

Minutes of the 1st meeting of 19th Electric Power Survey Committee (EPSC) held on 27th July, 2015 at New Delhi.

The first meeting of 19th Electric Power Survey Committee (EPSC) was held at NRPC, New Delhi on 27th July, 2015 under the Chairmanship of Chairperson, CEA and Chairman of 19th EPSC to deliberate on issues and aspects related to 19th Electric Power Survey of the country. The meeting was attended by members/ representatives of the 19th EPSC. List of participants is given at Annex. I.

Chairperson, CEA & Chairman 19th EPSC, welcomed the members/participants of the 19th EPSC and stated that in fulfilment of CEA's obligation under Section 3(4) of Electricity Act, 2003, Central Electricity Authority (CEA) prepares National Electricity Plan in accordance with National Electricity Policy and notifies such plan once in Five Years. The forecast of electricity demand provides basic input for preparation of the National Electricity Plan. The electricity demand forecast also serves as a tool for planning capacity addition by various utilities and stakeholders and is a guideline to plan growth of industries and infrastructural development.

He said that the 18th EPS of the country was undertaken by CEA which covered year-wise electricity demand forecast for 12th and 13th Five Year Plans and long term forecast for 14th and 15th Five Year Plans. Partial End Use Methodology (PEUM), which is a proven method for demand forecasting had been used for carrying out the 18th EPS forecast. The electricity demand forecasts on all-India level were validated by econometric method and the work was carried out by Indian Statistical Institute (ISI). The forecast of 18th EPS provided basic inputs for preparation of National Electricity Plan brought out by CEA in 2012.

The 18th EPS Report was brought out in four volumes as given below:-

Volume I	-	All India 18 th EPS /Region /State/UT wise
Volume II	-	Electric Power Survey of Mega Cities
Volume III	-	Electric Power Survey of NCR, Delhi
Volume IV	-	18 th EPS of India (by econometric model)

Chairperson, CEA, further mentioned that as three years of 12th Five Year Plan have already elapsed, task of formulation of the next National Electricity Plan has been taken up by CEA for which exercise of electricity demand forecast needs to be carried out. For carrying out the demand forecast exercise, the 19th EPSC has been constituted vide order CEA/Plg/DMLF/PS/2/19EPS/2014 dated: 11.06.2015 with the following terms of reference:

- i. To forecast the year- wise electricity demand projection for each State/ UT, region and all-India in detail upto the end of 13th Five Year Plan.
- ii. To project the perspective year wise electricity demand for 14th Five Year Plan period (2021-22 to 2026-27) and terminal years of 15th and 16th Five Year Plan i.e. year 2031-32 and 2036-37 respectively.

The committee has to submit its Report in a period of 15 months. In order to elicit views of the various stakeholders and experts in the Power Sector in connection with carrying out the 19th Electric Power Survey (EPS) exercise, a Brain Storming Session was convened by CEA on 29th May, 2015 at New Delhi. Experts/representatives from various Utilities participated in the brain storming Session.

The 19th EPS Committee would also study category wise consumption pattern of various consumption categories and assess perspective T&D losses of different States/UTs. He mentioned that the objective of the meeting was to deliberate on various aspects pertaining to methodology to be adopted for the demand forecast exercise and action plan for carrying out 19th EPS and elicit the views/suggestions of representatives/ members of the Committee. He stated that the Partial End Use Method (PEUM) adopted for carrying out 18th EPS has given reasonably accurate results in the initial years of forecast, with variations in the later years. As far as the variations are concerned, peak demand figures have more variations as compared to energy forecast. The Econometric Model was considered for validation of results of PEUM. The projections of energy using Econometric Model have experienced more variations as compared to PEUM Methodology. He indicated that national vision of reduction in T&D losses, load management techniques, impact of adoption of various steps/measures for improvement of efficiency, Power For All (PFA) and increasing the national per capita consumption of electrical energy needs to be suitably factored in the electricity demand forecasts.

Chairperson, CEA, broadly outlined the issues to be deliberated upon by the EPSC i.e. Methodology to be adopted for demand forecasts: Partial end use (as in 18th EPS), econometric method or any other methodology; granularity of forecasts: seasonal forecast DISCOM- wise, State/UT wise, timely furnishing of input data in the prescribed format (enclosed) by the concerned agencies, effect of Power for All (24x7), effect of growth of Renewable Energy Sources (RES) in the state, EPS of Mega cities, EPS of NCR and effect of Make in India/Dedicated Freight Corridor (DFC)/Smart cities etc. He said that the Power for All (PFA) documents for some of the states/UT are ready and documents for remaining States/UTs would be finalised by December, 2015. The nomination of Nodal Officer from each State/UT is to be done by 5th August, 2015. The nodal Officer would participate in the deliberations of the 19th EPSC, would co-ordinate with various agencies in the State/UT and would be responsible for furnishing data to CEA in the prescribed formats by 21st August, 2015. He requested all participants to give specific views/suggestions and to adhere to the time frame for appointing nodal officer and furnishing of data in the prescribed formats. He emphasised that the first draft of the Report be ready by February, 2016. The EPS of Mega cities and EPS of NCR would be taken up after completion of EPS of States/UTs, Region and all-India for 13th plan and beyond.

Thereafter a presentation was made by Chief Engineer (PS&LF), CEA & Member Secretary of 19th EPSC. In the presentation, Member Secretary of 19th EPSC outlined the constitution of 19th EPSC and the Terms of Reference of the Committee, suggestions of brainstorming session & points to be considered for deliberation viz. the methodology to be adopted for Demand Forecast (time series analysis, End-Use Method, econometric method etc.), incorporation of measures for energy conservation and energy efficiency, Dedicated Freight Corridor (DFC), 24x7 Power for All (PFA), Make in India programme, Penetration of roof-top solar, working out T&D losses from AT&C losses etc. She also emphasised on seasonality, definition of seasons, improving granularity of forecasts, DISCOM wise electricity demand forecast or state-wise forecasts and invited views/suggestions of Members/participants on how these could be adopted in the 19th EPS forecasts. She also requested the members to adhere to the timeline of nomination of nodal officers and furnishing data to CEA.

