

YEAR END REVIEW 2019 – MINISTRY OF POWER

Relevant for: Developmental Issues | Topic: Government policies & interventions for development in various Sectors and issues arising out of their design & implementation incl. Housing

Ministry of Power

Year End Review 2019 – Ministry of Power

Electrification of Approximately 2.6 Crores Households Achieved

3,71,985 Kms of LT Lines and 1,77,676 Kms of HT Lines (11 KV and 33 KV) Erected

Guidelines Issued to all States/UTs to Convert Existing Meters into Smart Ones. more than 9 Lakh Smart Meters Installed.

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Availability of reliable and affordable energy is key for development of any country. Several steps have been taken to reform and strengthen the power sector as a whole including power generation, transmission & distribution. The details of year-long achievements for Ministry of Power are as below :

1. Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA):

- Launched in Sept., 2017 with the objective to achieve universal household electrification by providing last mile connectivity and electricity connections to all remaining un-electrified households in rural and urban areas by 31st March, 2019
- Scheme Outlay: Rs. 16320 Crore including GOI Grant of Rs. 12320 Crore
- GOI Grant released : Rs. 5720 Crore
- As on 31st March, 2019, all States reported electrification of all willing households under 'Pradhan Mantri Sahaj Bijli Har Ghar Yojana' (Saubhagya), except few households in LWE affected Bastar region of Chhattisgarh.
- Electricity connections to 262.84 Lakh households have been released from 11.10.2017 to 31.03.2019.
- Subsequently, seven States reported 19.09 Lakh un-electrified households which were unwilling earlier but are now willing to get electricity connection. These households are being electrified by the concerned States and as on 20.12.2019, electricity connections to 7.42 Lakh Households have been released.

2. Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY):

- 100% villages across the country stands electrified as on 28th April, 2018.

- Total Scheme Outlay is Rs.75893 Crore (DDUGJY: Rs. 43033 crore and RE Component: Rs.32860 Crore)
- Projects with total cost of Rs. 43486 crore have been sanctioned in 32 States/UTs.
- Besides above, additional amount of Rs.14270 crore has been sanctioned for creation of additional infrastructure to support 100% household electrification.

- Gol Grant released (Including RE Component)

Since 2014-15 - Rs.45174 Crore

During 2019-20 (Up to 24.12.19) - Rs.3857 Crore

- Achievements as on 30.11.2019

Rural Electricity Infrastructure (Including additional infrastructure created for household electrification under DDUGJY & Saubhagya)

- 1475 nos. new sub-stations commissioned
- 1658 nos. sub-stations augmented
- 4,92,181nos. distribution transformers installed
- 3,71,985Kms of LT lines and 1,77,676Kms of HT lines (11 KV and 33 KV) erected
- 1,00,318 Kms feeder separation completed
- Metering.

Consumers : 1.27 Crore Nos.

DistributionTransformers : 1,73,559Nos.

Feeders : 11,425 Nos.

3. Integrated Power Development Scheme (IPDS):

- Integrated Power Development Scheme (IPDS) was launched in the year 2014 with an Outlay of Rs. 32,612 crore for improving and augmenting the distribution and sub-transmission systems in Urban areas with a view to improve reliability.
- Under the scheme, till today, system strengthening of sub-transmission and distribution network has been in 371 circles. 560 additional urban Towns have been IT-enabled, and about 30,000 kms of HT/LT lines have been installed across 546 circles in the country. 820 new substations have been constructed, while more than 50,000 Distribution transformers have been installed. For better work flow management in the Utilities, IPDS has also funded Enterprise resource planning (ERP) across several Utilities, out of which implementation has been completed in 6 Utilities.
- Under the older projects subsumed under IPDS, till now, 1287 towns have been IT enabled, and SCADA systems have been completed in 57 towns. System strengthening works have been completed in 1195 towns.
- Significant progress has been made under the scheme in the current financial year with the physical progress of IPDS reaching almost 80% in the system strengthening works. The details of the works accomplished under IPDS in new projects in the current financial year are as follows:

Works Accomplished under IPDS in Current Financial Year

Items		Unit	Achievement * April 2019 – 26 DEC 2019
Substations	<i>New Substation</i>	<i>No.</i>	<i>200</i>
	<i>Capacity enhancement & Additional Transformers</i>	<i>No.</i>	<i>280</i>
Over-head Lines	<i>HT (33 & 11KV)</i>	<i>CKm</i>	<i>5,143</i>
	<i>LT (440 V)</i>	<i>CKm</i>	<i>1,464</i>
Cables	<i>Aerial Bunch / Under Ground</i>	<i>CKm</i>	<i>19,050</i>
Distribution Transformers		<i>No.</i>	<i>10,079</i>
Meters	<i>Smart/ Prepaid</i>	<i>No.</i>	<i>46,806</i>
	<i>Consumer-System</i>	<i>No.</i>	<i>20,533,72</i>
Solar Panels		<i>KWp</i>	<i>12,347</i>

