	Uttarakhand	Delhi	Telangana	Tamil Nadu	AP	Bihar	Gujarat	UP	Punjab
1	Places of Worship	D	D	D	S	IST	S	C	-	D	D
2	Charitable Institutions	-	C	D	IST	D/IST	IST	C	-	I	D
3	Pvt. Educational/Welfare Institutions	IST	-	C	C	S	C	C	S	IST	C
4	Govt. Educational/Welfare Institutions	S	C	D	IST	IST	IST	C	S	IST	D
5	Pvt. Educational/Welfare Residential Establishments	D	-	C	C	S	C	-	-	C	D
6	Govt. Educational /Welfare Residential Establishments	D	C	D	C	IST	C	C	-	C	D
7	Crematoriums	S	-	D	IST	D/IST	IST	C	-	D	-
8	Cattle Farms	A	-	C	I	I	I	-	-	-	I
9	Floriculture/ Nurseries/ Horticulture	A	S	C	I	I/A	I	-	-	A	A
10	Fisheries	I	-	C	I	A	I	A	C	-	A
11	Poultry Farms	A	-	C	I	I/A	I	-	-	-	I
12	Public Parks	IST	IST	D	IST	-	IST	-	-	C	S

D Domestic | C Commercial | I Industry | S Specific/Individual Category | IST Institutional | A Agriculture

3.58 In regard to the need for rationalization of tariff structure in the country, the Ministry of Power have stated as:

> "Therefore, a need was felt to not only simplify and rationalize the tariff structure but also make it harmonious across all States. Simplification of tariffs is expected to improve transparency in setting tariffs and may well yield benefits including enhanced consumption, collection efficiency, along with bringing in governance benefits. The Ministry of Power has also constituted a Committee to suggest measures for "Simplification of consumer categories and rationalization of Tariff Structure". The Committee in its report recommended streamlining the consumers broadly

into five major categories, i.e. domestic, agriculture, commercial, industrial and institutional. Under these broad categories, it was proposed to sub-categorize the consumers on the basis of voltage. The domestic category may have within itself three subcategories i.e. cross-subsidizing, cross-subsidized and cross-subsidy neutral. Further, this category may have lifeline category and efforts should be made to gradually phase out un-metered, rural and urban categories. For agriculture consumers, consolidation of sub-categories into agriculture and agriculture-allied categories and efforts should be made to dis-incentivize unmetered consumption. For industry category, a separate "Supported" category may be created to facilitate a select group of industries."

3.59 The views of some of the States in regard to rationalization of various tariff categories are as under:

Andhra Pradesh:

There should only be five categories *viz*. Domestic, Commercial, Industrial, Institutional and Agriculture, coinciding with the allowed land use classification done by urban development authorities or the land classification done by Government. This should be standardised across the country. If the Governments intend to subsidise any sub-category of consumers, such sub-categorisation should be done at the Government end for the purpose of passing on DBT but not by the DISCOMS.

Madhya Pradesh:

The categories should be minimized and may be only based on voltage level of supply. (Tariff Categories may be categorized as Single-phase LT, Three Phase LT, 220kV, 132 kV, 66kV, 33kV, 11kV etc.). Sub-categorization of consumer's categories can be considered for LT voltage level for limited groups such as Domestic, Non Domestic, Agriculture, LT Industry, Public Utilities.

Odisha:

Economic Conditions of various categories of Consumers vary from state to state across the Nation due to variance in topography, climatic conditions and natural availability of resources etc. Therefore, respective state Commissions, being better aware of the ground realities in the States should determine the methodology for the categorization of Tariff for the state. However, the number of slabs and categories need to be rationalized.

Punjab:

The present tariff structure is very complex having several categories in its tariff structure based on voltage level, connected load, tariff for small industrial, medium industrial and large industrial consumers, Non-Residential (NRS), Domestic (DS), Agriculture Power (AP), Power Intensive Unit (PIU), various types of rebates, several type of taxes, TOD Tariff, seasonal industries' tariff, street lighting, BS, consumption slabs, surcharges, Open Access etc. This has fed to increase in complexity of Tariff, which has made it difficult for field staff to implement and consumers to understand, its collection and keeping a record of each type. The complexity of tariff has generated a lot of complaints by the consumers, disputes, court cases, thereby causing loss of revenue, requirement of expert staff and loss of time. Therefore, it needs to be simplified.

Telangana:

This structure can be simplified and rationalized by reduction of slabs/sub-categories.

The categories should be minimized and may be only based on voltage level of supply. For such minimum categories of consumer, subsidy if any provided by the Government. (Tariff Categories may be categorized as LT, 11kV, 33kV, 132 kV,220kV, etc.)

The decision to provide tariff incentive from improving the consumer mix may be left to the SERC's.

Feeder Separation

3.60 Electricity is a concurrent subject and the responsibility to provide 24x7 uninterrupted power supply to all households/villages falls under the purview of respective State Governments / Power Utilities. The Ministry of Power have stated that the Feeder Separation is one of the important works to supplement the goal for providing 24x7 uninterrupted power supply and in improving the AT&C loss in the DISCOMS /Power Departments. The feeder separation involves the separation of predominantly existing mixed category feeders (which supply electricity to all types of consumers including agriculture consumers) into agriculture and non-agriculture feeders.

3.61 The Ministry of Power have stated that as reported by State/DISCOMS to CEA (as on Jun 2021), there are about 1,64,057 nos of Rural feeders in the country, and out of these a total of 62,193 nos of Feeder (37.91% of Rural Feeders) are under Agriculture category. 4697 nos. of Feeders separated under ongoing DDUGJY scheme as on 31.12.2021. These agriculture feeders are the separated feeders with predominantly agriculture consumers. There are balance 166 feeders under DDUGJY as on 31.12.2021 which are under reconciliation. The separation of Feeders is dynamic process to be carried out by States/DISCOMS.

3.62 The Ministry have further stated that these figures correspond to the States/UTs where the numbers of agriculture consumers are substantial in nature in terms of energy consumption. As per General review 2019-20 data of CEA, there are 12 States, namely, Rajasthan, Telangana, Madhya Pradesh, Karnataka, Andhra Pradesh, Punjab, Haryana, Maharashtra, Uttar Pradesh, Tamil Nadu, Chhattisgarh, Gujarat) which have more than 10% of the total energy consumption in the Agriculture category in the State/UTs. There are four States in which agriculture consumption is between 2% to 5%. The agriculture consumption in the remaining States/UTs is less than 2% of the total energy consumption where feeder separation is not preferred but some States like Uttarakhand, Jharkhand, Odisha, Himachal and Assam etc. have carried out some feeder separation work.

3.63 In regard to state-wise status of agriculture feeder separation in the country, the Central Electricity Authority (CEA) has furnished the following information:

State/UTs	Total No of Rural Feeders As on June 2021	Total No. of Agriculture feeders	Separation Achieved Under DDUGJY	Balance Feeders yet to be segregated under DDUGJY
Andaman & Nicobar	37	0	0	0
Andhra Pradesh	9,926	467	0	0
Arunachal Pradesh	283	0	0	0
Assam	2,000	0	0	0
Bihar	3,817	1,291	1,291	0
Chhattisgarh	4,455	653	163	63
UT of DNH and Daman & Diu	287	0	0	0
Goa	200	0	0	0
Gujarat	13,104	8,792	0	0
Haryana	10,921	4,048	3	0
Himachal Pradesh	2114	0	0	0
J&K	1380	5	5	16
Jharkhand	1619	159	159	3
Karnataka	10,600	5,114	399	0
Kerala	1486	0	0	0
Ladakh	49	0	0	0
Madhya Pradesh	18,545	8,077	38	0
Maharashtra	14,996	9,361	459	0
Manipur	104	0	0	0
Meghalaya	400	0	0	0
Mizoram	239	0	0	0
Nagaland	193	0	0	0
Odisha	4,388	17	17	6
Puducherry	61	0	0	0
Punjab	8,139	6,129	55	15
Rajasthan	25,436	15,045	841	0
Sikkim	154	0	0	0
Tamil Nadu	3,099	3	0	0
Telangana	9,636	1,765	0	0
Tripura	333	0	0	0
UP	11,474	750	750	0
Uttarakhand	1325	43	43	0
West Bengal	3,225	474	474	16
Lakshadweep	32	0	0	0
Chandigarh	0	0	0	0
Grand total	**1,64,057**	**62,193**	**4,697**	**119**

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PART - II

OBSERVATIONS/RECOMMENDATIONS OF THE COMMITTEE

1. The Committee note that Electricity in India is under the concurrent list of the Constitution at entry number 38 in the List III of the Seventh Schedule of the Constitution of India and is administered both by the Central and the State Governments. The Electricity Act, 2003 is currently the legislation governing the Indian Electricity Sector. The Electricity Act, 2003 provides the Central Government to publish the National Electricity Policy and Tariff Policy, for the development of the power system based on optimal utilization of resources. The Tariff Policy is meant to provide guidance to Regulators in tariff fixation. The Committee have an intention to make the power tariff not only affordable for each and every citizen of the country but also make the system of power tariff simple, transparent and accountable.