Member Secretary of 19th EPSC also gave a comparison between the projections of 18th EPS vs actual peak demand and energy requirement. It was indicated that deviation in energy requirements upto the year 2014-15 was in the range of up to 8.5% whereas for the peak demand, the deviation was in the range of up to 13% on all-India basis. She emphasised that

availability of accurate input data was vital for carrying out the forecasts and the responsibility of furnishing accurate data lies with the States/UTs. Proper analysis of system load factor and incorporation of the same in working out the peak demand forecast was very essential.

Member Secretary requested all the members of 19th EPSC to designate one nodal officer from each state/UT, not below the rank of Chief Engineer, and intimate the details to CEA. These nodal officers would be responsible to participate in the deliberations of 19th EPSC and would also be responsible to co-ordinate and collect data from DISCOM's/licensees in their respective states and provide the same to CEA. The nodal Officers are to be nominated by 5th August, 2015. Data is to be furnished to CEA in the prescribed formats by 21st August, 2015. The Regional Power Survey Offices (RPSOs) of CEA would also coordinate with the respective States/TRANSCOs to collect data and bring out a preliminary forecast.

Member Secretary also invited suggestions on co-opting experts as members of 19th EPSC, identification of states for econometric modeling, identification of cities for which demand forecast is to be undertaken separately and time frame for taking up forecast of NCR/Cities.

After the presentation, Chairman, 19th EPSC, invited the views/suggestions of the Members of CEA followed by views/suggestions of members/representatives from various States/UT's. The views/suggestions/ observations are outlined below:-

Member (Thermal), CEA

Electricity demand forecast is a huge and detailed exercise and has a bearing on the infrastructural planning activities. He requested the State utilities to furnish the requisite data/information within the specified timeline so that the study can be completed as per schedule. He also stressed that several new things, which were not considered in 18th EPS, need to be factored suitably in 19th EPS forecasts.

Member (E&C), CEA

Demand forecast made by CEA in the previous surveys and 18th EPS have been overestimated. In 19th EPS, we have to concentrate on sectoral level projections, energy not served, wide penetration of star labelled products and how the seasonality can be factored in the 19th EPS studies. He also raised the issue of how good it would be to carry out econometric modelling for the DISCOM's as economic data might not be available for individual DISCOM's and requested the Members/participants to share their views on the same.

Member (Power System), CEA

Electricity demand forecast is very important as it is the backbone for planning of generation, transmission, distribution and overall infrastructure of the country. Effect of 24x7 Power For All (PFA), massive programme of roof-top solar, increased use of LED bulbs, advent of star labelled and energy efficient equipments needs to be suitably factored in the study to have a reliable Electric Power Survey Report.

He opined that the methodology adopted for electricity demand forecast by CEA may not be the cause of deviation in the electricity demand forecasts made by CEA. Methodology is totally dependent on input data. Variation may be due to inaccurate input data. The accuracy of forecast is dependent on reliable input data which lies in the domain of States/UTs. There was a very small gap between the 18th EPS projections viz.-a viz actual during the first 3

years and after that the gap has increased which is a matter of concern and how this gap could be lowered in the 19th EPS needs to be looked into. In this regard, he requested co-operation of all states/UTs for timely submission of accurate data to CEA.

Adviser (Coal), Ministry of Coal

Enquired about the variation of 18th EPS projections with actual for the coal sector. Chairperson, CEA, informed that the demand of coal sector was included in the industrial category and separate projection for coal sector was not done in the 18th EPS.

Director General (BEE)

DG, Bureau of Energy Efficiency (BEE), opined that the deviations in the EPS projections and actual energy demand may be due to various factors including calendar effect viz. holidays, week-ends, effect of weather, economic and demographic effect etc. The use of electrical/electronic gadgets is increasing in every house. Buyers of electricity are available but the distribution infrastructure is inadequate in most of the cases. Load shedding is also on account of poor distribution infrastructure and could be one reason for lower peak and energy demands.

The shape of the load curve generally does not change from year to year. For seasonality, we can use the data available with SLDCs. We need to study past data of weather, calendar-effect, load shedding by DISCOM's and work out the trend as to how the changes have occurred and same has to be suitably factored in the 19th EPS study. He emphasised on scenario based forecasts. He also emphasised on load research study. He further stressed that the load forecast exercise should be carried out in a professional way. DG (BEE) also agreed to provide the load research study for the 35 large utilities to CEA.

Distinguished Fellow (TERI)

Load forecasting is an important exercise for the State and Central planning agencies. The 19th EPS forecasts should be more granular and should also include seasonal forecasts. Seasonality is also important due to inclusion of renewable sources of electricity generation on a large scale. He stressed that accurate data for the past 10-15 years is required for undertaking the demand forecast exercise. Demand Response, effect of TOD (Time of the Day) are important factors to be considered in the forecasts. TERI has carried out the load research study of 35 major utilities and the same would be available in 3-4 months.

Himachal Pradesh

Deviations of the 18th EPS forecasts vs actual needs to be analysed to find out the states which have large deviations. He stated that in some of the countries like UK, the deviation in forecast vs actual is of the order of 0.1% to 1%. Theft, T&D losses, losses in free supply to the farmers, needs to be analysed and suitably incorporated in the demand forecast. He also suggested that one member from IMD should also be included in the 19th EPSC.

SLDCs are directly connected with the power supply data and head of SLDCs and DISCOMs should also be included in the 19th EPSC as member. He also emphasised that heads of SLDC, DISCOMs and state regulators should be made equally responsible while carrying out the demand forecast of the States. Chairperson, CEA and Chairman of the 19th EPSC informed that we cannot have multiple representation in the 19th EPSC from one State/UT. There will be one member from each State (from State TRANSCO) who has to co-ordinate within the State/UT. DISCOMs are welcome to participate in the deliberations but there has to be only one nodal officer from each State/UT.

