



Ministries of Power and NRE
Government of India

Conference of Power and Renewable Energy Ministers of States & UTs.

11th & 12th October 2019
Gujarat





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INDEX

SL. NO	PAGE NO.
1. Minutes of the Conference of Power and Renewable Energy Ministers of States/UTs held on 26 th & 27 th February, 2019 at Gurugram, Haryana	
2. Action Taken Report on the Conclusions/Recommendations from the Conference of Power and Renewable Energy Ministers of States/UTs held on 26 th & 27 th February, 2019 at Gurugram, Haryana	

AGENDA ITEMS

1. Ministry of New and Renewable Energy

- 1.1 Implementation of PM-KUSUM scheme.
- 1.2 Implementation of Solar Rooftop scheme (SRISTI).
- 1.3 Achievement of RPO
- 1.4 Renewable energy development programs in border areas.
- 1.5 Setting up of ultra-Mega RE parks.
- 1.6 **Ease of doing business:**
 - a) Sanctity of Contract – PPAs to be sacrosanct
 - b) Payment security:
 - i. Timely payment to generators (solar/wind power) by DISCOMs on First in First Out (FIFO) basis.
 - ii. Opening of LCs by all DISCOMs/distribution licensees for all independent RE producers.
 - c) Must Run Status and non-curtailment of power.
 - d) Allotment of land & levying of facilitation charges for land.
- 1.7 **Regulatory issues:**
 - a) Adoption of Tariff.
 - b) Filling up vacant posts of State Electricity Regularity Commission.

2. Distribution

- 2.1 Supply of 24x7 Power for All: status, monitoring mechanism and further road map.



- 2.2 Completion and closure of remaining DDUGJY (including RE) projects: status and time lines
- 2.3 Review of IPDS Scheme: Performance, and way forward
- 2.4 Progress in smart pre-paid meters and progress in feeder and transformer meters
- 2.5 UDAY progress
- 2.6 Distribution reforms:
 - a) Right of consumers
 - b) DBT
 - c) Multiple supply licensees / franchises

3. Thermal

- 3.1 FGD & DeNOx equipment installation in the TPS across the country in a time bound manner

4. Hydro

- 4.1 Measures to promote Hydro Sector/ Pump Storage.

5. Ease of doing business

- 5.1 Payment issues
- 5.2 Implementation of Merit Order Dispatch across the country
- 5.3 Pass through
- 5.4 Open access

6. Information Technology

- 6.1 National Power Portal

7. Transmission

- 7.1 Strengthening of Transmission System for 24X7 Power

8. Energy Conservation

- 8.1 DISCOMs to comply with the mandatory provisions of Energy Conservation Act, 2001 and PAT Rules
- 8.2 Review of progress on adoption of Energy Conservation Building Code (ECBC) by the States and the UTs



**Minutes of the Conference of Power and
NRE Minister's of States/UTs**
held on 26th – 27th February, 2019 at Gurugram, Haryana



1

Minutes of the Conference of Power and NRE Minister's of States/UTs held on 26th – 27th February, 2019 at Gurugram, Haryana

1. The Ninth Conference of Power and Renewable Energy Ministers of States & Union Territories was held on 26th - 27th February, 2019 at Gurugram, Haryana. Following is the gist of discussions held and decisions taken.
2. Secretary (P) in his welcome address stated that the electricity sector is one of the fastest growing sectors in the country. Electrification of all villages has been achieved. The target of 100% Household electrification has been achieved except for few households in two States.
3. We have enough generation and transmission capacities. Energy shortage have come down to less than 1%. Some of the challenges faced by the power sector include, strengthening of DISCOMs, implementation of New Environmental Norms by 2022 and reducing our carbon foot print.
4. With the increased use of electricity, the carbon foot print is going to increase. Star rating program/building codes need to be implemented. Carbon foot print is to be reduced in terms of GDP. For Electric Vehicles, charging infrastructure guidelines have been issued. States to identify nodal agencies for the same
5. Hon'ble Minister of State Power & NRE (I/C) stated that during the last 4 ½ years power sector in India has been transformed. We have electrified all remaining villages and now we have moved in a direction of electrifying all households. In electrifying all households we achieved the targets in all States except a few households in Chhattisgarh and Rajasthan.
6. In last 4 ½ years India has transformed itself from power deficit country to exporter of power country by adding 1 Lakh MW of generation capacity. We have added more than one lakh circuit Km of transmission and now the whole country is on one grid at one frequency seamlessly transmitting power from one place to other place. The highest transmission line in the world is Ladakh and Kargil has recently been dedicated by the Hon'ble Prime Minister to the Nation. We have strengthened our distribution system and are now in a position to achieve our target of 24X7 power supply to all households.
7. Govt. of India is supporting schemes for strengthening distribution system necessary for providing 24X7 power supply to all households. Under the UDAY scheme of Govt. of India the burden of debt on DISCOMs has come down. Combined losses of DISCOMs have come down from Rs. 54,000 crores to Rs. 17,000 crores in last two years.
8. To achieve the target of 24X7 power to all households we have successfully run biggest programme in the world under SAUBHAGYA by electrifying 25 Million households in a shortest timeframe of 15-18 months.

9. The challenges before us are:-

- I. Providing 24X7 power supply to all: All States have signed MoU for 24X7 Power to All. From April, 2019 States need to ensure providing 24X7 power supply to all consumers except Agriculture consumers. For Agriculture consumers, supply duration can be 8-10 hours a day, to conserve ground water.
- II. Challenge of meeting increased electricity demand.
- III. After successfully electrifying all villages and also more than 25 Million households under 'SAUBHAGYA' the demand for electricity is bound to increase. This will further increase during summer months.
- IV. The sector can be sustained only if DISCOMs remain viable. Reduction of losses by DISCOM, improving collection efficiency, shifting towards pre-paid metering and accounting for each unit of electricity supplied are the measures necessary for sustainability of the sector.
- V. Standards of service: Service standards to be laid down by all DISCOMs for providing reliable quality power supply to all consumers.
- VI. Implementing New Environment Norms: In view of the Hon'ble Supreme Court order, New Environment norms are to be implemented in all generating plants by the year 2022 in a phased manner.
- VII. The country has pledged to have 40% of installed capacity by Non-Conventional sources by the year 2030. We have also set a target of 175 GW of RE capacity by year 2022. Even with high RE Capacity, Coal power is going to be there to provide reliable supply of power, which is our first priority.
- VIII. HMoSP emphasized on the need of fulfillment of commitment made by the country to the United Nations Framework Convention on Climate Change on Intended Nationally Determined Contribution (INDC). He pointed out that there is urgent need to go for renewable sources to leave behind a healthier Earth for our future generations.

10. Distribution

Presentations were made by JS(Distribution), covering following broad issues:-

- I. Prevailing AT&C losses, unsustainable borrowings by DISCOMs, huge increase in Regulatory assets, high cost of power purchase, Government over dues, very high cross subsidization making the industrial sector unviable were some of the concerns raised by Ministry of Power.
- II. States raised the issue that Government of India should provide some support/subsidy through PSDF/Clean Coal Cess fund to meet the expenses towards installing Pollution Control Equipment (PCE) in compliance with the New Environmental norms. (Action: JS(Thermal)/CE(OM))

- III. The issue of cross subsidy in Tariff to be looked into broader perspective. If industrial tariff is on higher side, the industry may not come in that State, which will affect employment.
- IV. CERC and SERCs to be invited in the next Power Ministers' Conference.
- V. Smart Meters in pre-paid mode and use of ABC cable shall resolve the issues of meter reading, billing, payments and theft etc.
- VI. Dedicated police stations may be identified / set up for dealing with electricity theft. Strong execution and governance structure is required to implement smart meters project. (Action: All States)
- VII. Under-Ground Cabling projects in distribution and supply of electricity - Commercial financing may be provided by PFC/REC as these projects have very low payback period.
- VIII. UP raised issue of disposal of old meters in view of installation of Smart Meters. It was informed that business models do exist which can be examined.
- IX. The two schemes for Smart Metering and 'Scheme for ABC Cabling' were shared. State demanded to include underground cabling also to ACB cabling scheme, which was agreed upon.
- X. Regarding ensuring 24X7 power supply, a suitable objective monitoring system is required. Telangana shared their monitoring system. States to put 24X7 supply monitoring system by December, 2019. (Action: All States)
- XI. Uttarakhand raised the issue of possibility of negotiating/reviewing legacy Gas Power PPP and promotion of Hydro Plants. Action JS(Hydro/Thermal).

11. Thermal

- I. During the Power Minister Conference, the issues related to power sector such as preparedness of power plant for new emission norms, stress in the power sector, coal supply situation, outstanding payments and remedies to the prevailing issues were discussed in detail with the participants.
- II. The States were advised to increase the Plant Load Factor (PLF) from the present levels in respect of the power stations located in their States and were informed about the proactive actions taken by the Ministry to mitigate the anticipated coal supply issues, installation of emission control equipment.
- III. The States were informed that in view of the expected increase in power demand in the next few months till monsoons, Ministry of power has issued advisory (placed on website of Ministry) to the power plants, CEA and other stake holders on 07.02.2019:
 - a. All pit head generation and coal and rake supply should be maximized immediately. All pit head plants to be given priority in coal and rake allotment for full PLF irrespective of their ACQ/FSA, in this period,



- b. Central and State Government plants should be given more responsibility and must be encouraged and facilitated to gear up their generation to provide uninterrupted power at appropriate price to consumers in this period,
 - c. All power plants to be advised to be watchful and to maintain plant availability and adequate coal stocks as per norms, in this period and,
 - d. Imported coal based plants to have adequate stocks to meet demand.
- IV. The States of Karnataka, Maharashtra, Punjab, Andhra Pradesh, West Bengal, Uttar Pradesh and Tamil Nadu informed that the coal supply constraints is one of the major reasons for low PLF of the power plants located in their States.
 - V. The States were advised to expeditiously place order for the emission control equipment, failing which they may be forced to close down their power plants. The power plants were also advised to take necessary steps to maintain adequate coal stocks during the upcoming months to maintain uninterrupted power supply.
 - VI. The States while referring to the cost of installation of emission control equipment brought out that the incremental cost due to this equipment is making the power costlier and would require funds in the form of grant from PSDF / National Clean Energy & Environment Fund (NCEEF).
 - VII. The participants were informed that some projects out of the stressed projects are now performing and the enabling support (like PPAs, release of outstanding dues, etc) of States was required for the projects to come out of the stress. The States were also informed about the problem faced by the power plants in the land issues related to power project, mines, coal transportation and the support of the States was solicited.
 - VIII. UP raised the issue of burden of transportation cost of fly ash paid by the power plants to the ash users, as required under the MOEF&CC notification. It was informed to the participants that this matter will be examined by Ministry of Power to alleviate the burden of transportation cost on the power plants.
 - IX. Punjab raised the issue of non-supply of washed coal to them as per UDAY MoU from October, 2018 and less supply of coal than contracted ACQ.
 - X. Haryana raised the issue of Third Party Sampling of coal being not carried out at the receiving end. Ministry noted this and assured to take up with CIMFR for facilitation.
 - XI. The States were advised to honour the Power Purchase Agreements (PPAs) signed by them.

12. Transmission:

Presentation was made by CE(OM).

- I. The expansion of transmission system in the country was highlighted. TBCB mode was successfully used for expansion of Inter State Transmission Systems (ISTS). States were advised to adopt TBCB mode for Intra - State Transmission projects. (Action: All States)

II. International Practices on Sale / Purchase of Power:

A detailed presentation was made by CE (R&R, OM and Trans), MoP on the status of present power purchase by the Discoms and the road map ahead to optimize the power purchase cost by the Discoms. Emphasis was given to increase the share of power purchase from market from the present level of 3 % to a higher level as is being experienced in other countries. States were requested to increase sell and purchase of power from market/ exchange particularly the URS power. States must release their URS power, if not required, in exchange so that they do not carry the liability of paying the entire charges to the generators. Further, it was also explained that efforts are being made to enable the long term/ medium term power purchases under capacity or energy markets.

MoSP(I/C) directed to study systems in detail regarding capacity contract agreements of USA, UK, etc. for understanding and further discussions.

States/ Discoms may also like to orient themselves to optimize the power purchase.

III. Inter-state & Intra state transmission system status and International practices in transmission:

A detailed presentation was made on the transmission system by CE (Trans), MoP. States were requested to build more transmission lines adopting the N-1 or N-1-1 planning criteria so that the 24x7 power is made available to all its consumers. States may also like to adopt the Tariff Based Competitive Bidding Route for implementation of the transmission system in the state.

On a query regarding dual PoC Transmission Charges levied for the energy being traded by the DISCOMS, It was clarified that a committee has already been formed and is looking into the PoC mechanism. The proposal having one single transmission access charge for all beneficiaries was made. States may like to send their response in this regard.

MNRE pointed out that conventional thermal generation used to take 3-4 years in installation and in the meantime transmission system also used to be established. However, in case of renewables, generation comes in 18 months time and transmission, even with best efforts takes around two and a half years, so there is mismatch. In renewable resource rich areas we should plan transmission system for next four years, so that when RE developer is ready with generation, the transmission is available.

MoSP mooted the idea of de-linking Generation and Transmission development keeping in view of the quantum and pace of RE Generation. MoSP also stated that in the manner High Capacity Power Transmission Corridors (HCPTC) have been established through high capacity AC and HVDC transmission systems in the past, now in order to facilitate renewables development in the Country we may plan similar kind of transmission system in advance.

13. Less Carbon Intensive Economy (Energy Efficiency):

Presentation was made by DG, BEE.

- I. In the presentation, decoupling of energy intensity with GDP was highlighted as it is happening in the developed countries. India achieved electricity savings of about 86.1 Billion units in 2017-18, which is equivalent to savings of Rs 41799 crore. There is additional thermal savings of 9.41 mtoe which is equivalent to Rs 11,828 crore. Total energy savings of 16.62 mtoe was achieved which is equivalent to Rs. 53,628 crores and resulting in CO2 emission reduction of 108 million tonnes.
- II. Various programmes of Energy Efficiency were highlighted like Perform, Achieve and Trade (PAT) scheme, Standard & Labeling (S&L), Energy Conservation Building Code (ECBC), Unnat Jyoti Affordable Lighting for All (UJALA) and Street Lighting National Programme (SLNP)
- III. Uttar Pradesh suggested deployment of professional staffs having domain expertise in State Designated Agencies (SDAs). MoP/BEE to ensure deployment of expert manpower in SDAs. (Action: EA/DG, BEE)
- IV. BEE was advised to consider reduction in the usage of coil heaters and incandescent bulbs, to promote efficient use of energy and its conservation. (Action: DG BEE)
- V. NTPC suggested that after the successful implementation of first PAT cycle, BEE may consider benchmarking of energy intensive Thermal Power Plants based on stipulated energy performance.
- VI. Madhya Pradesh raised concern for replacement of LED bulbs. Hon'ble MOSP (IC) directed EESL to do analysis of manufacturer-wise failure of LED bulbs and blacklist manufacturers whose failure rate is very high. There should also be replacement of LED bulbs promptly in such cases. (Action: MD EESL)

14. Renewable Energy Sources: less carbon intensive economy

Additional Secretary, MNRE made a brief presentation where the present status of progress in renewable energy sector made so far was presented along with detailed information on newly approved schemes of the Ministry such as Kisan Urja Suraksha Evam Utthaan Mahabhiyan (KUSUM), Solar rooftop phase II, etc was given. This was followed with a short movie on success of solar PV based cooking system distributed in village of Madhya Pradesh.

After detailed discussion with States/UTs on various issues related to Renewable Energy Sector, following directions were given to States for implementation:-

- I. Energy efficient pumps (4 star rated or more) must be encouraged in the recently approved KUSUM scheme and other schemes being implemented by the States/UTs.
- II. Possibility of integrating drip irrigation techniques with solar pumps in the recently approved KUSUM scheme may be explored in order to conserve ground water.

- III. States/UTs were requested to work with Technical Assistance agencies such as World Bank, ADB, GIZ& EU for developing single window clearance portal and demand aggregation for better implementation of newly approved solar rooftop program phase II.
- IV. States/UTs may also promote solar rooftop plants in non-subsided sector keeping in view the huge benefits in terms of power tariff to these consumers.
- V. States/UTs are requested to identify barren land available for developing RE parks in the state which will lead to additional income for farmers from leasing of land for these projects.
- VI. Gujarat Government may resolve the pending issues immediately for wind power projects auctioned in SECI III, IV and V bids.
- VII. States/UTs must ensure Renewable Purchase Obligation (RPO) compliance and penalty may be invoked for non-compliance of the same.
- VIII. States/UTs may bid out solar and wind energy projects on their own in order to meet 175 GW target by 2022.
- IX. States may start preparation for implementation of new scheme like KUSUM, SHRISHTI, etc.
- X. States may take step for identification of lands and fixing of land rates for new RE parks to be set up for 50 GW.
- XI. States may use their good office with Member of Parliaments from their states to get proposals under AJAY Phase-II scheme.
- XII. Implementation under GEC phase-I needs to be expedited. CEA may expedite proposals under GEC phase-II.

15. Suggestions/issues raised by State/UT Governments

- I. Odisha: Possibility of using solar PV based cooking system for cooking mid-day meals in schools or SC/ST hostels in the State may be explored. (Action: MD, EESL)
- II. Telangana: State Government informed that single portal for rooftop solar plants in the State is already operational and CII is promoting the rooftop program in the State. Technical assistance must be provided to implementing agencies in the State for better implementation of solar rooftop program.
- III. Kerala: State Government enquired about the role of DISCOMs as implementing agencies in solar rooftop program and associated benefits to DISCOMs for implementation of the program in the State.
- IV. Uttar Pradesh: State Government informed that single portal for rooftop solar plants in the state are already operational. Provision of aggregation of land for small scale solar plants under KUSUM scheme may be kept in guidelines being finalized.



- V. Maharashtra: State Government informed that single portal for rooftop solar plants in the state are already operational. A tender for 1 lakh solar pumps based on MNRE specifications has been opened recently.
- VI. Gujarat: There is huge demand of solar rooftop in the State. State Government informed that single portal for rooftop solar plants in the State is already operational. State Government also informed that land policy for renewable energy projects is at final stages of approval. A similar scheme for promoting solar pumps in the state is being implemented. State Government suggested that size of solar panels should be minimum 1.5 times the capacity of pump. Also increase permissible limit for pump capacity from 7.5 HP to 10 HP. Commissioning schedule of the Green Energy Corridor (GEC) for the state will be adhered to.
- VII. Tamil Nadu: State Government suggested that size of solar panels should be minimum 2.4 times the capacity of pump. A similar scheme for promoting solar pumps in the state is being implemented. Issues pending in implementation of Green Energy Corridor (GEC) project in the state are being resolved at the highest level. One LIDAR system for offshore wind measurement has been installed in the state with 2 more systems being installed. New solar policy being finalized to fulfil RPO targets. States with huge renewable energy generation may be compensated for backing down conventional power. Issue of penal provisions in Deviation Settlement Mechanism (DSM) for renewable energy rich states may be resolved at the earliest.
- VIII. Haryana: Guidelines for implementation of KUSUM program may be notified at the earliest.
- IX. Jammu & Kashmir: Issues related to small hydro power projects under Prime Minister Development Package (PMDP) may be resolved at the earliest.

The session ended with the vote of thanks to the Chair.



**Action Taken Report on the Conclusions/
Recommendations/Decisions on the Minutes
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Energy Ministers of States/UTS held on
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CONFERENCE OF
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2

Action Taken Report on the Conclusions/ Recommendations/ Decisions on the Minutes of the Conference of Power and Renewable Energy Ministers of States/UTs held on 26th – 27th February, 2019 at Gurugram, Haryana.

S.No.	Conclusions/ Recommendation/ Decisions	Comments of Energy Department
1	Carbon foot print needs to be reduced in terms of GDP.	<p>Chhattisgarh State has taken initiative to ensure compliances related to Environmental norms.</p> <p>Madhya Pradesh MP has designated M.P. Power Management Co. Ltd as the State nodal Agency for setting up E. V. charging infrastructure.</p> <p>Karnataka ECBC Code has been notified as per regional and local climatic conditions,. The notifications/ regulations have been issued to promote the use of star rated equipment. LED bulbs, LED tubes and BEE star rated Fans are being distributed at the subsidised rates under HOSABELAKU and PAWANA yojana respectively. Bangalore Electricity Supply Company Limited (BESCOM) has been designated as the “State Nodal Agency” for setting up of EV Charging Infrastructure.</p> <p>Rajasthan 1. ECBC-2017 is submitted to Energy Department for notification. 2. Nodal agencies for Electric Vehicle, charging infrastructure etc. designated.</p> <p>Tamil Nadu Electric Vehicle: TANGEDCO has been nominated as Nodal Agency for Charging infrastructure for Electric vehicle. The E-Vehicle policy for Tamil Nadu state released.</p> <p>Sikkim Govt. of Sikkim has notified Power Department as Nodal Agency for Charging Infrastructure.</p>



S.No.	Conclusions/ Recommendation/ Decisions	Comments of Energy Department
1		<p>Bihar</p> <p>Bihar Renewable Energy Development Agency (BREDA) has been designated as Nodal Agency in Bihar for implementation of programs related to energy efficiency and reducing carbon foot prints.</p> <p>BREDA has prepared draft ECBC for the State and is in process of notification of ECBC.</p> <p>As per MoP guidelines, Bihar locations have not been identified for charging infrastructure.</p>
2	Providing 24x7 power supply to all : From April, 2019 States need to ensure 24x7 power supply to all consumers except Agriculture consumers. For Agriculture consumers, supply duration can be 8-10 hours a day.	<p>Odisha Achieved.</p> <p>Telangana Achieved.</p> <p>West Bengal Achieved.</p> <p>Chhattisgarh Already implemented. Agricultural pump sets getting electricity supply 18 hours/day from separated agriculture feeder.</p> <p>Gujarat Achieved.</p> <p>Karnataka Achieved. Agricultural feeders are provided with 7 hours of 3 phase supply.</p> <p>Rajasthan Achieved. Under Agriculture block, supply of 6 Hrs given in day time and 7 Hrs. in night.</p> <p>Tamil Nadu Achieved. For Agricultural services 9-12 hours/day.</p> <p>Bihar Bihar achieved 100% household electrification on 25 October 2018, before the target date specified under SAUBHAGYA. Power is being supplied on an average of 22-24 hours per day in urban areas and 20-22 hours per day in rural areas. except agriculture. For Agriculture consumers, power is being supplied around 8 hours per day. Various projects of State and Central Govts. are under implementation for improvement of distribution infrastructure to achieve 24x7 power supply.</p>



S.No.	Conclusions/ Recommendation/ Decisions	Comments of Energy Department
3	Reduction of losses by DISCOMs, improving collection efficiency, shifting towards pre-paid metering and accounting for each unit of electricity supplied are the necessary measures for sustainability of the sector.	<p>Odisha During the last 5 years the DISCOMs in Odisha have been able to reduce the AT&C losses by about 11%. DISCOMs of Odisha have rolled out IT enabled services. Notification has been published by the State Govt. to adopt Pre-paid meters for all Govt. consumers in the 1st Phase and the process is going on. Periodic Energy Audit is being carried out.</p> <p>Telangana Operational performance, Collection efficiency and AT&C loss of the TSDISCOMs has significantly improved</p> <p>Chhattisgarh The AT&C loss trajectory is within the approved trajectory of MoP.</p> <p>Rajasthan Installation of 86 Lac smart meters have been planned in next 4 years.</p> <p>Tamil Nadu The collection efficiency of TANGEDCO is already high at 99.60%. Providing pre-paid meter in phased manner is under process. Distribution strengthening works under progress to be completed by 30.09.19, under UDAY scheme, H.T. strengthening works to be completed before 31.03.2020.</p> <p>Bihar Both the Discoms of Bihar have also reduced their debt burden and the ACS & ARR Gap per Unit. However, in view of mass rural electrification and release of new connections in LT side, the financial loss has decreased marginally during FY 2018-19. Financial losses during FY 2017-18 and FY 2018-19 are Rs. 1595.08 cr and 1439.85 cr respectively.</p>
4	Standards of service: Service standards to be laid down by all DISCOMs for providing reliable quality power supply to all consumers.	<p>Odisha The Odisha Electricity Regulatory Commission (OERC) has framed the "OERC (Licensees' Standards of Performance) Regulations, 2004, to provide reliable and quality power supply to all consumers of the State.</p> <p>Telangana Noted</p> <p>Chhattisgarh Under process.</p> <p>Madhya Pradesh Standards of services of DISCOMs specified by MPERC are adhered to by the DISCOMs of MP</p> <p>Karnataka Notification of standards not reported.</p> <p>Rajasthan SoP has already been issued by regulator and at present 24x7 quality supply is being given.</p>



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4		<p>Tamil Nadu Distribution Standards of Performance, formulated by TNERC are being followed.</p> <p>Bihar For providing reliable and quality power supply to all consumers in the State, Standards of service is already laid down in the BERC (Standards of performance of Distribution Licensee) Regulation, 2006 notified vide Gazette Notification dated 22 January, 2007.</p>
5	Implementing New Environment Norms: In view of the Hon'ble Supreme Court order, New Environment norms are to be implemented in all generating plants by the year 2022 in a phased manner.	<p>Telangana Being implemented.</p> <p>Chhattisgarh Being implemented.</p> <p>Madhya Pradesh Being implemented.</p> <p>Karnataka Being implemented.</p> <p>Rajasthan Being implemented.</p> <p>Tamil Nadu Being implemented.</p>
6	The country has pledged to have 40% of installed capacity by Non-Conventional sources by the year 2030. We have also set a target of 175 GW of RE capacity by year 2022.	<p>Telangana Noted. SCCL is setting up 129 MW Solar Power Plants in first Phase and 90 MW Solar power plants in second phase.</p> <p>Chhattisgarh Chhattisgarh State Power Distribution Company Limited has signed MoU with Solar Power Corporation of India limited for developing a 100MW Solar Power Plant in district Rajnandgaon.</p> <p>Rajasthan At present, Rajasthan has Contracted Capacity of 21770 MW with a share of 2411 MW Solar, 4139 MW Wind and 102 MW Biomass. Also, RUVNL has planned to procure additional 4885 MW Solar and 1426 MW Wind by 2023. In additional to above, Rajasthan has requested to Gol to provide 2600 MW target under KUSUM.</p> <p>Tamil Nadu So far 418MW capacity solar projects have been commissioned under Tender in various phases and 48MW capacity wind power projects. TANGEDCO has proposed to set up 500 MW solar park in Ramnad district. Proposed Floating Solar Power Projects at Vaigai, Mettur and Bhavani Sagar Reservoirs in association with Solar Energy Corporation of India (SECI).</p>

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6		<p>Bihar</p> <p>Presently the installed capacity of Solar and Non-Solar generation in the state is 128 MW and 108 MW respectively:-</p> <ul style="list-style-type: none"> • In addition 10 MW solar power is procured from SECI. • In future, the following RE power has been planned: <ul style="list-style-type: none"> (i) Solar (ISTS Scheme)-750 MW. (ii) Non-Solar (ISTS Scheme) -1550 MW. <p>The Bihar Renewable Energy Development Authority (BREDA) has issued tender for installation of following RE (Solar) projects in Bihar :-</p> <ul style="list-style-type: none"> (a) 250 MW (Ground Mounted Grid connected) (b) 15 MW Rooftop Grid connected Solar Project in RESCO mode. (c) 10 MW Rooftop Grid connected Solar Project in RESCO mode.
7	<p>Prevailing AT&C losses, unsustainable borrowings by DISCOMs, huge increase in Regulatory assets, high cost of power purchase, Government over dues, very high cross subsidization making the industrial sector unviable were some of the concerns raised by Ministry of Power.</p>	<p>Odisha</p> <p>During the last 5 years, the DISCOMs in Odisha have been able to reduce the AT&C losses by about 11%.</p> <p>In Odisha, DISCOMs, are presently able to meet the cost of power purchase.</p> <p>The issues relating to Regulatory assets are being addressed by the State Electricity Regulatory Commission (OERC).</p> <p>The State has expressed concern power purchase cost from the Central Power Stations.</p> <p>The State Electricity Regulatory Commission (OERC), is following the norms of keeping the cross-subsidization within +/- 20% as prescribed while determining the retail supply tariff to balance the interest of all categories of consumer and Stake Holders.</p> <p>Telangana</p> <ul style="list-style-type: none"> • The operational performance of TSDISCOMS has significantly improved. • The Discoms have energy audit wing. The top management monitors AT&C loss and takes corrective measures. • Discoms have been able to achieve a significant loss reduction from 14.15% to 11.23% from FY 2015-16 to FY 2018-19 (for TSSPDCL). • Further, the TS Discoms have adopted the competitive bidding process to procure power. • Telangana Discoms are actively participating in IEX in both Buy/Sell markets to get price advantage in power purchase. • Discoms over the past two years have not sought any tariff hike over the existing tariff.