The Committee observe that the cost of supply of electricity to the consumer primarily consists of generation, transmission and distribution costs. The Committee also note that there is a great variation in generation cost as well as the installation cost of power plants depending on their source, fuel, location, etc. DISCOMS have made long term Power Purchase Agreements (PPAs) with multiple power generators at various rates (fixed as well as variable cost) as per their demand and regulation obligations such as Renewable Purchase Obligation (RPO). Therefore, the power procurement cost by the DISCOMS varies greatly. Further, due to inherent considerations of distance, direction and quantum, in the present mechanism for transmission of electricity i.e. Point of Connection (PoC) charges vary for different injection/ drawal points. Thereon, O&M Expenses, AT&C losses and other charges are added to the power procurement cost to arrive at the Average Cost of Supply (ACoS) of any DISCOM. The Committee are also apprised that at the distribution level, since electricity is a concurrent subject, States have the right to decide the tariff across the categories of consumers, keeping in view the socio-economic conditions of their consumers and the State Government policies. The States with a view to provide lower power tariff to marginalized/ poor consumers use cross-subsidy as a tool. Also, many States have created a large number of consumer tariff categories/slabs, in some cases, the number is as high as 93.

The Committee, therefore, cannot but conclude that the present power tariff structure being very complex and varied, as such there is a great need for rationalization of various key components of power tariff. The Committee also understand that having a uniform tariff across the country at present or in one go would be very difficult. However, the Committee are of the opinion that the Ministry should take concrete steps in the direction of rationalization of tariff structure. Keeping in view that the subject is under the concurrent list of the Constitution, the Central Government should undertake comprehensive discussions with the State Governments to address their concerns in this regard so that this desired goal is achieved at some point without pitfalls.

2. The Committee note that the focus of the Tariff Policy 2016 is on 4 Es: Electricity for all, Efficiency to ensure affordable tariffs, Environment for a sustainable future, Ease of doing business to attract investments and to ensure financial viability. The Committee find that the goal of 'Electricity for all' has been successfully achieved. In regard to Efficiency to ensure affordable tariffs, the Committee are of the view that in this context much more is needed to be done. The Country has a total installed capacity of 3,88,848 MW, whereas, the peak demand so far has been about 2,00,000 MW. The PLF of Coal & Lignite based power plants in the country during the year was 53.37%. The under-utilization of such power plants leads to the payment of fixed cost by the DISCOMS which is ultimately passed on to the end consumers. The Aggregate Technical and Commercial (AT&C) losses in the country is still about 21% which needs to be brought down in a time-bound manner and the benefit accrued thereon should be passed on to the consumers in the form of lower tariff.

The Committee also hope that on the front of 'Environment for a sustainable future', there have been sincere efforts by the Central Government by focusing on installation of more and more renewable energy and committing a target of 500 GW by the year 2030. However, it is also a fact that the coal-based thermal power is the mainstay of the power sector in the country and will remain so at least during the present decade. As there is no dearth of indigenous coal in the country, the Committee are of the view that the endevour of the Government should be maximum utilization of coal-based thermal plants in the country by restricting their emission by various interventions including the use of carbon

capture technology. Also, the source and supply of coal to these power plants needs further rationalization to bring down the generation cost. The Committee are of the view that much has been done by the Government for 'Ease of doing business' to attract investments and to ensure financial viability, nonetheless, the issue of financial viability in the distribution sector still persists. The total loss of distribution utilities for the year 2019-20 stands at Rs. 74,914 crore. Their revenue gap without the UDAY grant and Regulatory Income was Rs. 0.60/kWh during the year 2018-19.

In view of the foregoing, the Government should suitably amend the present Tariff Policy not only to enable it to cater to the needs of the changed scenario but also to achieve its unaccomplished goals particularly in connection with the efficiency to ensure affordable tariff, rationalization to bring down the generation cost and financial viability in the distribution sector.

3. The Committee note that as per Tariff Policy, Two-Part Tariff Structure comprising fixed and variable charges has been adopted for power procured under medium and long term contracts by DISCOMS from Generating Stations. The fixed charges are reflective of capital investments and are paid based on the availability of the power station. The variable charges are the cost of fuel used for the generation of electricity. The Committee observe that various States have been raising the issue that they have to pay a big amount as a fixed cost in the event of non-utilization of power stations. Also, they have raised the issue that 15.5% of Return on Equity is too high and does not match the present low-interest regime. The Committee also note that at the distribution tariff level the fixed cost component is not being recovered fully. The Committee do understand that the principal objective of the tariff policy is to essentially attract adequate investments in the power sector by providing an appropriate return on investment; nonetheless, they also believe that it should also not be aloof to the changed scenario. The Committee understand that in regard to the fixed charge component of the power plant, there is no escape from it, however, they desire that the Government should earnestly explore avenues and come out with solutions to reduce its burden on DISCOMS, including ensuring optimum utilization of the generation resources.

4. The Committee note that the Electricity Act, 2003 specifies the duties of DISCOMS by which they are obligated to fulfill the electricity requirements and demands of consumers. The Committee also concur with the view that maintaining the sanctity of contracts is one of the main pillars which attracts the confidence of both buyer and seller and is fundamental to bring investment into the sector. Re-negotiation of PPAs unless mutually decided by the contracting parties is not desirable as it sends adverse signals to future investment. The Committee further note that approximately 90% of the electricity demand of the DISCOMS are met through long term Power Purchase Agreements (PPAs). PPAs are entered into between the generating companies and the load-serving entities. The PPAs are commercial in nature and mutually agreed by the parties and are binding on them. The Committee are also aware that the major chunk of any DISCOM's cost is the power purchase cost and there are States/DISCOMS which have made PPAs at very high rates from the current market price and this situation is putting a lot of pressure on their financial performance. In Committee's views if the same is rationalized it would immensely help in making power tariff affordable for the end consumers. Moreover, for having a uniform power tariff across the country, the States will have to end the long-term PPAs with the power generating companies. The Committee, therefore, desire that in case both the parties agree, there should be a provision of review/renegotiation of the PPAs. Further, the Committee also desire that gradually as and when the PPAs expire, they can be pooled. The Central Government should examine this matter and if required, provide all possible assistance to the stakeholders so that instead of a zero-sum game it becomes a win-win situation for the concerned parties.

Power Exchanges

5. The Committee observe that the Power Exchanges in the country harbinger the possibility of having a uniform tariff across the country. The Committee are also of the opinion that for ushering a new era of competition and rationalization of power tariff of power generation of various sources, an efficient, neutral and transparent system of power exchanges would be required. However, at the same time, the Committee also find that at present the power procured through power exchanges is less than 5% of the total electricity generated in the country which

fulfill the power demand of DISCOMS in short term. The Committee also concur with the view that the price of electricity being traded is not cheaper than the average power purchase cost, all the time. Many times, distress bid is put by generating stations so as to keep the plant running at a technical minimum, therefore, the rate therein may not be the true indicator. Also, it is usually observed that other than monsoon and lean demand period, the rate in the Power Exchanges increases due to the increase in overall buy volumes. Moreover, the power exchange prices are determined at the Regional Periphery and hence, do not reflect the cost of transmission.