DVC

DVC has at present done planning for the next Five Year Plan i.e. till the year 2021-22. The requisite data to be filled up in the formats beyond 2021-22 may not be available with DVC. It was requested that power being supplied/proposed to be supplied by DVC in its command area of Bihar and Jharkhand needs to be indicated separately.

Jammu & Kashmir

Energy not served during past years should be factored in the 19th EPS forecasts of Jammu & Kashmir. There was huge gap in the projections of the 18th EPS and actual in case of Jammu & Kashmir. He enquired whether the proposed legal framework of separation of carriage from content will have any impact on the demand forecast. He also enquired as to how the technical losses could be separated from AT&C losses.

Reliance Infra

Emphasised the importance of proper demand forecast and stated that proper forecast will help in proper planning of infrastructure. The forecast needs to be done on DISCOM basis. DISCOM's will provide data of past 10-15 years and there should be check and balance at DISCOM level for validation of data. Typical load patterns should also be included in the 19th EPS Report.

Madhya Pradesh

In Madhya Pradesh, electricity demand forecast is being done by M. P. Power Management Company. Madhya Pradesh had provided separate formats for rural and urban loads at the time of 18th EPS forecasts. He enquired whether DISCOMs need to provide data separately for rural and urban areas. It was informed that majority of the states do not have past data for rural and urban areas separately, hence, separate data for rural and urban areas need not be provided.

In MP, agriculture supply accounts for 39% of the total load and agriculture supply is given in two shifts of 10 hours each. This needs to be suitably factored in the 19th EPS forecasts for working out the peak demand.

Andhra Pradesh

The 24x7 Power for All (PFA) document which is a joint initiative of Centre and State has already been prepared for Andhra Pradesh and the same is being implemented in the state. Demand forecasts of new cities needs to be considered like the new capital city Amaravati in Andhra Pradesh.

NHPC

DISCOM's need to upgrade their infrastructure and estimate the power which they can deliver. This will affect the demand forecasts. Different weather conditions in different regions, festive seasons etc. and diversity in demand of different states/regions needs to be factored in the 19th EPS forecasts.

Meghalaya

Open access customers are coming in the state and methodology to factor in the load of open access customers needs to be arrived at.

KSEB Ltd.

Seasonal variations should also be considered in the forecast and the forecast should be made as accurate as possible.

Ministry of Water Resources (Central Water Commission)

Under the programme Pradhan Mantri Krishi Sinchayee Yojana, water is to be given to all the fields. Drip & sprinklers would be used for the purpose and hence, the energy requirement of these drips and sprinklers would need to be included in the forecasts as they would be of sizeable number. Under the Namami Gange programme, cleaning of rivers has been undertaken. Electricity requirement of effluent treatment plants needs to be taken care of. Likely impact of similar other schemes also needs to be factored in the forecasts.

Odisha Power Transmission Co. Ltd.

Odisha State is prone to cyclones. Representative of Odisha Power Transmission Co. enquired as to how the weather effects like the effect of cyclone could be factored in the forecast. Effect of make in India programme and 24X7 Power for All (PFA) should be suitably considered in the electricity demand forecast.

CESC Ltd.

The same forecasting methodology as adopted for 18th EPS forecasts could be adopted for the 19th EPS forecasts. More efforts should be made on analysing the reasons for variations of 18th EPS forecast viz- a- viz the actual and corrective measures be taken in the 19th EPS forecasts. State based and category based studies should be conducted to find out the past trends. The output of the EPS will be utilised in the planning of Generation, Transmission and Distribution system in the country. There is trend of over estimation in the sector. Regional and seasonal variations needs to be captured in the demand forecast so that the country does not have over capacity in generation and transmission.

Noida Power Company

Noida Power Company supplies a load of about 350 MW. It caters to rural, urban and industrial loads. The representatives opined that Load Research is very important and should be accounted for in the forecasts. Consumption and hence forecast would depend on the price of electricity and needs to be suitably factored in. DSM measures would also affect the demand forecast. Improved reliability of distribution network would bring in latent demand. These factors need to be suitably captured in the demand forecast.

Bihar

Less electricity demand is experienced in the State at present due to transmission constraints. Once the transmission constraints are removed, the electricity demand would increase substantially in the State. The demand would also increase on account of various initiatives taken by the Government like the one for supply of electricity for agriculture. It was suggested that Mid Term Appraisal of demand forecasts should also be done. The PFA document for Bihar was already ready and demand should take into account the projections made in the document.

Andaman & Nicobar Islands

Electricity demand is mostly met through DG sets. Projection of electricity demand depends upon the developmental programmes of other sectors.

Gujarat

It was informed that there are four Government DISCOM's and four private licensees in Gujarat. On a query whether Private licensees can submit data directly to CEA, it was informed that data has to be submitted through Nodal Officer (representative of TRANSCO) so that the data is validated by the state and the state is aware of the developmental activities of each DISCOM /licensees.

Goa

There is not much difference in 18th EPS demand projections and actual in respect of Goa and exact demand forecast is a very difficult task. Representative of Goa informed that as Assembly session was going on in Goa, the deadline for submission of data may be extended. He informed that load research exercise has already been carried out in Goa.

Tata Power (Delhi)

Tata power has both restricted and un-restricted demand. Load shedding data is available and the same would be furnished to CEA. In addition to peak load forecast, forecast of minimum load should also be done in the 19th EPS forecasts.

Delhi

The state is going through Transient Oriented Development (ToD). Several Rapid Rail Corridors are planned and out of these three have been prioritised and the electricity demand of these needs to be suitably taken into account. Similarly, regularisation of colonies would also lead to increase in electricity demand. This also needs to be considered in the demand forecasts.