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7		<ul style="list-style-type: none">• Gujarat All four DISCOMs of GUVNL are making profits since restructuring of erstwhile Gujarat Electricity Board w.e.f. 1st April, 2005. <p>Madhya Pradesh Being implemented.</p> <p>Rajasthan Being implemented.</p> <p>Tamil Nadu The AT&C losses brought down to 14.02% (provisional) in 2018-19. TANGEDCO has restricted high interest bearing loans, regulatory assets amortized to the extent of Rs.22805 crores, procuring power under tender discovered tariff. Though TANGEDCO depends on external power sources, there are long term PPAs with less than Rs.4.50/unit.</p> <p>Government over dues Subsequent to UDAY stipulations, the dues from Government departments, Government undertaking, local bodies are being collected at frequent intervals.</p> <p>Bihar</p> <ul style="list-style-type: none">• AT&C loss in both Discoms are decreasing. However, in view of 80% of supply of power through LT connections, it is difficult to achieve AT&C loss target of 15%. Borrowings in both Discoms are within the norms envisaged under UDAY.• Regulatory Assets is Nil in Both Discoms.• Cost of power purchases is high due to high Transmission charges.• Govt. has been releasing energy dues in time and it is expected that the entire arrear will be liquidated very soon.• Cross subsidizations being made by Regulator is well within the norms of + 20%
8	States raised the issue that Government of India should provide some support/subsidy through PSDF/Clean Coal Cess fund to meet the expenses towards installing Pollution Control Equipment (PCE) in compliance with the New Environmental norms.	<p>Odisha Odisha demands increased share of funds to the States from the Centre from Coal Royalty and its periodic review.</p> <p>Telangana State requests Government of India to provide soft loans from National Clean Energy Fund (NCEF)/subsidy through PSDF after receipt of DPR from M/s.BHEL.</p> <p>Chhattisgarh Being Examined.</p> <p>Rajasthan Feasibility Studies completed. DPR & Technical Specifications received.</p>

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8		<p>Tamil Nadu State has requested GOI to provide soft loans from National Clean Energy Fund (NCEF) and to give full grant for installing the additional systems for adhering to the new Environmental limits norms and relaxation of norms.</p>
9	<p>The issue of cross subsidy in Tariff to be looked into broader perspective. If industrial tariff is on higher side, the industry may not come in that State, which will affect employment.</p>	<p>Odisha Cross-subsidization within +/- 20%.</p> <p>Telangana Efforts to keep tariffs within +20% of average cost of supply and cross subsidy portion for highly subsidizing consumers is gradually reduced in a phased manner.</p> <p>West Bengal As per tariff policy the tariff for different categories of consumers under WBSEDCL is being kept within +- 20% of the average cost of supply except Agriculture.</p> <p>Chhattisgarh Already Implemented.</p> <p>Madhya Pradesh Efforts have been made to progressively reduce the cross-subsidy levels, in line with the National Tariff Policy, 2016.</p> <p>Rajasthan Discoms has proposed a new tariff for energy intensive industries by reducing about 12% tariff rates and to provide 85p/unit</p> <p>Tamil Nadu Tamil Nadu Electricity Regulatory Commission has approved road map for reduction of cross subsidy for all categories including industrial consumer in the tariff order No.1 of 2017 dated:11.08.2017.</p>
10	<p>Smart Meters in pre-paid mode and use of ABC cable shall resolving the issues of meter reading, billing, payments and theft etc.</p>	<p>Odisha Being implemented.</p> <p>Telangana Noted</p> <p>West Bengal Installation of Smart meter in prepaid mode being considered. 36,186 Km LT AB Cable has been drawn to arrest theft of energy.</p> <p>Chhattisgarh Initiatives already taken to install smart meters in a phased manner.</p> <p>Madhya Pradesh Work of installation of smart meters is under process. ABC cabling has been done in almost all towns of MP.</p>



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10		<p>Karnataka Under Smart Grid project on pilot basis, smart pre-paid meters have been installed in 25000 consumer installations. LT Overhead Lines are being replaced with AB Cables in theft prone areas.</p> <p>Rajasthan Installation smart meters being implemented. Rs.3750 Crs. is required for smart metering 3 years plan to cover all consumers. Demands Rs. 2250 Crs. as 60% grant from Gol.</p> <p>Sikkim Being implemented.</p> <p>Chandigarh CED is in process of replacing 25727 Nos. Energy Meter with Smart Energy Meter in the first phase as a Pilot project under smart Grid Pilot Project.</p> <p>Bihar MoU has been signed with EESL for implementation of Smart pre-paid metering in Bihar. EESL, in turn, has selected its supplier for providing smart meters and system integrator through international competitive bidding. There is target for installation of 23.5 Lakh Smart prepaid meters over a period of 1.5 years in the first phase. Installation has been started from 1st Sep, 2019 in Arwal and Kanti Towns on pilot basis.</p>
11	Dedicated police stations may be identified /set up for dealing with electricity theft. Strong execution and governance structure is required to implement smart meters project.	<p>Odisha Implemented.</p> <p>Telangana Demands amendment in Electricity Act for providing legal sanctity.</p> <p>Chhattisgarh Special Courts established.</p> <p>Gujarat 34 Designated Courts & 16 Police Stations are under operation in Gujarat State.</p> <p>Madhya Pradesh Not implemented.</p> <p>Karnataka DISCOMs have already set up Vigilance Police Stations to identify theft of electricity in their jurisdiction.</p> <p>Rajasthan Special Courts notified in each district for trial of cases under the Electricity Act, 2003. 34 Anti Power Theft Police Stations are functional for faster investigations of electricity theft cases</p>

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11		<p>Tamil Nadu Noted.</p> <p>Sikkim Implemented.</p> <p>Lakshadweep Electricity theft case is extremely low.</p> <p>Andaman and Nicobar A vigilance squad has been constituted for randomly inspecting to control electricity theft. Smart metering project under consideration.</p>
12	States to put 24x7 supply monitoring system by December, 2019.	<p>Odisha Being implemented.</p> <p>West Bengal System is in place.</p> <p>Chhattisgarh System is in place.</p> <p>Gujarat System is in place.</p> <p>Madhya Pradesh Under implementation.</p> <p>Karnataka Implemented.</p> <p>Rajasthan System is in place.</p> <p>Tamil Nadu System is in place.</p> <p>Sikkim Noted.</p> <p>Lakshadweep System is in place.</p> <p>Andaman and Nicobar Being implemented.</p>
13	The States were advised to increase the Plant Load Factor (PLF) from the present levels in respect of the power stations located in their States and were informed	<p>Telangana Year wise PLF achieved at STPP is as below:</p> <ul style="list-style-type: none"> • FY 2017-18 - 91.09% • FY 2018-19 - 82.75% • FY 2019-20 (up to Jul'19) – 91.74%



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13	about the proactive actions taken by the Ministry to mitigate the anticipated coal supply issues, installation of emission control equipment.	Chhattisgarh The Average Plant Load Factor of Thermal Power Plants of CSPGCL is 67.39 % which is higher than average PLF of State sector power plants- 58.46%. Karnataka Noted Rajasthan RVUN Units generate in accordance to schedule released by SLDC and achieved rated generation during times of increased demand in the Grid. Tamil Nadu TANGEDCO owned Thermal Stations are performing well with the actual PLF range of 60-80%. However, considering the Backing down of Thermal Stations due to accommodation of RE power, the Deemed PLF would be 80-90%.
14	Central and State Government plants should be given more responsibility and must be encouraged and facilitated to gear up their generation to provide uninterrupted power at appropriate price to consumers in this period,	Telangana TSGENCO has performed well during the Pre-monsoon period and successfully met the State load requirement. Singareni Collieries (SCCL): SCCL is prioritizing the coal supply to power sector. Coal supply to Power sector (upto July. 2019) is 18.329 MT (83% of total coal supplies). Out of the above. pit headgeneration plants received 100% supply as per FSA. Chhattisgarh Being implemented. Karnataka KPCL is generating the power as per the requirement of State Load Dispatch Centre and power tariff is fixed based on the PPA signed with DISCOMs which is approved by KERC. Rajasthan RVUN Units are available for power generation in accordance to schedule released by SLDC. RVUN power stations have achieved rated generation during times of increased demand in the Grid. Tamil Nadu Uninterrupted power supply is being maintained to the consumers of Tamil Nadu by utilising the generation from Must Run Stations and maintaining the Merit Order Dispatch from the State owned and Central Generating Stations (CGS) thermal generators to gear up their generation.

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15	The States were advised to honour the Power Purchase Agreement (PPAs) signed by them.	<p>Telangana The terms and conditions of PPAs are being honored.</p> <p>Chhattisgarh The terms and conditions of PPAs are being honored.</p> <p>Karnataka The terms and conditions of PPAs are being honored.</p> <p>Rajasthan The terms and conditions of PPAs are being honored.</p> <p>Tamil Nadu The terms and conditions of PPAs are being honored.</p>
16	State was advised to adopt Tariff Based Competitive Bidding (TBCB) mode for Inter State Transmission System (ISTS).	<p>Odisha Noted.</p> <p>Telangana Noted.</p> <p>West Bengal Noted</p> <p>Chhattisgarh Noted</p> <p>Gujarat Under process.</p> <p>Madhya Pradesh The Government of Madhya Pradesh is taking up construction of 400/220kV Substation at Guna (Distt-Guna) and 220/132kV Substation at Bhind (Distt-Bhind) with 1420MVA transformation capacity and 750 Circuit kilometer associated transmission lines through Tariff Based Competitive Bidding (TBCB). In future also more projects shall be taken up through TBCB.</p> <p>Karnataka The projects at 400kV level are being identified by KPTCL.</p> <p>Rajasthan RVPN has adopted TBCB for implementation of transmission system.</p> <p>Tamil Nadu Noted.</p> <p>Sikkim TBCB mode is in practice in the State.</p> <p>Bihar TBCB mode in transmission system has already been implemented in Bihar in Inter State Transmission System (ISTS). However, its performance under liability is not upto the mark of satisfaction. We are closely watching the performance and decision for implementation of TBCB mode in Intra State Transmission System will be taken up subsequently.</p>



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17	States were requested to increase sale and purchase of power from market/exchange particularly the URS power. States must release their URS power, if not required, in exchange so that they do not carry the liability of paying the entire charges to the generators. Further, it was also explained that efforts are being made to enable the long term/ medium term power purchases under capacity or energy markets.	<p>Odisha</p> <p>Whenever any URS Power is available, the State designated entity i.e. GRIDCO, the Aggregator, has been trying to sell the same in Day Ahead Market (DAM) of Power Exchanges. If the bid fails to be cleared, then efforts are made to sell the same in the DAC/ Intraday/ Bilateral Market. If the said power is not disposed off in spite of all the efforts mentioned above then it remains as URS to be availed by other beneficiaries of the generating stations.</p> <p>Telangana</p> <p>Noted.</p> <p>West Bengal</p> <p>Noted.</p> <p>Chhattisgarh</p> <p>Implemented.</p> <p>Madhya Pradesh</p> <p>Implemented.</p> <p>Karnataka</p> <p>Implemented.</p> <p>Rajasthan</p> <p>Implemented.</p> <p>Tamil Nadu</p> <p>Noted.</p> <p>Bihar</p> <p>Bihar is purchasing power from the Energy Exchange primarily to meet its peak requirement with prudence so as to optimize the power purchase cost.</p> <p>In the FY 2018-19, the total purchase of power from Energy Exchange was about 16.75% of the total power consumption of the state.</p> <p>In order to optimize its power purchase, BSPHCL has engaged PFCCL (a Govt. of India Company) as consultants for its "Energy Portfolio Management".</p>

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18	<p>On a query regarding dual PoC Transmission Charges levied for the energy being traded by the DISCOMs, a committee has been formed which is looking into the PoC mechanism. The proposal having one single transmission access charge for all beneficiaries was made. States may like to send their response in this regard.</p> <p>In renewable resource rich areas we should plan transmission system for next four years, so that when RE developer is ready with generation, the transmission is available.</p>	<p>Odisha</p> <p>The proposal regarding delinking Generation and Transmission development should be thought of from the angle of existing huge stranded capacity in Transmission. Consequential outcome of such delinking should not enhance the stranded capacity further in transmission.</p> <p>Considering the targeted huge RE Capacity of 175 GW, it is inevitable to classify the eligible entities for waiver of transmission charges. The financial burden being loaded on the existing DICs on account of such waiver should be notified periodically.</p> <p>Instead of one single transmission access charge for all beneficiaries, the existing POC methodology should be retained with necessary improvement in POC calculation methodology.</p> <p>Chhattisgarh</p> <p>Views of the State shall be made after policy decision is notified by Ministry of Power.</p> <p>Madhya Pradesh</p> <p>The Green Energy Corridor Project of MPPTCL has adequate capacity of 400 KV/ 220 KV S/s and lines for evacuation of power from RE sources. However, transmission network can further be developed after getting specific request from MNRE/NRED/RE generators.</p> <p>Karnataka</p> <p>The energy traded by DISCOMs for which it would have paid PoC Charges once need not attract the PoC charges again.</p> <p>MoSP mooted the idea of de-linking Generation and Transmission development keeping in view of the quantum and pace of RE Generation. MoSP also stated that in the manner High Capacity Power Transmission Corridors (HCPTC) has been established through high capacity AC and HVDC transmission systems in the past, now in order to facilitate renewable development in the Country we may plan similar kind of transmission system in advance.</p> <p>Rajasthan</p> <p>For planning evacuation system associated with conventional generating station, N-1 planning criteria is being followed by RVPN. Further, since Rajasthan is RE rich state so the new transmissions system is being developed for evacuation of RE generation without N-1 criteria.</p> <p>RVPN has adopted TBCB for implementation of transmission system.</p>



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19	Progress of programmes of Energy Efficiency like Perform, Achieve and Trade (PAT) scheme, Standard & Labeling (S&L), Energy Conservation Building Code (ECBC), Unnat Jyoti Affordable Lighting for all (UJALA) and Street Lighting National Programmed (SLNP).	<p>Telangana</p> <ul style="list-style-type: none">• Promoting new agricultural consumers for installation of BEE 5 star Energy efficient pumps.• A total of 3,34,925Nos. 9W LED bulbs were distributed to the households.• Under SLNP 2,16,946Nos. of Conventional street Lights are replaced with LED StreetLights in Urban local bodies. <p>West Bengal</p> <p>Perform Achieve and Trade (PAT) Scheme:</p> <ul style="list-style-type: none">• At present there are total 40 DCs in West Bengal.• All the DCs under PAT-II have been directed to submit the M&V report within the stipulated time period. <p><u>Energy Conservation Building Code (ECBC)</u></p> <ul style="list-style-type: none">• Under process. <p><u>Unnat Jyoti Affordable Lightining for All (UJALA)</u></p> <ul style="list-style-type: none">• Cumulative distribution status as on 8.8.2019 is<ol style="list-style-type: none">1. Bulb : 92,28,865 nos2. Tube light : 6,69,711 nos3. Fans : 56,554 nos <p>Chhattisgarh</p> <p>Under process.</p> <p>Madhya Pradesh</p> <p>Three thermal power stations of M.P. Power Generating Co. Ltd., have been registered in PAT Scheme of BEE for PAT cycle-I and now registered in this scheme for PAT cycle-II also.</p> <p>Delhi</p> <p>1. Perform , Achieve and Trade (PAT) scheme:-</p> <ul style="list-style-type: none">• Under PAT Cycle, 17 nos. Designated Consumers(DCs) have been identified by BEE.• Successfully completed the monitoring and verification (M&V) of all DCs under PAT-I Cycle. <p>2. Energy Conservation Building Code (ECBC) :-</p> <p>Under process.</p> <p>3. Unnat Jyoti Affordable Lighting For All (UJALA):-</p> <p>The following Energy Efficient equipment distributed in Delhi under UJALA Scheme till 31.07.2019:</p> <ol style="list-style-type: none">a) LED Bulb -10524939 nos.b) Tube Light -266022 nos.c) Fan - 51051 nos.

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19		<p>4. Street Lighting National Programme (SLNP) status. Delhi Municipal Corporations have constructed 6.04 Laksh of Street Lights into Energy Efficient LED and 55,700 conventional street lights have been converted into Energy Efficient LED street lights till 31.07.2019.</p> <p>Rajasthan</p> <ol style="list-style-type: none"> 1. Rajasthan achieved 100% targets under PAT Cycle-I. 2. Energy Dept., GoR notified ECBC-2007 as ECB Directives in 2011 in Rajasthan State and ECBC -2017 is submitted for notification. 3. Training & awareness programs conducted under Standard & labeling for Retailers.
20	NTPC suggested that after the successful implementation of first PAT cycle, BEE may consider benchmarking of energy intensive Thermal Power Plants based on stipulated energy performance.	<p>Bureau of Energy Efficiency (BEE) <u>Under consideration in consultation with CEA.</u></p>
21	Madhya Pradesh raised concern for replacement of LED bulbs, Hon'ble MOSP (I/C) directed EESL to do analysis of manufacturer-wise failure of LED bulbs and blacklist manufacturers whose failure rate is very high. There should also be replacement of LED bulbs promptly in such cases.	<p>EESL <u>Directions complied and manufacturers of faulty LED bulbs banned.</u></p>
22	Energy efficient pumps (4 star rated or more) must be encouraged in the recently approved KUSUM scheme and other schemes being	<p>Odisha Noted.</p> <p>Telangana Under consideration.</p>



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22	implemented by the States/UTs.	Chhattisgarh Use of Star rated Energy efficient agriculture pump sets are mandatory in Chhattisgarh to get new electricity connection for agriculture pump sets. Gujarat Gujarat DISCOMs have already taken initiative to encourage the use of Energy efficient pumps sets under DSM program. However, we may incorporate the same in PM-KUSUM at time of implementation. Karnataka Noted. Rajasthan Already implementing. Tamil Nadu Noted. Bihar It will be incorporated under KUSUM Scheme.
23	Possibility of integrating drip irrigation techniques with solar pumps in the recently approved KUSUM scheme may be explored in order to conserve ground water.	MNRE MNRE is consulting Ministry of Water Resources, Ministry of Agriculture and Farmers' Welfare for convergence of other schemes with PM KUSUM. Odisha Noted for compliance. Telangana State is examining the guidelines issued by MNRE on 22.07.2019 for implementation of KUSUM scheme. Gujarat noted Karnataka Noted. Tamil Nadu Noted.

S.No.	Conclusions/ Recommendation/ Decisions	Comments of Energy Department
24	States/UTs were requested to work with Technical Assistance agencies such as World Bank, ADB, GIZ & EU for developing single window clearance portal and demand aggregation for better implementation of newly approved solar roof top program phase II.	<p>MNRE Regular meetings are held with the Technical Assistance Team to monitor their progress and prompt solutions of issues raised.</p> <p>Odisha It is decided to implement the newly approved Solar Rooftop Program Phase-II in the state through GRIDCO for setting up of Grid- connected solar rooftop plants. Technical Assistance of the World Bank and the GiZ is under consideration for implementation of Solar Rooftop Program Phase-II.</p> <p>West Bengal At present there is a provision at WBSEDCL Portal for applying for solar power by the concerned segments of consumers.</p> <p>Chhattisgarh New Solar Rooftop scheme is under examination.</p> <p>Gujarat State Government of Gujarat has notified a scheme "Surya-Gujarat" for the implementation of rooftop solar PV system. Further work in this regard is in progress.</p> <p>Delhi On direction of MNRE, PV Rooftop Cell formed under the EU-India Technical Cooperation Energy Project has developed a "Single Window Clearance Portal" for Rooftop Solar Implementation in NCT of Delhi.</p> <p>Karnataka Noted.</p> <p>Rajasthan Noted.</p> <p>Tamil Nadu Solar LT Services are being effected to the consumers for achieving the target of 40% of 9000 MW fixed by the Government of Tamil Nadu.</p> <p>Chandigarh Recently, Chandigarh Administration has signed the Power Sale Agreement (PSA) with SECI on dated 30.08.2019 for procurement of 40MW of wind power from 1200 MW Tranche-VI @Rs 2.83/Kwh plus trading margin of Rs. 0.07/Kwh.</p> <p>Bihar Technical Assistance is being taken from E&Y under SUPRABHA scheme of World Bank for Solar Power Plant portal design work and developing single window clearance portal and Demand Aggregation for better implementation of newly approved Solar Rooftop Programme Phase-II.</p>



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25	States/UTs may also promote solar rooftop plants in non-subsidized sector keeping in view the huge benefits in terms of power tariff to these consumers.	<ul style="list-style-type: none">• MNRE• Phase-II of Rooftop Solar Programme as approved by the Cabinet envisaged an addition of 38GW by the year 2022 to achieve cumulative 40 GW capacity by year 2022.• Operational guidelines issued on 20.08.2019.• Capacity also allocated on 20th August 2019 to 9 Discoms. <p>Odisha At present 'Net Metering Regulation' is prevailing in the state.'Gross Metering Regulation' is in active consideration of the State Regulator (OERC).</p> <p>Telangana Under implementation.</p> <p>West Bengal Action pending.</p> <p>Chhattisgarh Noted for examination.</p> <p>Gujarat The State promotes and supports the solar rooftop plants under non-subsidized sectors.</p> <p>Karnataka Followed as per KERC regulations and tariff orders.</p> <p>Rajasthan Solar Rooftop Projects in Non-subsidized sector are being commissioned under private mode as per Net Metering Regulation.</p> <p>Tamil Nadu The TN Solar Energy policy 2019 promotes solar rooftop plants which include those of non – subsidized sector also.</p> <p>Chandigarh UT Chandigarh is encouraging the residents of city for installation of rooftop SPV on private building by making amendment in the process.</p> <p>Lakshadweep Lakshadweep Electricity Department is planning to install 20 MW floating Solar along with roof top Solar plant. The project is awaiting environmental clearance.</p> <p>Andaman and Nicobar Noted.</p> <p>Bihar As per RE Policy Bihar 2017, Project size between 0.5 MW to 2 MW in multiple of 100 KW has been allowed to be setup by land owning farmers, Co-operatives, Societies, Gram Panchayat, Municipalities, MSME Units, Existing Industrial Units etc. for sale of power to Discom through competitive bidding or at BERC determined tariff.</p>

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26	States/UTs are requested to identify barren land available for developing RE parks in the state which will lead to additional income for farmers from leasing of land for these projects.	<p>MNRE Five teams were constituted to identify land in major RE potential States.</p> <p>Odisha GEDCOL / OREDA are taking action.</p> <p>West Bengal Being explored.</p> <p>Chhattisgarh Noted for examination.</p> <p>Gujarat Identified areas. 1) Radha Nesda (700 MW), 2) Dholera (5,000 MW) and 3) Charanka (700 MW) where RE parks have been announced.</p> <p>Karnataka The identification of suitable barren lands is under process.</p> <p>Rajasthan State has plan to develop 2500 MW decentralized solar power system on the barren land of farmer for which survey is under process.</p> <p>Tamil Nadu Appropriate action is being taken.</p>
27	Gujarat Government may resolve the pending issues immediately for wind power projects auctioned in SECI III, IV and V bids.	<p>Gujarat All the Collectors of the State have been directed to consider allocation of revenue land on lease basis to eligible Companies and WTG manufacturers or their 100% subsidiaries.</p>
28	States/UTs must ensure Renewable Purchase Obligation (RPO) compliance and penalty may be invoked for non-compliance of the same.	<p>Odisha Complied.</p> <p>Telangana RPO compliance of the TSSPDCL and TSNPDCL for the FY 2017-18 & FY 2018-19 has been more than the fixed target.</p> <p>West Bengal Reported constraint in compliance.</p> <p>Chhattisgarh Already adopted.</p> <p>Gujarat Being complied with.</p> <p>Delhi Compliance not reported against targets.</p>



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28		<p>Karnataka The achievement of DISCOMs for FY 2018-19 is more than RPO fixed by KERC/ MNRE. Action has been initiated for non-fulfillment of RPO by the captive generators.</p> <p>Rajasthan Being complied with.</p> <p>Tamil Nadu Action being taken.</p> <p>Lakshadweep Action being taken.</p> <p>Andaman and Nicobar Complied with.</p> <p>Bihar Bihar has taken following steps to meet the RPO target set by BERC :- I. Purchase of Solar Power from plants located in Bihar- 128 MW II. Purchase of Solar Power from plants located outside of Bihar – 10 MW III. Purchase of Bio-mass and Bagasse power – 108 MW IV. Purchase of non Solar Power (Wind Power) – 241 MW V. Power from Small Hydel Plants located in Bihar – 55 MW In addition to above, tie-up for 750 MW Solar and 1300 MW Wind power for future has been done. Tenders have also been issued for purchase of solar and wind power for meeting RPO target. Renewable Energy Certificate (REC) are purchased against balance RPO with remains unfulfilled.</p>
29	States/UTs may bid out solar and wind energy projects on their own in order to meet 175 GW target by 2022.	<p>Odisha GRIDCO (Odisha) floated the tender to procure 200 MW solar PV power for the state through e- Reverse Auction bidding process and is also planning for another bidding process with e-Reverse Auction to procure 500 MW Solar Power.</p> <p>Telangana Being implemented.</p> <p>West Bengal As per availability of Govt. vested land, WBSEDCL is bidding out solar projects on their own in order to meet 175 GW target by 2022.</p> <p>Chhattisgarh Noted</p> <p>Rajasthan Efforts are being made.</p>

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29		<p>Tamil Nadu Guidelines for KUSUM scheme received, necessary action will be taken by TANGEDCO.</p> <p>Lakshadweep Being implemented.</p> <p>MNRE States are advised and encouraged to bid for Solar and Wind Projects during interactions. Some States which has bid out are as follows:</p> <ul style="list-style-type: none"> • Gujarat- 1650 MW • Kerala- 200 MW • Maharashtra- 2884 MW • Bihar- 250 MW • Haryana- 300 MW <p>Some States have asked SECI to bid out for them: Tamil Nadu - 500 MW</p> <p>Bihar As per Bihar RE Policy 2017, BREDA has set target for installation of 2969 MW Solar Power in the State. In this regard, tendering has been done by BREDA for :-</p> <ol style="list-style-type: none"> (i) 250 MW Ground Mounted Grid connected Solar Power Plants Projects. (ii) 15 MW Rooftop Grid connected Solar Project in RESCO mode. (iii) 10 MW Rooftop Grid connected Solar Project in RESCO mode.
30	States may start preparation for implementation of new scheme like KUSUM, SHRISHTI, etc.	<p>MNRE Administrative approval, Implementation guidelines, State-wise allocation of capacities have been issued. EESL has issued NIT for procurement of 1.75 lakhs stand-alone solar water pumps. Phase-II of Rooftop Solar Programme. Operational guidelines issued on 20.08.2019. Capacity also allocated on 20th August 2019 to 9 Discoms. Other DISCOMs are being requested to send demand for RTS. Ranking of States on Roof top Attractiveness (SARAL) Index finalized and launched.</p> <p>Odisha Being implemented.</p> <p>Telangana Under implementation.</p> <p>West Bengal May take up installation of Solar PV Grid.</p>



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30		Chhattisgarh Noted for examination. Gujarat Bieng Implemented. Delhi Like KUSUM scheme, Govt. of Delhi approved "Mukhyamantri Kisaan Aay Badhotari Yojna and "Mukhyamantri Solar Power YOJNA". Karnataka KUSUM scheme final Guidelines are yet to be received from MNRE. Rajasthan Being implemented. Bihar Proposal has been submitted to MNRE for sanction.
31	States may take step for identification of lands and fixing of land rates for new RE parks to be set up for 50 GW.	MNRE land identification has been taken up. Odisha Being implemented. West Bengal Being explored. Gujarat Notified a Policy. Karnataka Under process. Rajasthan Identified 1,23,400 Hectare Govt. land.
32	States may use their good office with Member of Parliaments from their states to get proposals under AJAY Phase-II scheme.	MNRE Copy of the AJAY-II Scheme has been sent to States with a request to expedite consent from Member of Parliaments. Chhattisgarh Noted. Lakshadweep No action. Bihar District Magistrates and Municipal Corporations have been requested to submit proposal for implementation of the scheme.