During the course of detailed discussion, the Committee have found that most of the stakeholders are not averse to the idea of price discovery through Power Exchanges in a fair manner. The Committee also observe that since most of the power demands of DISCOMS are tied with long term PPAs, there is little scope for further growth in the trading volumes of Power Exchanges. However, in future, power exchanges may play a bigger role once the utilities are liberated from the commitment of long term PPAs. The Committee, therefore, recommend that the Government should ensure that the Power Exchange system in the country develops in a manner that encourages competition in the market leading to an increase in the overall efficiency of the power system. They also desire that there should be an adequate number of Power Exchanges to rule out any monopoly in this regard. Also, stringent regulation needs to be made and strictly enforced to avoid any gaming or malpractice in power exchanges, which would be detrimental to consumer interest.

Pooling of Electricity at Central Level

6. The Committee note that the country has a total generation installed capacity to the tune of 3,88,848 MW, whereas, the average peak demand hovers around 1,70,000 MW. The Plant Load Factor in respect of coal and lignite based power plants was 53.37% during the year 2020-21. Such power plants under State Sector had a PLF of 44.68% during the same period. This shows the extent of the under-utilization of those power plants. Some DISCOMS have raised the issue that since Solar is the daytime power and have a 'must run' status; they have to surrender some of the power of the conventional generators to accommodate renewable power. This attracts payment of fixed charges on DISCOMS. The Committee also

note that the RPO trajectory which is being laid down by the Regulatory Commission is not being adhered to by the distribution companies. Moreover, the Committee are aware that the cost of installation as well as power generation, vary greatly from plant to plant and source to source. The Committee are also aware that Renewable Energy which is intermittent, needs balancing power from other sources for the stability of the Grid and a need for bundling of power is thus being felt for the firm supply of power. Some sources of power such as Hydropower have a higher initial cost and are also difficult to develop; however, once they are commissioned and fully depreciated, they are an excellent source of clean and cheap energy.

The Committee, therefore, are of the opinion that there should be an ideal mix of power basket not only to get clean, reliable and affordable power but also to optimize the generation resources. In Committee's view there is a need to develop a mechanism to ensure that the power sector develops in a desired manner having an ideal mix of power generation from various sources, and also the resources are utilized optimally. It is also desirable that there should be some strategic planning to reap gains in the long run. The Committee, therefore, desire that the Government should constitute an Expert Committee to examine as to how the pooling of power at the Central level could be done and incentivized to ensure an ideal mix of energy and provide electricity to all the States and UTs at an uniform rate.

The Committee note that 'Merit Order Dispatch' of electricity by the load dispatch centres through 'Security Constrained Economic Dispatch' so far has indicated optimization of the generation across the country thereby reducing the production cost. The Committee also note that to help reduce electricity cost for consumers, the Central Government is planning for the implementation of 'Market-Based Economic Despatch' (MBED) from 01.04.2022 on a limited scale. The Committee understand that this would ensure a single price in a given time slot for all buyers in that time slot and would be a step forward toward One Nation - One Tariff. The Committee hope that MBED will certainly ensure that the cheapest resources across the country are dispatched to meet the overall system demand and facilitate annual savings and desire that if this mechanism proves effective, it should be made more encompassing by including all other power generating companies and be implemented in a phased manner. Further, the

Committee also desire that to maximize the gains from such a mechanism the fuel allocation should be streamlined on the basis of plant efficiency and optimum utilization of pit head plants.

Point of Connection (PoC) Charges

7. The Committee note that the yearly transmission charges are calculated based on CERC Tariff regulations or are based on discovered price through competitive bidding. The yearly transmission charges are to be recovered from users of Inter-State Transmission System (ISTS) based on a sharing mechanism, which is currently the Point of Connection (PoC) mechanism. Due to inherent considerations of distance/ direction and quantum, these PoC charges vary for different injection/ drawal points. Many States have pointed out the need to rationalize the PoC mechanism as it lacks transparency. The Committee are in agreement with the view that the characteristic of transmission pricing is that the transmission charges have to be recovered in full. The sharing of these charges will change within the set of payees depending upon the mechanism used for computation. Hence, any decrease of charges for one payee will definitely lead to an increase of charges for other payees. This makes it difficult to satisfy all the stakeholders.

The Committee, therefore, desire that the Government/ CERC should form an Expert Committee to examine this issue. The Committee also recommend that for better and optimum utilization of the transmission system and realization of the dream of 'One-Nation One-Grid' in its true spirit, the feasibility of having a uniform transmission charges based only on the usage in terms of MW may be explored by consulting the stakeholders.

Cross-subsidy

8. The Committee note that the Tariff Policy provides that for achieving the objective that the tariff progressively reflects the cost of supply of electricity, the Appropriate Commission would notify a roadmap such that tariffs are brought within ±20% of the average cost of supply. The road map would also have intermediate milestones, based on the approach of a gradual reduction in cross-subsidy. The response of the State Governments in regard to the restriction of cross-subsidy to plus-minus 20% of the Average Cost of Supply, has been

positive and most of them have emphasized the need to have a cost-reflective tariff. In view of this, the Committee recommend that there is a need not only for restriction of cross-subsidy within a band but also for bringing more transparency in this matter for the improvement of the financial health of the DISCOMS. The Committee also desire that the possibility of adoption of a system may be examined, wherein the base tariff is the 'Average Cost of Supply' for all the categories, thereafter, plus-minus 20% is applied as the case may be for simplicity and transparency in tariff determination. Alternatively, the Direct Benefit Transfer (DBT) of subsidy in the account of the beneficiary may also be examined to make the system of cross-subsidy more focused and effective.

Rationalization of Tariff Categories

9. The Committee find that over the years, the tariff structure across the States has become very complex and the consumer tariff categories are unduly large in numbers. In this regard, it is often argued that the high complexity of tariffs for each segregated category prevents consumers from fully responding to tariffs due to the high cost of processing the price information. Further, the basis for making such classifications has not been uniform across the country. The Committee further note that the Ministry of Power had also constituted a Committee to suggest measures for "Simplification of consumer categories and rationalization of Tariff Structure". The Committee in its report had recommended streamlining the consumers broadly into five major categories, i.e. domestic, agriculture, commercial, industrial and institutional. Under these broad categories, it was proposed to sub-categorize the consumers on the basis of voltage. The domestic category may have within itself three subcategories i.e. cross-subsidizing, cross-subsidized and cross-subsidy neutral. Further, this category may have a lifeline category and efforts should be made to gradually phase out un-metered, rural and urban categories. For agriculture consumers, consolidation of sub-categories may be made into agriculture and agriculture-allied categories and efforts should be made to dis-incentivize unmetered consumption. For industry category, a separate "Supported" category may be created to facilitate a select group of industries.

The Committee are of the view that rationalization of tariff structure across the country would not only make the process of tariff determination simpler but

would also bring more transparency and accountability, as only the targeted and deserving group would get the needed benefits. The Committee, therefore, are of the opinion that the said proposal for rationalization of tariff structure may become part of the Tariff Policy and the States be persuaded to implement this earnestly. The Committee also desire that the Central Government should provide assistance to the States which may find it difficult to implement this due to some practical reasons.

Agriculture Feeder Separation

10. The Committee note that the Feeder Separation is one of the important works to supplement the goal for providing 24x7 uninterrupted power supply and in improving the AT&C loss in the DISCOMS /Power Departments. The Committee are aware that under Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY), there is a component for separation of agriculture and non-agriculture feeders. The feeder separation involves the separation of predominantly existing mixed category feeders (which supply electricity to all types of consumers including agriculture consumers) into agriculture and non-agriculture feeders.

In regard to the status of feeder separation in the country, the Ministry of Power have stated that there are about 1,64,057 Rural feeders in the country. And out of these, a total of 62,193 Feeder (37.91%) are under Agriculture category. They have also stated that 4,697 Feeders have been separated under the ongoing DDUGJY scheme as on 31.12.2021. These agriculture feeders are the separated feeders with predominantly agriculture consumers. There are balance of 166 feeders under DDUGJY as on 31.12.2021 which are under reconciliation. They have further stated that the separation of Feeders is a dynamic process to be carried out by States/DISCOMS. The Committee find that the separation of feeders will facilitate DISCOMS to supply electricity to the agriculture sector without interrupting quality and reliable power to domestic consumers. The Committee, therefore, are of the view that this system would benefit consumers as well as DISCOMS, as the agriculture sector may get power at a supportive rate and the State Governments/DISCOMS may rationalize their power procurement cost by resorting to Demand Side Management (DSM). The Committee, therefore, recommend the Government to proactively engage with the States to assess the quantum of work that needs to be undertaken under feeder separation by doing

Cost-Benefit Analysis, encouraging them to execute it expeditiously and complete the process within a fixed timeline.