Railways

The new class of locomotives being manufactured nowadays are energy efficient and there is considerable energy saving in each locomotive (of the order of 20 %). There has been very little increase in electricity consumption of non-traction loads on account of efficient appliances and the energy conservation measures adopted. Electrification of non-electrified routes and Dedicated Freight Corridors would lead to increase in electricity demand and the same needs to be included in the demand forecasts.

Niti Aayog

Data available with Niti Aayog would be shared with CEA as required.

Haryana

It was informed that DISCOM's in Haryana adopt the average of max model for demand forecasting. Chairperson, CEA and Chairman of 19th EPSC informed that the methodology of demand forecast was debatable.

Ms. Ritu Mathur, TERI

TERI also carries out electricity demand forecast and TERI would extend all possible help to CEA in the demand forecast exercise.

Tamil Nadu

Tamil Nadu uses MATLAB package for short term electricity demand forecasts. In TN there is 100% electrification of Rural Feeders. Impact of R-APDRP and 24x7 Power for all (PFA) needs to be factored in the EPS forecasts.

Chief Engineer, IRP Division, CEA

The new factors like make in India, 24X7 Power For All (PFA), roof-top solar etc. needs to be separately factored as scenarios in the 19th EPS Report. Electricity Demand could be indicated without considering the benefits of RES towards meeting the demand. Benefits of RES may be considered as a scenario.

Shri Ramesh Kumar, Retired Chief Engineer, CEA

A combination of Partial End Use Method and Econometric Modelling should be adopted for the 19th EPS forecasts. Effect of Climate Change should be suitably factored in the 19th EPS forecasts. He suggested that representative of MoEF be co-opted as a Member of the 19th EPSC for providing climate change data.

Ms. Pushpa Thottan, Economic Advisor, CEA

Make in India initiative should be factored in as a scenario in the demand forecasts. It should not be included in the main forecast.

Shri A. K. Rajput, Director, CEA

Digital India initiative, increased standard of living (increase in number of PC, TV, Refrigerator and Air Conditioners) in each house would lead to increase in electricity demand. Similarly increase in street lights, public health services would also lead to increase in electricity demand. Effect of solar pumps for pumping water also needs to be suitably accounted for.

Members/Representatives from various States/UTs assured that nomination of nodal officer and furnishing of data would be done within stipulated time. Some states have already nominated nodal officer and the same would be communicated to CEA shortly.

Chairman, 19th EPSC, requested the states to also furnish the assumptions made by each State in their demand forecast. The broad assumptions would be included in the 19th EPS Report.

Member (E&C), CEA, stated that the states to be considered for econometric modelling and cities for which separate forecasts to be carried out would be decided later on by the members of 19th EPSC, as the concerned states would have to furnish the requisite data of the states/cities for which these studies would be carried out.

Due to the demographic position of states in various regions of the country, the definition of seasons and months comprising a particular season varies substantially from one state to another. Hence, seasons cannot be defined uniformly across the country. So, it was decided that annual forecasts would be carried out.

Conclusions and action plan:

- Nodal Officer of the rank of Chief Engineer or equivalent (from TRANSCO), to be nominated by each State/UT and details furnished to CEA by 5th August, 2015.
- DISCOMs can also participate in the deliberations of 19th EPSC but the requested inputs/data for 19th EPS be furnished to the nodal officer from concerned State.
- Nodal officer must participate in the deliberations of 19th EPSC and would be responsible for coordinating and collecting data from DISCOM's/licensees in their respective states/UTs and providing the same to CEA
- Data to be furnished to CEA (by the nodal Officer) in the prescribed formats by 21st August, 2015.

- Assumptions made by each State in their demand forecast exercise to be specifically mentioned.
- Annual electricity demand forecasts would be carried out.
- Once data is received from States/UTs and preliminary forecasts made, the same would be discussed with the States/UTs.
- Report of Load Research studies being carried out by BEE to be furnished to CEA by respective State/UT.
- BEE to furnish energy conservation programmes and effect of the same on electricity demand for the next 10-15 years.
- Load curve of past 4-5 years for each State/UT to be furnished to CEA by respective State/UT.
- Co-opting members from IMD, MoEF, MNRE and other agencies.
- The states/UTs to be considered for econometric modelling and cities for which separate forecasts to be carried out would be decided later on by the members of 19th EPSC.
- Draft Report (using Partial end use method) covering demand forecasts of each State/UT, region and all-India to be ready by February, 2016.

The meeting ended with vote of thanks to the Chair.

List of Participants of the First Meeting of 19th EPSC held on 27th July 2015 at New Delhi

S. No.	Name (Shri./ Smt.)	Designation	Organization	Mobile No	E-mail
1.	Major Singh	Chairperson	CEA		
2.	T.K. Barai	Member (Thermal)	CEA		
3.	S. D. Dubey	Member (Power System)	CEA		
4.	Somit Dasgupta	Member (E&C)	CEA		
5.	P. D. Siwal	Secretary	CEA		
6.	Anjuli Chandra	Chief Engineer (PS&LF) & Member Secretary of 19 th EPSC	CEA	9312212314	pslfcea@yahoo.com
7.	P.S. Mhaske	Member Secretary	NRPC, CEA	9968667741	ms-nrpc@nic.in
8.	Joydeb Bandyopadhyay	Chief Engineer	CEA	9868921190	joydev042000@yahoo.co.in, ceirpcea@yahoo.com
9.	Ramesh Kumar	Retired Chief Engineer	CEA	8826266559	r_kumar2@hotmail.com
10.	Pushpa Thottan	Economic Advisor	CEA		pushpathottan@nic.in