S.No.	Conclusions/ Recommendation/ Decisions	Comments of Energy Department
33	Implementation under GEC Phase-I needs to be expedited. CEA may expedite proposals under GEC Phase-II.	<p>MNRE GEC, Phase-I has been expedited. GEC-II is under progress.</p> <p>Chhattisgarh CEA to respond.</p> <p>Gujarat GEC-I: 8 projects commissioned. GEC-II: Approved by the Standing Committee having.</p> <p>Karnataka GEC Phase-I being implemented.</p> <p>Tamil Nadu GEC- Being implemented.</p> <p>Lakshadweep NIL</p>
34	Odisha: Possibility of using solar PV based cooking system for cooking mid-day meals in schools or SC/ST hostels in the State may be explored.	<p>EESL The draft proposal for a national scheme for distribution of energy efficient solar based induction stoves has been submitted by EESL to Ministry of Power in the month of September'18. The same was discussed in a meeting chaired by Secretary (Power) on 24th September 2018. The scheme may be implemented in the state of Odisha after the proposal is approved by Ministry of Power.</p>
35	Tamil Nadu: State Government suggested that size of solar panels should be minimum 2.4 times the capacity of pump. A similar scheme for promoting solar pumps in the state is being implemented. States with huge renewable energy generation may be compensated for backing down conventional power. Issue of penal provisions in Deviation Settlement Mechanism (DSM) for renewable energy rich states may be resolved at the earliest.	<p>Tamil Nadu It is suggested that penalty clause in under drawal / over injection of RE power during the wind season may be relaxed for all RE rich states. Further the penalty for under drawal at high frequency i.e. above 50.10 Hz at market price (which has been fixed at 50.00 Hz) needs to be taken out.</p>



Background Notes on Agenda Items
Conference of
Power and Renewable Energy
Ministers of States & UTs.



Ministries of Power and NRE
Government of India



CONFERENCE OF
POWER AND RENEWABLE ENERGY
Ministers of States & UTs.



1

Ministry of New & Renewable Energy



Ministries of Power and NRE
Government of India



CONFERENCE OF
POWER AND RENEWABLE ENERGY
Ministers of States & UTs.

1. Ministers of New & Renewable Energy

Introduction

In our Nationally Determined Contributions as per the Paris Accord on Climate Change, our country has made a pledge that by 2030, 40% of our installed power generation capacity shall be from clean energy sources and also reducing emission intensity of GDP by 33-35 % from 2005 level. Keeping this in view and our commitment for a healthy planet with less carbon intensive economy, it was determined during 2015 that 175 GW of renewable energy capacity will be installed by the year 2022. This includes 100 GW from solar, 60 GW from wind, 10 GW from biomass and 5 GW from small hydro power. The substantial higher capacity target will ensure greater energy security, improved energy access and enhanced employment opportunities. With the accomplishment of these ambitious targets, India will become one of the largest Green Energy producers in the world, even surpassing several developed countries.

Power Sector at a Glance (As Per CEA)

- Installed Capacity as on 31.08.2019 from different energy sources in the country is as follows:-

Power Sector at a Glance (As Per CEA)

Sector	Capacity (in GW)	Percentage
Thermal	227.98 GW	(62.95%)
Nuclear	6.78 GW	(1.87%)
Hydro	45.4 GW	(12.53%)
Renewable	82.01 GW	(22.65%)
Total	362.17 GW	(100%)

- Renewable energy installed capacity has share of 22.65 % in total installed power generation capacity from all sources i.e. 362.17 GW.
- Status of renewable energy projects as on 31st August, 2019 is given below:-

Sector	Target by 31.03.2022 (GW)	Installed capacity (GW)	Under Implementation (GW)	Tendered (GW)	Total Installed/ Pipeline (GW)
Solar Power	100	30.71	17.27	34.87	82.85
Wind power	60	36.75	9.89	2.64	49.28
Bio Energy	10	9.94	0.00	0.00	9.94
Small Hydro	5	4.6	0.58	0.00	5.18
Wind Solar Hybrid	0	0	1.44	0.00	1.44
Total	175	82.00	29.18	37.51	148.69

1.1 Implementation of Pradhan Mantri Kisan Urja Suraksh aevam Utthaan Mahabhiyan (PM-KUSUM) scheme:-

MNRE has issued guidelines on 22.07.2019 for rollout of the Rs. 34,422-crore central finance assisted PM-KUSUM scheme along with Model PPA and Model Lease Agreement which would encourage farmers to generate solar power in their farms and use the clean energy to replace their existing agricultural pumps. This scheme has the following three components:

- i. **Component A:** Installation of 10,000 MW of Decentralized Ground Mounted Grid Connected Renewable Energy Power Plants by farmers of 500 kW to 2 MW capacity within 5 km distance from sub-station primarily on barren/uncultivable land. The DISCOMs will purchase power at pre-fixed tariff for which they will get PBI of Rs. 0.40 per unit up to Rs. 33 lakh per MW in a span of five years.
- ii. **Component B:** Installation of 17.50 lakh standalone Solar Powered Agriculture Pumps for which Government of India will provide financial support up to 30% of the cost of solar pump and States to also provide at least 30% of the cost of solar pump, balance cost to be shared by the beneficiary farmer. (For NE and hilly states the Central support would be up to 50% of the cost of solar pump)
- iii. **Component C:** Solarisation of 10 Lakh existing Grid-connected Agriculture Pumps for which Government of India will provide financial support up to 30% of the cost of solarisation and States to also provide at least 30% of the cost of solarisation, balance cost to be shared by the beneficiary farmer. (For NE and hilly states the Central support would be up to 50% of the cost of solarisation)

Based on the demand received from States, MNRE has made the allocation of quantities to various States under the three components of the Scheme on 13.08.2019. **However, there are number of States, yet to send demand for all the three components under the Scheme.** The

allocation was tentative and Ministry has issued sanction to the States which have confirmed the quantity allocated along with availability of state share of subsidy.

Centralized tendering for 1.75 lakh standalone Solar Powered Agriculture Pumps under Component-B has been initiated by EESL, bid closing date was 30.9.2019 and technical evaluation is under progress.

In order to ensure that scheme objectives are achieved within given time frame, **it is necessary to launch a rigorous awareness campaign and undertake advance planning for implementation.** Further component wise action points to be undertaken to help achieving targets envisaged under the scheme are given below:

Component-A

- i. DISCOMs to assess and notify RE generation capacity that can be injected in to identified 33/11 kV or 66/11 kV or 110/11 kV distribution sub-station of rural areas.
- ii. DISCOMs to advertise on the capacity available and call for RfS from interested farmers/ their representatives.
- iii. Farmers willing to lease out their land for development of RE plants near above notified substations should register with the nearest Discom office. List of such farmers should be uploaded on the Discom's portal so that interested power plant developers can approach them. Farmers willing to set up plant at their own may look for RfS document which will be issued by respective Discom.
- iv. State Government to determine pre-fixed levelised tariff below which Discoms will purchase power from the farmers.
- v. State Nodal Agency to help farmers/developers in getting all necessary clearances, finance from Banks/FIs, technical support for preparation of DPR, tendering and contracting for EPC, project execution, etc.
- vi. Finalisation of successful farmers/developers to be completed within two months of issue of RfS.
- vii. Organising State level PPA signing ceremony.

Component-B

- i. State Governments to designate Implementing Agency (IA) for the Component-B.
- ii. IA to establish online portal for implementation and monitoring of solar pumps.
- iii. IA to issue an advertisement calling for application and providing for method for applying.
- iv. Farmers willing to install solar water pumps to register with nearest IA's office physically or online on the portal.



- v. IA to fix criteria for allotment of solar pumps including its capacity.
- vi. State and IA to tie-up with Banks/FIs to facilitate loan to farmers for their share of solar pump cost.
- vii. IA to inform farmers about the empanelled vendors selected through centralized tendering, quality of solar pump specified, five years AMC provision, service centre and help line number of service providers etc., soon after finalisation of centralised tendering.
- viii. Farmers to select one of the empanelled vendor of his choice for installation.
- ix. IA to define procedure to collect State/Farmer's share and to make payment to the installer and also to get advance payment from MNRE after issue of LOA.
- x. IA to define procedure for post installation inspection and submission of completion report. IA will get subsequent/balance payment from MNRE on completion of work.
- xi. IA to monitor performance of the pumps and ensure timely grievance redressal, if any.

Component-C

- I. State Government to designate Implementing Agency (IA) for the Component-C.
- ii. DISCOMs to identify feeders for solarisation of existing agricultural pumps.
- iii. IA to issue RfS for empanelment of vendors for solarisation.
- iv. IA to establish online portal for implementation and monitoring of solarised agricultural pumps.
- v. State Government to determine pre-fixed tariff at which Discoms will purchase surplus power from the farmers.
- vi. States to define metering methodology and specifications of meters to be installed.
- vii. IA to inform farmers about the empanelled vendors, quality of solar pump specified, five years AMC provision, service centre and help line number of service providers etc., soon after finalisation of empanelment of vendors.
- viii. Farmers to select one of the empanelled vendor for solarisation of existing agricultural pumps
- ix. State and IA to tie-up with Banks/FIs to facilitate loan to farmers for their share of cost.
- x. IA to define procedure to collect State/Farmer's share and to make payment to the installer and also to get advance payment from MNRE after issue of LOA.
- xi. IA to define procedure for post installation inspection and submission of completion report. IA will get subsequent/balance payment from MNRE on completion of work.

xii. IA to monitor performance of the pumps and ensure timely grievance redressal, if any.

Request to states:

States are requested to take all necessary steps as mentioned above for successful implementation of the PM-KUSUM Scheme.

1.2 Implementation of Solar Rooftop scheme (SRISTI):-

The Ministry in phase I has been implementing "Grid Connected Rooftop and Small Solar Power Plants Programme" which is providing subsidy upto 30% of benchmark cost for the general category states and upto 70 % of benchmark cost for special category states, i.e. North Eastern States including Sikkim, Uttarakhand, Himachal Pradesh, Jammu & Kashmir and Lakshadweep, Andaman & Nicobar Islands for installation of grid connected rooftop solar power plants in building of residential, institutional and social sector. For Government sector achievement linked incentives upto 25% of the benchmark cost in general category States/UTs and 60 % of the benchmark cost for special category States/UTs are being provided is provided. About 4200 MW is being targeted under this scheme (2100 MW with subsidy and 2100 MW without subsidy) by year 2019-20. **So far, about 2098 MW solar rooftop systems have been sanctioned/ approved under the scheme. Aggregate 1827 MW (Annexure I) have been reported online as installed in the country as on 03.10.2019.**

Phase II of the Grid connected rooftop solar programme was approved for with a target for achieving cumulative capacity of 40,000 MW from Rooftop Solar (RTS) Projects by the year 2022 in February 2019. The programme will be implemented with total central financial support of Rs. 11,814 crores through DISCOMs. Operational guidelines have been issued on 20th August 2019. In the Phase-II Programme, Central Financial Assistance (CFA) for the residential sector has been restructured. Important features of the Phase-II of RTS are as under:

- Power Distributing companies (Discoms) will be the implementing agencies
- Subsidy/CFA will be available for the residential sector only
 - CFA under residential category will be provided for 4000 MW capacity and the same will be provided on the basis of benchmark cost or tender cost, which is lower
 - 40% CFA for RTS systems up to 3 kW capacity and 20% for RTS system capacity beyond 3 kW and up to 10 kW. No CFA beyond 10 kW
 - For Group Housing Societies/Residential Welfare Associations (GHS/RAW), CFA will be limited to 20% for RTS plants for supply of power to common facilities, however, the capacity eligible for CFA for GHS/RAW will be limited to 10 kW per house with maximum total capacity upto 500 kWp.

- Residential Consumers/Group Housing Societies/Residential Welfare Associations have to pay only balance amount after deducting the CFA to the empanelled vendor for installation of the RTS project
- For availing the benefit of CFA, indigenously manufactured PV Modules and Cells are to be used.
- Performance based incentives will be provided to DISCOMs based on RTS capacity achieved in a financial year (i.e. 1st April to 31st March every year till the duration of the scheme) over and above the base capacity i.e. cumulative capacity achieved at the end of previous financial year as per following rates

S.No.	Parameter	Incentive
1	For installed capacity achieved upto 10% over and above of installed base capacity within a financial year.	No incentive
2	For installed capacity achieved above 10% and up to 15% over and above of installed based capacity within a financial year	5% of the applicable cost for capacity achieved above 10% of the installed base capacity
3	For installed capacity achieved beyond 15% over and above of installed based capacity within one financial year.	5% of the applicable cost for capacity achieved above 10% and up to 15% of the installed base capacity PLUS 10% of the applicable cost for capacity achieved beyond 15% of the installed base capacity.

- Incentive to the Discoms will be available for the initial 18,000 MW only.

Capacities for the current year has been allocated to those 9 willing Discoms, which have given their consent on 20th August 2019. For the remaining Discoms, capacities are being allocated. Even advance to 3 Discoms from the State of Gujarat is being released as per the provision of the Scheme and the demand received from these three Discoms.

Multilateral agencies have been allocated to the States for providing Technical assistance (**Annexure II**). Assistance of these agencies can be availed for creation of single window clearance portal and demand aggregation

Request to States:

- **Tenders to be issued by DISCOMs for empanelment of venders.**
- **Authorities at district and sub-divisional level to be notified by DISCOMs for acceptance of application and implementation of programme.**
- **Integrated portal for application and processing of implementation to be kept ready.**

- **Mass awareness through media campaign for the Rooftop Solar Programme.**
- **Those Discoms which have not yet come forward for participation in the Phase-II of RTS should come forward. They can take the support of State Nodal Agencies if they so desire.**
- **RTS capacity be permitted up to 100% of connected load.**
- **Distribution Transfer (DT) capacity be increased to avoid denial of permission for setting up RTS on this ground.**
- **Mandatory notification for installation of rooftop solar projects on all Government buildings and new buildings (above certain built up area).**
- **Monitoring of sanctioned RTS capacity and expedite commissioning of the allotted capacity.**
- **Timely and correctly submission of project proposals and project commissioning reports for timely release of funds.**

1.3 Achievement of RPO:-

The RPO trajectory as notified by the Ministry of Power (MoP) requires 17 % share of renewables during the year 2018-19 (6.75 % from solar and 10.25 % from non-solar). The actual country-wide achievement, during 2018-19, grew up to 10.00% from 8.47% in 2017-18.

Only 4 states, namely Andhra Pradesh, Himachal Pradesh, Karnataka and Sikkim have achieved more than 100% RPO compliance. Seven States, namely Gujarat, Madhya Pradesh, Nagaland, Rajasthan, Tamil Nadu, Telangana and Uttarakhand have achieved more than 60% RPO compliance. Rest states/UTs have achieved less than 60% RPO compliance.

Further, only 9 States have notified RPO trajectory up to 2021-22 as per MoP notification. Other States have either not yet notified the trajectory or have notified a trajectory that is not in line with MoP notification.

The states of Andhra Pradesh and Karnataka have achieved 100% RPO compliance in solar, non-solar and total. Telangana have achieved 100% compliance in Solar only. Himachal Pradesh, Nagaland and Tamil Nadu have achieved 100% compliance in Non-solar only. Rest states/UTs are neither compliant in solar nor in non-solar.

State-wise RPO compliance for the period 2018-19 as well as respective Renewable Energy share is enclosed as **Annexure-III**.

RPO Compliance Monitoring

The RPO compliance monitoring is crucial to ensure that the RPO targets are met and regulatory action is initiated on non-compliance. On 4 June 2019, Secretary MNRE had written to all SERCs

for ensuring RPO compliance and enforcing penal provisions against defaulting obligated entities (copy of the letter at **Annexure-IV**). Further, on 29 August 2019, Secretary MNRE requested Chairperson APTEL's intervention to direct defaulting SERCs to ensure RPO compliance through timely monitoring and invoking penal provisions for non-compliance; aligning RPO trajectory; and not to permit carry forward or waiver of RPO (copy of the letter at **Annexure-V**).

Further, in view of the increasing quantum of inter-state renewable power transactions, it is necessary that the information on energy consumed (solar, non-solar & large hydro) and contracted capacity in each of the category may be collected at the state level for accurate monitoring of RPO compliance. On 9 September 2019, the Ministry requested all State Load Dispatch Centers (SLDCs) to collate and share this information on monthly basis (copy of letter is enclosed at **Annexure-VI**).

Requests to States

- i. Ensure RPO compliance;**
- ii. Align RPO trajectory with that notified by Ministry of Power till the year 2021-22;**
- iii. Provide monthly and quarterly information on RPO Compliance in the prescribed formats; and**
- iv. States to ensure that SLDCs submit information on inter-state trade of renewable power.**

1.4 Renewable energy development programs in border areas:

Status of proposed RE Projects in Border Areas of Kutch, Gujarat

1. Vide MNRE's Order No. 283/47/2019-Grid Solar dated 06.09.2019, two teams have been constituted for development of RE Power Projects in Kutch-Gujarat and Rajasthan, as follows:

Group No.	Composition of the Group	Place
1.	<ol style="list-style-type: none"> i. Shri Ruchin Gupta, Director, MNRE, - Group Head ii. Shri Manoj Mathur, Director, SECI iii. Shri Partha Sarthi Das, GM, PGCIL iv. Shri Rajendra Mistry, Chief Project Officer, GPCL, Gujarat 	Kutch, Gujarat
2.	<ol style="list-style-type: none"> i. Sh. B. P. Yadav, Joint Secretary, MNRE, - Group Head ii. Shri Shailesh Mishra, Director, SECI iii. Shri Rajesh Verma, Sr. DGM, PGCIL iv. Shri Surendra Mathur, Project Officer, RREC, Jaisalmer v. Shri D. K. Chhangani, Project Manager, RREC, Jodhpur vi. Shri Gopesh Sharma, Project Officer, RREC, Bikaner 	Rajasthan

- Hon'ble Prime Minister has desired that renewable projects be installed along 20 km of international border. He has also desired that renewable energy be used to generate drinking water in desert areas close to the border. Accordingly, the Ministry has requested both Rajasthan and Gujarat state to identify suitable land near international border (20-25 kms strip) where solar and wind projects could be installed.
- MNRE has held discussion with Gujarat Government on this issue, including discussions with Hon'ble Energy Minister, Government of Gujarat.
- Govt. of Gujarat has already identified a 20km wide and 30km long parcel of land along the border in Kutch District for setting up RE projects. The identified land parcel would be utilized for setting up of Solar-Wind Hybrid Projects after provisioning of necessary infrastructure.
- In order to expedite the defence clearance for RE projects proposed to be set up on the said land, MNRE has requested Government of Gujarat to submit the coordinates of the identified land to MNRE. The requisite details are awaited from Government of Gujarat.
- Vide letter dated 30.09.2019, MNRE has requested SECI to submit a detailed plan, phase-wise, in consultation with Power Grid Corporation of India Ltd. (PGCIL) and Central Electricity Authority (CEA) for developing the transmission capacity in the identified 20km x 30km land in Kutch in Gujarat.

Status of proposed RE Projects in Border Areas of Rajasthan

Three districts of Rajasthan namely- Bikaner, Jaisalmer and Barmer has been identified for these projects. The state government have welcomed this concept and have initiated action towards the same. In Rajasthan it was decided to install 5 GW each in districts of Bikaner and Barmer and 10 GW in Jaisalmer district. Data relating to land in these districts have been collected.

Request to states:

To expedite identification of land, finalization of implementation strategy and facilitate necessary clearances.

1.5 Setting up of Ultra Mega Renewable Energy Power Parks (UMREPPs):-

Objective

The land and power evacuation are the two most critical elements for successful implementation of the Solar Park Scheme. If these two inputs are facilitated by the Government, then the private developers would be enthused to participate in establishment of RE projects in this country. It is felt that a policy shift is required for expeditious implementation of the Solar Park Scheme. Accordingly, it is proposed to introduce the concept of Ultra Mega Renewable Energy Power

Parks (UMREPPs) under the existing Solar Park Scheme so as to enable the park developers to address the land and evacuation issues.

Implementation arrangements

The details of implementation arrangements are as follows:

Technology

The parks will now be developed as Renewable Energy (RE) based UMPPs with solar/wind/hybrid thereof and also with storage system, if required. The floating solar projects may also be considered.

Capacity

The capacity of individual UMREPP may be in the range of 2000 MW. However, the minimum capacity of any UMREPP at single location may be 600 MW where there is need for creation of new transmission system by CTU. The UMREPP, connected to any existing transmission system of CTU/STU, shall be of the size of 250 MW at single location. For floating solar PV parks, the minimum size should be 50 MW. Further, these UMREPPs may be spread over more than one location in the multiples of 600 MW for new transmission system and in the multiples of 250 MW for existing transmission system based on availability of land.

Implementing agency

The implementing agency of the UMREPPs may be any of the following:

- i) A Special Purpose Vehicle (SPV) in the form of a Joint Venture Company (JVC) to be set up between Central Public Sector Undertaking (CPSU) and any State Public Sector Undertakings (SPSU) or State Utility or Agency of the State Government. The shareholding pattern may be decided mutually.
- ii) A SPV fully owned by any CPSU.
- iii) A SPV fully owned by any State PSU / State Utility / Agency of the State Government.

Payment to States:

The State Governments offering land for the UMREPP are entitled for price of land i.e. Upfront / Lease rent / over a period of time in accordance with the policy of the State Govt.

Compensation to the SPV:

The SPVs would be entitled for the following compensation for development and management of the UMREPPs:

- a) Park development charges from RE Power Developers: Upfront / Annual Rent / Per unit energy charges basis to be disclosed and charged at a uniform rate from project developers. This may vary from park to park.

- b) Central Financial Assistance (CFA) of Rs. 20 Lakh/MW or 30% of the cost of development of internal infrastructure of the UMREPPs including cost of connecting to the CTU/STU point, whichever is lower. Any augmentation/strengthening and/or creation of external power evacuation infrastructure will be done by CTU as a project of National Importance and its cost would be socialized.
- c) O&M charges from RE power developers
- d) It is proposed that Rs. 0.07 /unit of power being generated from the projects to be developed in these UMREPPs for the entire PPA period of the projects set up under developer mode, if the SPV acts as a power trader also, that it sells the generated power to consuming entity including Discoms.

Power Projects inside UMREPPs:

The power project developers for setting up of renewable energy projects inside the UMREPPs would be selected through tariff based competitive bidding process. In addition to RE power developers, the SPVs (which are also UMREPP developers) are also allowed to bring RE power projects either EPC mode also in part or the whole of the park.

Request to States:

One of the major roles of State Government will be to facilitate the SPV in identification & acquisition of land for this purpose and also to facilitate in obtaining all required statutory clearances. The State Government may designate any State Government Organization for the purpose. The land may be offered in form of equity or on lease basis. Private land may also be allowed to be acquired on upfront charges or on lease basis.

1.6 Ease of doing business:-

a) Sanctity of Contract - PPAs to be sacrosanct.