4. Smart Metering:

- In the current financial year, Ministry of Power has issued guidelines to all States to convert all existing consumer meters into Smart meters in prepaid mode. Operation of Smart meters in prepaid mode would allow consumers to pay as per their own financial convenience and electricity consumption requirements.
- EESL, a JV between CPSUs in the power sector, has been providing Smart metering services to various Utilities as per MOUs entered into with them. EESL has also established innovative financing arrangements for the Smart metering projects that would enable them to provide smart metering services to the DISCOMs without requiring any outright CAPEX funding from the States/Utilities. The recoveries against the funding towards smart metering installations would be taken as a monthly annuity from the Utilities over a period of seven to eight years.
- Apart from installations in NDMC for about 50,000 consumers, EESL has also started installation of Smart meters in Haryana, Uttar Pradesh, Bihar and Rajasthan. Out of these States, the maximum installation is in the State of Uttar Pradesh, where more than 7.78 Lakh smart meters have already been deployed across 11 cities.
- More than 9 lakh smart meters have been installed in the state of Uttar Pradesh, Haryana, Bihar, NDMC-Delhi and Andhra Pradesh as detailed below:

Sr. No	Name of State/ DISCOM	Smart Meter installations by EESL
1	NDMC	56,220
2	Uttar Pradesh	7,78,631
3	Haryana	73,933
4	Andhra Pradesh	780
Total		9,09,564

5. Ujwal DISCOM Assurance Yojana (UDAY):

- Ujwal DISCOM Assurance Yojana (UDAY), a scheme for financial and operation turn around of Power Distribution Companies (DISCOMs) was launched by the Government for State owned Distribution Utilities on 20-11-2015 at a time when the outstanding debts and losses of the Distribution utilities had increased to levels that were adversely affecting the viability of the Power and Banking Sectors. The purpose of UDAY was to usher reforms across the Power and coal Sectors through competitive and cooperative federalism to pave the way for 24X7 affordable and reliable Power for all.
- UDAY incorporated a slew of measures, including financial re-engineering measures, as well as operational improvement measures. Exemptions were given to the States to borrow outside the FRBM limits in order to enable them to take over 75% of the outstanding debts of DISCOMs, as existing on 30th November 2015. The scheme had two outcome parameters: (i) AT&C loss reduction to 15%; and (ii) ACS-ARR gap reduction to zero by March 2019. Due to the large scale of problems/ challenges in some States, as well as late joining, some States were given extension to complete the turn around process by one or two years
- UDAY scheme is now in final stages, with majority of states having completed 3 years at the end of FY19. The performance from FY16 to FY18 (based on the data submitted by states on the UDAY portal) shows a consistent improvement in AT&C losses, and reduction in annual losses by almost 50% of pre-UDAY times.
- Significant improvements have been observed in terms of reduction in AT&C loss from 20.7% in FY16 to 18.2% in FY19. The lines losses have come down to below the levels of 20%, due to an increase in billing and collection of revenues, reduction in theft, and reduction in technical losses. States like Bihar, Haryana, Rajasthan, Jammu and Kashmir and Manipur have increased the billing efficiency by ~ 8-10%. In many states, like Assam, Goa, Himachal Pradesh, and Meghalaya, collection efficiency has improved by more than 5%.
- Similarly, the gap between ACS and ARR has reduced from 59 paise per unit in FY16 to 27 paise per unit in FY19 due to cost side optimization measures including control in power purchase costs, and reduction in interest costs, and discipline in revision of tariff filings in most of the states.

- Half yearly trends of performance of UDAY States in FY20 indicate that the AT&C losses are lesser than those in the same period by 62 basis points, though there is a marginal deterioration in the revenue gaps. Variation in pattern of electricity consumption due to extent of heat and rainfall accounts for these variations.
- The Government of India is formulating additional reform frameworks to buttress the efforts under UDAY to achieve a complete financial and operational turn around of State owned Utilities.