S. No.	Name (Shri./ Smt.)	Designation	Organization	Mobile No	E-mail
11.	Praveen Gupta	Director	CEA	011-26732250	pranika30@yahoo.com
12.	Seema Saxena	Director	CEA	9810531680	ssaxena.cea@nic.in
13.	Vivek Goel	Director	CEA	9968257805	dpd_cea@rediffmail.com
14.	Vijay Menghani	Director	CEA	9999035484	vmenghani@nic.in
15.	A.K. Rajput	Director	CEA	011-26732660	rajput.ashok@gmail.com
16.	Ishan Sharan	Director	CEA	9868021344	sharan_ishan@yahoo.com
17.	Sovaran Singh	Dy. Director	CEA	9868368945	sovaransingh@nic.in
18.	P. Esther Kamala	Dy. Director	CEA	9899029857	prasanth_esther@yahoo.com
19.	K.K. Chauhan	Dy. Director,	CEA, RPSO (North)	9811899762	ddtelecom2014@gmail.com
20.	N. Manjunatha	Dy. Director	CEA, RPSO (South), Bangalore	09448790396	n_manjunatha@mailcity.com
21.	Swapan Roy	Dy. Director	CEA, RPSO (East), Kolkata	09433120573	rpsokolkata@gmail.com
22.	J.K. Rathod	Dy. Director	CEA, RPSO (West), Mumbai	09987910799	rpso-west-mop@nic.in
23.	Bhupinder Singh	Ex. Director	CEA	9868123939	bsvilkh@hotmail.com
24.	M. V. Subba Reddy	Asstt. Director	CEA	7065200524	moka_cea@nic.in
25.	Himalaya Shubham	Asstt. Director	CEA, RPSO (North)	9871116892	shubhamhimalaya@nic.in
26.	D.N. Prasad	Adviser	M/o Coal	011-23386347	advp.moc@nic.in
27.	Sudhir Garg	ED/Energy Management	Ministry of Railways	9717600118	sugarg55@yahoo.com edeem@rb.rainet.gov.in

S. No.	Name (Shri./ Smt.)	Designation	Organization	Mobile No	E-mail
28.	Dr. Ajay Mathur	DG	BEE		dg-bee@nic.in
29.	K. Ramanathan	Distinguished Fellow	TERI	09811392237	krnathan@teri.res.in
30.	Ritu Mathur	Director	TERI	09873006653	ritum@teri.res.in
31.	Ram Chandra	Asstt. GM (CTU-Plg)	Power Grid Corporation	9910378128	ramachand@powergridindia.com
32.	B. Pan	CE (SLDC)	DVC	09903247102	brahmananda.pan@dvc.gov.in
33.	B.A. Dar	SE (P&D)	JKPDD	09419034877	darbashir@gmail.com
34.	A.K. Alung	GM (Planning)	MPPMCL, Jabalpur	09425805241	stateplanningcell@gmail.com
35.	Yogesh Gaur	Manager (Planning)	MPPMCL, Jabalpur	09425188841	stateplanningcell@gmail.com
36.	M. M. Dhoke	SE (P&D)	MPPTCL, Jabalpur	09425805237	ce.pnd@mptransco.nic.in
37.	Smt. B.V. Shanthi Seshu	E.D./ HRD & Plg.	AP Transco	09440811107	ed.plg@aptransco.gov.in
38.	L. Pardha Sarathi	ADE (Power System)	AP Transco	09440679372	cepowersystems@rediffmail.com
39.	P. Muthiah	R.M./TANGEDC O, New Delhi	TANGEDCO, Tamil Nadu	09599225671	rm@tnebnet.org
40.	A. Kharpan	Add. CE (Com)	MeECL	09436117802	ace_commercial@yahoo.com
41.	U. K. Paul	SE (Elec.)	Elec. Department, Port Blair	09474265466	seed@and.nic.in
42.	Dr. Asokan	Director	Kerala State Electricity Board Ltd	09446008009	dscmcp@kseb.in

S. No.	Name (Shri./ Smt.)	Designation	Organization	Mobile No	E-mail
43.	Venu Gopal N.	Chief Engineer (Commercial)	Kerala State Electricity Board, Trivandrum	09446008137	cecomm@ksebnet.com
44.	Nizamuddin Shaikh	Executive Engineer	Electricity Department, Goa	07588444457	nizsha4@gmail.com
45.	Laxmikant D. Kolveker	Superintending Engineer	Electricity Department, Goa	07350633000	laxmikant.kolveker@gmail.com
46.	J.P. Singh	Tech. Adviser	BSPTCL (Patna)	07763817729	jp_bseb@yahoo.co.in
47.	B. Sharma	Director (Projects)	BSPTCL	09771496900	bsharma2407@gmail.com
48.	Ajay Kumar	A. EX. E.	B.S.P.H.C.L.	07033093655	ajay.28.kumar@gmail.com
49.	Rajeev Amit	Chief Engineer (Comm.)	SBPDCL/Bihar	07763814021	cecom.sbpdc@gmail.com
50.	S.K.P. Singh	Director (Projects)	NBPDCL/ Bihar	07763815039	directorprojects.nbpdc@gmail.com
51.	M.R. Patel	SE (Tech.)	GUVNL/Vadodra/ Gujarat	09687662879	setech.guvnl@gebmail.com
52.	S.P. Trivedi	EE (T)	GUVNL	09925208063	secom.guvnl@gebmail.com
53.	Janardan Choudhary	GM	NHPC	09958819003	janardan.choudhary@gmail.com
54.	S.K. Mishra	Sr. Manager (E)	NHPC	09910103478	skm.nhpc@yahoo.com
55.	Suneel Grover	CE (SO&P)	HPSEBL, H.P.	09816096666	grovers_in@yahoo.com
56.	T.S. Mehra	Commissioner (B & B)	MOWR, RD & GR, GOI	09871956644	commgwhp-mowr@nic.in
57.	S.N. Pande	Senior Joint Commissioner	MOWR, RD & GR	09873163630	sn.pande@nic.in