A significant proportion of electricity in India is procured through long term PPAs. These PPAs are also basis for debt financing of these projects. Thus not only individual PPAs are important, sanctity of PPA system is also vital to sustenance and growth of the sector. Sections 62 and 63 of the Electricity Act 2003 provide two methods for tariff determination. Under Section 62 of the Act of 2003, the respective Commission, Central or State, are empowered to determine the tariff after public hearing and examining the relevant parameters. Under Section 63 of the Act of 2003, 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. There have been instances where PPAs are sought to be renegotiated. This shakes the confidence of all stakeholders including developers/ banks and financial intuitions and affects investment climate of the entire sector. The Ministry has been strongly opposing such moves.

Thus, the Power Purchase Agreements (PPAs) signed at tariff determined under section 62 or discovered under section 63 of electricity Act of 2003, should be sacrosanct and not be revisited unless a provision to do so exists in the PPA itself. If an impression goes out that the rule of law does not prevail or that contracts are not honoured then the investments will dry up and the growth will come to a halt.

Request to States:

The PPAs should not be re-negotiated and the provisions under PPAs should be enforced in letter and spirit.

b) Payment security:

1) Timely payment to generators (solar/wind power) by DISCOMs on First in First Out (FIFO) basis.

All large RE projects depend on debt from financial institutions. Payment against generation is only revenue to service their debts. Therefore any delays in payments would make these projects financially unviable and may lead to NPAs in extreme cases. Delayed payments also enhance risks of the sector and those specific states which lead to higher tariffs. However it is seen that there have been delays in payments from a number of states. In some of the cases, delays for renewable generators are more than conventional generators leading to allegations of bias against renewables. In some of the states' delays are more than a year.

An amount of Rs. 9735.6 Cr is due from various DISCOMs towards RE Generators. Andhra Pradesh lead the table with Rs 2509 cr followed by Tamil Nadu (Rs 2413 cr) and Telangana (Rs 1580 cr). Karnataka, MP, Rajasthan and Maharastra have outstanding payment for RE projects between Rs 500 cr to Rs. 1000 cr. An overall position of delays in payment to RE generators is as shown below (source-CEA, as on 31.7.2019, issued on 2.9.2019).

State/utility	Sum of Amount (in Cr)
Andhra Pradesh	2509.21
Tamil Nadu	2413.47
Telangana	1580.84
Karnataka	937.75
Madhya Pradesh	832.65
Rajasthan	722.23
Maharashtra	629.40

State/utility	Sum of Amount (in Cr)
IREDA	22.42
Punjab	19.80
DPL	19.03
Gujarat	18.16
Uttar Pradesh	11.74
Bihar	8.13
Sikkim	6.36
Uttarakhand	3.37
Andaman Nicobar	0.75
Torrent Power	0.31
Grand Total	9735.6

Request to States:

Timely payment to RE generators (Solar/ wind power) by DISCOMs on 'First In First Out' basis be ensured.

ii) Opening of LCs by all DISCOMs/distribution licensees for all independent RE producers.

Ministry of Power vide Order No. 23/12/2019 dated 28.06.2019 and subsequent corrigendum dated 17.07.2019 and clarification dated 23.07.2019 has issued an order regarding opening and maintaining of adequate Letter of Credit (LC) as Payment Security Mechanism (PSM) under Power Purchase Agreements (PPAs) by Distribution Licensees (DISCOMs). Following are the provisions:

- 1) Under the Electricity Act 2003, Regional Load Despatch Centres (RLDC) and State Load Despatch Centres (SLDC) are cast with the statutory responsibility to ensure that the supply of electricity is made in accordance with the contracts.
- 2) Section 28 (3) (a) of the Electricity Act 2003 provides that the Regional Load Despatch Centre shall be responsible for optimum scheduling and despatch of electricity within the region, in accordance with the contracts entered into with the licensees or the generating companies operating in the region.
- 3) Similarly as per provisions of Section 32 (2)(a) the State Load Despatch Centre shall be responsible for optimum scheduling and despatch of electricity within a State, in accordance with the contracts entered into with the licensees or the generating companies operating in that State.
- 4) The Power Purchase Agreements have the provision regarding maintenance of adequate Payment Security Mechanism mainly in the form of Letters of Credit by the Distribution

Licensees! Procurers of Power. A robust Payment Security System requires adequacy and validity of Letter of Credit to cover the payments due on account of drawal of power.

- 5) NLDC , RLDC and SLDC are therefore directed as follows:
- a) In accordance with Section 28 (3) (a), the NLDC , RLDC and SLDC shall despatch power only after it is intimated by the Generating Company and /Distribution Companies that a Letter of Credit for the desired quantum of power has been opened and copies made available to the concerned Generating Company.
 - b) The intimation to NLDC, RLDC and SLDC shall specify the period of supply.
 - c) RLDC shall dispatch electricity only up to the quantity equivalent of value of Letter of Credit.
 - d) The dispatch shall stop once the quantum of electricity under LC is supplied.
 - e) The concerned generating company shall be entitled to encash the LC after expiry of grace period, i.e. 45 to 60 days as provided in the PPA.
 - f) In the event power is not dispatched for any reason given above, the Distribution licensee shall continue to pay the Fixed Charge to the Generating Company.
 - g) The LC may be opened as per the PPA. However, the Distribution Company may open LC for a shorter duration say for supply corresponding to one week or fortnight. The same may be intimated to the respective LDCs and the generating company. In such cases also the LDCs shall schedule the power.
 - h) In case of difficulty in opening of LC, Distribution Company may pay in advance through electronic mode the amount equal to the amount corresponding to atleast one day purchases of electricity and inform the same to the respective LDC. In such case also LDC shall schedule the power to the Distribution Company.
- 6) It shall also be ensured by the Load Despatch Centre that the regulated entity, during the period of regulation, has no access to procure power from the Power Exchanges and they shall not be granted Short Term Open Access (STOA).
- 7) In case scheduling and despatch of power produced by any generator is not done due to non-opening of Letter of Credit by the Distribution licensee, then the Distribution licensee would be liable to pay compensation to the generator as per the terms of Power Purchase Agreement or Power Sale Agreement, as the case may be, the distribution licensee has entered in with the generator.

Further, Ministry of Power (MoP) vide No. 23/22/2019-R&R dated 09.08.2019, has instructed Power System Operation Corporation Ltd. (POSOCO) that according to the Procedure for Scheduling of power to Distribution Company in the event of Non-maintenance of Letter of

Credit, Power will be scheduled for dispatch only after a written intimation is given to the appropriate Load Dispatch Centre (LDC) i.e. NLDC/RLDC/SLDC that Letter of Credit (LC) for the desired quantum of power w.r.t the generating stations has been opened. The intimation shall also specify the period of supply. The intimation of requisite LC having been opened will be given by the Distribution Company and will be confirmed by the generating company. Respective RLDC and SLDCs are required to implement the above procedure.

MNRE has informed POSOCO to issue necessary directions to RLDCs/SLDCs as per Ministry of Power's order no. 23/22/2019-R&R dated 28.06.2019, 17.07.2019 & 23.7.2019. POSOCO has been further advised to strictly implement the provisions of the orders.

Request to states:

To issue necessary directions to DISCOMs and SLDCs for compliance of Ministry of Power's order no. 23/22/2019-R&R dated 28.06.2019, 17.07.2019 & 23.7.2019.'

c) Must Run Status and non-curtailment of power.

Renewables have must run status under the Indian Electricity Grid Code 2010. In some States, instances of curtailment of renewable power, without assigning any specific reason have significantly increased. This has an impact on financial viability of renewable energy projects.

Distribution Licensees should ensure that curtailment of renewable energy is restored to only for grid security reasons, through transparent process. Any compensation arising on this account should be as per provisions of the Standard Bidding Guidelines/ Power Purchase Agreement/ Power Sale Agreement. Details of curtailment should be put up in the public domain by the appropriate Load Dispatch Centre. The renewable power curtailed due to reasons, other than grid security, should be treated as deemed generation and compensated at the contracted tariff.

Request to States:

- i. Ensure that curtailment is resorted to only for grid security reasons, through transparent process; and**
- ii. Details of curtailment should be put up in the public domain by the appropriate Load Dispatch Centre.**

d) Allotment of land & levying of facilitation charges for land.

Allotment of land

- An important component of uncertainty in the RE project (both solar and wind) is timely availability of adequate land. While the actual project execution timeframe of RE projects is about six months to a year, the land resource and its processes (conversion) are known to take considerable time. While some of the states have taken proactive policy initiatives (like land conversion not required for solar projects) there are gaps in some other states which delays

the project implementation. Even for land conversion from for use of land for one RE source (solar or wind) to hybridise and include other source, certain doubts are expressed while processing the request of developer.

- The Ministry has issued an advisory requesting the states to allow land use to be permitted to add solar PV plants in existing wind projects and wind turbines in existing solar plants. The land use differentiation under different Land Revenue Acts broadly categorises 'agricultural' and 'non-agricultural' land use. So once permission has been given to convert agricultural land to non-agricultural and use it for installation of one type of RE resource, land use change procedure should not come in the way of enhancing the efficiency by hybridising it with other resources. It is also requested that since both wind and solar projects require large area of land resource, these be exempted from provisions of land usage (under land Revenue Act or equivalent law) and land ceiling (under land Reform Act or equivalent law).
- Recently, the issue has been taken up with MoEF & CC to notify renewable energy deployment as green activity and grant automatic approval for utilization of degraded forest land for renewable energy project. The will immensely in timely achievement of the renewable energy targets and set the county on energy transition path of cleaner environment, energy independence, and a stronger economy.

Request to States:-

- **In order to expedite the implementation of solar and wind power projects and enhance the ease in implementation of these projects, it is requested that the state government may consider exempting the solar and wind power projects as green activity not required any conversion in land use.**

Levying of facilitation charges for land

Recently, Rajasthan state government has increased Rajasthan RE Development Fund (RREDF) being levied for RE projects from Rs 1 lakh per MW to Rs 5 lakh per MW. This may lead to increase of Rs 20 paise per unit in RE tariff which may make RE power less competitive. Rajasthan Government has been requested not to increase the RREDF charges.

Request to States:

In order to keep RE tariff competitive, state governments are requested to not levy excessive development charges or charges if any should not be changed and if changed it may be applicable only for upcoming bids.

1.7 Regulatory issues:-

a) Adoption of Tariff.

It has been brought to the notice of the Ministry that some SERCs have been taking inordinate

time in adoption of the tariff determined through transparent process of bidding. This results in delay in financial closure and also impacts financial viability of the projects.

Under Section 63 of the Electricity Act 2003, it is clear that 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. On 28 May 2019, Secretary MNRE had requested Energy/Power Secretaries of all States, to issue an advisory to respective SERCs to adopt tariff arrived at through competition bidding process within one month from the date of submission (copy of letter at **Annexure-VII**).

Further, in view of The Hon'ble APTEL's judgment dated 29 August 2019, Ministry has requested all SERCs/JERCs requested to ensure that adoption of tariff discovered through competitive bidding in the respective States/UTs may not be subjected to public hearing proceedings (copy of letter at **Annexure-VIII**).

Request to States:

Consider issuing an advisory to SERCs to adopt tariff arrived at through competitive bidding process within one month from the date of request.

b) Filling up vacant posts of State Electricity Regulatory Commission.

It has been observed that some of the SERCs have not had a Chairman since a long time, and in many cases positions of Members are also vacant for a long period. This has hampered the process for adoption of wind and solar power tariff, and also other renewable energy related regulatory functions including ensuring RPO compliance. Although Section 85 (2) & (3) of the Electricity Act 2003 stipulates the process for filling the positions well in time, but this appears not to have been complied with in some cases.

Renewable energy projects have short gestation period projects are bid on a continuous basis at the central and state level. Therefore, it is imperative that critical functions of SERCs are discharged in a just and timely manner.

Request to States:

Ensure that process for filling up of vacant posts in SERCs is initiated timely.



Annexure I

State-wise cumulative capacity installed as on 03.10.2019

Sr. No.	State /UTs	Total Capacity installed (In MW)
1	ANDAMAN and NICOBAR ISLANDS	4.59
2	ANDHRA PRADESH	79.93
3	ARUNACHAL PRADESH	4.34
4	ASSAM	30.56
5	BIHAR	6.92
6	CHANDIGARH	29.98
7	CHHATTISGARH	10.39
8	DADRA and NAGAR HAVELI	0.48
9	DAMAN and DIU	0.39
10	GOA	3.83
11	GUJARAT	297.26
12	HARYANA	113.15
13	HIMACHAL PRADESH	11.56
14	JAMMU and KASHMIR	10.64
15	JHARKHAND	13.12
16	KARNATAKA	130.37
17	KERALA	41.36
18	LAKSHADWEEP	0.00
19	MADHYA PRADESH	45.87
20	MAHARASHTRA	213.21
21	MANIPUR	4.11
22	MEGHALAYA	0.12
23	MIZORAM	1.32
24	NAGALAND	0.00
25	NCT OF DELHI	102.89

Sr. No.	State /UTs	Total Capacity installed (In MW)
26	ORISSA	13.72
27	PUDUCHERRY	1.92
28	PUNJAB	67.21
29	RAJASTHAN	118.73
30	SIKKIM	0.07
31	TAMIL NADU	153.44
32	TELANGANA	70.93
33	TRIPURA	2.96
34	UTTAR PRADESH	124.24
35	UTTARAKHAND	75.21
36	WEST BENGAL	42.16
	Total	1826.98

Annexure II

Agencies allocated for TA Programme for RTS

World Bank		ADB	GIZ	EU
Assam	Odisha	Tamil Nadu	Himachal Pradesh	Maharashtra
Andhra Pradesh	Meghalaya	Karnataka	Jammu & Kashmir	UP
Bihar	Manipur	A & N Island	Gujarat	Punjab
Chhattisgarh	Mizoram	Puduchchery	Uttrakhand	W Bengal
Chandigarh	Nagaland	Goa	Dadra & N Haveli	
Delhi	Rajasthan	Lakshadweep	Daman & Diu	
Haryana	Sikkim	Kerala	Arunachal Pradesh	
Jharkhand	Tripura	Telangana		
Madhya Pradesh				



Annexure III

RPO Compliance 2018-19												
States/UTs	Energy Supply (MU)	Energy Supplied excl. Hydro (MU)	Solar RPO (%)	Non-Solar RPO (%)	Total RPO (%)	Solar Obligation (MU)	Non-Solar Obligation (MU)	Total RE Obligation (MU)	Solar Generation (MU)	Non-Solar Generation (MU)	Total Generation (MU)	Compliance (%)
Himachal Pradesh	9618	2383	6.75%	10.25%	17.00%	160.9	244.3	405.2	0.0	2287.9	2287.9	564.7%
Sikkim	512	73	6.75%	10.25%	17.00%	5.0	7.5	12.5	0.0	28.1	28.1	225.4%
Karnataka	71690	58431	6.75%	10.25%	17.00%	3944.1	5989.2	9933.3	7575.8	14081.7	21657.5	218.0%
Andhra Pradesh	63677	60406	6.75%	10.25%	17.00%	4077.4	6191.6	10269.1	4545.8	9584.6	14130.4	137.6%
Tamil Nadu	109273	104078	6.75%	10.25%	17.00%	7025.3	10668.0	17693.3	3554.5	13344.0	16898.5	95.5%
Nagaland	809	565	6.75%	10.25%	17.00%	38.1	57.9	96.1	0.0	87.5	87.5	91.1%
Rajasthan	79637	75554	6.75%	10.25%	17.00%	5099.9	7744.3	12844.2	4634.0	6673.2	11307.2	88.0%
Uttarakhand	13753	7802	6.75%	10.25%	17.00%	526.7	799.7	1326.4	318.3	786.7	1105.0	83.3%
Gujarat	116572	115137	6.75%	10.25%	17.00%	7771.8	11801.6	19573.3	2410.3	11366.1	13776.4	70.4%
Madhya Pradesh	75665	68045	6.75%	10.25%	17.00%	4593.0	6974.6	11567.7	2503.4	5137.1	7640.5	66.1%
Telangana	66635	63482	6.75%	10.25%	17.00%	4285.0	6506.9	10791.9	6297.5	733.7	7031.3	65.2%
Maharashtra	158148	151377	6.75%	10.25%	17.00%	10218.0	15516.2	25734.1	2206.6	12768.3	14974.9	58.2%
Mizoram	661	506	6.75%	10.25%	17.00%	34.2	51.9	86.1	0.1	40.0	40.1	46.6%
Andaman and Nicobar	323	323	6.75%	10.25%	17.00%	21.8	33.1	54.9	8.0	16.6	24.6	44.8%
Meghalaya	1953	850	6.75%	10.25%	17.00%	57.4	87.2	144.6	0.0	50.5	50.5	34.9%
Punjab	55275	44247	6.75%	10.25%	17.00%	2986.7	4535.3	7522.0	1492.9	952.3	2445.2	32.5%
Uttar Pradesh	116118	107987	6.75%	10.25%	17.00%	7289.1	11068.7	18357.8	1192.9	4447.4	5640.3	30.7%
Kerala	24911	17702	6.75%	10.25%	17.00%	1194.9	1814.4	3009.3	110.8	659.5	770.3	25.6%

Annexure III

RPO Compliance 2018-19												
States/UTs	Energy Supply (MU)	Energy Supplied excl. Hydro (MU)	Solar RPO (%)	Non-Solar RPO (%)	Total RPO (%)	Solar Obligation (MU)	Non-Solar Obligation (MU)	Total RE Obligation (MU)	Solar Generation (MU)	Non-Solar Generation (MU)	Total Generation (MU)	Compliance (%)
Chhattisgarh	26076	25755	6.75%	10.25%	17.00%	1738.4	2639.9	4378.3	335.1	610.0	945.1	21.6%
Jammu & Kashmir	15868	8725	6.75%	10.25%	17.00%	589.0	894.3	1483.3	0.0	312.2	312.2	21.0%
West Bengal	52078	47286	6.75%	10.25%	17.00%	3191.8	4846.8	8038.6	40.6	1445.6	1486.2	18.5%
Tripura	1837	1622	6.75%	10.25%	17.00%	109.5	166.3	275.8	0.0	43.0	43.0	15.6%
Odisha	31781	24670	6.75%	10.25%	17.00%	1665.2	2528.7	4194.0	249.1	390.4	639.6	15.2%
Lakshadweep	46	46	6.75%	10.25%	17.00%	3.1	4.7	7.8	1.1	0.0	1.1	14.3%
Chandigarh	1561	674	6.75%	10.25%	17.00%	45.5	69.1	114.6	13.5	0.0	13.5	11.8%
Bihar	29827	28086	6.75%	10.25%	17.00%	1895.8	2878.8	4774.6	179.9	308.3	488.1	10.2%
Haryana	53665	49362	6.75%	10.25%	17.00%	3332.0	5059.6	8391.6	66.0	589.9	655.8	7.8%
Delhi	32282	29250	6.75%	10.25%	17.00%	1974.4	2998.1	4972.5	10.8	276.8	287.7	5.8%
Daman & Diu	2557	2557	6.75%	10.25%	17.00%	172.6	262.1	434.7	18.9	0.0	18.9	4.4%
Arunachal Pradesh	855	579	6.75%	10.25%	17.00%	39.1	59.3	98.4	1.2	0.5	1.8	1.8%
Manipur	906	635	6.75%	10.25%	17.00%	42.9	65.1	108.0	1.9	0.0	1.9	1.7%
Assam	9204	7741	6.75%	10.25%	17.00%	522.5	793.5	1316.0	6.7	14.1	20.7	1.6%
Jharkhand	8461	7530	6.75%	10.25%	17.00%	508.3	771.9	1280.2	19.1	0.0	19.1	1.5%
Puducherry	2751	2751	6.75%	10.25%	17.00%	185.7	282.0	467.7	2.6	0.0	2.6	0.6%



Annexure III

RPO Compliance 2018-19												
States/UTs	Energy Supply (MU)	Energy Supplied excl. Hydro (MU)	Solar RPO (%)	Non-Solar RPO (%)	Total RPO (%)	Solar Obligation (MU)	Non-Solar Obligation (MU)	Total RE Obligation (MU)	Solar Generation (MU)	Non-Solar Generation (MU)	Total Generation (MU)	Compliance (%)
Dadar & Nagar Haveli	6317	6317	6.75%	10.25%	17.00%	4264	647.5	1073.9	5.8	0.0	5.8	0.5%
Goa	4280	4280	6.75%	10.25%	17.00%	288.9	438.7	727.6				
Others (DVC, NTPC, etc.)	21627	21627	6.75%	10.25%	17.00%	1459.8	2216.8	3676.6	1464.8	455.2	1920.0	52.2%
Total	1267209	1148446	6.75%	10.25%	17.00%	77520.1	117715.7	195235.9	39268.2	87490.9	126759.0	64.93%

Note:

1. Andaman & Nicobar Is. and Lakshadweep has stand-alone systems.
2. Data for inter-state power transfer including from NTPC, DVC, etc. have not been considered in this exercise.
3. RPO compliance is calculated on power supplied excluding large hydro
4. The data for power supply 2018-19 and for large hydro consumption has been taken from CEA
5. The data for large hydro power generated till 2018-19 is used as hydro power consumed in the country excluding any imports/exports

Annexure IV


सचिव
आनन्द कुमार
ANAND KUMAR

7/10/2017-EFM



सचिव
भारत सरकार
नवीन और नवीकरणीय ऊर्जा मंत्रालय
SECRETARY
GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY

Dated 4 June 2019

Dear Sir

This letter as in continuation to my letters of even number dated 10 October 2017 and 16 May 2018 seeking Hon'ble State Electricity Regulatory Commission (SERC)'s consideration for ensuring Renewable Purchase Obligation (RPO) compliance and enforcing penal provisions against defaulting obligated entities.

2. RPO trajectory, as notified by the Ministry of Power mandates States to meet 17.00% (6.75% solar and 10.25% non-solar) of energy consumption through renewable energy for the year 2018-19. However, as per provisional data received from the Central Electricity Authority (CEA), your state could only achieve 5.2 % RPO compliance (1.1% solar and 4.1 % non-solar). This is a matter of serious concern. Information available with the Ministry suggests that penal provisions against defaulting Obligated Entities, as enshrined in the Electricity Act 2003, have not been invoked.

3. Further, SERCs were requested to notify RPO for their respective States upto the year 2021-22 in the line with the Ministry of Power's order no 23/03/2016-R&R dated 14 June 2018. However, it has been observed that your State is yet to notify RPO trajectory that is aligned with that notified by the Ministry of Power. Aligning RPO trajectory will send right signals to the State government and the Obligated Entities for accelerating renewable energy deployment.

4. RPO is central to achieving national goal of installing 175 GW of renewable power by the year 2022 and also attaining electric power installed capacity from clean energy sources that India has committed under the Paris Climate Agreement. Apart from the requirement of meeting the international obligations under the climate agreement, mainstreaming renewables in India's energy supply has been identified as one of the ten dimensions of India's vision 2030. You will also appreciate that Obligated Entities may be better off with higher share of renewables as the marginal cost of renewable power has now become comparable to or less than the marginal cost of power from thermal power plants.

5. I request that the Hon'ble SERC exercise its statutory authority and issue directions to ensure RPO compliance either through purchase of renewable power or RECs, and enforce the same by invoking penal provisions of the regulations against defaulting Obligated Entities.


संचयन विभाग, पार पार प्रकाश

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6. I also take this opportunity to underline the importance of timely adoption of the tariff arrived at through competition bidding process. A number of the wind/ solar power developers have brought to the notice of this Ministry that some SERCs have been taking inordinate time in adoption of the tariff and this results in delay in financial closure and also impacts financial viability of the projects. I seek your kind consideration to look into such instances and ensure that the process of adoption of tariff so determined is completed within one month.

Power Report

Yours sincerely,


(Anand Kumar)

To

Chairperson, All SERCs



Annexure V



सत्यमेव जयते

आनन्द कुमार
ANAND KUMAR



सचिव
भारत सरकार
नवीन और नवीकरणीय ऊर्जा मंत्रालय
SECRETARY
GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY

D.O. No. 7/1/2019-EFM
Dated: 29.8.2019

Respected Chair person

I am writing this letter to seek Hon'ble APTEL's intervention to direct the defaulting State Electricity Regulatory Commissions (SERCs) to ensure compliance of Renewable Purchase Obligation (RPO) through timely monitoring and invoking penal provisions for non-compliance; aligning RPO trajectory; and not permitting carry forward or waiver of RPO.

2. India's commitment under Paris Climate Agreement seeks about 40 percent of electric installed capacity from non-fossil fuels and also reduction in carbon intensity of the economy by 33-35 percent from 2005 level by 2030. RPO compliance is central to achieving the commitment. Further, Hon'ble Supreme Court Order in the case between the Hindustan Zinc vs Rajasthan Electricity Regulator Commission on the applicability of RPO regulations dated 13 May 2015, has strongly supported RPO compliance and interpreted it in the context of Article 51A (g) of the Constitution of India that casts a fundamental duty on the citizen to protect and improve the natural environment, and the mandate of Article 21 that guarantees right to live with healthy life.

3. Development of renewable energy largely hinges on the regulatory framework that has been created under the Electricity Act, 2003 and emanating policies. In line with the section 86 (1) (e) of the Act, the SERCs have issued RPO regulations specifying share of renewable energy in the electricity mix. In addition, the National Electricity Policy further reiterates that progressively the share of electricity from renewable energy sources would need to be increased as prescribed by the SERCs. Further, the Ministry of Power (MoP), Government of India has notified Tariff Policy 2016 that provides for long term RPO trajectory by States. In pursuant to the revised tariff policy 2016, on 22 July 2016 and thereafter on 14 June 2018, the MoP had notified the uniform RPO trajectory up to the year 2021-22 that seeks 21 percent RPO (10.5 percent non-solar and 10.5 percent solar) by 2021-22.

4. So far only six States namely Arunachal Pradesh, Delhi, Himachal Pradesh, Karnataka, Rajasthan and Sikkim have issued final regulations for aligning RPO trajectory as per the notifications from the Ministry of Power. Three States namely Chhattisgarh, Madhya Pradesh and Odisha have aligned RPO trajectory in draft RPO regulations. The State-wise RPO trajectory is enclosed as **Annexure-I**.

5. As per in-house calculations (based on CEA data for renewable power generation and power consumption) in the year 2018-19, four States, namely, Andhra Pradesh, Himachal Pradesh, Karnataka and Sikkim have achieved more than 100 percent RPO compliance. Seven States namely Gujarat, Madhya Pradesh, Nagaland, Rajasthan, Tamil Nadu, Telangana and Uttarakhand have achieved more than 60 percent RPO compliance. Rest States/UTs have achieved less than 60 percent of RPO compliance. State-wise RPO compliance for the year 2018-19 is enclosed as **Annexure-II**.