Reduction of AT&C losses

11. The Committee note that for the year 2018-19, the ACoS and ARR were Rs. 6.15/kWh and Rs. 5.55/kWh respectively with a gap of Rs. 0.60 kWh (9.75% of ACoS) without UDAY Grant and Regulatory Income. The Committee further note that the AT&C losses for the said period stood at 21.74%. Had the AT&C losses reduced even by half, the DISCOMS would have become financially viable. The Committee are aware that the Central Government has also been making efforts to reduce the AT&C losses for years, with little success as it is still at the level of about 21% and in some States it is as high as 60%. The Committee are aware that distribution of electricity is in the domain of States so their determination and active participation to bring down AT&C losses are equally important. The Committee in the past had examined the subject on AT&C losses in-depth and found that there are majorly commercial losses and pilferages with a little share of technical losses. The Committee had also learnt that the reduction of AT&C losses is also an administrative issue and depends greatly on managerial interventions of the States/DISCOMS. The Central Government have been doing their bit by the implementation of RPDRP, A-RPDRP, IPDS and UDAY schemes. However, Supervisory Control and Data Acquisition (SCADA) as provided under IPDS, enables the DISCOMS to know where the problem is and what to do. But ultimately, DISCOMS will have to take managerial action to address that issue.

In the view of the Committee, there is a dire need to reduce the AT&C losses swiftly by taking stricter measures, as it would not only reduce the burden on the exchequer but also benefit the honest consumers in the form of reduced power bills. The Committee, therefore, desire that the Central Government should persuade the State Governments and provide them all the possible assistance in reducing AT&C losses in a time-bound manner. The Committee also desire that the success stories in regard to the reduction of AT&C losses worth emulating should be propagated and the information related to the performance of DISCOMS also needs to be publicized in layman's terms so that the public also becomes aware of it.

12. The Committee find that the task of providing universal access to electricity has been successfully achieved. Now, the aim is to provide '24x7 power to all', a joint initiative of the Government of India and the States/UTs. The Committee are of the view that to achieve the target, the financial viability of DISCOMS is of utmost importance. Simultaneously, it is of paramount importance that the honest consumers should get quality, reliable and uninterrupted power supply at reasonable rates. The Committee are also of the belief that the Distribution Sector needs to be made more transparent, responsive and accountable. The Central Government should examine the matter as to how we can gradually move to cost-reflective tariff without increasing the burden on the common man. The Committee desire that the audit system for DISCOMS needs to be improved and strengthened for better transparency. Simultaneously, interventions such as 'Time of Day' (TOD) tariff should be deployed as an important 'Demand Side Management' (DSM) measure to incentivize consumers to shift a portion of their load from peak times to off-peak times, thereby improving the system load factor by reducing the demand on the system during peak period. This can be thus implemented by the DISCOMS to reduce their expenses and for better utilization of generation resources.

NEW DELHI;
26th July, 2022
Sravana 4, 1944 (*Saka*)

Rajiv Ranjan Singh *alias* Lalan Singh
Chairperson,
Standing Committee on Energy

APPENDIX I

MINUTES OF THE FOURTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2019-20) HELD ON 6th NOVEMBER, 2019 IN COMMITTEE ROOM 'E', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1100 hrs. to 1300 hrs.

PRESENT

MEMBER

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

1. Shri Chandra Sekhar Bellana
2. Shri Harish Dwivedi
3. Km. Shobha Karandlaje
4. Shri Ramesh Chander Kaushik
5. Shri Ashok Mahadeorao Nete
6. Shri Praveen Kumar Nishad
7. Smt. Anupriya Patel
8. Shri Jai Prakash
9. Shri Shivkumar Chanabasappa Udasi

RAJYA SABHA

10. Shri T. K. S. Elangovan
11. Shri Vijay Goel
12. Shri B. K. Hariprasad
13. Shri Javed Ali Khan
14. Dr. C.P. Thakur
15. Smt. Viplove Thakur

SECRETARIAT

1.	Shri R.C. Tiwari	-	Joint Secretary
2.	Shri N.K. Pandey	-	Director
3.	Smt. L. N. Haokip	-	Deputy Secretary

LIST OF WITNESSES

Ministry of Power

Sl. No.	Name	Designation
1.	Shri Sanjeev Nandan Sahai	Secretary
2.	Shri S.K.G. Rahate	Additional Secretary
3.	Shri Aniruddha Kumar	Joint Secretary
4.	Shri M.K. Narayan	Joint Secretary
5.	Shri V.K. Dewangan	Joint Secretary

PSUs/Autonomous Body/Statutory Body

6.	Shri Prakash Mhaske	Chairperson, CEA
7.	Shri Somit Dasgupta	Member (E&C), CEA
8.	Shri S.K. Jha	Secretary, CERC
9.	Shri Gurdeep Singh	CMD, NTPC
10.	Shri K. Sreekant	CMD, PGCIL
11.	Shri Balraj Joshi	CMD, NHPC

2. At the outset, the Chairman welcomed the Members and the representatives of the Ministry of Power to the sitting of the Committee and apprised them of the agenda and focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. Thereafter, the Ministry of Power made a PowerPoint presentation on the subject. The Secretary, Ministry of Power, also briefly apprised the Committee about the subject matter i.e. 'Review of Power Tariff Policy – Need for uniformity in tariff structure across the Country'.

4. Thereafter, the Committee *inter-alia* deliberated upon the following points with the representatives of the Ministry of Power:

i) Determination of power tariff – Provisions of Electricity Act, 2003, guiding rules and regulations for determination of tariff.

ii) Authorities responsible for determination of tariff – Central Regulatory Commission, State Regulatory Commissions, the mandate and the performance so far.

iii) Power Tariff Policy – its formulation and objective, Tariff Policy of 2006 and subsequent Amendments done in the year 2008, 2011, and 2016, salient features of Tariff Policy of 2016, need for change in Tariff Policy.

iv) Need to simplify the process of tariff determination and make it more transparent and accountable.

v) Present tariff structure/slabs in various States – need for reduction in number of categories/slabs and to bring uniformity in consumer categories across the Country.

vi) Reasons for poor financial conditions of DISCOMS – high AT&C losses, poor infrastructure and their operational efficiencies, gap in Average Cost of Supply and Average Revenue Receipt, delayed/non-payment of dues by the Government agencies.

vii) Need for Reforms – Segregation of Content and Carriage, technological up-gradation of infrastructure, pre-payment/timely payment of dues by the Government and its Agencies, installation of Smart/Pre-Paid meters, creation of power pool at the Central level and need for Tripartite Power Purchase Agreements.

5. The Members sought clarifications on various issues relating to the subject and the representatives of the Ministry replied to some of the questions. The Committee directed the representatives of the Ministry to furnish written replies to the queries which could not be responded to by them.

6. During the discussion, the Committee felt the need to examine various stakeholders relating to the subject. Accordingly, they decided to call representatives of various State Governments/ State Electricity Regulatory Commissions (SERCs)/Independent Power Producers (IPP) in the forthcoming sittings of the Committee.

7. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

APPENDIX II

MINUTES OF THE EIGHTH SITTING OF THE STANDING COMMITTEE ON ENERGY(2019-20) HELD ON 6TH JANUARY, 2020 IN MAIN COMMITTEE ROOM, PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1100 hrs. to 1340 hrs.