S. No.	Name (Shri./ Smt.)	Designation	Organization	Mobile No	E-mail
58.	Sanjoy Mukherjee	General Manager (Planning)	CESC Ltd.	09831095587	sanjoy.mukherjee@rp-sg.in
59.	Bhagwant K.	Addl. SE	PSPCL	09646118864	kishore.bhagwant@yahoo.com
60.	Ranjeet Sawdeker	SM	Mumbai	09324818009	ranjeet.sawdeker@reliance.com
61.	P. Devanand	DGM	TPDDL, Delhi	09871800506	p.devanand@tatapower-ddl.com
62.	S. Goswami	Manager (Power System)	TPDDL, Delhi	9971395295	sp.goswami@tatapower-ddl.com
63.	Subharth Saha	Assistant Manager	Representing FICCI	09831011316	subharth.saha@rp-sg.in
64.	S.R. Varshney	Executive Engineer	NDMC	9910421187	ecp33.elect@ndmcmail.gov.in
65.	M.P. Singh	Asstt. Engineer	NDMC	9868889692	mp.singh26@yahoo.com
66.	A.K. Gera	DGM	BRPL	0931389875	anand.gera@reliancecada.com
67.	M.M. Ganeshani	Lead Associate- Strategy & Corporate Planning	Tata Power	09029009517	mohit.ganeshani@tatapower.com
68.	Somesh Kumar	Head Advocacy	Tata Power	9250008879	somesh.kumar@tatapower.com
69.	A.K. Ghai	Dy. CE/ Power Regulation	BBMB	09417216047	dirpr@bbmb.nic.in
70.	Manoj Kumar Upadhyay	Senior Research Officer (SRO) Power	Niti Aayog, Govt. of India	011- 23096757, 23042422/ 9971131218	mk.upadhyay@nic.in
71.	Peeyush Mohit	GM	Adani Power	08980802737	peeyush_mohit@adani.com

S. No.	Name (Shri./ Smt.)	Designation	Organization	Mobile No	E-mail
72.	Gaurav Gupta	Executive Engineer	UHBVN, PKL	09356779008	xenhppc@gmail.com
73.	Sanket Srivastava	Manager	NPCL	09718804966	ssrivastava@noidapower.com
74.	Rajiv Goyal	GM (Projects & Power Trading)	NPCL, Gr. Noida	9911998210	rajivgoyal@noidapower.com
75.	V. Venu Gopal	GM (Planning)	DTL	9871093902	venugopal.v1960@yahoo.co.in
76.	Sarda Prasanna Routray	Manager (Planning)	DTL	9999533939	sproutray@gmail.com
77.	S. N. Sinha	RE/BSPHCL	BSPHCL	9810172842	rendbsphcl@yahoo.in
78.	Umang Anand	ARE/ BSPHCL	BSPHCL	9643245312	arend.bsphcl@gmail.com
79.	U. K. Samal	Sr. GM (CP)	OPTCL, Bhubaneshwar	9438907730	samaluttamkumar@gmail.com
80.	B. P. Mishra	CGM (RT&C)	OPTCL, Bhubaneshwar	9438907019	ele.bpmishra@optcl.co.in
81.	Abaji V. Naralkar	GM	Reliance Infra	9324817526	abaji.naralkar@relianceada.com

**19TH ELECTRIC POWER SURVEY
ENERGY CONSUMPTION ,ENERGY REQUIREMENT AND PEAK LOAD
CATEGORY WISE & YEAR WISE SUMMARY OF FORECAST**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **SUMMARY OF FORECAST (Restricted & Unrestricted)**

	ACTUAL											
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
ENERGY CONSUMPTION -MUs												
1. Domestic												
2. Commercial												
3. Public lighting												
4. Public Water Works												
5. Irrigation												
6. LT Industries												
7. HT Industries												
8. Railway Traction												
9. Bulk Supply to												
a) Non-Industrial Consumers												
b) Private Licensees												
10. Others (if Any)												
Total (Energy Consumption)												
T&D losses -MU												
T&D losses -in %												
Energy Requirement - MU												
Annual Load Factor - %												
Peak Load - MW												
Month & time of occurrence of Peak Load(for Actual)												
	Prov.	ESTIMATED										
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
ENERGY CONSUMPTION -MUs												
1. Domestic												
2. Commercial												
3. Public lighting												
4. Public Water Works												
5. Irrigation												
6. LT Industries												
7. HT Industries												
8. Railway Traction												
9. Bulk Supply to												
a) Non-Industrial Consumers												
b) Private Licensees												
10. Others (if Any)												
Total (Energy Consumption)												
T&D losses -MU	Year wise Transmission & Distribution Losses Reduction programme for short term & long term period											
T&D losses -in %												
Energy Requirement - MU												
Annual Load Factor - %	Year wise Load Factor moderation programme for short term & long term period											
Peak Load - MW												

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **DOMESTIC**

Year	Population	Number of Consumers				Specific Electrical Energy Consumption		Electrical Energy Consumption	
		End Year	Mid Year	Increase during the Year	% age AGR of (1)	in kWh (7/2)	Increase during the year	MUs	% age AGR of (7)
		1	2	3	4	5	6	7	8
2003-04	Actual								
2004-05									
2005-06									
2006-07									
2007-08									
2008-09									
2009-10									
2010-11									
2011-12									
2012-13									
2013-14									
2014-15									
2015-16	Prov.								
2016-17	Short & median								
2017-18									
2018-19									
2019-20									
2020-21									
2021-22									
2022-23	prespective								
2023-24									
2024-25									
2025-26									
2026-27									

Note:

1. Year wise programme for development / Growth of Domestic consumers/ living standard, impact of power for all (24X7), smart cities and Electricity Consumption in the category from year 2015-16 to 2021-22 & 2021-22 to 2026-27.
2. Specific growth Indicators to substantiate growth as assumed in the category for future.