6. Hydro

- **16% higher generation (120.7 BU) in 2019-20 (April ~ Nov.) from generation (103.9 BU) in 2018-19 (April ~ Nov.)**
- Mangdechhu hydropower project (**720 MW**) in Bhutan commissioned in August 2019 and inaugurated by Prime Minister on 17.08.2019
- CCEA approval of Rs. 1600 crore in July 2019 for pre-investment activities of NHPC's Dibang Multipurpose (**2880 MW**) project in Arunachal Pradesh, the largest hydropower project to be initiated in the country.
- Revival of Subansiri Lower (**2000 MW**) project in Arunachal Pradesh, the largest under construction hydropower project, which was stalled since December 2011 due to local unrest and NGT case, has been re-started after NGT case was dismissed on 31.07.2019 and local issues were resolved
- Revival of Teesta-VI (**500 MW**) project in Sikkim, which was stalled since December 2012 through NHPC's take over of the project through NCLT bidding.
- On the advice of the Central Govt., the state governments of hydro-rich states of Jammu & Kashmir and Himachal Pradesh have provided relaxations to reduce tariff of hydropower projects:
 - Jammu & Kashmir has deferred free power, exempted water cess for 10 years and have given exemptions from local taxes to Kiru and Kwar Projects.
 - Himachal Pradesh has also deferred free power, agreed for 50% reimbursement of State GST and for booking 1.5% LADF to any head other than project cost, BOOT/ BOOM for 70 years etc, with an objective to bring down hydro tariff below Rs. 4.5 per unit. On these lines, Govt. of Himachal Pradesh signed agreements with 3 CPSUs viz. NTPC, NHPC and SJVN for setting up **10** hydropower projects of **2917 MW** on Chenab river entailing an investment of about Rs. 28,000 crore.
- Guidelines being prepared for operationalising the following measures to promote hydropower sector approved by the Union Cabinet on 07.03.2019 :
 - Declaring Large Hydropower Projects (>25 MW) as Renewable Energy
 - Hydropower Purchase Obligation(HPO)
 - Tariff rationalisation measures
 - Budgetary support for flood moderation component &
 - Budgetary support for enabling infrastructure like bridges, roads etc.

The saleability issues facing hydropower would be addressed through HPO, tariff

rationalisation measures and budgetary support for flood moderation and enabling infrastructure like roads, bridges etc. Large Hydropower projects (>25 MW) would also become eligible for green funding after being categorised as renewable energy source.

7. One Nation-One Grid-One Frequency:

- Expansion of ISTS transmission lines (220 kV and above) by 14,546 km
- Transformation capacity addition of ISTS network by 74,910 MVA
- Inter-Regional Transfer capacity of addition of 5,700 MW

8. MoP has approved implementation of ISTS transmission projects worth about Rs. 15,186 Cr under RTM/TBCB mode.

9. Setting up of Renewable Energy Management Centre (REMC):

Eight REMCs have been commissioned in the States of Andhra Pradesh, Karnataka, Tamilnadu, Madhya Pradesh, Maharashtra and Gujarat and Southern Regional Load Despatch Centre and Western Regional Load Centre during 2019. These REMCs would help in Grid integration of Renewable Energy by taking care of intermittency of RE generation and, facilitating real time forecasting, scheduling and real time tracking of Renewable Energy Generation.

10. Restoration work during Odisha cyclone:

Provided support by way of manpower, material and other support to the tune of Rs.11.48 crore for early restoration of transmission lines/ power system in the state of Odisha, which was badly affected by the cyclone 'Fani'

11. Important works done in Jammu & Kashmir:

12. 220 kV Transmission Line/ System from Srinagar to Leh, via Drass and Kargil was commissioned in February, 2019, but due to collapse of a few towers during the avalanche was not fully functional. This was restored and made fully operational. Restoration of Kishenpur-New Wanpoh Transmission lines in J&K, affected by the recent snow storm in Kashmir, was completed under adverse weather conditions and difficult terrain MoU signed and Work commenced in two CSR Projects in J&K at an estimated cost of Rs.5.78 crore Improvement/ upgradation of inner link road at Wagoora. Upgradation of 10 Army Goodwill Schools in J&K.

13. Srinagar-Drass-Kargil-Khalsti-Leh transmission system:

On 3rd February, 2019, Shri Narendra Modi, Prime Minister of India dedicated the 220kV Srinagar-Drass-Kargil-Khalsti-Leh transmission system aimed at powering Kargil and Ladakh region of Jammu & Kashmir thereby, connecting these regions of India to the National Grid.

13. MAHARATNA Status:

Power Grid Corporation of India Limited (POWERGRID) has been conferred with the coveted Maharatna Status by the Government of India on 23.10.2019.