PRESENT

MEMBER

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

2. Dr. A. Chellakumar
3. Shri Harish Dwivedi
4. Shri Kishan Kapoor
5. Shri Ramesh Chander Kaushik
6. Shri Praveen Kumar Nishad
7. Smt. Anupriya Patel
8. Shri Jai Prakash
9. Shri N. Uttam Kumar Reddy
10. Shri Shivkumar Chanabasappa Udasi

RAJYA SABHA

11. Shri T.K.S. Elangovan
12. Shri B.K. Hariprasad
13. Shri Javed Ali Khan
14. Shri S. Muthukaruppan
15. Smt. Viplove Thakur

SECRETARIAT

1.Shri R.C. Tiwari Joint Secretary

2.Shri N.K. Pandey Director

LIST OF WITNESSES

MINISTRY OF POWER

Sl. No.	Name	Designation
1	Shri Aniruddha Kumar	Joint Secretary
2	Shri Ghanshyam Prasad	Chief Engineer
3	Shri Prakash Mhaske	Chairperson, CEA
4	Shri Sandesh Kumar Sharma	Member(E&C), CEA

CENTRAL ELECTRICTY AUTHORITY

Sl. No.	Name	Designation
1	Shri Prakash Mhaske	Chairperson, CEA
2	Shri Sandesh Kumar Sharma	Member(E&C), CEA

CENTRAL ELECTRICITY REGULATORY COMMISSION

Sl. No.	Name	Designation
1	Shri S.C. Shrivastava	CE, CERC
2	Dr. S.K. Chatterjee	Chief, CERC
3	Smt. Rashmi Samasekharan Nair	Deputy Chief, CERC
4	Shri Rajashekhar	Advisor, CERC

MINISTRY OF NEW & RENEWABLE ENERGY

Sl. No.	Name	Designation
1	Shri Anand Kumar	Secretary
2	Shri Bhanu Pratap Yadav	Joint Secretary
3	Shri Amitesh Kumar Sinha	Joint Secretary
4	Ms. Sutapa Majumdar	Economic Advisor
5	Dr. P.C. Maithani	Scientist-G
6	Dr. Pankaj Saxena	Scientist-F

STATE ELECTRICITY REGULATORY COMMISSIONS

Sl. No.	Name	Designation
1	Shri Sanjay Kumar Singh	Secretary, U.P. Electricity Regulatory Commission, Lucknow
2	Mr. D. Radhakrishna	Chairman, Tripura Electricity Regulatory Commission
3	Dr. B. Jayasankar	Director (Finance &Tariff) Kerala State Electricity Regulatory Commission
4	Mr. Shambhu Dayal Meena	Chairman, Karnataka Electricity Regulatory Commission
5	Shri Ramesh Kr. Chaudhary	Member, Bihar Electricity Regulatory Commission
6	Mr. Anand Kumar	Chairman, Gujarat Electricity Regulatory Commission
7	Shri Arun Kumar Sharma	Member, Chhattisgarh State Electricity Regulatory Commission, Raipur

8	Shri Mukul Dhariwal	Member Madhya Pradesh Electricity Regulatory Commission
9	Shri Priyabrata Patnaik	Secretary, Odisha Electricity Regulatory Commission
10	Shri Durgadas Goswami	Member, West Bengal Electricity Regulatory Commission
11	Shri Tarun Kumar Mukherjee	Secretary, West Bengal Electricity Regulatory Commission
12	Shri Tapan Kumar Chakraborty	Advisor(Engg) West Bengal Electricity Regulatory Commission
13	Shri Sanjay Kumar Singh	Secretary, U.P. Electricity Regulatory Commission, Lucknow
14	Shri D.P. Gairola	Member (Law) &Chairman (I/c) Uttarakhand Electricity Regulatory Commission
15	Shri Gaurav Sabharwal	Assistant Director (Finance/Tariff) Uttarakhand Electricity Regulatory Commission
16	Shri Ghanashyam Patil	Director (Tariff) Maharashtra Electricity Regulatory Commission
17	Shri Pravas Kumar Singh	Member (Legal) Jharkhand Electricity Regulatory Commission
18	Er. Pradeep Chauhan	Joint Director (Tariff) Himachal Pradesh Electricity Regulatory Commission, Shimla
19	Sh. B.K. Dosi	Secretary, Rajasthan Electricity Regulatory Commission,
20	Sh. Himanshu khuarana	Director (Tech) cum Addl. Secretary, Rajasthan Electricity Regulatory Commission
21	Sh. Pravindra Singh Chauhan	Member, Haryana Electricity Regulatory Commission, Panchkula

2. At the outset, the Chairman welcomed the Members and the representatives of the Ministry of Power, the Ministry of New and Renewable Energy, Central Electricity Regulatory Commission and State Electricity Regulatory Commissions to the sitting of the Committee and apprised them of the agenda and focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. Thereafter, the Committee *inter-alia* deliberated upon the following points with them:

i) Determination of power tariff – Provisions of Electricity Act, 2003, guiding rules and regulations for determination of tariff.

ii) Authorities responsible for determination of tariff – Central Regulatory Commission, State Regulatory Commissions, the mandate and the performance so far.

iii) Need to simplify the process of tariff determination and make it more transparent and accountable.

iv) Present tariff structure/slabs in various States – need for reduction in number of categories/slabs and to bring uniformity in consumer categories across the Country.

v) Reasons for poor financial conditions of DISCOMS.

vi) Concept of pooling of power at the national level – its pros and cons.

vii) Need for Reforms in Power Distribution Sector.

4. The Members sought clarifications on various issues relating to the subject and the representatives of the Ministries/State Electricity Regulatory Commissions replied to most of the questions. The Committee directed the representatives of the Ministry to furnish written replies to the queries which could not be responded to by them.

5. During the discussion, the Committee felt the need to hear the views of the Independent Power Producers (IPPs). Accordingly, they decided to call representatives of Independent Power Producers (IPP) in the forthcoming sitting of the Committee.

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7. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

APPENDIX -III

MINUTES OF THE NINTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2019-20) HELD ON 6TH JANUARY, 2020 IN MAIN COMMITTEE ROOM, PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1430 hrs. to 1600 hrs.

PRESENT

MEMBER

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

2. Dr. A. Chellakumar
3. Shri Harish Dwivedi
4. Shri Kishan Kapoor
5. Shri Ramesh Chander Kaushik
6. Shri Praveen Kumar Nishad
7. Smt. Anupriya Patel
8. Shri Jai Prakash
9. Shri N. Uttam Kumar Reddy
10. Shri Shivkumar Chanabasappa Udasi

RAJYA SABHA

11. Shri T.K.S. Elangovan
12. Shri B.K. Hariprasad
13. Shri Javed Ali Khan
14. Shri S. Muthukaruppan
15. Smt. Viplove Thakur

SECRETARIAT

1. Shri R.C. Tiwari — Joint Secretary
2. Shri N.K. Pandey — Director

LIST OF WITNESSES

MINISTRY OF POWER

Sl. No.	Name	Designation
1	Shri Aniruddha Kumar	Joint Secretary
2	Shri Ghanshyam Prasad	Chief Engineer
3	Shri Prakash Mhaske	Chairperson, CEA
4	Shri Sandesh Kumar Sharma	Member(E&C), CEA

CENTRAL ELECTRICTY AUTHORITY

Sl. No.	Name	Designation
1	Shri Prakash Mhaske	Chairperson, CEA
2	Shri Sandesh Kumar Sharma	Member(E&C), CEA

CENTRAL ELECTRICITY REGULATORY COMMISSION

Sl. No.	Name	Designation
1	Shri S.C. Shrivastava	CE, CERC
2	Dr. S.K. Chatterjee	Chief, CERC
3	Smt. Rashmi Samasekharan Nair	Deputy Chief, CERC
4	Shri Rajashekhar	Advisor, CERC

MINISTRY OF NEW & RENEWABLE ENERGY

Sl. No.	Name	Designation
1	Shri Anand Kumar	Secretary
2	Shri Bhanu Pratap Yadav	Joint Secretary
3	Shri Amitesh Kumar Sinha	Joint Secretary
4	Ms. Sutapa Majumdar	Economic Advisor
5	Dr. P.C. Maithani	Scientist-G
6	Dr. Pankaj Saxena	Scientist-F