Mid Year Data =(Current Year Data+Previous Year Data) / 2

End Year Data= Data at the End of the Year

AGR = Annual Growth Rate

MU = Million Units

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **Commercial Category**

Year	Number of Consumers				Specific Electrical Energy Consumption		Electrical Energy Consumption	
	End Year	Mid Year	Increase during the Year	% age AGR of (1)	in kWh (7/2)	Increase during the year	MUs	% age AGR of (7)
	1	2	3	4	5	6	7	8
2003-04	Actual							
2004-05								
2005-06								
2006-07								
2007-08								
2008-09								
2009-10								
2010-11								
2011-12								
2012-13								
2013-14								
2014-15								
2015-16	Prov.							
2016-17	Short & medium							
2017-18								
2018-19								
2019-20								
2020-21								
2021-22								
2022-23	prospective							
2023-24								
2024-25								
2025-26								
2026-27								

Note:

1. Year wise programme for development / Growth of Service Sector/ concept of malls, smart cities and other utility stores /Growth of Electricity Consumption in the category and Electricity Consumption from year 2015-16 to 2021-22 & 2021-22 to 2026-27
2. Specific growth Indicators to substantiate growth as assumed in the category for future.

Mid Year Data =(Current Year Data+Previous Year Data) / 2

End Year Data= Data at the End of the Year

AGR = Annual Growth Rate

MU = Million Units

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **PUBLIC LIGHTING**

Year	Connected Load (MW)				Hours of operation		Electrical Energy Consumption	
	End Year	Mid Year	Increase during the Year	% age AGR of (1)	in Numbers (7/2)	Increase during the year	MUs	% age AGR of (7)
	1	2	3	4	5	6	7	8
2003-04								
2004-05								
2005-06								
2006-07								
2007-08								
2008-09								
2009-10								
2010-11								
2011-12								
2012-13								
2013-14								
2014-15								
2015-16	Prov.							
2016-17								
2017-18								
2018-19								
2019-20								
2020-21								
2021-22								
2022-23								
2023-24								
2024-25								
2025-26								
2026-27								

Note:

1. Year wise programme for development / concept of LED street lighting / Growth of Electricity Consumption in the category and Electricity Consumption from year 2015-16 to 2021-22 & 2021-22 to 2026-27
2. Specific growth Indicators to substantiate growth as assumed in the category for future.

Mid Year Data = (Current Year Data+Previous Year Data) / 2

End Year Data = Data at the End of the Year

AGR = Annual Growth Rate

MUs = Million Units

MW = Mega Watts

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **PUBLIC WATER WORKS (LT)**

Year	Connected Load (MW)				Hours of operation		Electrical Energy Consumption	
	End Year	Mid Year	Increase during the Year	% age AGR of (1)	in Numbers (7/2)	Increase during the year	MUs	% age AGR of (7)
	1	2	3	4	5	6	7	8
2003-04								
2004-05								
2005-06								
2006-07								
2007-08								
2008-09								
2009-10								
2010-11								
2011-12								
2012-13								
2013-14								
2014-15								
2015-16	Prov.							
2016-17								
2017-18								
2018-19								
2019-20								
2020-21								
2021-22								
2022-23								
2023-24								
2024-25								
2025-26								
2026-27								

Note:

Year wise programme for development / adoption of energy efficient pumpsets/ Growth of Electricity Consumption in the category and Electricity Consumption from year 2015-16 to 2021-22 & 2021-22 to 2026-27

2. Specific growth Indicators to substantiate growth as assumed in the category for future.

Mid Year Data = (Current Year Data+Previous Year Data) / 2

End Year Data = Data at the End of the Year

AGR = Annual Growth Rate

MUs = Million Units

MW = Mega Watts

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **PUBLIC WATER WORKS (WITH DEMAND < 1MW)**

Year	Connected Load (MW)				Hours of operation		Electrical Energy Consumption	
	End Year	Mid Year	Increase during the Year	% age AGR of (1)	in Numbers (7/2)	Increase during the year	MUs	% age AGR of (7)
	1	2	3	4	5	6	7	8
2003-04	Actual							
2004-05								
2005-06								
2006-07								
2007-08								
2008-09								
2009-10								
2010-11								
2011-12								
2012-13								
2013-14								
2014-15								
2015-16	Prov.							
2016-17	Short & median							
2017-18								
2018-19								
2019-20								
2020-21								
2021-22								
2022-23	prespective							
2023-24								
2024-25								
2025-26								
2026-27								

Note:

1. Year wise programme for development / Growth of Electricity Consumption in the category Electricity Consumption from year 2015-16 to 2021-22 & 2021-22 to 2026-27
2. Specific growth Indicators to substantiate growth as assumed in the category for future.

Mid Year Data =(Current Year Data+Previous Year Data) / 2

End Year Data = Data at the End of the Year

AGR = Annual Growth Rate

MUs = Million Units

MW = Mega Watts

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **PUBLIC WATER WORKS (WITH DEMAND> 1 MW)**

Sl. No.	Name & Location of Water Works Scheme	Contract Demand in MW	Actual																							
			2003-04		2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12		2012-03		2013-14		2014-15	
			CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
1																										
2																										
3																										
4																										
5																										
6																										
ETC																										

Sl. No.	Name & Location of Water Works Scheme	Contract Demand in MW	Prov.		Estimated																					
			2015-16		2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24		2024-25		2025-26		2026-27	
			CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
1																										
2																										
3																										
4																										
5																										
6																										
ETC																										

CL = Connected Load (MW)
EC = Energy Consumption (MU)

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.
Name of State/UT

Category: **IRRIGATION (PUMPSETS / TUBEWELL)**

	Actual											
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
PUMPSETS												
(A) Total number energised/to be energised												
i) Up to Year Ending												
ii) During the year												
iii) In operation (Mid yr)												
(B) Total Connected Load (MW)												
i) Up to Year Ending												
ii) Mid year												
(C) Averages (Mid Year)												
i) Capacity of Pumpset (kW/pumpsets in Mid Year)												
ii) Hours of operation (kWh/kW) (Mid Year)												
III. Total Energy consumption MUs												