14. Power Rail Koyla Availability through Supply Harmony (PRAKASH) Portal:

PRAKASH portal was launched on 03.10.2019. Benefits of Portal to the Stake-holders: On a single platform, the following information will be available:

- *Coal company: Stocks and the coal requirement at power stations*

- *Indian Railways: Actual coal available at siding.*
- *Power stations can plan future schedule by knowing rakes in pipe line and expected time of receipt*
- *MoP/ MoC/Ministry of Railways/CEA/POSOCO can review the overall availability of thermal power in different regions and coal available for the same*

Information available on portal:

- *Summary Dashboard: Summary of Generation, Coal receipt for power plants, Dispatch by Coal Company and Rake placement by Railways for month and financial year.*
- *Geo Status: Summary of power plant and siding details on Map of India.*
- *Reports: Following report will be available*
- *Daily Power Plant Status: Report gives Station data related to power generation, coal receipt, consumption and stock.*
- *Plant Exception Report: Report gives Station list having given stock on particular date.*
- *Periodic Power Plant Status: Report gives station data related to power generation, coal receipt, consumption and stock for selected period. Coal materialization based on dispatch by Coal Company is available.*
- *Coal Dispatch Report: Report gives subsidiary wise coal dispatch for particular period. It also gives source wise details of dispatch. Dispatch trend is also visible.*

15. Transport Sector:

"Charging Infrastructure for Electric Vehicles - Guidelines and Standards" were issued on 14.12.2018 which were subsequently revised on 01.10.2019.

- Public Charging Stations Installed by NTPC/EESL till December 2019: NTPC : 57 EESL : 65

16. Energy Efficiency in Industry Sector:

- After the completion of PAT 2 Cycle involving 621 designated consumers from 11 Sectors, BEE has undertaken monitoring and verification process. It is estimated that these 621 large consumers would achieve energy saving target of 9.5 million tonnes of oil equivalent annually which is equivalent to reduction of 35 million tonnes CO₂ emissions for the country.
- National conclave on Enhancing Energy Efficiency in MSME's held on 23-24th September, 2019. Two new numbers of Energy Management Centres established in 2019. Energy Conservation Guidelines for MSME sector was published.

17. Appliances Sector:

- Energy Consumption standards for Air conditioners have been notified vide S.O. No. 3897 (E) dated 30th October, 2019 for further improvement with effect from 1st January, 2021. As part of the notification, it will be mandatory for the Air Conditioner manufacturers to incorporate "24-degree default setting" in their AC models from next year.
- The Energy Consumption standards for LED Lamps have been revised vide S.O. No.3631(E) dated 09.10.2019.
- Voluntary Star Labelling of Solar Water Heater to be launched on 14th December, 2019 during National Energy Conservation Awards Day.

18. Building Sector:

- ECBC has been notified by 15 States /UT till November, 2019.
- ECO-NIWAS Samhita (Energy Conservation Building Code for Residential Buildings) has been launched in December, 2018 and Star labelling of Homes was launched in February, 2019.
- Star-rating of commercial building is developed for office, BPO, shopping mall and hospitals. 33 nos. of commercial buildings were awarded BEE star rating in 2019.
- An International Building Energy Conference – ANGAN (Augmenting Nature by Green Affordable New-habitat) with support from GIZ under IGEN (Indo-German Energy Program) organized on 9-11, September, 2019.
- “ECO-NIWAS” Portal (www.econiwass.com) for promoting energy efficiency in residential building sector launched to benefit construction of energy efficient homes.

19. National Energy Conservation Awards and Painting Competition:

- Bureau of Energy Efficiency has been organizing school, state and national level painting competitions across the country every year. During 2019, over 84 lakhs students participated in these competitions and awards are to be given to the winners during the occasion of National Energy Conservation Day i.e. 14th December, 2019.
- On this occasion 33 industrial units from various sectors were given awards for their excellent performance in energy efficiency. Altogether 355 units and establishments across the country participated in this year’s National Awards Programme and a total electrical saving of 10566 Million units and thermal Savings of about 2.40 million toe has been reported. This has resulted in CO₂ emission reduction of 10.5 million tonnes.

20. North Eastern states:

- Over 1 crore LED bulbs, 93,900 LED tube lights and 3.65 lakh energy efficient fans distributed under UJALA scheme.
- Over 1 lakh LED street lights installed under SLNP.

21. Unnat Jyoti by Affordable LEDs for All (UJALA):

- Over 36.10 crore LED bulbs, 71.61 lakh LED tube lights and 23.10 lakh energy efficient fans distributed across the country.
- This has resulted in estimated energy savings of 47 billion kWh per year with avoided peak demand of 9,590 MW, estimated GHG emission reduction of 38 million t CO₂ per year and estimated cost saving of INR 18,935 crore per year in electricity bills of consumers.

