

**SUMMARY RECORDS OF THE BRAIN STORMING SESSION ON THE  
19<sup>TH</sup> EPS HELD ON 29<sup>TH</sup> MAY, 2015 IN NEW DELHI**

In order to elicit views of the various stakeholders and experts in the Power Sector in connection with carrying out the 19<sup>th</sup> Electric Power Survey (EPS), which is a exercise of electricity demand forecasts, for 13<sup>th</sup> Plan and beyond, a Brain Storming Session was convened by CEA on 29<sup>th</sup> May 2015 at New Delhi. Experts/representatives of various Utilities participated in the brain storming session.

Shri Major Singh, Chairperson, CEA welcomed all the participants and stated that CEA is a permanent secretariat for undertaking EPS of the country. EPS is periodically carried out by CEA for planning of the Power Sector. He highlighted the major points of 18<sup>th</sup> EPS , which formed the basic input for carrying out generation and transmission planning for the Power Sector for the 12<sup>th</sup> Plan and the 13<sup>th</sup> and beyond Plan. He added , that in view of faster pace of urbanization of cities in the country the 18<sup>th</sup> EPS for the first time CEA had also carried out separate EPS for National Capital Region and for 13 Nos. of mega cities (having population of 20 lakhs and above). Further in order to validate the results of EPS , which was carried out using Partial End Use Method ,the studies were also done by using Econometric Modeling work of which was assigned to Indian Statistical Institute (ISI), New Delhi. Chairperson informed that the results of 18<sup>th</sup> EPS were generally matching with the actual demand on All India basis. However, in some of the states variations were primarily on account of lesser role of actual growth as compared to which was considered at the time of discussions with States/Utilities. He added that in order to further refine the electricity demand forecast, revision in existing methodology viz. increasing the level of granularity, DISCOM wise and seasonal forecast is considered necessary and be covered in 19<sup>th</sup> EPS. He informed that Ministry of Power have conveyed the concurrence for taking the work of 19<sup>th</sup> EPS of the country. Therefore, timely furnishing of input data in the prescribed performae would be of vital importance for taking up the task. He emphasized on the need to designating nodal officers to coordinate with CEA to furnish input data for the 19<sup>th</sup> EPS.

Shri K Ramanathan, distinguished fellow, TERI, addressed the session and emphasized on factoring contribution of renewable energy in the grid and other DSM measures being carried out in different States. He stated that reliable data is essential for a realistic forecast. He suggested that demand forecast may be undertaken on seasonal basis.

Shri Raj Pal , Economic Advisor , MOP observed that demand forecast is a prerequisite of National Electricity Plan . He emphasized that estimation must be realistic and the test of any forecast is minimizing the errors in the forecast . He also suggested that, for 19<sup>th</sup> EPS, Econometric method may also be used with incorporation of economical parameters ,such as population, GDP, growth rates etc . This is one of reliable methods for any forecast .However , this requires reliable data sets. He also suggested that trends in reduction in T&D losses may be incorporated in the demand forecast. He added that NSS and census data could be of lot of help in factoring in above referred aspects in the demand forecast.

Sh A.S. Bakshi, Member, CERC, pointed that, in projections made by CEA in the earlier demand forecast , energy forecasts were reasonably accurate but the peak load projections needed improvement. He emphasized that correct peak load projections were very essential to optimize investment decisions as capacity addition programme and transmission planning considered peak load projections. He opined that errors in the peak load projections are on account of projection of load factor not being commensurate with the actual load factor of the future. It was observed that in actual load was flatter and not peaky as projected and this could be because of various energy conservation measures initiated by the Government. Therefore, for the 19<sup>th</sup> EPS , these factors needed to be more accurate so that more realistic Peak load assessment could be carried out. He stated that CEA has been using Partial End Use Method (PEUM) for demand forecast and suggested that CEA also needed to have a look at the International practices in electricity demand forecast and adopt the best practices available elsewhere. He pointed out that electricity demand is very price elastic, therefore impact of price of electricity on the demand forecast was required to be factored in. Regarding level of granularity to adopted for the demand forecast, he opined that considering data at the district level might not be very effective, however data at DISCOM level could be

considered. He stated that reliable State level data was very essential in the carrying out successful demand projections and therefore States were requested to furnish reliable and accurate data.

Dr. Kirit Parikh , former Member, Planning Commission and Chairman IRAd emphasized the need for very realistic electricity demand forecast as the investment in the power sector depended upon on demand forecast. He stated that new challenges in the demand forecast emerged from assessment of demand on account of measures being taken in the field of energy efficiency and energy conservation, as also impact on demand due to decreasing price of LEDs and efforts being made for its large scale deployment in the household and street lights . He said that with emphasis on star labeling programme and assessment of the impact of absorption of such products in urban and rural areas would impact demand. Similarly , with the implementation of Dedicated Freight Corridor (DFC) the share of Railways in the freight will increase substantially leading to increase of Railway demand . Similarly , with Make in India campaign the increase in growth of economy would lead to increased demand and the commitment for 24x7 would lead to spurt of demand .

Chief Engineer, DMLF Division , CEA made a presentation highlighting the challenges and issues for 19<sup>th</sup> EPS giving a brief overview of the 18<sup>th</sup> EPS and outlined the variations in the actual and forecasted demand of 18<sup>th</sup> EPS.

Shri Pravir Niyogi , FICCI made a presentation on power procurement planning and emphasized need for coordinated procurement planning ,where the data pertaining to the long term ,medium term and short term cost of the power from various generators are made available at a common platform to facilitate the procurers to plan.

Shri Pankaj Batra, Chief Engineer, CEA made a presentation on the exercise of power procurement, which is based on the data provided by the States and indicated the gap in the power to be tied up by various states.

Dr. K. Balaraman , Head of Power System Groups, M/s PRDC made a presentation on a case study carried by him on the demand projection for the States of Assam, Karnataka and Maharashtra. In his study, econometric model has been used. He intimated that they had collected past data of several years of that State. Further, instead of carrying out the studies on one set of parameters, they had decided State specific parameters and accordingly had carried out econometric modeling study. In this study they considered inflation as an input instead of price of electricity ,for demand forecast. He intimated that short term demand forecast was found to be very accurate, though in the long term the results showed considerable variations.

Dr Anil Jain, Joint Director ,CPRI made a presentation of short term forecasting method using Fuzzi Logic ,He informed that he had used data pertaining to Thailand and the results achieved were quite accurate. Dr. Anil Jain was requested to give a write up on his work and also suggested ways for carrying of model similar study for at least one State.

After the views/suggestions were given by the various participants , based on suggestions, following mentioned conclusions for consideration of the 19<sup>th</sup> Electric Power Survey Committee were proposed :-

- i) The international practices being followed by the other countries in their demand forecasting and the suitability of those for adoption in the Indian context may be considered.
- ii) Impact of energy efficiency , measures for conservation of energy ; impact of DFC ; 24x7 supply; Make in India programme to be suitably factored in demand forecast .
- iii) A combination of PEUM , econometric modeling and any other methodology , if found suitable could be considered . The States to be considered for econometric modeling shall be decided based on the availability of the past economic data of those States.

- iv) Demand forecast at DISCOM level and seasonal variations may be considered. Number of cities for which separate demand forecasting may be required in view of their growth rate shall be identified by the EPS Committee and separate demand forecasting for the same shall be carried out.
  
- v) Suitable factors which might impact the price/inflation in the demand forecasting may be considered.