	Prov.	Estimated										
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Number of pump sets to be energised (Programme)	No. of pump sets to be energised during the years											
Average Capacity of Pumpset (kW/pumpsets)	Estimated Capacity of pump sets during the years											
Average Hours of operation (kWh/kW)	Estimated Hours of operation of pump sets during the years											

Note :

Mid Year Data=(Current Year Data+Previous Year Data) / 2

End Year Data= Data at the End of the Year

AGR = Annual Growth Rate

MUs = Million Units

MW = Mega Watts

19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27

Name of Utility/Licensee/ Elect. Deptt.
Name of State/UT

Category: LIFT IRRIGATION SCHEME

Sl. No.	Name & Location of Lift Irrigation Scheme	Contract Demand in MW	Actual													
			2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-03	2013-14	2014-15		
1			CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
2																
3																
4																
5																
6																
ETC																

Sl. No.	Name & Location of Lift Irrigation Scheme	Contract Demand in MW	Estimated											
			Prov.						Estimated					
			2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
1			CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
2														
3														
4														
5														
6														
ETC														

CL = Connected Load (MW)
EC = Energy Consumption (MU)

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **INDUSTRIES (LT)**

Year	Connected Load (MW)				Hours of operation		Electrical Energy Consumption	
	End Year	Mid Year	Increase during the Year	% age AGR of (1)	in Numbers (7/2)	Increase during the year	MUs	% age AGR of (7)
	1	2	3	4	5	6	7	8
2003-04								
2004-05								
2005-06								
2006-07								
2007-08								
2008-09								
2009-10								
2010-11								
2011-12								
2012-13								
2013-14								
2014-15								
2015-16	Prov.							
2016-17								
2017-18								
2018-19								
2019-20								
2020-21								
2021-22								
2022-23								
2023-24								
2024-25								
2025-26								
2026-27								

Note:

1. Year wise programme for development / Growth of Domestic consumers/ living standard and Electricity Consumption in the category from year 2015-16 to 2016-17, 2016-17 to 2021-22 & 2021-22 to 2026-27
2. Specific growth Indicators to substantiate growth as assumed in the category for future.

Mid Year Data =(Current Year Data+Previous Year Data) / 2

End Year Data= Data at the End of the Year

AGR = Annual Growth Rate

MUs = Million Units

MW = Mega Watts

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.

Name of State/UT

Category: **INDUSTRIES HT < 1MW**

Year	Connected Load (MW)				Hours of operation		Electrical Energy Consumption	
	End Year	Mid Year	Increase during the Year	% age AGR of (1)	in Numbers (7/2)	Increase during the year	MUs	% age AGR of (7)
	1	2	3	4	5	6	7	8
2003-04								
2004-05								
2005-06								
2006-07								
2007-08								
2008-09								
2009-10								
2010-11								
2011-12								
2012-13								
2013-14								
2014-15								
2015-16	Prov.							
2016-17	Short & medium							
2017-18								
2018-19								
2019-20								
2020-21								
2021-22	prespective							
2022-23								
2023-24								
2024-25								
2025-26								
2026-27								

Note:

1. Year wise programme for development / Growth of Domestic consumers/ living standard and Electricity Consumption in the category from year 2015-16 to 2016-17, 2016-17 to 2021-22 & 2021-22 to 2026-27

2. Specific growth Indicators to substantiate growth as assumed in the category for future.

Mid Year Data =(Current Year Data+Previous Year Data) / 2

End Year Data= Data at the End of the Year

AGR = Annual Growth Rate

MUs = Million Units

MW = Mega Watts

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.
Name of State/UT

Category: **HT INDUSTRIES 1 MW & above**

Sl. No.	Name & Location of Industries	Contract Demand in MW	Actual															
			2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-03	2013-14	2014-15				
1			CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
2																		
3																		
4																		
5																		
6																		
ETC.																		

Sl. No.	Name & Location of Industries	Contract Demand in MW	Estimated															
			Prov. 2015-16		2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27			
1			CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
2																		
3																		
4																		
5																		
6																		
ETC.																		

CL = Connected Load (MW)
EC = Energy Consumption (MU)

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.
Name of State/UT

Category: RAILWAY TRACTION

Sl. No.	Name of Railways	Name of section	Name of feeding Sub-station	Contract Demand in MW	Actual													
					2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-03	2013-14	2014-15		
1					CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
2																		
3																		
4																		
5																		
etc.																		

Sl. No.	Name of Railways	Name of section	Name of feeding Sub-station	Contract Demand in MW	Estimated													
					Prov. 2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		
1					CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
2																		
3																		
4																		
5																		
etc.																		

CL = Connected Load (MW)
EC = Energy Consumption (MU)

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.
Name of State/UT

Category: RAILWAY TRACTION

Sl. No.	Name of Railways	Name of section	Name of feeding Sub-station	Contract Demand in MW	Actual													
					2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-03	2013-14	2014-15		
1					CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
2																		
3																		
4																		
5																		
etc.																		

Sl. No.	Name of Railways	Name of section	Name of feeding Sub-station	Contract Demand in MW	Estimated													
					Prov. 2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27		
1					CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
2																		
3																		
4																		
5																		
etc.																		

CL = Connected Load (MW)
EC = Energy Consumption (MU)

**19TH ELECTRIC POWER SURVEY
ELECTRICITY DEMAND FORECAST FROM 2016-17 TO 2021-22 & 2026-27**

Name of Utility/Licensee/ Elect. Deptt.
Name of State/UT

Category: Bulk Supply (Non-Industrial Consumers)		Actual												
Sl. No.	Name & Location of Bulk Consumer	Contract Demand in MW	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-03	2013-14	2014-15
			CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC
1														
2														
3														
4														
5														
6														
ETC														

Sl. No.	Name & Location of Bulk Consumer	Contract Demand in MW	Estimated												
			Prov.		Est.										
			2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	
			CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	CL	EC	
1															
2															
3															
4															
5															
6															
ETC															

CL = Connected Load (MW)
EC = Energy Consumption (MU)