22. Street Lighting National Programme (SLNP):

- Over 1 crore energy efficient LED streetlights have been installed across the country.
- This has resulted in estimated energy savings of 6.9 billion kWh per year with avoided peak demand of 1,152 MW, estimated GHG emission reduction of 4.76 million t CO₂ per year and estimated annual cost saving of INR 2,686 crore in electricity bills of Municipalities.

23. National E-Mobility Programme:

Procurement process of 10,000 e-cars concluded. The price discovered for e-cars is 25 % less than similar cars in market. Till date, 1510 e-cars deployed/under deployment for Government offices and 470 Captive Chargers (300 AC & 170 DC) commissioned in these offices.

24. Electric Vehicles Charging Infrastructure:

EESL is also installing Public Charging Stations to promote Electric vehicles. Till date, 65 nos. of Public Charging Stations (PCS) have been commissioned in New Delhi Municipal Council (NDMC) area. MoUs signed with multiple stakeholders across the country.

25. Building Energy Efficiency Programme (BEEP):

Building energy efficiency project has been completed in 10,310 buildings including Railway stations and Airports.

26. Agricultural Demand Side Management (AgDSM):

Over 73,600 energy efficient pumps have been installed in Andhra Pradesh and Uttar Pradesh.

27. Decentralized solar power plants:

Decentralized solar power plant of 60 MW cumulative capacity commissioned in the state of Maharashtra.

28. Atal Jyoti Yojana (AJAY) and Solar Study Lamp scheme:

Over 1.48 lakh Solar LED Street Lights commissioned in rural areas under AJAY and over 59.18 lakh Solar Study Lamps distributed to school going students under Solar Study Lamp scheme.

29. Ensuring Sustainability of Power Sector- Addressing issue of Payment delays by Discoms:

- The Central Government has taken a major step to address the problem of mounting outstanding dues towards Generating Companies by the Distribution Companies by issuing an Order on 28th June, 2019 regarding Opening and maintaining of adequate Letter of Credit (LC) as Payment Security Mechanism under Power Purchase Agreements by Distribution Licensees. This mechanism has been made effective w.e.f 1st August, 2019.
- Under this mechanism the 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).
- The measure is expected to improve payments to the power generators and improve sustainability in the Power Sector.

30. Measures towards reduction of cost of power to the consumer:

- In order to reduce the cost of power procured by the Distribution Licensees, a new system has been put in place where for Inter State Generating Stations (ISGS), the merit order

dispatch at national level shall be followed. Hence the cheapest generation will be available at the maximum level. This is a step where for ISGS, the State level merit order has been shifted to National level merit order. This mechanism has resulted in savings of approximately Rs 3 Crores every day and has a potential of saving Rs 1200 Crores in a year towards power procurement cost of Distribution licensees.

- An Order was issued by Ministry of Power on 15.11.2019 on “Reduction in cost of power due to pre-payment in entire value chain of power sector”. Electricity Regulatory Commissions are requested to take necessary actions in reduction of cost due to pre payment as in such cases the working capital requirements get reduced. This initiative reduces the cost of power to the consumer.

31. Promotion of Renewable Energy:

- In Order to promote the capacity addition of Solar and Wind Power Projects, the waiver available for use of Inter State Transmission System (ISTS transmission charges and losses) has been extended for use of Inter State Transmission System (ISTS) for transmission of electricity by Solar or Wind power projects commissioned till December 2022. The waiver shall be applicable for the twenty five years from the commissioning of such projects.
- Clarification on Orders related to Renewable Purchase Obligation for Captive Power Plants (CPP) has been issued on 1st February 2019.

32. Allowing use of linkage coal for short term power procurement and power exchanges:

- For the first time, linkage coal was allowed to Power Plants for selling power in the Day Ahead Market (DAM) through power exchanges or in short term through a transparent bidding process through Discovery of Efficient Energy Price (DEEP) portal. A methodology in this regard was issued by Ministry of Power on 2nd December 2019.
- Till now the Coal Linkage was granted to power generating stations only for selling power through long term and medium term power purchase agreements. This move shall de-stress the Power Generating Stations which have not secured long term or medium term power purchase agreements.

33. Revival of Stressed Assets : Pilot Scheme II:

- In our endeavour for revival of the stressed assets, a **Pilot Scheme** was introduced by MOP in April 2018 to facilitate procurement of aggregated power of 2500 MW for 3 (three) years (covered under medium term) from the generating companies having coal based Power Plants which are already commissioned without having a power purchase agreement for the quantum of power the Bidder is willing to bid. Based on the experience gained in the Pilot Scheme, **Pilot Scheme –II** for procurement of another 2500 MW for the period of three years under medium term was notified on 01.02.2019.

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