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website : www.mnre.gov.in



6. MNRE has been making concerted efforts for ensuring RPO compliance. SERCs have been regularly impressed upon about the need for aligning RPO trajectory (through letters, meetings, etc.) by Secretary, MNRE and also by the Hon'ble Minister. MNRE has been consistently following up with the States and they have been reminded time and again to provide data of compliance on a quarterly basis. An RPO cell has been constituted in MNRE to closely monitor the RPO compliance of the States on a regular basis. Further, MNRE notified the Guidelines for Tariff Based Competitive Bidding Process for Solar power on 3 August 2017 and for wind power on 8 December 2017. As of now, solar and wind tariffs in most of the States are below the Average Power Purchase Cost in the respective States. In addition, for harnessing renewables in high potential sites in a cost-effective manner, on 13 February 2018, the Ministry of Power has notified waiving off the inter-state charges and losses for solar and wind power projects set up upto 2022.

7. Despite the best possible supportive policies and falling prices, most of the SERCs are not ensuring RPO compliance and many are yet to align their RPO trajectory. Maharashtra ERC has allowed carrying forward the targets for State Discom till 2020. It is evident that many Obligated Entities are ignoring the requirement of RPO compliance since there is no indication of enforcement of penalties. Further, the SERCs have not taken any action so far under Section 142 of the Electricity Act 2003 for RPO non-compliance. Non-compliance of the regulations and non-enforcement of penal provisions is resulting in slow growth of renewable energy sector.

8. With the present installed capacity of over 80 GW (excluding hydro power above 25 MW), renewable power represents around 23 percent of total installed electricity generation capacity in India. India has set a target of achieving cumulative electric installed capacity of 175 GW by the year 2022. In order to achieve the target, RPO compliance would be essential.

9. In view of the aforesaid, it is requested that the Honorable APTEL may consider to exercise its statutory authority, as vested in it under Section 121 of the Electricity Act, 2003 and issue directions to defaulting SERCs to ensure compliance of RPO through timely monitoring and invoking penal provisions for non-compliance; aligning RPO trajectory; and not permitting carry forward or waiver of RPO.

Best Regards

Yours Sincerely,

Anand Kumar
[Anand Kumar]

Mrs (Dr.) Justice Manjula Chellur
Chairperson
Appellate Tribunal for Electricity
7th Floor, CORE-4, Scope Complex
Lodhi Road, New Delhi - 110 003



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Annexure VI



Dr. P C Maithani
Adviser, MNRE

Fax : 011-24361298

Telegram : RENEWABLE

भारत सरकार
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D. O. No.

7/10/2017-EFM

Dated

9 September 2019

Renewable Purchase Obligation (RPO) compliance monitoring is crucial to ensure adequate progress against the National and State targets for renewable energy deployment. Accordingly, Ministry of New and Renewable Energy, vide letter of even number dated 22 May 2018 has constituted the RPO Compliance Cell to coordinate on matters relating to RPO Compliance with States, SERCs and CERC. So far, State level RPO compliance has been measured based on the renewable energy generated in the State. However, considering that the share of inter-state sale of renewable power is progressively increasing, it is imperative that the information on energy consumed (solar, non-solar & large hydro) and the associated contracted capacity is captured for the State as a whole.

2. State Load Dispatch Centres (SLDCs), by virtue of coordinating all electricity transactions in the area of their jurisdiction, are in the best position to compile the data necessary for computation of RPO compliance at State level. SLDCs are therefore requested to provide the requisite information regarding source-wise contracted capacity and power consumption to this Ministry on a monthly basis in the prescribed format (Annexure).

3. SLDCs are also requested to designate an officer at an appropriate level for coordination of the activity. The name of designated officer and information may be sent to Shri Tarun Singh, Scientist-C, Nodal Officer, RPO Compliance Cell (Address: Block 14, CGO Complex, Lodhi Road, New Delhi - 110003; Ph: 011-24360707 Extn-2022; Mobile: 9560269009; E-mail: tarun.singh@nic.in).

Yours Sincerely,

(P C Maithani)

To

-as per list attached-

Copy to:

1. Principal Secretary for Power/Energy (All States/UTs)
2. Chairman/MD, State Nodal Agency for Renewable Energy (All States/UTs)
3. Chairman & MD, National Load Dispatch Centre
4. Executive Director, Regional Load Dispatch Centre (Northern, Eastern, North-Eastern, Western And Southern)



Annexure						
Format for providing information on energy consumed (solar, non-solar & large hydro) and contracted capacity						
Period	Solar Energy		Non-Solar Renewables		Large Hydro (> 25 MW capacity)	
	Energy Consumption in the State (in MU)	Contracted Capacity* by Obligated Entities in the State (in MW)	Energy Consumption in the State (in MU)	Contracted Capacity* by Obligated Entities in the State (in MW)	Energy Consumption in the State (in MU)	Contracted Capacity* by Obligated Entities in the State (in MW)
F.Y. 2018-19						
April-2019						
May-2019						
June-2019						
July-2019						
August-2019						
September-2019						
October-2019						
November-2019						
December-2019						
January-2020						
February-2020						
March-2020						

* Contracted Capacity: Capacity contracted by Obligated entities for purchase during the period



Annexure VII



सत्यमेव जयते

आनन्द कुमार
ANAND KUMAR



सचिव
भारत सरकार
नवीन और नवीकरणीय ऊर्जा मंत्रालय
SECRETARY
GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY

D.O. 11/6/2019-EFM

28 May 2019

A number of wind and solar power developers have brought to the notice of this Ministry that in some of the States the State Electricity Regulatory Commissions (SERCs) have been taking inordinate time in adoption of the tariff determined through transparent process of bidding. This results in delay in financial closure and also impacts financial viability of the projects.

2. Under Section 63 of the Electricity Act 2003, it is amply clear that 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.

3. In view of the above, I request you to issue an advisory to your State Electricity Regulatory Commission to adopt tariff arrived at through competition bidding process within one month from the date of submission.

Best Regards

Yours sincerely,

(Anand Kumar)

slc



नवीन नवीकरणीय ऊर्जा मंत्रालय

ब्लॉक नं. 14, केन्द्रीय कार्यालय परिसर, लोदी रोड, नई दिल्ली-110003
Block No. 14, CGO Complex, Lodi Road, New Delhi - 110 003
Tel. : 011-24361481, 24362772 • Facsimile : 011-24367329 • E-mail : secy-mnre@nic.in
website : www.mnre.gov.in

Annexure VIII

11/6/2019-EFM
Government of India
Ministry of New and Renewable Energy

Block 14 CGO Complex,
Lodhi Road New Delhi-110003

5 September 2019

OFFICE MEMORANDUM

Subject: Directions of Hon'ble Appellate Tribunal For Electricity (APTEL) for not holding public hearing for adoption of tariff in a competitive bidding process- reg.

The Hon'ble APTEL in its judgement dated 29 August 2019 in the matter of Ayana Kadapa Renewable Power Private Limited Petitioner(s) Versus Andhra Pradesh Electricity Regulatory Commission(APERC) & Others, has directed *the Respondent-Commission not to hold public hearing since the proceedings pertain to adoption of tariff in a competitive bidding process*. The Order may be accessed at <http://aptel.gov.in/old-judgement-data>.

2. In view of the above, Hon'ble SERCs/JERCs are requested to ensure that adoption of tariff discovered through competitive bidding in the respective States/UTs may not be subjected to public hearing proceedings.


(P.C. Maithani)
Adviser

Secretary, Hon'ble SERCs/JERCs (All States/UTs)

Copy to:

1. Secretary, Hon'ble CERC

Copy also to:

1. Principal Secretary for Energy/Power (All States/UTs)
2. Chairman/MD, State Nodal Agencies for Renewable Energy (All States/UTs)

Copy for information to:

1. Secretary, MNRE
2. Additional Secretary, MNRE



2 Distribution

2. DISTRIBUTION

2.1 Supply of 24x7 Power for All: Status, monitoring mechanism and further road map

Introduction:

Electricity consumption is one of the most important indices that decide the development level of a nation. Providing reliable, affordable and quality power supply is an immediate requirement of the day. Government of India is committed to improve the quality of life of its citizens and bring economic development through providing access to electricity to all households and power supply round the clock.

The 'Power for All' Programme is a major step in this direction. "24x7 Power for All" is a joint initiative of Government of India and State Governments with the objective to make available 24X7 reliable and quality power to all households, industry, commercial businesses, public needs, agriculture and others, as a step to achieve inclusive development.

Electricity being the subject of concurrent list, State Governments are primarily responsible for development of electricity infrastructure and supply of quality, reliable and affordable electricity to the consumers. All the States & UTs have signed agreements with Government of India for providing 24X7 Power for All w.e.f. 1.4.2019. Roll-out plan has been chalked out for each State and UT encompassing each important area of the power sector - Generation, Transmission, Distribution, Green Energy Corridor, Renewable Energy and Energy Efficiency.

Government of India plays significant role by supplementing the efforts of the States through various programmes like Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS), Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA), Ujwal Discom Assurance Yojana (UDAY) etc. With the completion of Village and Household Electrification, States are now required to ensure 24x7 supply of electricity to all consumers.

Status:

- a) 100% Village Electrification: Under DDUJY, electrification works have been completed in all remaining un-electrified villages and all census villages have been declared electrified on 28th April 2018.
- b) 100% Household Electrification: Under Saubhagya scheme, electricity connections to 2.62 Crore households have been provided. Since the launch of Saubhagya scheme, all States have declared saturation of household electrification except Chhattisgarh, where only 18,734 households are yet to be electrified.
- c) Generation: With the synchronised Grid and robust Inter-State and inter- regional

transmission system, each State has access to draw power from anywhere in the country. As on 29th September 2019, the total installed capacity is 360,800 MW and the peak demand of 1,45,593 MW has been met with 1,44,903 MW, with a deficit of 690 MW (0.5%). (Source: National Power Portal)

- d) **Transmission:** Transmission plays an important role in transporting power from generating stations to load centres. On the power Transmission front, the country is comfortably placed. In 220 KV and above transmission networks, transmission line length of 4,17,944ckm have been erected till 31st August 2019. Also, transformation (sub-station) capacity of 9,21,118 MVA has been created till 31st August 2019 (Source: National Power Portal).Further, congestion observed in real time in the transmission network is an indicator of the availability and requirement of transmission components. As per NLDC data, it is observed that the most of the times inter-regional flows are within the limits of ATC (Available Transfer Capability) and congested hours are close to negligible.

From the above, it can be concluded that sufficient generation and transmission infrastructure is in place in order to achieve 24x7 power supply in the country.

Monitoring Mechanism:

- i) **Feeder Monitoring:** To ensure 24x7 power supply, feeder metering of 1.95 lakh 11KV feeders of the country has been taken up. The supply related parameters are captured and made available on National Power Portal (NPP). As on 29.9.2019, out of total 1,00,254 on-board rural feeders, 68,503 rural feeders are communicating and out of 36,630 on-board urban feeders, 34,342 feeders are communicating. Apart from this, around 30,000 feeders are being monitored by States/ Discoms themselves
- ii) Electricity supply status is also updated by Discoms on national power portal and UrjaMitra portal in terms of hours of supply for rural areas and frequency and duration of interruptions in urban areas. Both these approaches capture the power supply status upto the substation level.

Based upon the above mechanism, 13 States have claimed to supply electricity to consumers in Rural & Urban areas for almost 24 hours. These States include - Gujarat, Himachal, Kerala, Tamil Nadu, Telangana, West Bengal, Punjab, Goa, Andhra Pradesh, Madhya Pradesh, Maharashtra, Tripura, and Uttarakhand. Remaining 16 States have claimed to supply less than 24 hours (in which 9 States supply 24 Hours to Urban areas) - these include: Arunachal Pradesh, Bihar, Chhattisgarh, Haryana, Manipur, Odisha, UP, Karnataka, Rajasthan, Assam, J&K, Jharkhand, Meghalaya, Mizoram, Nagaland and Sikkim. All UTs supply 24 hours power to both Urban & Rural areas.

- iii) The available supply of power is currently monitored through above mentioned mechanism. All the data are being uploaded by Discoms upto feeder level. In order to capture the data

regarding supply of power at consumer level, GOI is working towards developing a mechanism to capture public feedback regarding hours of availability of electricity and number of interruptions (if any), through Android based crowd sourcing mobile app 'Jagruk'. The pilot version of the app has been developed and States of Assam, Odisha, Jharkhand and UT of Puducherry have been requested to undertake the pilot rollout in identified districts mentioned below:

- (a) Ramgarh, Jharkhand;
 - (b) Kamrup Metropolitan, Assam;
 - (c) Balasore, Odisha; and
 - (d) Puducherry.
- iv) District level monitoring mechanism is being developed for monitoring power supply position. States / Discoms will be required to enter district-wise supply parameters on the Power for All (PFA) portal.

Future Roadmap:

With the collective support of States & Power Utilities, Government of India is determined to achieve 24X7 Power For All in the country for the overall development of the nation.

- a) There are certain constraints which should overcome by State Governments and State power utilities:
 - i) Completion of works as per the Power for All road-mop document signed by States/UTs and also complete the works sanctioned under DDUGJY & IPDS, so as to improve the overall system stability.
 - ii) Narrowing the gap between ACS and ARR by reducing the cost of power supply.
 - iii) Expediting IT enablement works for improving billing/collection efficiency.
 - iv) Improving collection efficiency through measures like Smart/prepaid metering and Low tension (LT) Aerial bunched cabling (ABC).
 - v) Achieving AT&C losses as per the trajectory finalised.
- b) Although sufficient power is available, but due to poor/improper maintenance of the sub-transmission and distribution infrastructure, frequent planned and unplanned outages are undertaken. Appropriate action needs to be taken to reduce planned and unplanned outages. To ensure 24x7 availability of reliable and quality power in the country, Gol is also mulling over imposing penalty on Discoms for undertaking unscheduled power cuts.
- c) All the states should identify critical bottlenecks and strive towards overcoming either with assistance from Gol or from their own resources.

2.2 Completion and closure of remaining DDUGJY (including RE) projects: status and time lines:-

"Deendayal Upadhyaya Gram Jyoti Yojana" (DDUGJY) was launched by Government of India in 2014 for strengthening and augmentation of sub transmission & distribution infrastructure in rural areas including feeder separation and metering. 644 projects with total project cost of Rs. 42244 crore have been sanctioned under the scheme. As per guidelines, all projects were expected to be completed by 31st March, 2019.

As reported by the nodal agency REC, out of total 644 projects, works in 160 projects have been completed and need to be closed by the States. All the states need to expedite the implementation of remaining DDUGJY projects and ensure closure of projects at the earliest.

Early completion of these projects will facilitate improvement in quality and reliability of power supply in rural areas and consequent benefits to the electricity consumers as well as to the DISCOMs/States.

RE Component Projects (X, XI and XII Plan Projects)

REC has reported that out of 235 RE component projects sanctioned under X plan, 223 projects have been closed and remaining 12 projects in the state of Himachal Pradesh (1), Jharkhand (7), Madhya Pradesh (1), Odisha (2) and Uttar Pradesh (1) are yet to be closed.

Out of 686 RE component projects sanctioned under XI and XII plan, 406 projects have been closed/closure received at REC. In the remaining 280 projects, work has been completed in 189 projects but closure proposal yet to be received at REC.

All states to ensure that all X, XI & XII plan projects are completed and closed at the earliest.

2.3 Review of IPDS Scheme: Performance, and way forward:

Integrated Power Development Scheme (IPDS) was notified on 3rd December 2014 for urban area as a central sector scheme with outlay of Rs 32,612 crore including a budgetary support of Rs 25,354 crore. Erstwhile Restructured Accelerated Power Development and Reforms Programme (R-APDRP) with an approved outlay of Rs 44,011 crore including a budgetary support of Rs 22,727 crore for 12th and 13th plans also subsumed in IPDS. Main components of IPDS are:

- Strengthening of sub-transmission and distribution networks in the urban areas including establishment of GIS Substations;
- Metering of distribution transformers / feeders / consumers in the urban areas Including Smart Metering
- IT enablement of distribution sector, ERP, and RT-DAS

Performance of States - Status of IPDS Implementation (as on 27.09.2019)

- Projects worth Rs 32,059 crore (including 0.5% PMA cost) have been approved for System Strengthening, IT Phase-II, ERP, Smart Metering System, RT-DAS and GIS S/s projects.
- So far, Rs 10,956 crore has been released to State Power Discoms.

System strengthening projects -

Distribution improvement projects worth Rs. 28,260 crore have been approved for System Strengthening work and projects worth Rs. 27,495 crore have been awarded. Balance award pending is mainly in A&N Islands.

- 336 Circles out of 546 Circles have been completed so far. Work is completed in ~2100 towns with positive impact on around 3 crore consumers. Overall physical progress of work being implemented under IPDS is 75%. The laggard states are J&K, NER etc. Glimpse of work completed till date is as follows:
 - ✓ Transformation capacity of 8000 MVA added through 783 new Power Substations
 - ✓ Capacity augmentation of 1,300+ exiting substations completed
 - ✓ More than 27,000 ckm of new overhead lines charged for better reliability
 - ✓ 57,000 ckm of Underground/Aerial Bunched cables laid to reduce losses
 - ✓ Improved Voltage profile, power supply through 48,500 new Distribution Transformers
 - ✓ Green Buildings - 40,000 KwP of Solar Panels installed on Substations and other Government buildings across States.
 - ✓ **States completed entire work in all the circles** - Andhra Pradesh, Gujarat, Rajasthan and Telangana
 - ✓ **States where progress is slow** - Bihar, J&K, NER States
- Metering - Major Component of IPDS Scheme, nearly 86 lakh Consumer Meters have been sanctioned under IPDS of which 69 lakh have been installed.

GIS Substations - 120 Gas Insulated Switchgear (GIS) /E-containerized Substations have been approved at a cost of Rs 978 crore in 83 towns of 16 States. These Modern technology Substations are important in Urban Power landscape, as the land requirement to build such Substations is less than the conventional Substations. Work has been awarded in 3 States and NIT has been floated by 11 other States.

Digital Technology projects -

IT Phase-II projects - Projects worth Rs 985 crore have been approved for IT enablement of 1931 smaller towns in 24 States.

- ✓ AP, Haryana, HP, Kerala, Maharashtra, Punjab, Telangana, UP, Uttarakhand & West Bengal have awarded the projects and work is in progress. R-APDRP led to introduction of IT, but it needs to be sustained by States.
- ✓ Projects are yet to be awarded in Bihar, Chhattisgarh, Gujarat, J&K, Jharkhand, Karnataka, Madhya Pradesh, Odisha, Rajasthan & NE states.

ERP - Projects worth Rs792 crore for implementation of ERP have been approved for improving operational efficiency of Discoms of AP, Bihar, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Karnataka, Maharashtra, MP, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Rajasthan, Tripura, Telangana, Tamil Nadu, UK and UP.

- ✓ Projects have been awarded in Andhra Pradesh, HP, Jharkhand, Kerala, MP, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Telangana & UP.
- ✓ Projects are yet to be awarded in Bihar, Chhattisgarh, Gujarat, Haryana, NER and UK

RT-DAS - Ministry of Power has sanctioned projects worth Rs 208 crore for implementation of Real Time Data Acquisition System (RT-DAS) in 20 States for accurate capturing of Reliability parameters (SAIDI/SAIFI) at 11 kV levels on nearly Real-time basis

Smart Metering System - Rs 834 crore has been approved for installation of 41 lakh Smart Meters in 21 Discoms. States have been advised to float bids on their own or take services of various Smart Meters integrators/aggregators like EESL, PFCL, PGCIL etc. in finalizing of roadmap for effective implementation of Smart metering projects. There seems reluctance in uptake of Smart Meters by the Discoms and only Discoms of AP, Bihar, HP and Rajasthan have awarded the sanctioned projects.

The projects are to be implemented in a time-bound manner. States are expected to follow their Quality plans to ensure quality of implementation of IPDS projects. PFC, the Nodal agency, has appointed Third Party Concurrent Evaluating Agencies (TPCEAs) for Concurrent and post-implementation evaluation.

States should ensure periodic review & monitoring of these projects at State level Distribution Reforms committee (DRC) and DISHA to ensure quality and timely implementation of the project.

Performance of States - Progress of Implementation of R-APDRP (as on 27.09.2019)

IT projects

- Project has led to formation of IT backbone in the States with creation of 20 Data Centres , 20 Disaster Recovery Centres & 44 Customer Care centres
- 1,287 towns out of the 1,294 Part-A (IT) projects (sanctioned for Rs4,724 crore), have been declared IT enabled (Go-Live). Funds released so far is around Rs. 4,000 crore. 7 towns yet to be declared Go-Live are in the States of Odisha (2), Puducherry (4) and Arunachal Pradesh (1)

town).

- Verification of work by Third Party Agency (TPIEA-IT) is completed and report has been accepted for 24 States (AP, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana HP, Jharkhand, Karnataka, Kerala, Maharashtra, MP, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Sikkim, Telangana, Tripura, Uttar Pradesh, Uttarakhand and West Bengal), however, final Closure is awaited from States of APSPDCL Discom of AP, Bihar, Haryana, Jharkhand, Kerala, TSSPDCL of Telangana, NER States, UP & Uttarakhand.
- Feeder data on National Power Portal (NPP) - PFC has facilitated Utilities to develop a system to capture Urban Feeder Monitoring Data from R- APDRP Data Center under overall guidance of Ministry of Power/CEA - Integration of 28 States/49 Discoms/~2000 towns/34,000+ Feeders has been achieved with NPP. Regular data sanitization, monitoring & action need to be undertaken by Discoms to reduce AT&C losses on feeders.

SCADA projects

- 59 SCADA projects worth Rs1,206 crore in the eligible towns in the country have been sanctioned and Rs 639 crore has been released.
- SCADA Implementing Agencies (SIA) has been appointed for 57 towns except 2 towns of J&K.
- SCADA Control Centers have been commissioned in 57 towns; whereas work in 54 towns has been completed and likely to be completed in balance 3 towns by 30.09.2019.

Part-B (distribution strengthening) projects

- 1,227 Part-B projects worth Rs 30,427 crore have been sanctioned to 26 States with GOI loan of Rs 6,833 crore already released to States.
- Work under Part-B has been completed in 1196 towns except 30 towns of J&K, and 1 town of Puducherry.
- Part B projects, which are yet to be completed, may not get the full benefit of conversion of loan into grant, as the financial sunset of R-APDRP scheme is upto FY 2021-22.

Way forward

- States are expected to complete all IPDS System strengthening work by March 2020. States should also ensure metering of Feeders and Distribution Transformers, along with centralized collection of the meter data for monitoring and analysis. States are also expected to ensure rigorous monitoring and review along-with Quality checks. All States should ensure rectifications of observations (on Quality of work carried out) as pointed out by Third Party Concurrent Evaluation Agencies (TPCEAs).
- States are also expected to close the completed IPDS system-strengthening projects

progressively by March 2020 after reconciliation & submission of As-built Bill of Quantities (BoQ) and compliances against observations of TPCEAs. States to ensure closure of R-APDRP projects to be eligible for funding under any new Distribution scheme of Gol.

- IT enablement of urban area will act as the backbone of large-scale smart metering roll out in the country, States are expected to expedite award and implementation of IT enablement of smaller towns, sanctioned under IPDS. States are expected for operation and maintenance of IT Infrastructure. Also, regular day to day maintenance and upkeep of IT system established under R-APDRP need to be ensured by the States for which Discoms should strengthen IT team & build internal competency, so that proper monitoring for improvement in the operational parameters can be taken up. States to also ensure timely implementation of ERP projects to improve their operational efficiencies and RT-DAS projects for accurate measurement of reliability parameters at 11 kv level i.e. SAIDI/SAIFI.
- States to submit their action plans regarding implementation of Smart Metering and ensure that Smart Meters are integrated to the IT system already established under R-APDRP.
- States of Arunachal Pradesh, Odisha, Puducherry should expedite completion of IT enablement work under R-APDRP so that Third Party verification can be completed in these States.
- States of AP, Gujarat, Kerala, Odisha, Punjab, Telangana, Uttarakhand should expedite Third Party verification of completed SCADA projects under R-APDRP to make them eligible for conversion of Loan into Grant.
- States of AP, NER, Odisha, Punjab, Rajasthan and Tamil Nadu should expedite closure of Part-B projects under R-APDRP.

2.4 Progress in smart pre-paid meters and progress in feeder and transformer meters:-

Status of Smart / pre-paid metering:

- Around 1,56,637 smart meters have already been installed in the AMI projects taken under Smart Grid Pilots being monitored by NSGM and around 7,50,443 Smart meters are expected to be installed in 5 NSGM projects which are under implementation / award.
- 1,34,798 pre-paid meters for 23 states and 1,15,049 smart meters for 5 states have been sanctioned under IPDS, out of which 47,845 pre-paid meters and 88,780 smart meters have already been installed.
- In addition to above, Rs 834 crore has also been approved for installation of 41 lakh Smart Meters in 21 Discoms under IPDS. States have been advised to float bids on their own or take services of various Smart Meters integrators/aggregators like EESL, PFCCL, PGCIL etc. in finalizing of roadmap for effective implementation of Smart metering projects. Discoms of

AP, Bihar, HP and Rajasthan have awarded the sanctioned projects.

- EESL has awarded Contract for procurement of 10 Million smart meters and system integrators and has floated another tender for 5 Million smart meters.
- EESL has signed MoUs for smart meters with the states of Uttar Pradesh, Haryana, NDMC-Delhi, Bihar, Rajasthan, Andhra Pradesh, Telangana.
- The work on smart metering project is under progress and till date, over 9 lakhs Smart Meters have been supplied to these states and over 6 lakh smart meters have been installed and operational so far in the states of Uttar Pradesh, Haryana and NDMC-Delhi and Bihar.
- After EESL's smart metering project, NDMC becomes the first utility to have all their consumers with smart meters without any upfront investment from NDMC.
- **Uttar Pradesh:** Approx. 6.7 Lakhs Smart Meters have been supplied and out of that 4.9 Lakhs Smart Meter has been installed and operational.
- **Haryana:** Approx. 54 Thousand Smart Meters have been supplied and out of that 42 Thousand Smart Meter has been installed and operational.
- **Bihar:** Approx. 73,000 Smart Meters have been supplied. Currently, Meter installations are ongoing in Kanti and Arwal as well as rural/ agricultural areas and more than 4,700 Smart Meters have been installed and under operation in Smart Prepaid mode.
- **Rajasthan:** Smart Meter deployment at Ajmer and Jodhpur DISCOMs has been started for 3 Lakhs Smart Meter. Currently, IT integration with DISCOM billing system is under progress and consumer indexing activity has been planned at Pushkar and Jodhpur city in Oct-2019.
- **Andhra Pradesh:** Subsequent to MoU signing with AP DISCOMs for 18 Lakhs Smart Meters deployment, approx. 30,000 Smart Meters have been supplied. EESL AMI system has been successfully integrated with DISCOM billing system. However, AP DISCOMs have stopped further smart meter deployment due to unknown reasons.
- **Andaman & Nicobar, Arunachal Pradesh and Lakshadweep:** The discussions with DISCOMs are ongoing for deployment of Smart Meters in these States/ Uts.