REPRESENTATIVES OF THE STATE GOVERNMENTS

S.No	State	Name/Designation
1	Assam	Shri Niraj Verma, Pr. Secretary (Power), Government of Assam
2	Bihar	Shri Arun Kumar Sinha, Director(Projects),Bihar State Power Generation Company Ltd 2)Sri S.K.P Singh, Director(Projects),North Bihar Power Distribution Co. Ltd
3	Chhattisgarh	Shri G.C. Mukherjee, Director (Commercial &Regulatory Affairs) Chhattisgarh State Power Distribution Company Limited
4	Delhi	Ms. Padmini Singla, Secretary, Power GNCT of Delhi.
5	Gujarat	Shri K.P. Jangid, GM(Commerece), GUVNL
6	Haryana	Shri Mohammad Shayin, IAS, Secretary (Power) -cum-MD/HVPNL

7	Mizoram	Er. C. Lalramliana, Joint Secretary, Power &Electricity Department, Government of Mizoram
8	Karnataka	Shri Mahendra Jain, Additional Chief Secretary, Energy Department, Government of Karnataka
9	Madhya Pradesh	Shri Nitesh Vyas, Managing Director of MP Power Management Co. Ltd and Secretary, Energy, Government of MP
10	Odisha	Shri Bishnupada Sethy, Principal Secretary, Deptt. of Energy,Govt of Odisha
11	Punjab	Ms. Ravneet Kaur Additional Chief Secretary,Department of Power, Government of Punjab
12	Tamil Nadu	Shri K. Sundaravadhanam - Director/Finance, TANGEDCO (ii) Shri V.Kasi - Financial Controller,TANGEDCO
13	Telangana	Shri Cherukuri Srinivasa Rao, JMD (Finance, Commercial and HRD) Transmission Corporation of Telangana
14	Uttar Pradesh	Shri Arvind Kumar, IAS, Private Secretary Energy, UP &Chairman, UPPCL
15	Chandigarh	Shri Mukesh Anand, Special Secretary (Engineering) U.T., Chandigarh

2. At the outset, the Chairman welcomed the Members and the representatives of the Ministry of Power, the Ministry of New and Renewable Energy, Central Electricity Regulatory Commission and the State Governments to the sitting of the Committee and apprised them of the agenda and focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. Thereafter, the Committee *inter-alia* deliberated upon the following points with them:

i) Determination of power tariff – Provisions of Electricity Act, 2003, guiding rules and regulations for determination of tariff.
ii) Need to simplify the process of tariff determination and make it more transparent and accountable.
iii) Present tariff structure/slabs in various States – need for reduction in number of categories/slabs and to bring uniformity in consumer categories across the Country.
iv) Reasons for poor financial conditions of DISCOMS.
v) Concept of pooling of power at the national level – its pros and cons.
vi) Need for Reforms in Power Distribution Sector.

4. The Members sought clarifications on various issues relating to the subject and the representatives of the Ministries/State Governments replied to most of the questions. The Committee directed the representatives of the Ministries/ State Governments to furnish written replies to the queries which could not be responded to by them.

5. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

APPENDIX -IV

MINUTES OF THE TENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2019-20) HELD ON 16TH JANUARY, 2020 IN COMMITTEE ROOM - 2, BLOCK -A, PARLIAMENT HOUSE ANNEXE EXTN. BUILDING, NEW DELHI

The Committee met from 1430 hrs. to 1600 hrs.

PRESENT

MEMBERS

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

2. Shri Thomas Chazhikadan
3. Shri Harish Dwivedi
4. Shri Sanjay Haribhau Jadhav
5. Shri Ramesh Chander Kaushik
6. Shri Praveen Kumar Nishad
7. Smt. Anupriya Patel
8. Shri Jai Prakash
9. Shri Naba Kumar Sarania
10. Shri Shivkumar Chanabasappa Udasi

RAJYA SABHA

11. Shri Javed Ali Khan
12. Smt. Viplove Thakur

SECRETARIAT

1. Shri R.C. Tiwari — Joint Secretary
2. Shri N.K. Pandey — Director

LIST OF WITNESSES

MINISTRY /AUTHORITY/REGULATORS

Sl. No.	Name	Designation
1	Shri Sandeep Naik	Director
2	Shri P.D. Siwal	Member (Thermal), CEA
3	Shri Rajesh Kumar	Director, CEA
4	Smt. Rashmi Nair	Deputy Chief, CERC
5	Shri Raja Shekhar	Advisor, CERC

REPRESENTATIVES OF INDEPENDENT POWER PRODUCERS

Sl. No.	Name	Designation	Organization
1	Shri Ashok Khurana	Director General	Association of Power Producers
2	Shri Suren Jain	M.D.	Jaiprakash Power Venutres Ltd.
3	Shri Ashis Basu	Co-Chairman-Association of Power Producers and CEO	GMR Energy Ltd.
4	Shri Ved Mani Tiwari	CEO	Sterlite Power
5	Shri Kush	CEO	Essar Power MP Ltd.
6	Shri Bharat Rohra	MD &CEO	Jindal Steel &Power Ltd.
7	Shri Ajay Kapoor	Chief Legal, Regulatory &Advocacy	Tata Power Ltd.
8	Shri Balaji Sivan	Vice President	GMR Energy Ltd.
9	Shri Dinesh Batra	Vice President	Hindustan Power Projects Pvt. Ltd.
10	Shri Mahesh Vipradas	V.P.-Regulatory &Power Markets	Sembcorp Energy India Ltd.
11	Shri Abhishek Chatterjee	Asst. D.G.	Association of Power Producers

2. At the outset, the Chairman welcomed the Members and the representatives of the Ministry of Power, Central Electricity Regulatory Commission and the Independent Power Producers to the sitting of the Committee and apprised them of the agenda and focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. Thereafter, the Committee *inter-alia* deliberated upon the following points with them:

i) Determination of power tariff – Provisions of Electricity Act, 2003, guiding rules and regulations for determination of tariff.

ii) Need to simplify the process of tariff determination and make it more transparent and accountable.

iii) Present tariff structure/slabs in various States – need for reduction in number of categories/slabs and to bring uniformity in consumer categories across the Country.

iv) Generatation Capacity in the country – need to optimally utilized the capacity, investment made in the generation sector.

v) Concept of pooling of power at the national level – its pros and cons.

vi) Need for Reforms in Power Distribution/Generation Sector.

4. The Members sought clarifications on various issues relating to the subject and the representatives of the Ministry/Independent Power Producers replied to most of the questions. The Committee directed the representatives of the Ministries/ State Governments to furnish written replies to the queries which could not be responded to by them.

5. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

APPENDIX -V

MINUTES OF THE FIFTEENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2019-20) HELD ON 3rd SEPTEMBER, 2020 IN MAIN COMMITTEE ROOM, PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee sat from 1100 hrs. to 1300 hrs.

PRESENT

MEMBER

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

2. Shri Gurjeet Singh Aujla
3. Shri Chandra Shekhar Bellana
4. Shri Thomas Chazhikadan
5. Shri Harish Dwivedi
6. Shri Jai Prakash
7. Shri Ramesh Chander Kaushik
8. Shri Praveen Kumar Nishad
9. Smt. Anupriya Patel
10. Shri N. Uttam Kumar Reddy
11. Shri Shivkumar Chanabasappa Udasi

RAJYA SABHA

12. Shri T.K.S. Elangovan
13. Shri Javed Ali Khan
14. Shri Muzibulla Khan
15. Shri Nabam Rebia
16. Shri Sudhanshu Trivedi

SECRETARIAT

1.	Shri R.C. Tiwari	-	Joint Secretary
2.	Shri Sundar Prasad Das	-	Director

LIST OF WITNESSES

S.No.	Name	Designation
	Power Generating Central Power Sector Undertakings	
1	Shri Gurdeep Singh	CMD, NTPC & Chairman, DVC
2	Shri D.V. Singh	CMD, THDC
3	Shri N. L. Sharma	CMD, SJVNL
4	Shri V. K. Singh	CMD, NEEPCO
5	Er. Harminder Singh Chug	Member (Power), BBMB
6	Shri Yamuna Kumar Chaubey	Director, NHPC
7	Shri Binod Kumar Rai	Resident Director, DVC
	Regulators/Authority /Others	
8	Shri Sanoj Kumar Jha	Secretary, CERC
9	Shri Ajay Talegaonkar	Chief Engineer (F&CA) CEA
10	Shri K. Sreekant	CMD, PGCIL
11	Shri KVS Baba	CMD, POSOCO
	Ministries	
12	Shri Vivek Kumar Dewangan	Joint Secretary, Ministry of Power
13	Shri Ghanshyam Prasad	Joint Secretary, Ministry of Power
14	Shri J.N. Swain	CMD, SECI (MNRE)
15	Shri Tarun Singh	Scientist-D Ministry of New & Renewable Energy