System (feeder and transformer) meters:

- System (feeder and transformer) meters along with consumer meters are necessary for proper energy accounting and auditing.
- As per the report submitted by CEA in October 2014, feeder metering (11kv) in the country is around 92.4% whereas metering on Distribution Transformers is around 40% only. 15 % of the 40 % DT metering available is defective thus only 34 % of the transformers have effective metering.



- States should ensure metering of Feeders and Distribution Transformers, along with centralized collection of the meter data for monitoring and analysis.
- Status of Feeder and Distribution Transformer meters sanctioned vis-à-vis installed under IPDS and DDUGJY are as follows:

Feeder Meters			Distribution Transformer Meters		
Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed
34,730	23,108	14,146	4,79,719	5,02,477	2,24,844

State wise status of Distribution Transformer and Feeder meters sanctioned under IPDS and DDUGJY

State/UTs	IPDS as on 30.09.2019						DDUGJY as on 31.08.2019						Total						
	DT Meters		Feeder Meters				DT Meters		Feeder Meters				DT Meters		Feeder Meters				
	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned
Andaman & Nicobar				25	0	0	174	0	0	28	0	0	174	0	0	53	0	0	0
Andhra Pradesh	8,190	7,580	7,580	219	125	125	3,693	3,618	3,618	425	336	336	11,883	11,198	11,198	644	461	461	461
Arunachal Pradesh							1,839	1,626	1,596	413	399	378	1,839	1,626	1,596	413	399	378	378
Assam	1,005	1,005	956	269	269	46	16,097	0	0	300	260	210	17,102	1,005	956	569	529	256	256
Bihar	4,029	3,598	2,834	764	800	540	0	45,251	14,373	0	0	0	4,029	48,849	17,207	764	800	540	540
Chhattisgarh							807	711	0	3,382	3,382	2,759	807	711	0	3,382	3,382	2,759	2,759
Dadar & Nagar							352	352	352	34	34	34	352	352	352	34	34	34	34
Gujarat	10,721	12,093	12,093				56,805	57,624	58,282	0	0	0	67,526	69,717	70,375	0	0	0	0
Haryana							57	0	0	994	0	0	57	0	0	994	0	0	0
Himachal Pradesh	718	732	268	24	27	3	412	412	208	18	18	0	1,130	1,144	476	42	45	3	3
Jammu & Kashmir	4,025	1,427		674			7,601	2,760	0	819	266	0	11,626	4,187	0	1,493	266	0	0
Jharkhand							0	67,140	271	841	629	629	0	67,140	271	841	629	629	629
Karnataka	638	565	426				24,400	24,310	17,721	5,582	0	0	25,038	24,875	18,147	5,582	0	0	0
Kerala	2,676	2,710	2,076	273	273	168	23,655	23,655	22,751	103	103	93	26,331	26,365	24,827	376	376	261	261
MP	5,409	5,751	4,129	26	34	34	8,652	16,134	14,403	999	657	695	14,061	21,885	18,532	1,025	691	729	729
Maharashtra				821	821	821	0	0	0	0	0	0	0	0	0	821	821	821	821
Manipur	518	603	102				0	72	67	0	0	1	518	675	169	0	0	1	1
Meghalaya							1,044	1,020	277	207	207	0	1,044	1,020	277	207	207	0	0



State/UTs	IPDS as on 30.09.2019						DDUGJY as on 31.08.2019						Total						
	DT Meters		Feeder Meters		DT Meters		Feeder Meters		DT Meters		Feeder Meters		DT Meters		Feeder Meters				
	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	Sanctioned	Awarded	Installed	
Mizoram				45	45		0	0	0	0	0	0	0	0	0	0	45	45	0
Nagaland	648	648	418	22	22	614	614	614	0	191	191	0	1,262	1,262	418	213	213	0	0
Odisha	2,816	3,680	1,358	252	262	45	57,738	0	0	1,530	648	74	60,554	3,680	1,358	1,782	910	119	119
Puducherry							1,168	1,250	0	28	0	0	1,168	1,250	0	28	0	0	0
Punjab	3,908	3,884	2,459				0	3,841	1,903	0	0	0	3,908	7,725	4,362	0	0	0	0
Rajasthan				103	103	103	0	0	0	8,299	6,655	934.5	0	0	0	8,402	6,758	1,038	1,038
Sikkim	444	328		81	80		0	0	0	65	65	65	444	328	0	146	145	65	65
Tamil Nadu	44,029	44,029	24,138	1,069	1,086	1,015	0	0	0	0	0	0	44,029	44,029	24,138	1,069	1,086	1,015	1,015
Telangana	942	942	942				0	0	0	1,338	1,495	1,494	942	942	942	1,338	1,495	1,494	1,494
Tripura	613	0	0	139			2,786	0	0	0	0	0	3,399	0	0	139	0	0	0
Uttar Pradesh	5,494	5,494	4,238	305	305	298	45,743	45,743	23,205	3,228	3,228	2,962	51,237	51,237	27,443	3,533	3,533	3,260	3,260
Uttarakhand	999	880	876	187	187	187	0	0	0	0	0	0	999	880	876	187	187	187	187
West Bengal	5,663	5,663	924	96	96	96	1,22,597	1,04,732	0	512	0	0	1,28,260	1,10,395	924	608	96	96	96
Total	1,03,485	1,01,612	65,817	5,394	4,535	3,481	3,76,234	4,00,865	1,59,027	29,336	18,573	10,665	4,79,719	5,02,477	2,24,844	34,730	23,108	14,146	14,146



2.5 UDAY progress:-

State DISCOMs in the country had huge accumulated losses and outstanding debt. As a result of which financially stressed DISCOMs were not able to supply adequate power at affordable rates, which hampers quality of life and overall economic growth and development. Efforts towards 100% village electrification, 24X7 power supply and clean energy cannot be achieved without performing DISCOMs. Power outages also adversely affect national priorities like "Make in India" and "Digital India". In addition, default on bank loans by financially stressed .DISCOMs has the potential to seriously impact the banking sector and the economy at large.

Accordingly, "UDAY" (Ujwal DISCOM Assurance Yojana), a scheme for financial and operation turnaround of Power Distribution Companies (DISCOMs) was formulated and launched by the Government on 20-11-2015 in consultation with the various stakeholders to ensure a sustainable permanent solution to the problem of legacy of debts and address potential future losses. The scheme also envisages reform measures in all sectors - generation, transmission, distribution, coal, and energy efficiency. The Scheme envisages to reduce interest burden, cost of power and AT&C losses. Under the scheme, States are to take over 75% of debt of DISCOMs as on 30-09-2015 which would be outside the FRBM limits.

I. Status of participation by States:

MOUs signed: So far 27 States and 5 UTs namely Jharkhand, Chhattisgarh, Rajasthan, Uttar Pradesh, Gujarat, Bihar, Punjab, Jammu & Kashmir, Haryana, Himachal Pradesh, Uttarakhand, Goa, Karnataka, Andhra Pradesh, Manipur, Madhya Pradesh, Maharashtra, Assam, Sikkim, Meghalaya, Telangana, Tamil Nadu, Arunachal Pradesh, Kerala, Tripura, Mizoram, Nagaland, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, Puducherry and Lakshadweep have signed Memorandum of understanding under UDAY. While 16 States have signed comprehensive MoU which includes financial restructuring of debt, other 16 States/UT have signed the MoU only for operational improvements.

II. Issuance of bonds: Under UDAY, States were to take-over 75% of DISCOM debt and balance 25% are to be restructured/replaced by DISCOM Bonds at lower rates. Total debt of UDAY states as on 30.09.2015 was of the order of Rs. 3.82 lac crores. As informed above, 16 states have opted for financial restructuring, wherein debt of Rs.2.69 lac crores were sought to be addressed (3 states i.e. Maharashtra, A.P. & Tamil Nadu have opted for restructuring of only a part of their debt). Out of the above, total of Rs. 2.32 lac crores of Bonds have so far been issued (87% of UDAY states debt to be addressed) consisting of States Bonds of Rs. 2.09 lac crores and DISCOMs Bonds of Rs. 0.23 lac crores. DISCOM Bonds worth Rs. 0.37 lac crores are yet to be issued.

III. Performance in major financial parameters in FY16, FY17, FY18 and Fy19.

- UDAY states have showcased an improvement. Some of the key highlights are provided below:

Financial performance snapshot from FY16 to FY19

Financial Parameters	FY16	FY17	FY18	Increase/ Decrease	FY19*
Profit/Loss (~Rs. Cr.)	(51562) ●	(38080) ●	(15132)	→	(28036)
ACS-ARR Gap (Rs./kWh)	0.60 ●	0.42 ●	0.17	→	0.27
Collection Efficiency (%)	97.09% ●	96.20% ●	96.84%	→	97.03%
Billing Efficiency (%)	81.57% ●	82.88% ●	83.86%	→	84.31%
AT&C Losses (%)	20.81% ●	20.28% ●	18.80%	→	18.19%
Power Purchase Cost (Rs./kWh)	4.22	4.22 ●	4.19	→	4.42

(The progress shown above is based on provisional / unaudited data entered by States /DISCOMs on UDAY portal during respective years/quarters, which may vary from the year-end audited figures. The portal dynamically captures data as and when uploaded by States and remained unchanged).

*AT&C and ACS-ARR GAP for Q4FY19 data is based on data submitted by 28 states, P&L Q4FY19 data is based on data submitted by 27 states, rest of the data being picked up from Q3FY19 or latest available data on UDAY portal. (As on 27-Sep-2019). (Since last report, one more state data i.e. Mizoram has now been included in this report.)

IV. Performance in major operational parameters

Operational performance snapshot

Operational efficiency indicators	Target till Mar'19	Achievement till Mar'19	Cumulative % achievement
Urban Feeder Metering	48,524	48,524	100%
Rural Feeder Metering	1,14,951	1,14,951	100%
UJALA (in lacs)	2805.79	2805.79	100%
DT Metering Urban	13,81,852	10,42,050	75%
Feeder Segregation	63,197	46,097	73%
DT Metering Rural	45,08,325	25,97,455	58%

V. Some of the important achievements during UDAY period are as below:

- AT&C loss reduction:** From **20.81%** in FY 16 to **20.28%** in FY 17 and to **18.80%** in FY18 has further improved to **18.19%** in FY19 (Data updation still in process on UDAY portal).

2. **20 States reduced AT&C losses** in FY19 as compared to Fy16.
3. Billing efficiency has improved from **81.57% in FY 16 to 82.88% in FY17 to 83.86% in FY18 and further improved to 84.31% in Fy19.**
4. **Increase in billed energy:~10% increase** in FY17 over FY16, **~7% increase** in FY18 over FY17 and **~6% increase** in FY19 over Fy18.
5. **ACS-ARR gap reduction:** Reduced from **Rs.0.60 /kWh** in FY16to **Rs.0.42/kWh** in FY17 to **Rs. 0.17/kWh** in FY18 but has deteriorated to **Rs.0.27/kWh** in FY19 (Data updation still in process on UDAY portal).
6. **18 States have reduced ACS-ARR GAP** in FY19 as compared to Fy16.
7. Amongst the **states having FY19 as the terminal year-**
 - a. *Gujarat, Himachal Pradesh, Karnataka, Dadra & Nagar Haveli have met both AT&C loss and ACS-ARR gap targets;*
 - b. *Punjab, Telangana, Andhra Pradesh, Uttarakhand, Kerala, Daman & Diu have only met AT&C loss targets*
 - c. *Haryana, Maharashtra, Rajasthan, Puducherry have only met ACS-ARR gap targets*
 - d. *Chhattisgarh, Goa, Jharkhand, Manipur and Tamil Nadu have not met any of the targets*
8. Amongst the **states having FY20 as the terminal year**
 - a. *Tripura has met only AT&C loss target*
 - b. *Uttar Pradesh has met only ACS-ARR gap target*
 - c. *Bihar, Madhya Pradesh, J&K, Assam, Meghalaya have not met any of the targets*
9. **Power purchase cost reduction:** Power purchase costs are almost 80-85% of DISCOM costs. Special interventions done to reduce the cost of power
 - a. The Power purchase costs of DISCOMs has remained same (no increase); **in FY17 as compared to increase of more than 8% in FY16.** (Rs. 4.22 /unit in FY17 against Rs. 4.22/unit in Fy16)
 - b. **In FY18 power purchase cost has decreased by less than 1% as compared to FY17.** (Rs. 4.19/unit in FY18 against Rs. 4.22 /unit in Fy17).
 - c. **In FY19 power purchase cost has increased by approx. 6.00% as compared to FY18.** (Rs. 4.42/unit in FY19 against Rs. 4.19 /unit in Fy18).

It may be noted that during FY19, there has been an increase in the price of coal across all grades. The price of G12 grade coal increased by ~17%.

Railway transportation charges have had successive increases of 21% and 8.75% effective January 2018 and November 2018.

10. **Book losses** of Discoms have reduced from **Rs. 51,562 Crore** in FY 16 to **Rs. 38,080Crore** in FY17 to **Rs. 15,132 Crore** in FY 18. During FY19 the losses have increased to **Rs. 28,036Crores** (Data updation still in process on UDAY portal). Total 10 states have **shown positive trends** of either reducing losses or have shown profits in Fy19.
11. Provisional figures based on unaudited accounts (as submitted on UDAY portal) indicate that 8 States namely Gujarat, Haryana, Dadar & Nagar Haveli, Karnataka, Goa, Himachal Pradesh, Maharashtra and Rajasthan have shown profits during FY19. In FY17, only 4 states have shown book profits.
12. Urban Feeder Metering, Rural Feeder Metering and UJALA - LED Distributions target has been achieved 100%. This is commendable as this has improved the operational efficiency.
13. Q1FY20 data has started coming on UDAY Portal. However, only 17 States have submitted AT&C Losses with an average of 21.17% and 15 States have submitted ACS-ARR GAP data with an average of Rs. 0.33/unit. Since the data submitted is only for few States and that too partial, hence Q1FY20 proper data assessment cannot be done.

2.6 Distribution reforms:-

a) Right of consumers

Electricity has emerged as an essential requirement for the economy. Lives and livelihoods depend on it. Therefore assured and stable supply of electricity 24x7 is an imperative. Tariff Policy issued by Govt of India recognises that Consumer interest is best served in ensuring viability and sustainability of the entire value chain viz., generation, transmission and distribution of electricity, while at the same time facilitating power supply at reasonable rate to consumers. The tariff for electricity will need to be fair and transparent, and based on the cost of supply, and no consumer should be forced to pay more than the fairly determined Tariff after taking into account the costs of supply and the requirement for return on investment, and the requirements of equity.

The proposed amendments to the Tariff Policy 2019 specify the Right of Consumers i.e.:

- i. Right to expect minimum standards of performance.
- ii. Right to get 24x7 power supply

The proposed amendments provide that the basic framework on service standards shall include the following:

- i. Continuity and reliability of supply - the consumer is entitled to have reliable and uninterrupted supply of electricity provided the consumer is not in default, and has not been charged with any offence under the Act warranting disconnection.

- ii. The quality of supply shall be as per standards prescribed by the Central Electricity Authority. CEA shall notify the standards for quality of supply within 120 days of the issuance of this notification.
- iii. Application for connection/ disconnection/enhancement or reduction of connected load must be responded to and disposed off within a reasonable time frame
- iv. Complaints of disruption in supply must be responded to within the stipulated time frame barring major breakdown or force majeure

Within the above framework the State Commission shall notify the standards of performance of licensee with respect to promptness, quality and reliability of service for all consumers. This notification shall be issued within 120 days of the issuance of the standards for quality of supply by CEA.

Regarding right of every consumer to get 24x7 power supply, it also provides that since agricultural consumers may not require 24 hours supply, appropriate relaxation may be given in this regard by Appropriate Commission

The proposed amendments to Tariff Policy also provide that in case of power cuts above a specified duration and frequency for reasons other than for technical faults beyond the control of Distribution Licensees or force majeure events - including but not limited to lightning, drought, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, or exceptionally adverse weather conditions, an appropriate penalty, shall be levied on the Distribution Company and credited to the account of the respective consumers. Regulations in this regard shall be framed by the respective SERC within six months of the coming into force of the Policy in accordance with the guidelines framed by the CEA after consultation in the Forum of Regulators.

b) DBT

In regard to Tariff design, the Tariff Policy issued by Government of India provides that the State Governments can give subsidy to the extent they consider appropriate as per the provisions of section 65 of the Act. Direct subsidy is a better way to support the weaker sections of consumers than the mechanism of cross-subsidizing the tariff across the board. Subsidies should be targeted effectively and in transparent manner. As a substitute of cross subsidies, the State Government has the option of raising resources through mechanism of electricity duty and giving direct subsidies to only needy consumers. This is a better way of targeting subsidies effectively.

The proposed amendments to Tariff Policy includes that the Consumers below poverty line who consume below a specified level, as prescribed in the National Electricity Policy may receive a special support through cross subsidy and Direct Benefit Transfer or through any other mode. The Appropriate Commission shall determine the tariff without taking into account any subsidy components. Any subsidy to be given to any category of consumers shall be given by way of Direct Benefit Transfer directly into their consumer account with the

Distribution Licensee to be reflected in the electricity bill of the consumer. This may be enforced by the State Commissions not later than two years from the date of promulgation of the Policy. An extension may be given by the State Commission of one year in this regard.

c) Multiple supply licensees / franchises

- Competition brings in efficiency gains and creates public value. While the inherent nature of setting up "wires" for the flow of electrons is monopolistic in nature, the same is not ideally true for the content, i.e. the electricity, which can be sourced and supplied by multiple suppliers to the consumers utilizing the monopolized wires. However, in its present form, the power distribution business is monopolized with wires and content business being handled by one entity only, i.e. the DISCOM. Therefore, a move towards bringing retail competition for the electricity would likely bring in efficiency improvements as well as value to consumers in form of better tariffs.
- It is proposed that the content, i.e. electricity be provided by several retailers through contractual arrangements with the DISCOMs. The retailers would be free to procure power from the PPA's vested with the DISCOM at a pre-determined cost or from the Power exchange, as per the requirements. The fixed costs of the existing PPAs would be borne by the Retailers in the ratio of the energy wheeled. The retailers would pay to the DISCOM Regulator determined wheeling charges, which would include CAPEX infusion charges, depreciation, interest costs, O&M and administrative charges. Apart from the above, the retailers would also pay for the power sourced through the PPAs vested in the DISCOMs.
- On the revenue front, the Retailers would retain all the payments made by the consumers towards their consumption at tariffs determined by the Regulators. The tariffs would be set by the Regulators with a tariff ceiling. The subsidies from the State could be directly paid to the consumer by the State through Direct benefit transfer, or to the retailers, in case the Retailer chooses such an option. Cross subsidies would be paid through a mechanism of Universal fund maintained by either the DISCOM or the State. The Universal fund would be populated with amounts in excess of the Average cost of supply (ACOS) from all consumers that are paying in excess of the ACOS determined by the Regulators.
- The business of retailers would be better with a higher volume of Power, and therefore, there would be an incentive with the retailers to provide cash back discounts to the high paying consumers, i.e. Industry and the commercial establishments. At the same time, the losses in the network above levels of 12%, assumed to be only commercial losses, would be paid by the retailers in the ratio of the energy consumed and sold by them.
- The above mechanism would be self-correcting and aimed at improving the efficiency of power procurement as well as loss reduction besides being remunerative to the high paying consumers.



3 Thermal



Ministries of Power and NRE
Government of India



CONFERENCE OF
POWER AND RENEWABLE ENERGY
Ministers of States & UTs.

3. THERMAL

3.1 FGD & De-NO_x equipment installation in the TPS across the country in a time bound manner

- i. Ministry of Environment, Forest and Climate Change (MoEF&CC) notified New Norms for Particulate matter, SO_x, NO_x, Water consumption and Mercury for coal based Thermal Power Plants (TPPs) on 07.12.2015, to be complied within 2 years.
- ii. To comply with the new Environment norms, Electrostatic Precipitator (ESP) is required for Suspended Particulate Matter (SPM), Flue gas De-sulphurisation (FGD) for SO_x and Combustion Modification for NO_x.
- iii. To ensure uninterrupted power supply in the country, after extensive consultation with various experts and stakeholders viz. CEA, NTPC Ltd., other power utilities, Regional Load Dispatch centres (RLDCs), POSOCO, a detailed phasing/ implementation plan (to be implemented before December 2022) was submitted to MoEF&CC on 13.10.2017. CPCB has accordingly issued directions to all TPPs.
- iv. CEA is monitoring the installation of FGD in approximately 166 GW (440 units) of TPPs. These plants are to comply with new environment norms before 2022 as per the phasing plan submitted by MoP to MoEF&CC/CPCB and directions issued by CPCB to each unit. However, out of these:
 - i. For units falling within radius of 300 kilometres from Delhi NCR (12,790 MW, 33 units), CPCB has set a target to meet new environment norms by December 2019.
 - ii. For 104 units (56,810 MW, 104 units) falling in the category of 500 MW and above of installed capacity and where the population density is more than 400 persons per sq. km or are critically polluted, Hon'ble Supreme Court has directed to comply with emission standards for SO_x and PM latest by December, 2021.

Summary of the Status of the installation of FGD in these category of plants, as given by CEA, is attached at **Annexure-I**.

- v. Progress for installation of FGD by the stipulated timelines, for Central Generating Stations is fairly good while State Sector and Private Sector Plants are lagging way behind. They need to expedite installation of pollution control equipments by the timeline stipulated by CPCB. Failure to do meet the timelines, may attract closure notice from Central Pollution Control Boards.

- vi. Ministry of Power vide letter(s) dated 30.05.2018, 07.12.2018 and 30.07.2019 has allowed pass through for additional cost incurred for installation/retrofitting of pollution control equipment to comply with new environment norms, as pass through in the tariff and this shall not be taken account in the Merit Order Dispatch till December 2022.
- vii. MoEF&CC has, in-principle, agreed to change the NOx norms for TPPs installed between 01.01.2004 and 31.12.2016 from 300 mg/Nm³ to 450 mg/Nm³. Further, revision of NOx norms for TPPs installed after 01.01.2017 is under consideration in MoEF&CC as reports of pilot studies on Selective Catalytic Reduction (SCR) and Selective Non Catalytic Reduction (SNCR) for NOx emissions as submitted by NTPC Ltd. to Ministry of Power, have been submitted to MoEF&CC for their perusal.
- viii. **States are requested to expedite installation of pollution control equipments, so as to meet the timelines stipulated by CPCB/MoEF&CC.**

Annexure I

SUMMARY SHEETS -STATUS OF FGD INSTALLATION

1. General Summary* (to comply before December 2022) (State-wise Status at Annex-I and Year-wise Summary attached at Annex-II)

S.No.	Sector (Capacity in MW)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	53350 (143)	53350 (143)	53350 (143)	51510 (135)	51510 (135)	32840 (73)	0
2	State Sector	51885 (164)	50235 (158)	43965 (144)	23425 (78)	18905 (60)	1000 (2)	0
3	Private Sector	61237 (133)	58607 (127)	44080 (88)	32930 (60)	29060 (52)	2720 (4)	1320 (2)
	Total	166472 (440)	162192 (428)	141395 (375)	107865 (273)	99475 (247)	36560 (79)	1320 (2)

*Capacity in MW (UNITS)

Annexure I

2. Summary* of 500 MW Critical Units (to comply by December 2021)

Units > 500 MW & located in areas either critically polluted or having population density > 400/km² (monitored by Hon Supreme Court) Capacity in MW (UNITS)

S.No.	Sector (Capacity in MW)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	29320 (57)	29320 (57)	29320 (57)	29320 (57)	29320 (57)	19820 (38)	0
2	State Sector	13980 (25)	13980 (25)	12280 (22)	4800 (8)	4800 (8)	1000 (2)	0
3	Private Sector	13510 (22)	13510 (22)	9610 (16)	7370 (12)	4970 (8)	2720 (4)	1320 (2)
	Total	56810 (104)	56810 (104)	51210 (95)	41490 (77)	39090 (73)	23540 (44)	1320 (2)

*Capacity in MW (UNITS)

3. Delhi NCR Summary* (to comply by December 2019) Capacity in MW (UNITS)

S.No.	Sector (Capacity in MW)	FGD planned	Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
1	Central Sector	3320 (9)	3320 (9)	3320 (9)	3320 (9)	3320 (9)	3320 (9)	0
2	State Sector	4770 (17)	4770 (17)	4770 (17)	3850 (13)	3850 (13)	0	0
3	Private Sector	4700 (7)	4700 (7)	4700 (7)	4700 (7)	4700 (7)	2720 (4)	1320 (2)
	Total	12790 (33)	12790 (33)	12790 (33)	11870 (29)	11870 (29)	6040 (13)	1320 (2)

*Capacity in MW (UNITS)
(source: CEA)

Annex-I of Annexure-I

State-wise status (Sector wise) of number of units where NIT issued and Bids awarded for FGD installation

State	Sector	Sum of Unit Capacity	Count of Unit No	Sum of NIT Issued (Y/N)	Sum of Bids Awarded (Y/N)
Andhra Pradesh		9430	19	4	4
	Central Sector	2000	4	4	4
	Private Sector	3680	6	0	0
	State Sector	3750	9	0	0
Bihar		5270	17	17	4
	Central Sector	4770	15	15	4
	State Sector	500	2	2	0
Chhatisgarh		20430	46	25	13
	Central Sector	6880	15	15	13
	Private Sector	11550	26	10	0
	State Sector	2000	5	0	0
Gujarat		12127	35	28	0
	Private Sector	8202	16	11	0
	State Sector	3925	19	17	0
Haryana		5330	12	12	5
	Central Sector	1500	3	3	3
	Private Sector	1320	2	2	2
	State Sector	2510	7	7	0
Jharkhand		4250	13	7	3
	Central Sector	2000	5	3	3
	Private Sector	1830	6	4	0
	State Sector	420	2	0	0
Karnataka		9220	20	18	3
	Central Sector	2400	3	3	3
	Private Sector	1800	4	2	0
	State Sector	5020	13	13	0

State	Sector	Sum of Unit Capacity	Count of Unit No	Sum of NIT Issued (Y/N)	Sum of Bids Awarded (Y/N)
Madhya Pradesh		15190	34	20	12
	Central Sector	4260	12	12	12
	Private Sector	7680	12	8	0
	State Sector	3250	10	0	0
Maharashtra		19790	54	12	5
	Central Sector	2980	5	5	5
	Private Sector	7140	21	7	0
	State Sector	9670	28	0	0
Odisha		7080	21	12	0
	Central Sector	3460	12	12	0
	Private Sector	3200	7	0	0
	State Sector	420	2	0	0
Punjab		5680	15	9	0
	Private Sector	3920	7	5	0
	State Sector	1760	8	4	0
Rajasthan		6280	18	5	0
	Private Sector	1320	2	2	0
	State Sector	4960	16	3	0
Tamil Nadu		7670	22	18	0
	Central Sector	4390	14	14	0
	Private Sector	1450	3	1	0
	State Sector	1830	5	3	0
Telangana		5400	12	9	6
	Central Sector	2600	7	7	6
	State Sector	2800	5	2	0
Uttar Pradesh		20880	60	39	16
	Central Sector	9470	30	30	14
	Private Sector	6360	12	0	0
	State Sector	5050	18	9	2
West Bengal		12445	42	12	6
	Central Sector	6640	18	12	6
	Private Sector	1785	9	0	0
	State Sector	4020	15	0	0
Grand Total		166472	440	247	77

(source: CEA)

Annex-II of Annexure-I

Year-wise Summary - Status of FGD Installation

Capacity in MW (UNITS)

		Feasibility Study Started	Feasibility Study Completed	Tender Specifications Made	NIT Issued	Bids Awarded	FGD Commissioned
2019	Central	3320 (9)	3320 (9)	3320 (9)	3320 (9)	3320 (9)	0
	Private	5220 (8)	5220 (8)	4700 (7)	4700 (7)	2720 (2)	1320 (2)
	State	7870 (22)	5970 (19)	5050 (15)	5050 (15)	0	0
		16410 (39)	14510 (36)	13070 (31)	13070 (31)	6040 (11)	1320 (2)
2020	Central	3650 (9)	3650 (9)	3650 (9)	3650 (9)	2430 (5)	0
	Private	10330 (21)	5530 (12)	3210 (7)	3210 (7)	0	0
	State	6540 (13)	3540 (8)	1160 (2)	1160 (2)	0	0
		20520 (43)	12720 (29)	8020 (18)	8020 (18)	2430 (5)	0
2021	Central	15510 (40)	15510 (40)	15510 (40)	15510 (40)	9180 (19)	0
	Private	20763 (44)	15985 (34)	11875 (21)	9805 (16)	0	0
	State	25035 (82)	24825 (81)	9005(31)	7755 (26)	1000 (2)	0
		61308 (166)	56320 (155)	36390 (92)	33070 (82)	10180 (21)	0
2022	Central	30870 (85)	30870 (85)	29030 (77)	29030 (77)	17910 (40)	0
	Private	22295 (54)	17345 (34)	13145 (25)	11345 (22)	0	0
	State	10790 (41)	9630 (36)	7710 (30)	4440 (17)	0	0
		63955 (180)	57845 (155)	49885 (132)	44815 (116)	17910 (40)	0

(source: CEA)



4 Hydro



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4.1 Measures to promote Hydro Sector/ Pump Storage:-

BACKGROUND:

India is endowed with a hydropower potential of 1,45,320 MW but even after 70 years of independence, almost 1,00,000 MW of potential remains undeveloped. The share of hydropower has fallen from a high of 50.62% in 1962-63 to an all time low of 12.5% (considering PSPs) or 11.21% (without considering PSPs) now. The share of hydro of hydropower is even lesser at 9.9% in terms of overall annual generation in 2018-19 in the country. The actual capacity addition in 12th Plan period (2012-17) was only 5479 MW, which was a mere 50% of the targeted 10,897 MW. The decline in share of Hydro power in the energy mix is more critical when seen in the context of ever increasing criticality of hydropower due to increasing share of solar and wind, which are intermittent sources of power and hence create grid destabilising factors.

In the case of PSPs, the potential identified by CEA was over 96000 MW of which only 4786 MW has been commissioned so far. Another 1205 MW is under construction presently. Out of ten commissioned PSPs, some are not operational in pumping mode due to various issues. PSPs are even more useful for grid balancing/ stability.

ISSUES:

The issues causing hurdles in development of conventional hydropower and PSPs were highlighted in the earlier Power Ministers' Conferences at Vadodara and Kochi respectively. The major issues faced in the hydropower sector can be categorised as financial reasons and other reasons. The financial reasons include high capital cost, long gestation period, huge time and cost overruns due to geological surprises, natural calamities etc, poor financial health of private developers and contractors, non-availability of long term finance etc. Many private sector projects got stalled due to these reasons. The non-financial reasons include religious sentiments of people attached to certain rivers, political, social and local resistance for hydropower projects, long drawn processes for environmental clearances, inter-state issues, local issues, land acquisition and R&R issues, etc. Due to these factors, several projects got stranded/stalled including Subansiri Lower (2000 MW), Lata Tapovan (171 MW) and several CPSU/ private sector projects are yet to take off including Tawang-II (800 Mw), Tawang-I (600 MW), Teesta- IV (520 MW) etc.

REVIVAL MEASURES BY UNION GOVERNMENT:

Considering the resolutions in the power ministers conferences and subsequent stakeholder consultations, the Ministry of Power initiated a proposal regarding measures for revival of hydropower sector. Due to the Union government's unwavering commitment to mitigate Climate Change by promoting Clean and Green Hydropower, the Union Cabinet approved the



following measures to promote hydro power in March 2019:

- i) Declaring Large Hydro Power (LHPs) (> 25 MW projects) as Renewable Energy source;
- ii) Hydro Purchase Obligation (HPO) as a separate entity within Non-solar RPO
- iii) Tariff rationalization measures for bringing down hydro power tariff;
- iv) Budgetary Support for Flood Moderation/Storage component of hydropower projects
- v) Budgetary Support for Enabling Infrastructure, i.e. roads/bridges etc.

a) DECLARING LARGE HYDRO POWER PROJECTS(LHPS>25 MW) AS RENEWABLE ENERGY SOURCE:

Earlier, only SHPs were considered as Renewable Energy source. LHPs also provided similar benefits, viz., clean and green power and had no consumptive use of water for generating electricity, but these projects were not categorised as Renewable Energy source. Various countries in the world, viz. Canada, USA, China and France, etc., provide benefits to hydropower at par with renewable sources of energy. Considering these facts, the Union Cabinet declared LHPs also as Renewable Energy source. This will enable developers to access low cost and long term finance from Financial institutions and Banks.

b) HYDRO PURCHASE OBLIGATION (HPO) AS A SEPARATE ENTITY WITHIN NON - SOLAR RENEWABLE PURCHASE OBLIGATION (RPO):

There are several benefits of hydropower. But due to high gestation period and resultant high time and cost overruns, the tariff of hydropower in the initial years is high which affected its saleability. In order to ensure grid stability in the context of meeting our ambitious international commitments for installation of renewable power (40% of total capacity by 2030), it was felt necessary to have adequate amount of hydropower to balance the power from renewable energy sources. Therefore, a separate HPO within the mandated non-solar RPO (available for other renewable sources like Solar, Wind, etc.) after increasing the percentage of non-solar RPO, was approved by the Cabinet. This measure will ultimately reduce the overall cost of procurement of power by DISCOMs as it would enable them to procure more solar and wind power, the cost of which has come down significantly in the recent years.

c) TARIFF RATIONALISATION MEASURES FOR BRINGING DOWN HYDROPOWER TARIFF:

One of the main reasons for high tariff in the initial years is non-availability of long term finance and front loaded nature of the tariff. As per the normal lending practice, loan repayment period is about 12 years, during which the developer has to repay the complete loan i.e. 70% of project cost. The cash flow to repay the loan can be derived from tariff only. So,

during the initial 12 years, it becomes imperative to increase the tariff significantly. However, due to higher tariff in the initial years, DISCOMs are reluctant to sign PPAs with Hydro Power Plants. Hence, to revive the hydropower sector, it was considered necessary to bring down the tariff in the initial years to facilitate PPAs.

To address this issue, Ministry of Power held a meeting with Banks/FIs, developers and regulators to discuss various possibilities to bring down the tariff. During the discussions, Banks/ FIs have expressed their willingness to provide loan for longer tenure as well as to restructure the repayment plan matching with the cash flows generated from the project based upon tariff trajectory agreed upon between the Developer and the DISCOM. Meticulous analysis was done including considering repayment of loan in 12, 18 and 25 years with different repayment plan and different options for restructuring the tariff, viz., flat tariff, tariff escalating @ 1-3%, etc. (the CAGR of Average cost of Supply for the period of 2010-11 to 2016-17 has been 3.90%), keeping the levelized tariff same for a PPA of 40 years, i.e., useful life of the plant. In various options, the first year tariff, levelized tariff, first year DSCR along with life cycle IRR were also examined. By restructuring the debt repayment plan and tariff, it was found that it is possible to reduce the tariff in initial years without adversely affecting the IRR and debt repayment capacity of the developer/generator. For example, by restructuring the trajectory of tariff for 40 years in such a manner that the tariff increases @2% every year and keeping the levelized tariff same as that worked in accordance with CERC regulations and by restructuring the debt repayment tenure from 12 years to 18 years which is to be repaid Equated Monthly/ Quarterly Instalments (EMI), the first year tariff reduces by approximately 30% as compared to the first year tariff determined as per the existing CERC regulations. The rate of increase in tariff can vary as per the mutual convenience of promoter, lenders and DISCOMs without changing the levelized tariff which is determined as per the existing CERC regulation.

With the reduction in tariff in initial years, it is felt that DISCOMs would come forward to sign PPAs for the Hydro Power Projects and it would promote much needed Hydro Power in the country without any fiscal/financial support.

d) BUDGETARY SUPPORT FOR FLOOD MODERATION/ STORAGE HEPS:

Large storage projects provide flood moderation benefit in addition to the generation of power. However, the entire cost of debt servicing, interest and other O&M costs, etc. were borne by the consumers of power generated from the project. Addition of civil cost of flood moderation component, the loss of energy due to flood moderation/ storage and higher R&R cost, made the storage projects commercially unviable. However, construction of storage projects not only mitigates the cost incurred in flood relief and rehabilitation but also prevents irreparable loss caused by floods to human lives and property. The flood

moderation support unburdens the tariff. The fund required for flood moderation would vary from project to project (e.g., as per recently cleared DPR of Dibang HEP (2880 MW) in Arunachal Pradesh, an estimated Rs. 1.60 crore per MW is required for the flood moderation component at July' 2017 price level).

e) BUDGETARY SUPPORT TO COST OF ENABLING INFRASTRUCTURE, I.E., ROADS/ BRIDGES:

Due to lack of roads and bridges in project areas, substantial amount has to be incurred on these components to undertake the construction of the projects. This expenditure increases the project cost and, consequently, the tariff. It was therefore decided to unburden the tariff from the cost of enabling infrastructure, i.e., roads/ bridges, by funding it from budgetary support. This support is applicable for projects starting construction after notification of the measures. This budgetary support is to be provided after appraisal/ approval of each project by PIB/ CCEA as per the extant rules/ due process. It was also decided to limit the grant for such roads and bridges to:

- i. Rs. 1.5 crore per MW for projects upto 200 MW,
- ii. Rs. 1.0 crore per MW for projects above 200 MW.

OTHER RECENT INITIATIVES BY THE UNION GOVERNMENT:-

The Union Cabinet has recently accorded investment approval for NHPC's Teesta - VI (500 MW) HE project in Sikkim and Kiru HE Project (624 MW) in Jammu & Kashmir in addition to approval for pre-investment activities of Dibang Multipurpose project (2880 MW), which is the largest hydropower project to be initiated. Further, the construction of Subansiri HE Project (2000 MW), the largest hydropower project under construction, which was stalled since December 2011, has also recommenced after clearance by Ministry of Environment and Forest and NGT. Further, Ratle HE Project (850 MW) in Jammu & Kashmir, is on the way to revival after signing of MOU between NHPC and JKSPDC.

INITIATIVES BY STATE GOVTS.:

The Ministry of Power has been emphasising on taking up the hydropower projects which are commercially viable. The Ministry urged the State Governments to make hydropower competitive by foregoing/ deferring/ staggering free power for few years, reimbursing State GST etc. This initiative of the Union Government has received positive response from the State governments too.

Jammu & Kashmir has deferred free power, exempted water cess for 10 years and have given exemptions from local taxes to some Joint Venture projects like Kiru(624 MW) and Kwar(540 MW) to reduce tariff. Recently, Govt. of Himachal Pradesh signed agreement with 3 CPSUs viz.

NTPC, NHPC and SJVN for setting up 10 hydropower projects of 2917 MW on Chenab / Sutlej river entailing an investment of about Rs. 28,000 crore. SJVN signed agreement for 7 projects of 1958 MW involving an estimated investment of Rs. 18,165 crore. In these projects, the State Govt has agreed to defer their entitlement of 12% free power from the project and also reimburse the State's share of GST(in part or full) in such a manner that the tariff of the project is affordable (levellized tariff around Rs.4.50/unit). The 12% free power benefits will be staggered/deferred, on project to project basis, in a manner that no/minimum burden is felt in the initial years of loan repayment period during which tariff is generally high.

These agreements will not only help India fully utilize its share of water under the Indus Waters Treaty but also be a big boost for hydropower in India's energy mix. There is also a provision that pre-construction LADF can be met through head other than project cost, thus unburdening the tariff. The projects are to be implemented on BOOT basis for a period of 70 years and will generate lot of employment for the local youth. Ministry of Power congratulate Govt. of Himachal Pradesh and J&K for such a great initiative to promote hydropower in the country.

THE ROAD AHEAD:

Hydropower has a few inherent advantages like instantaneous start/ stop abilities, quick ramping capability, black start facility, reactive power absorption etc which make it very important for grid stability / balancing, apart from meeting peaking power capabilities. It is also very clean, green and sustainable source of power. The balance hydropower potential is in the under developed Himalayan upper reaches which can benefit immensely from the socio-economic development to the entire region brought about by setting up hydropower projects. Hydropower has played major role in economic development of Bhutan. Further, stringent environment norms and sensitive resettlement & rehabilitation policies are followed while implementing hydropower projects, thus eliminating possibility of negative effects associated with hydropower.

The immediate target ahead is to commission another 30000 MW by 2030 as per the vision of the Union Cabinet. The realisation of this target is critical to the achievement of Nationally Determined Contributions (NDCs) for Climate Change committed by our country to the United Nations Framework Convention on Climate Change. This will be possible only and only when Union Government and the State governments, especially of the BIG 5 of hydro viz. Arunachal Pradesh, Himachal Pradesh, Jammu & Kashmir, Uttarakhand and Sikkim jointly promote hydropower sector and eliminate as many hurdles as possible in its development. The other states need to take steps to identify and develop commercially viable PSPs. Undoubtedly, the joint efforts of State Governments and Union Government is bound to usher in an era of unprecedented growth in hydropower development including development of PSPs.



5
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5.1 Payment issues:-

- In order to address the problem of huge outstanding dues of Generating Companies and Transmission Companies by the Distribution Companies, an Order on Opening and maintaining of adequate Letter of Credit (LC) as Payment Security Mechanism under Power Purchase Agreements by Distribution Licensees has been issued by Ministry of Power on 28.06.2019. The order has got effective and implemented from 1st August, 2019.
- As per the aforesaid Order dated 28.06.19, for power purchases from 01.08.2019 onwards, Power will be scheduled for dispatch only after Letter of Credit (LC) for the desired quantum of power with respect to the generating stations has been opened. It shall be ensured by the concerned Load Despatch Centre that such entity, during the period of non-scheduling of power on account of Non opening of LC or advance payment, has no access to procure power from the Power Exchange(s) and they shall not be granted Short Term Open Access (STOA). This shall bring discipline in the sector and ensure sustainability in the Power Sector.
- A Procedure for Scheduling of Power to Distribution Company in the event of Non-maintenance of Letter of Credit has also been devised and issued on 17.07.2019. A Corrigendum to the aforesaid Order dated 28.06.2019, by incorporating the suggestions from MNRE & some States, has been issued on 17.07.2019 by Ministry of Power. A clarification has also been issued on 23rd July, 2019 to all stakeholders regarding applicability of Order dated 28.6.2019 and its Corrigendum dated 17.7.2019. A Clarification Order has been issued on 9th August 2019 based on Representations from some of the stakeholders.
- States are requested to purchase power against the adequate payment security mechanism for a sustainable power sector.

5.2 Implementation of Merit Order Dispatch across the country:-

- In order to reduce the overall cost of power generation as well as cost of power to consumer, MOP had issued a scheme on Flexibility in generation and scheduling of Thermal Power Stations to reduce cost of power to consumers in 30-08-2018. Subsequently, as per the direction of CERC Order dtd. 31st January, 2019, a pilot scheme on Security Constrained Economic Dispatch (SCED) optimisation model is being implemented by POSOCO in Inter-State Generating Stations (ISGS) Pan India with effect from 01st April, 2019. SCED is being implemented for all the thermal Inter State Generating Stations (ISGS) that are regional entities and whose tariff is determined or adopted by the Central Commission (CERC). In the above mechanism, power is being supplied from the cheapest available power stations first to meet the power demand.
- POSOCO has submitted an interim feedback report on Pilot on SCED for April - July'19 period to CERC and Ministry of Power in August, 2019. As informed in the interim report submitted

by the POSOCO, 49 coal and lignite based thermal ISGS generators having total installed capacity of 55,940 MW are participating in the SCED pilot project and SCED pilot has led to optimization of the generation across India thereby saving production costs. Further informed that, around ₹ 389 Crores reduction in fuel cost for April - July'19 period has been facilitated by pilot on SCED. Subsequently, as per the direction of CERC, the pilot scheme has been further extended upto March 2020.

- Subsequently, in order to implement the Merit Order Dispatch across the country i.e including Generating stations owned by states and intra state generating stations, a Group has been constituted under the chairmanship of Shri Sanjiv Nandan Sahai, Special Secretary, MoP with members from CEA, CERC, POSOCO and One State Representative from each Region i.e. Gujarat, Uttar Pradesh, Karnataka, West Bengal, Assam vide Ministry of Power order dated 23rd July, 2019 on Implementation of Merit Order Dispatch across the country.
- The Terms of Reference of the Group include proposed methodology, time frame and necessary changes in the appropriate regulations as deemed appropriate etc. for implementation of the Merit Order Dispatch across the country. The Group shall submit its report within four months from the date of its constitution.
- States are requested to give suggestion to make it operational so that there is a cost saving.

5.3 Pass through:-

- Tariff Policy 2016 provides that after the award of bids, if there is any change in domestic duties, levies, cess and taxes imposed by Central Government, State Governments/Union Territories or by any Government instrumentality leading to corresponding changes in the cost, the same may be treated as "Change in Law" and may unless provided otherwise in the PPA, be allowed as pass through subject to approval of Appropriate Commission.
- In Order to address that issue of pass-through of certain costs, in the proposed amendments to Tariff policy, it is being proposed that :-

- **Change in Law:**

The following events taking place after financial Bid submission date shall be treated as a change in law unless otherwise provided in the PPA and impact of such change in law shall be allowed as pass through:

- i. Any change in domestic duties, levies, cess and taxes or imposition of new charge or surcharge by Central Government, State Governments/Union Territories or by any Government instrumentality leading to corresponding changes in the cost or revenue
- ii. Any other event as decided by the Appropriate Commission

- The cost or revenue pass-through under change in law shall be allowed only if the contributing element has not been factored into any of the indices used for escalation as identified in PPA.
 - The Appropriate Commission will determine the per unit impact of such change in duties, levies, cess and taxes which will be passed on. The order for pass through giving the calculation of per unit impact will be issued within 60 days of the filing of petition.
 - Where the Appropriate Commission has already passed an order to allow pass through of the changes in domestic duties, levies, cess and taxes in any case under the change in law, the principles thereof will apply ipso facto to all such cases. However, the actual impact of change in law will be determined in each case separately by the appropriate commission.
 - The Central Commission shall lay down the principle and procedure for pass through of impact under "change in law" and State Commissions shall be guided by the same.
- **Carrying Cost:**

The impact of such change in law shall be effective from the date of change in law. Provided further that carrying cost shall be paid from date of occurrence of change in law. The rates of the carrying cost shall be determined by the CERC from time to time. State Commission shall also be guided by it.
 - **Late Payment Surcharge:**

In case of delayed payments late payment surcharge equivalent to interest at the bank lending rate for short term loans shall be payable mandatorily by the DISCOMs/procurers, notwithstanding any agreement to the contrary. The Appropriate Regulatory Commissions may ensure compliance

5.4 Open access:-

- The concept of Open Access was introduced through Electricity Act, 2003. As per Electricity Act (EA), "open access" means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission.
- A consumer who is permitted open access will have to make payment to the generator, the transmission licensee whose transmission systems are used and to distribution utility for the wheeling charges and, in addition, a surcharge.
- A consumer would avail of open access only if the payment of all the charges leads to a



benefit to him. While the interest of distribution licensee needs to be protected it would be essential that provisions of section 42 of the Act, which requires the open access to be introduced in a time-bound manner, is used to bring about competition in the larger interest of consumers.

- The Formula for cross subsidy was provided in the Tariff Policy. It has been provided that the cross subsidy surcharge shall not exceed 20% of the tariff applicable to the category of the consumers seeking open access.
- The additional surcharge for obligation to supply as per section 42(4) of the Act shall become applicable only if it is conclusively demonstrated that the obligation of a licensee, in terms of existing power purchase commitments has been and continues to be stranded, or there is an unavoidable obligation and incidence to bear fixed costs consequent to such a contract.
- It has now been proposed in amendment to Tariff Policy that surcharge payable by a consumer shall initially be fixed to take care of current level of cross-subsidy and shall be progressively reduced every year by 25% of the prevailing value for that consumer.
- **States are requested to encourage open access in power sector.**





6 Information Technology



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6.1 National Power Portal:-

National Power Portal (NPP) is a centralized dashboard which has been designed and developed to disseminate analyzed information for Indian Power Sector which facilitates online data capture/ input (daily, monthly, annually) from generation, transmission and distribution utilities in the country and disseminate Power Sector Information (operational, capacity, demand, supply, consumption etc.) through various analyzed reports, graphs, statistics for generation, transmission and distribution at all India, region, state level for central, state and private sector. The Dashboard also provides link of Power Sector Apps like TARANG, UJALA, URJA, VIDYUT PRAVAH, SAUBHAGYA, PRAAPTI, MERIT ODE, RFMS. The Nodal Agency for implementation of NPP and its operational control is Central Electricity Authority (CEA).



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7 Transmission



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7.1 Strengthening of Transmission System for 24x7 Power:-

- National transmission network at a glance
 - In order to provide 24x7 supply of power across the country with the initiative of Ministry of Power, strengthening of Inter State Transmission System (ISTS) is being carried out to facilitate Inter State Power Transfer. In this direction, already about 191,000 ckm transmission lines and 391,000 MVA transformation capacity has been established under ISTS facility mainly through 765kV/400kV/220kV AC and ± 500 kV/ ± 800 kV HVDC System. Further, about 226,000 ckm transmission lines and 530,000 MVA transformation capacity has been established under Intra State system for 220kV and above voltage level.
 - Further, to facilitate power transfer across the regions the substantial growth in inter-regional transmission capacity has taken from Aggregate interregional transmission capacity by the end of 9th, 10th, 11th and 12th Plan are 5750 MW, 14050 MW, 27750 MW and 75050 MW respectively. The present cumulative Inter-Regional power transfer capacity is 99,050MW.
 - In this process, all India National Grid is now one synchronized grid and has resulted in the formation of "One Nation - One Grid - One Market". This has facilitated power transfer from resource rich areas to major load centres of the country with reliability and security.
- Transmission system capability
 - With the present massive transmission network of about 418,000ckmof transmission lines and 921,000MVA of transformation capacity for 220kV and above voltage level and coupled with inter-regional transfer capacity of about 99 GW and having the availability of the Inter-state transmission system more than 99.8%, the transmission system is capable of meeting the peak demand of the country.
 - This has lead to seamless transfer of power from one part of the Country to other part of the Country.
- Current requirement / Future ready network
 - As per National Electricity Plan (NEP) 2017-22, about 110,000ckmof transmission lines and about 383,000 MVA of transformation capacity in the substations at 220kV and above voltage levels are expected to be added during period 2017 -22.
 - With the implementation of above transmission system, the inter regional power transfer capacity of the country shall be enhanced to more than 1,18,000 MW by the end of 2021-22 the increase in inter-regional transmission capacity would sustain 24x7 smooth flow of power from surplus to deficit (across the) regions.

- The load growth for 24x7 'Power For All' has been factored in the NEP 2017-22. However, minor modifications to these schemes are carried out in the various meetings of Standing Committee on Transmission (SCT) as and when requested by the states/feedback of grid operators.
- The Govt. of India has embarked an ambitious plan of 175GW Renewable Energy (RE) capacity by 2022. Presently, about 80GW RE capacity already exists. Gestation period of RE project is short in comparison to development of its transmission facilities, therefore, transmission planning & its implementation has been taken up in advance so that it can match with renewable generation.
- To fulfil targets of RE capacity (175 GW) by 2022, POWERGRID as CTU in association with CEA has already taken various initiatives like Green Energy Corridors Scheme, Transmission system for Ultra Mega Solar Power parks&for Renewable Energy Zones (66.5 GW) in the RE rich states of Tamil Nadu, Andhra Pradesh, Karnataka, Gujarat, Maharashtra, Rajasthan and Madhya Pradesh has been planned for implementation by 2022.
- There is continuous monitoring of the under construction transmission system for timely implementation of the schemes.

■ **Issues:**

● **Investment**

To cater to growing power transfer requirement by 2022, investment in transmission of about ₹ 2,69,000 Cr. is envisaged as per National Electricity Plan (NEP) of CEA. Out of this, ₹ 1,24,000 Cr. investment is expected in inter-state transmission system. Some of the states are lacking in execution of planned transmission system.

● **Right of Way (RoW)**

The RoW has become a major concern for implementation of transmission system in the Country. To facilitate smooth implementation of transmission schemes, the compensation for RoW has been formulated as 85% for tower footage area and 15% for the line corridor as per the Govt. of India guidelines, 2015. Most of the states have adopted these guidelines and notified the same. For implementation at ISTS level too these guidelines are being implemented. Remaining states may expedite adoption of these RoW guidelines.

● **RoW for Urban areas**

Land value in Urban Areas is normally on the higher side, therefore the MoP had constituted a separate Committee for deciding the quantum of compensation for the

above purpose and to examine other relevant aspects of RoW compensation pertaining to urban areas. The Committee has submitted the report recently, which is under consideration.