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3. Thereafter, the Chairperson welcomed the Members and the representatives of the Ministry of Power, the Ministry of New and Renewable Energy, CERC, CEA, PowerGrid, POSOCO and Power Generating Central Public Sector Undertakings - NTPC, THDC, NHPC, SJVNL, NEEPCO, BBMB and DVC to the sitting of the Committee and apprised them of the agenda and focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

4. Thereafter, the Committee *inter-alia* deliberated upon the following points:

i) Determination of power tariff – provisions of the Electricity Act, 2003, Power Tariff Policy, 2016, guiding rules and regulations for determination of tariff.

ii) Need for change in Power Tariff Policy, 2016 - to simplify the process of tariff determination and make it more transparent and accountable, promoting competition, efficiency, and optimization in utilization of resources.

iii) Power Generation Capacity in the country –intermittency of renewable energy, Grid stability, importance of hydro power and need for expeditious development of Hydro Power Sector.

iv) The concept of Pooling of Power at the Central level - its need, pros and cons, possible difficulties in its implementation, fixed and variable cost of tariff, implications of renegotiation of long term Power Purchase Agreements.

v) One Nation-One Grid - significance of this concept, Point of Connections (PoC) charges, role of Power Exchanges in bringing uniformity in power tariff.

5. The Members sought clarifications on various issues relating to the subject and the representatives of the Power Generating Central Public Sector Undertakings (CPSUs)/Ministries/Regulators replied to some of the questions. The Committee directed to furnish written replies to the queries which could not be responded. The Committee also directed the representatives of Power Generating Central Public Sector Undertakings to send their views on the matter in writing on which it could not be responded.

6. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

APPENDIX -VI

MINUTES OF THE FOURTEENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2020-21) HELD ON 10th AUGUST, 2021 IN MAIN COMMITTEE ROOM, PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1500 hrs. to 1600 hrs.

PRESENT

MEMBER

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

2. Shri Gurjeet Singh Aujla
3. Chandra Sekhar Bellana
4. Shri Sanjay Haribhay Jadhav
5. Shri Ramesh Chander Kaushik
6. Shri Ashok Mahadeorao Nete
7. Shri Parbatbhai Savabhai Patel
8. Shri Jai Prakash
9. Shri Dipsinh Shankarsinh Rathod
10. Shri Shivkumar Chanabasappa Udasi

RAJYA SABHA

11. Shri Muzibulla Khan
12. Shri Maharaja Sanajaoba Leishemba
13. Dr. Sudhanshu Trivedi

SECRETARIAT

1.	Shri R.C. Tiwari	-	Joint Secretary
2.	Shri R.K. Suryanarayanan	-	Director
3.	Shri Kulmohan Singh Arora	-	Additional Director

LIST OF WITNESS

S.No.	Name	Designation
MINISTRY OF POWER		
1.	Shri Ghanshyam Prasad	Joint Secretary
2.	Shri Gorityala Veera Mahendar	Member (E&C), CEA
3.	Shri Ajay Talegaonkar	Chief Engineer, CEA
4.	Shri Sanoj Kumar Jha	Secretary, CERC
5.	Shri S.K. Chatterjee	Chief (RA), CERC
6.	Shri KVS Baba	Chairman & Managing Director, POSOCO
7.	Shri S. S. Barpanda	Director (MO), POSOCO
8.	Shri K. Sreekant	Chairman & Managing Director, PGCIL
9.	Shri Sunil Agrawal	Executive Director (CP), PGCIL
MINISTRY OF NEW AND RENEWABLE ENERGY		
10.	Shri Amitesh Kumar	Joint Secretary
11.	Shri S.K. Mishra	Director(PS), SECI
STATE GOVERNMENTS		
12.	Shri N. Srikanth	Energy Secretary, State Govt. of Andhra Pradesh
13.	Shri A.K. Sinha	Director (Technical), BSPGCL, State Govt. of Bihar
14.	Shri Satya Gopal	Addl. Chief Secretary (Power), State Govt. of Delhi
15.	Ms. Mamta Verma	Principal Secretary (EPD), State Govt. of Gujarat
16.	Shri Dharmendra Pratap Yadav	Principal Secretary, Energy Department, State Govt. of Tamil Nadu
17.	Shri G. Kumar Naik	Additional Chief Secretary to Energy Department, State Govt. of Karnataka
DISCOMS		
18.	Shri H. Haranantha Rao	Chairman & Managing Director, APSPDCL, Andhra Pradesh
19.	Shri A.V.L.K. Jagannadha Sharma	DyEE/APPCC, Andhra Pradesh
20.	Shri G. Ramesh	DyEE/RAC, APSPDCL, Andhra Pradesh
21.	Shri G. Anjanappa	AAO/RAC, APSPDCL, Andhra Pradesh
22.	Shri Ashok Kumar	Director (Operation), SBPDCL, Bihar
23.	Sh. Amal Sinha	Director & Group CEO, BSES Rajdhani Power Limited, Delhi
24.	Sh. Rajeev Chowdhury	Head Regulatory, BSES Rajdhani Power Limited, Delhi
25.	Sh. Rajesh Bansal	Chief Executive, BSES Rajdhani Power Limited, Delhi
26.	Sh. Amarjeet Singh	Chief Executive, BSES Rajdhani Power Limited, Delhi
27.	Shri Dhimantkumar Vyas	Managing Director, PGVCL, Gujarat
28.	Shri K.P. Jangid	General Manager (Commerce), GUVCL, Gujarat
29.	Shri Jayavibhavaswamy	Managing Director, CESCOM, Karnataka

30.	Shri V. Prakash	General Manager (Commercial), CESCOM, Karnataka
31.	Smt. Renuka	General Manager (A&R), CESCOM, Karnataka
32.	Shri Rachappaji	Manager (A&R), CESCOM, Karnataka
33.	Smt. Latha	Deputy General Manager (RA-1), CESCOM, Karnataka
34.	Dr. R.C. Chetan	Director (Finance), BESCOM, Karnataka
35.	Shri H.C. Sreerame Gowda	Director (Technical), BESCOM, Karnataka
36.	Shri Rajesh Lakhoni	Principal Secretary/CMD, TANGEDCO, Tamil Nadu
37.	Shri S. Shanmugam	Managing Director, TANTRANSCO, Tamil Nadu
38.	Shri P. Muthiah	Additional Director, TANGEDCO, Tamil Nadu
39.	Shri B. Rajeshwari	C.F.C., TANGEDCO, Tamil Nadu

2. At the outset, the Chairperson welcomed the Members and the representatives of the Ministry of Power, the Ministry of New and Renewable Energy, CERC, CEA, PowerGrid, POSOCO, State Governments and DISCOMS to the sitting of the Committee and apprised them of the agenda and focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. Thereafter, the Committee *inter-alia* deliberated upon the following points:

i) Need for change in Power Tariff Policy - to simplify the process of tariff determination and make it more transparent and accountable, promoting competition, efficiency, and optimization in utilization of resources.

ii) Need for optimum utilization of Power Generation Capacity in the country – intermittency of renewable energy, Grid stability, importance of hydro, Renewable Purchase Obligation (RPO).

iii) The concept of Pooling of Power at the Central level - its need, pros and cons, possible difficulties in its implementation, fixed and variable cost of tariff, implications of renegotiation of long term Power Purchase Agreements, Regulation of Power Supply (First Amendment) Regulations, 2021.

iv) One Nation-One Grid - Point of Connections charges, Power Exchanges, impact of new regulation related to transmission charges, Market Based Economic Dispatch (MBED).

v) Financial health of DICOMS – categories and sub-categories of consumers, cross subsidy and Direct Benefit Transfer, outstanding dues, extension of Centrally Sponsored Schemes to Private DISCOMS.

4. The Members sought clarifications on various issues relating to the subject and the representatives of the DISCOMS replied to some of the questions. The Committee, therefore, directed the DISCOMS to furnish written replies to the queries which could not be responded. The Committee also directed the DISCOMS to send their views on the matter in writing.

5. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

APPENDIX -VII

MINUTES OF THE THIRD SITTING OF THE STANDING COMMITTEE ON ENERGY (2021-22) HELD ON 1st DECEMBER, 2021 IN COMMITTEE ROOM 'D', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1500 hrs. to 1600 hrs.

PRESENT

MEMBER

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

2. Smt. Sajda Ahmed
3. Shri Devendra Singh Bhole
4. Shri Sanjay Haribhau Jadhav
5. Shri Kishan Kapoor
6. Shri Ramesh Chander Kaushik
7. Shri Uttam Kumar Reddy Nalamada
8. Shri Parbatbhai Savabhai Patel
9. Shri Jai Prakash
10. Shri Dipsinh Shankarsinh Rathod
11. Shri Gnanathiraviam S.
12. Shri Bellana Chandra Sekhar
13. Shri Shivkumar C. Udasi

RAJYA SABHA

14. Shri Ajit Kumar Bhuyan
15. Shri T.K.S. Elangovan
16. Shri Sanjay Seth

SECRETARIAT

1.	Shri R.C. Tiwari	-	Joint Secretary
2.	Shri R.K. Suryanarayanan	-	Director
3.	Shri Kulmohan Singh Arora	-	Additional Director

WITNESSES

S.No.	Name	Designation/Organization
1	Shri P.K. Pujari	Chairperson, CERC
2	Shri Sanoj Kumar Jha	Secretary, CERC
3	Shri Dinesh Chandra	Chairperson, CEA
4	Shri G.V. Mahendar	Member (E&C), CEA
5	Shri Ajay Talegaonkar	Chief Engineer (F&CA), CEA

2. At the outset, the Chairperson welcomed the Members and the representatives of the Central Electricity Regulatory Commission (CERC) and Central Electricity Authority (CEA) to the sitting of the Committee and apprised them of the agenda *viz*. evidence on the subject 'Review of Power Tariff Policy – need for uniformity in tariff structure across the country', the focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. Thereafter, the Committee *inter-alia* deliberated upon the following points:

i) Need for change in Power Tariff Policy – need to make the system of power tariff simple, transparent and accountable.

ii) The concept of Pooling of Power at the Central level - its need, pros and cons, possible difficulties in its implementation, fixed and variable cost of tariff, bundling of power.

iii) Power Purchase Agreements (PPA) – cost-plus and competitive method of power tariff determination, implication of relegation of PPAs, Return on Equity (RoE).

iv) One Nation-One Grid - Point of Connections (PoC) charges.

v) Power Exchanges – their role in the changed scenario, need for strengthening of market surveillance system.

4. The Members sought clarifications on various issues relating to the subject and the representatives of the Central Electricity Regulatory Commission (CERC) and Central Electricity Authority (CEA) replied to some of the questions. The Committee, therefore, directed them to furnish written replies to the queries which could not be responded.

5. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

APPENDIX –VIII

MINUTES OF THE FOURTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2021-22) HELD ON 1st DECEMBER, 2021 IN COMMITTEE ROOM 'D', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1600 hrs. to 1700 hrs.

PRESENT

MEMBER

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

2. Smt. Sajda Ahmed
3. Shri Devendra Singh Bhole
4. Shri Sanjay Haribhau Jadhav
5. Shri Kishan Kapoor
6. Shri Ramesh Chander Kaushik
7. Shri Uttam Kumar Reddy Nalamada
8. Shri Parbatbhai Savabhai Patel
9. Shri Jai Prakash
10. Shri Dipsinh Shankarsinh Rathod
11. Shri Gnanathiraviam S.
12. Shri Bellana Chandra Sekhar
13. Shri Shivkumar C. Udasi

RAJYA SABHA

14. Shri Ajit Kumar Bhuyan
15. Shri T.K.S. Elangovan
16. Shri Sanjay Seth

SECRETARIAT

1.	Shri R.C. Tiwari	-	Joint Secretary
2.	Shri R.K. Suryanarayanan	-	Director
3.	Shri Kulmohan Singh Arora	-	Additional Director

WITNESSES

No.	Name	Designation
The Ministry of Power		
1	Sh. Alok Kumar	Secretary
2	Sh. S.K.G. Rahate	Additional Secretary
3	Sh. Ghanshyam Prasad	Joint Secretary
The Ministry of New and Renewable Energy		
4	Sh. Indu Shekhar Chaturvedi	Secretary
5	Sh. Dinesh Dayanad Jagdale	Joint Secretary
6	Sh. Dipesh Pherwani	Scientist-C

2. At the outset, the Chairperson welcomed the Members and the representatives of the Ministry of Power and the Ministry of New and Renewable Energy to the Sitting of the Committee and apprised them of the agenda *viz*. evidence on the subject 'Review of Power Tariff Policy – need for uniformity in tariff structure across the country', the focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. Thereafter, the Committee *inter-alia* deliberated upon the following points:

i) Need for change in Power Tariff Policy – need to make the system of power tariff simple, transparent and accountable.

ii) The concept of Pooling of Power at the Central level - its need, pros and cons, possible difficulties in its implementation, fixed and variable cost of tariff, bundling of power.

iii) Power Purchase Agreements (PPA) - cost plus and competitive method of power tariff determination, implication of relegation of PPAs, Return on Equity (RoE).

iv) Cross-subsidy – need for restricting cross-subsidy within a band of ± 20% of Average Cost of Supply.

v) One Nation-One Grid – Point of Connections (PoC) charges.

vi) Power Exchanges – their role in the changed scenario.

vii) Need to make power tariff affordable - supply of coal to power plants.

4. The Members sought clarifications on various issues relating to the subject and the representatives of the Ministry of Power and the Ministry of New and Renewable Energy replied to some of the questions. The Committee, therefore, directed them to furnish written replies to the queries which could not be responded.

5. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

APPENDIX -IX

MINUTES OF THE THIRTEENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2021-22) HELD ON 26th JULY, 2022 IN HON'BLE CHAIRPERSON'S CHAMBER, ROOM NO. 111, PARLIAMENT HOUSE ANNEXE EXTENSION, NEW DELHI

The Committee sat from 1530 hours to 1615 hours

PRESENT

MEMBERS

LOK SABHA

Shri Rajiv Ranjan Singh alias Lalan Singh - Chairperson

2. Shri Gurjeet Singh Aujla
3. Shri Sanjay Haribhau Jadhav
4. Dr. A. Chellakumar
5. Shri Sunil Kumar Mondal
6. Shri Ashok Mahadeorao Nete
7. Shri Velusamy P.
8. Shri Gyaneshwar Patil
9. Shri Bellana Chandra Sekhar
10. Shri Shivkumar C. Udasi

RAJYA SABHA

11. Shri Ajit Kumar Bhuyan
12. Shri Rajendra Gehlot
13. Shri Muzibulla Khan
14. Shri Maharaja Sanajaoba Leishemba
15. Shri S. Selvaganabathy
16. Dr. Sudhanshu Trivedi

SECRETARIAT

1.	Dr. Ram Raj Rai	Joint Secretary
2.	Shri R.K. Suryanarayanan	Director
3.	Shri Kulmohan Singh Arora	Additional Director

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

(i) Report on the subject 'Review of Power Tariff Policy - Need for uniformity in tariff structure across the Country'.

(ii) Report on the subject 'Evaluation of Wind Energy in India'.

(iii) Report on action-taken by the Government on observations/ recommendations contained in Seventeenth Report (17th Lok Sabha) on the subject 'Action Plan for Achievement of 175 GW Renewable Energy Target'.

(iv) Report on action-taken by the Government on observations/ recommendations contained in Eighteenth Report (17th Lok Sabha) on the subject 'Development of Coal Blocks allocated to Power Sector Companies'.

(v) Report on action-taken by the Government on observations/ recommendations contained in Nineteenth Report (17th Lok Sabha) on the subject 'Delay in Execution/Completion of Power Projects by Power Sector Companies'.

3. After discussing the contents of the Reports, the Committee adopted the aforementioned draft Reports without any amendment/modification. The Committee also authorized the Chairperson to finalize the above-mentioned Reports and present the same to both Houses of the Parliament.

The Committee then adjourned.