- **Rationalization of ISTS Charges Sharing (PoC mechanism)**

Some states have raised their concerns on the method for allocation of transmission charges, resulting in higher transmission charges for respective states. They have also raised issues like lack of transparency, complexity of method, unexplained large variation in PoC tariff, assumptions etc.

A Committee was formed under chairmanship of Shri S.N.Sahai, Special Secretary, MoP to study the system of Transmission charges. The committee has finalized its report and additional calculations are being carried out to firm up the recommendations.



8 Energy Conservation



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Ministers of States & UTs.

8.1 DISCOMs to comply with the mandatory provisions of Energy Conservation Act, 2001 and PAT Rules:-

The Perform, Achieve, and Trade (PAT) scheme is one of the four components of the National Mission for Enhanced Energy Efficiency (NMEEE), and aims at enhancing the energy efficiency of the energy intensive industrial sectors in the country. In the first cycle of PAT (2012-13 to 2014-15), 478 industrial units in 8 sectors (Aluminum, Cement, Chlor- Alkali, Fertilizer, Iron & Steel, Paper & Pulp, Thermal Power, Textile) have been mandated to reduce their specific energy consumption (SEC) i.e. energy used per unit of production.

During the review of Action Plan on NMEEE including PAT, the Prime Minister's Council on Climate Change advised to extend the coverage to other sectors specified into the Energy Conservation Act, 2001. Therefore, three new sectors i.e. Electricity Distribution Companies, Refineries and Railways were included under PAT Cycle-II.

In exercise of the powers conferred by the clause (e) of section 14 of the Energy Conservation Act, 2001 (52 of 2001), the Central Government has issued Statutory Order No. 3542(E) dated 29th December 2015 by which Electricity Distribution companies having AT&C losses of 1000 Million kWh equivalent to (86000 Mtoe) and above are notified as designated consumers. As per this notification, 44 Electricity Distribution companies were identified as Designated consumers and T&D loss reduction targets were notified under PAT cycle-II vide S.O. 1264 (E) dated 31st March 2016.

For smooth implementation of PAT Scheme, a Technical Committee was constituted for DISCOM under the chairmanship of Joint Secretary (Distribution), Ministry of Power. Further, as per the recommendation of Technical Committee, Ministry of Power, Government of India has revised energy consumption norms and standards in % of T&D losses for baseline year (i.e. FY 2014-15) and target year (i.e. FY 2018-19) of DISCOMs under PAT Cycle-II in conjunction with SERC data and UDAY Scheme and published in the Gazette of India vide S.O.5045 (E) dated October 01, 2018. Copy of this Gazette is enclosed at **Annexure-1**.

As per the provisions of Energy Conservation Act, 2001 and PAT Rules, each Designated Consumer (DC) need to comply with following Mandatory Provisions:

- I. Appointment of Energy Manager
- II. Submission of Annual Energy Return
- III. Carrying out Mandatory Energy Audit (MEA)
- IV. Submission of Form-2 (Details of energy saving measures recommended in MEA report by AEA)



- V. Submission of Form-3 (Details of energy conservation measures implemented, investment made and saving in energy achieved and progress made in the implementation of other recommendations given by AEA in Form-2)
- VI. Registration on PATNet Portal
- VII. Carrying out Monitoring and Verification (M&V)

DISCOM wise status on above compliances are enclosed at Annexure-II and the summary are as follows:

- 37 DISCOMs have appointed Energy Manager.
- 24 DISCOMs have submitted Action Plan to curb losses.
- 25 DISCOMs have submitted their Annual Energy Return for FY2017-18.
- 13 DISCOMs have submitted Mandatory Energy Audit (MEA) Report along with Form-2.
- 6 DISCOMs have submitted Form-3
- 35 DISCOMs have registered on PATNet Portal. List of unregistered DISCOM is enclosed at **Annexure-III.**
- 20 DISCOMs have submitted M&V report timely i.e. on or before 30th September 2019. 6 DISCOMs have submitted draft M&V report.

Capacity Building of DISCOMs

60 DISCOMs have being included under the capacity Building of DISCOMs program during 2017-20. 504 master trainers have being created have been created on DSM and energy efficiency by organizing training of trainees program (ToT) and capacity building of circle level officials for around 5000 on DSM energy efficiency.

Out of 60, 50 DISCOMs have established their DSM cell. BEE has engaged 4 project management consultants for implementation of activities like proving manpower support (1 technical, 1 financial), conducting load research activities and finalization of DSM action plan, conducting the training programs to create the master trainer and capacity building of circle level officials of DISCOMs on DSM and energy efficiency, pursuing to notify the DSM regulation in the states.

Penalty for Non Compliances:

If any DC fails to comply with the provisions as mentioned in para 5, penalty will be levied as per section 26 of the Energy Conservation Act, 2001. i.e. ten lakh rupees for each such failure and, in the case of continuing failure, with an additional penalty which may extend to rupees 10,000 (ten thousand rupees) for every day during which such failure continues.



Draft Resolution: All DISCOMs are requested to comply with the above mandatory provisions of Energy Conservation Act, 2001 and PAT Rules. The same has to be submitted to Bureau of Energy Efficiency with a copy to respective State Designated Agency (SDA).

8.2 Review of progress on adoption of Energy Conservation Building Code (ECBC) by the States and the Uts:-

Background note:

- The Energy Conservation Act (EC Act) was enacted in 2001 with the goal of reducing energy intensity of Indian economy. The Act provides regulatory mandate for energy conservation building codes for commercial buildings. The updated Energy Conservation Building Code (ECBC) 2017 launched by the Hon'ble Minister of State (IC) for Power, Coal, NRE & Mines in June; sets minimum energy performance standards for commercial buildings having a connected load of 100 kW or contract demand of 120 kVA and above. While the Central Government has powers under the EC Act 2001, the State Governments have the flexibility to modify the code to suit local or regional requirements and notify them.
- As on date, the Status of ECBC Amendment & Notification is as follows:

S.No.		Name of the States/UTs	
1	ECBC Notification Issued	1) Uttar Pradesh* 2) Odisha 3) Punjab 4) Andhra Pradesh 5) Telangana 6) Karnataka 7) Himachal Pradesh*	8) Haryana 9) Kerala 10) Rajasthan 11) Uttarakhand 12) West Bengal 13) UT of Puducherry
2	ECBC Amendment Completed	1) Chhattisgarh 2) Maharashtra 4) Bihar 5) Madhya Pradesh 6) Delhi 7) Assam 8) UT of Andaman & Nicobar Islands 9) Gujarat 10) UT of Daman & Diu 11) Tamil Nadu	12) Meghalaya 13) Jharkhand 14) Goa 15) Sikkim 16) Nagaland 17) Arunachal Pradesh 18) Tripura 19) Manipur 20) Mizoram 21) Lakshadweep

*Approved by Cabinet



- To support implementation of ECBC in the built environment, several enabling measures have been taken up. These included :
 - Establishment of ECBC cells in all the States/UTs
 - Empanelment of ECBC expert architects
 - Development of technical reference material such as ECBC User Guide for lighting, building envelope, Comfort systems and its simulation;
 - Development of conformance/compliance check tool to help architects/ design professionals and code compliance officials to assess conformance with code requirements
 - Capacity building of various stakeholders like State Designated Agencies (SDA), Municipal corporations, Urban Department, CPWD, state PWD etc.
- Complementing the efforts of the Government, ECBC has been integrated in other rating & compliance systems being followed in the country such as EIA (Environmental Impact Assessment) for large area development under MoEF&CC (Ministry of Environment, Forest & Climate Change), Green Rating for Integrated Habitat Assessment (GRIHA) rating system of ADARSH and Leadership in Energy & Environmental Design (LEED) rating system of the Indian Green Building Council (IGBC). Ministry of Housing and Urban Affairs (MoHUA) Development included ECBC provisions in model building bye-laws and the same is circulated to the states for incorporation in their building bye-laws. Also, ECBC is incorporated in National Building Code (NBC), 2016 in a chapter named "Approach to Sustainability".

Draft Resolution for Review of progress on adoption of Energy Conservation Building Code (ECBC) by the States and the Uts

All State Government to notify ECBC 2017 by December 31, 2018; with the objective that all new construction of commercial buildings are energy efficient and ECBC Compliant.

GOVERNMENT OF INDIA
MINISTRY OF POWER

Annexure-I

NOTIFICATION
New Delhi, the 1st October, 2018

S. O. 5045(E).—In exercise of the powers conferred by clauses (g) and (n) of section 14 of the Energy Conservation Act, 2001 (52 of 2001), the Central Government, in consultation with the Bureau of Energy Efficiency, hereby makes the following amendments in the notification of the Government of India in the Ministry of Power number S.O. 1264(E), dated 31st March, 2016 [hereinafter referred to as the said notification] published in the Gazette of India, Extraordinary, Part-II, Section 3, Sub-section (ii).

In the said notification, in the Sector Table, for Part XI relating to Electricity Distribution Companies and the entries relating thereto, the following Part and entries shall be substituted, namely:-

S.No	Designated consumers	Baseline Energy Consumptions norms and standards in percentage of Transmission and Distribution losses for baseline year 2014-2015	Target Energy Consumption Norms and Standards in percentage of Transmission and Distribution loss for target year 2018-2019		
			(1)	(2)	(3)
(1)	(2)	(3)	(4)		
	Name, address and State	Registration number	Percentage of Transmission & Distribution losses	Net input energy in Million units	Percentage of Transmission and Distribution losses
“XI. Electricity Distribution Companies					
1	Eastern Power Distribution Company of Andhra Pradesh Limited, Postal and Telegraph Colony, Seethammadhara, Visakhapatnam-530013 (Andhra Pradesh)	DIS0001AP	10.74	11622.01	5.44



2	Uttar Gujarat Vij Company Limited, Visnagar Road, Mehsana -384001(Gujarat)	DIS0002GJ	9.87	18070.19	9.67
3	Dakshin Gujarat Vij Company Limited, Nana Varachha Road, Kapodara, Surat-395006 (Gujarat)	DIS0003GJ	9.33	17132.8	9.15
4	Kerala State Electricity Board Limited, Vydyuthi Bhavanam, Pattom, Thiruvananthapuram-695004 (Kerala)	DIS0004KR	9.34	21572.9	9.34
5	Southern Power Distribution Company of A.P. Limited, D.NO:19-13-65/A, Srinivasapuram, Tiruchanoor Road, Chittoor District, Tirupati-517503 (Andhra Pradesh)	DIS0005AP	11.72	25907.65	9.58
6	Southern Power Distribution Company of Telangana Limited, 6-1-50,Mint Compound,Hyderabad-500063 (Telangana)	DIS0006TS	11.30	32815.88	9.90
7	Himachal Pradesh State Electricity Board Limited Vidyut Bhawan, Shimla-171004 (Himachal Pradesh)	DIS0007HP	12.29	8831.75	11.50
8	Northern Power Distribution Company of Telangana Limited, H.No: 2-5-31/2, Corporate Office, Vidyut Bhavan, Nakkalgutta, Hanamkonda, Warangal-506001 (Telangana)	DIS0008TS	14.69	12801.61	10.00



9	Bengaluru Electricity Supply Company Limited, Corporate Office, K.R.Circle, Bengaluru – 560001 (Karnataka)	DIS0009KR	14.78	28261.00	14.50
10	Maharashtra State Electricity Distribution Company Limited, Hongkong Bank Building, M.G. Road, Fort, Mumbai-400001 (Maharashtra)	BIS0010MH	16.36	110458.00	12.75
11	Madhya Gujarat Vij Company Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara-390 007 (Gujarat)	DIS0011GJ	12.27	9454.95	11.89
12	Chamundeshwari Electricity Supply Corporation, No. 29, Vijayanagar 2nd Stage, Mysore, Hinakal-570017, (Karnataka)	DIS0012KR	13.89	6085.00	12.75
13	Bombay Sub-Urban Electric Supply Rajdhani Power Limited, BSES Bhawan, Nehru Place, New Delhi-110019	DIS0013DL	14.73	11938.00	11.26
14	Punjab State Power Corporation Limited, Mall road, Sheran Wala Gate, Patiala-147001 (Punjab)	DIS0014PB	16.50	48113.24	14.00
15	Uttarakhand Power Corporation Limited, Victoria Cross Vijeyta Gabar Singh Bhawan, Kanwali Road, Balliwala Chowk, Dehradun-248001 (Uttarakhand)	DIS0015UK	18.79	11882.20	14.44
16	Gulbarga Electricity Supply Company Limited, Corporate Office, Main Road, Gulbarga-585102 (Karnataka)	DIS0016KR	18.93	7563.00	15.00



17	Hubli Ubli Electricity Supply Company Limited, P.B.Road, Navanagar, Hubli-580025 (Karnataka)	DIS0017KR	16.74	11059.00	15.00
18	Bombay Sub-Urban Electric Supply Yamuna Power Limited, Shakti Kiran building, Karkardooma, Delhi-110032	DIS0018DL	19.54	6717.00	15.33
19	Ajmer Vidyut Vitran Nigam Limited, Vidyut Bhawan, Panchsheel Nagar, Makarwali Road, Ajmer-305004 (Rajasthan)	DIS0019RJ	26.08	17449.55	15.00
20	Tamil Nadu Generation and Distribution Corporation Limited , NPKRR Maaligai, 144,Anna Salai, Chennai – 600002 (Tamil Nadu)	DIS0020TN	19.32	85437.00	13.50
21	Jodhpur Vidyut Vitran Nigam Limited , New Power House, Industrial Area, Jodhpur-342003 (Rajasthan)	DIS0021RJ	24.20	20927.03	15.00
22	Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company Limited, Gph Compound, Polo Ground, Indore – 452015 (Madhya Pradesh)	DIS0022MP	21.91	19795.40	16.27
23	Paschimanchal Vidyut Vitran Nigam Limited, Urja Bhawan, Victoria Park, Meerut 250001 (Uttar Pradesh)	DIS0023UP	19.66	26817.79	15.90



24	Paschim Gujarat Vij Company Limited, Nana Mava Main Road, Laxminagar, Rajkot-360004(Gujarat)	DIS0024GJ	24.61	26472.62	15.00
25	Dakshin Haryana Bijli Vitran Nigam, Vidyut Sadan, Vidyut Nagar, Hisar - 125005(Haryana)	DIS0025HR	24.47	27496.73	14.14
26	Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company Limited, Shakti Bhawan, 3rd Floor, Vidyut Nagar, Jabalpur – 482008(Madhya Pradesh)	DIS0026MP	21.69	16106.20	15.59
27	Assam Power Distribution Company Limited, 4th Floor, Bijulee Bhawan, Paltan Bazar, Guwahati - 781001(Assam)	DIS0027AS	21.14	6918.50	15.25
28	Chhattisgarh State Power Distribution Company Limited, Energy Info Tech Centre, Daganiya, Raipur (CG)-492013 (Chhattisgarh)	DIS0028CG	22.14	21964.00	14.72
29	Purvanchal Vidyut Vitaran Nigam Limited, Vidyut Nagar Hydrel Colony, Diesel Locomotive Works Bhikharipur, Varanasi-221004 (Uttar Pradesh)	DIS0029UP	23.88	18626.14	15.90
30	Madhyanchal Vidyut Vitran Nigam Limited, Head Office 4-A, Gokhale Marg, Lucknow-226001 (Uttar Pradesh)	DIS0030UP	22.88	14998.80	15.90



31	Jaipur Vidyut Vitran Nigam Limited, Vidyut Bhawan, Janpath, Jaipur - 302 005 (Rajasthan)	DIS0031RJ	30.46	25156.25	15.00
32	Dakshinanchal Vidyut Vitran Nigam Limited, Urja Bhavan, NH-2 (Agra-Delhi Bypass Road), Sikandra, Agra - 282 007(Uttar Pradesh)	DIS0032UP	29.49	18936.18	15.90
33	Madhya Pradesh Madhya Kshetra Vidhyut Vitaran Company Limited, Nishtha Parisar, Govindpura, Bhopal- 462023 (Madhya Pradesh)	DIS0033MP	24.63	17710.90	17.20
34	Kanpur Electricity Supply Company Limited, Headquarter, Kesa House, 14/71Civil Lines, Kanpur-208001 (Uttar Pradesh)	DIS0034UP	26.04	3213.85	15.90
35	West Bengal State Electricity Distribution Company Limited Revenue and Energy Management Vidyut Bhawan ("B",block), 2nd Floor, block DJ, Sector - II, Kolkata - 700091 (West Bengal)	DIS0035WB	27.60	31355.00	22.50
36	Uttar Haryana Bijli Vitran Nigam, Plot No. C-16, Vidyut Sadan, Sector-6, Panchkula-134109 (Haryana)	DIS0036HR	30.58	21532.40	14.14
37	Jharkhand Bijli Vitran Nigam Limited, Engineer's Building, Dhurwa, Ranchi-834 004 (Jharkhand)	DIS0037JH	29.71	11955.00	15.00



38	North Eastern Electricity Supply Company of Orissa Limited, Januganj, Balasore-756019 (Orissa)	DIS0038OD	31.10	5015.30	22.23
39	Central Electricity Supply Utility of Orissa, 2nd Floor, IDCO Tower, Janpath, Bhubaneswar-751022 (Orissa)	DIS0039OD	33.90	8297.30	25.99
40	Western Electricity Supply Company of Odisha, Burla, District Sambalpur-768017 (Orissa)	DIS0040OD	35.46	7053.83	23.80
41	North Bihar Power Distribution Company Limited, Second Floor, Vidyut Bhawan, Bailey Road, Patna 800001 (Bihar)	DIS0041BR	37.89	6847.71	20.00
42	Southern Electricity Supply Company Of Odisha, Courtpetta, Berhampur, Ganjam, Orissa-760 004 (Orissa)	DIS0042OD	39.00	3192.84	30.39
43	South Bihar Power Distribution Company Limited, Second Floor, Vidyut Bhawan, Bailey Road, Patna 800001 (Bihar)	DIS0043BR	49.73	10148.00	22.00
44	Jammu Kashmir Power Development Department, Grid Substation Complex, Janipur, Jammu (Jammu and Kashmir)	DIS0044JK	49.02	11546.00	21.90"

[F.No. 10/6/2018-EC]

(Raj Pal)

Economic Adviser

Note: - The principal notification was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) vide notification number S.O. 1264(E), dated 31st March, 2016.



Annexure-II

Electricity Distribution Companies under PAT Scheme								
S. No.	State	State/ Utilities	Energy Manager	Annual Energy Return (FY 2017-18)	MEA Report	Form 2	Form 3	Action Plan
1	Orissa	CESCO	Yes	Yes	Yes	Yes	Yes	Yes
2		NESCO	Yes	Yes	Yes	Yes	Yes	Yes
3		SESCO	Yes	Yes	Yes	No	No	No
4		WESCO	Yes	No	Yes	No	No	No
5	Himachal Pradesh	HPSEB	Yes	Yes	No	Yes	Yes	Yes
6	Chhattisgarh	CSPDCL	Yes	No	Yes	Yes	Yes	Yes
7	Punjab	PSPCL	Yes	Yes	No	Yes	Yes	Yes
8	Assam	APDCL	Yes	Yes	Yes	No	No	No
9	West Bengal	WBSEDCL	Yes	No	Yes	Yes	Yes	Yes
10	Tamilnadu	TANGEDCO	Yes	Yes	No	No	No	No
11	Madhya Pradesh	MPMKVVCL	Yes	No	No	Yes	Yes	Yes
12		MPPKVVCL	Yes	Yes	No	No	No	No
13		MPPuKVVCL	Yes	No	No	No	No	No
14	J&K	JK-PDD	No	No	No	No	No	No
15	Karnataka	BESCOM	Yes	No	No	Yes	Yes	Yes
16		CESCOM	Yes	Yes	No	Yes	Yes	Yes
17		HESCOM	Yes	Yes	No	Yes	Yes	Yes
18		GESCOM	Yes	Yes	No	Yes	Yes	Yes
19	Gujarat	DGVCL	Yes	Yes	No	Yes	Yes	Yes
20		MGVCL	Yes	Yes	No	Yes	Yes	Yes
21		PGVCL	Yes	Yes	Yes	Yes	Yes	Yes
22		UGVCL	Yes	Yes	No	Yes	Yes	Yes
23	Uttarakhand	UPCL	Yes	Yes	No	Yes	Yes	Yes

Annexure-II

Electricity Distribution Companies under PAT Scheme								
S. No.	State	State/ Utilities	Energy Manager	Annual Energy Return (FY 2017-18)	MEA Report	Form 2	Form 3	Action Plan
24	New Delhi	BRPL	Yes	Yes	Yes	Yes	Yes	Yes
25		BYPL	Yes	Yes	Yes	Yes	Yes	Yes
26	UP	DVVNL	Yes	No	No	No	No	No
27		MVVNL	No	No	No	No	No	No
28		PVVNL	No	No	No	No	No	No
29		PuVVNL	No	No	No	No	No	No
30		KESCO	No	No	No	Yes	Yes	Yes
31	Bihar	NBPDCL	No	No	No	No	No	No
32		SBPDCL	No	No	No	No	No	No
33	Jharkhand	JBVNL	Yes	No	No	No	No	No
34	Haryana	DHBVN	Yes	No	No	No	No	No
35		UHBVN	Yes	No	No	No	No	No
36	Andhra Pradesh	APEPDCL	Yes	Yes	Yes	No	No	No
37		APSPDCL	Yes	Yes	No	No	No	No
38	Telangana	TSSPDCL	Yes	No	No	No	No	No
39		TSNPDCL	Yes	Yes	No	No	No	No
40	Maharashtra	MSEDCL	Yes	Yes	Yes	Yes	Yes	Yes
41	Rajasthan	AVVNL	Yes	No	No	Yes	Yes	Yes
42		JVVNL	Yes	Yes	No	Yes	Yes	Yes
43		JDVVNL	Yes	Yes	No	Yes	Yes	Yes
44	Kerala	KSEB	Yes	Yes	Yes	Yes	Yes	Yes
	Total (44)		37	25	13	13	6	24



Annexure-II

Status of M&V for DISCOMs							
S.no.	Name of the DC	Submission date	M&V report (Hard Copy)	M&V report (Soft Copy)	Form A	Proforma	Form B
1	APEPDCL	26-Sep-19	Not received	Received	Received	Received	Received
2	BRPL	06-Sep-19	Received	Received	Received	Received	Received
3	BYPL	23-Sep-19	Received	Received	Received	Received	Received
4	KSEBL	30-Sep-19	Not received	Received	Received	Received	Received
5	CESU	30-Sep-19	Not received	Received	Received	Received	Received
6	Nesco Utility	29-Jul-19	Received	Received	Received	Received	Received
7	Southco Utility	26-Sep-19	Not received	Received	Received	Received	NR
8	Wesco	30-Sep-19	Not received	Received	Received	Received	Received
9	UPCL	30-Sep-19	Not received	Received	Received	Received	Received
10	DHBVN	27-Sep-19	Not received	Received	Received	Received	Received
11	UHBVN	30-Sep-19	Not received	Received	Received	Received	Received
12	DVVNL	28-Sep-19	Not received	Received	Received	Received	Received
13	PVVNL	30-Sep-19	Not received	Received	Received	Received	Received
14	PuVVNL	28-Sep-19	Not received	Received	Received	Received	Received
15	MVVNL	30-Sep-19	Not received	Received	Received	Received	Received
16	KESCO	27-Sep-19	Received	Received	Received	Received	Received
17	TSSPDCL	30-Sep-19	Not received	Received	Received	Received	Received
18	TSNPDCL	30-Sep-19	Not received	Received	Received	Received	Received
19	MPMKVVCL	30-Sep-19	Not received	Received	Received	Received	Received
20	SESC	30-Sep-19	Not received	Received	Received	Received	Received
21	GESCOM	30-Sep-19	Not received	Draft M&V report received	Not received	Received	Not received
22	BESCOM	30-Sep-19	Not received	Draft M&V report received	Received	Received	Not received

Annexure-II

Status of M&V for DISCOMs							
S.no.	Name of the DC	Submission date	M&V report (Hard Copy)	M&V report (Soft Copy)	Form A	Proforma	Form B
23	HESCOM	30-Sep-19	Not received	Draft M&V report received	Not received	Received	Not received
24	PSPCL	01-Sep-19	Not received	Draft report received	Received (not signed) 30.09.2019	Received 30.09.2019	Received (not signed) 30.09.2019
25	APDCL	30-Sep-19	Not received	Draft Report Received	Not received	Not received	Not received
26	MSEDCL	30-Sep-19	Not received	Draft Report Received	Not received	Not received	Not received
27	WBSEDCL		Not received	Not received	Not received	Not received	Not received
28	PGVCL		Not received	Not received	Not received	Not received	Not received
29	UGVCL		Not received	Not received	Not received	Not received	Not received
30	MGVCL		Not received	Not received	Not received	Not received	Not received
31	DGVCL		Not received	Not received	Not received	Not received	Not received
32	CSPDCL		Not received	Not received	Not received	Not received	Not received
33	J&K		Not received	Not received	Not received	Not received	Not received
34	TANGEDCO		Not received	Not received	Not received	Not received	Not received
35	NBPDCL		Not received	Not received	Not received	Not received	Not received
36	SBPDCL		Not received	Not received	Not received	Not received	Not received



Annexure-II

Status of M&V for DISCOMs							
S.no.	Name of the DC	Submission date	M&V report (Hard Copy)	M&V report (Soft Copy)	Form A	Proforma	Form B
37	JBVNL		Not received	Not received	Not received	Not received	Not received
38	AVVNL		Not received	Not received	Not received	Not received	Not received
39	JVVNL		Not received	Not received	Not received	Not received	Not received
40	JdVVNL		Not received	Not received	Not received	Not received	Not received
41	MPPKVVCL		Not received	Not received	Not received	Not received	Not received
42	MPPuKVCL		Not received	Not received	Not received	Not received	Not received
43	APSPDCL		Not received	Not received	Not received	Not received	Not received
44	HPSEBL		Not received	Not received	Not received	Not received	Not received

Annexure-III

List of Un-registered DISCOMs on PATNet Portal	
S.NO	Organization Name
1	Southern Power Distribution Company of A.P. Ltd.
2	Madhya Pradesh Poorv Kshetra Vidyut Vitaran Company Ltd.
3	Jammu Kashmir Power Development Department
4	Madhyanchal Vidyut Vitran Nigam Limited
5	Paschimanchal Vidyut Vitran Nigam Ltd
6	Purvanchal Vidyut Vitaran Nigam Limited
7	Kanpur Electricity Supply Company Ltd.
8	North Bihar Power Distribution Company Ltd.
9	South Bihar Power Distribution Company Ltd.



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