

APERC (Terms and Conditions for short-term procurement/sale of power) Regulation, 2021

APERC issued draft on 23rd Nov, 2021 regarding (Terms and Conditions for short-term procurement/sale of power) Regulation, 2021. The key attributes of this Regulation are given below:

Demand Estimation:

SLDC to carry out monthly demand estimation for each block of 15 minutes duration, based on (historical data, demand forecasts by the licensees and AI tools - deep/machine learning etc). In addition to these, weekly & day-ahead demand estimations should also be considered by SLDC.

This Regulation has separate provisions for monthly, weekly and day-ahead power procurement plan as mentioned below:

1. Monthly Power Procurement Plan:

- Each licensee to provide its demand estimation for each block of 15 minutes duration to SLDC by the end of 10th of every month.
- After reviewing its own demand estimation for the State, estimate provided by all the licensees, availability of power from all the approved sources, SLDC to communicate with the licensees regarding the power required to be procured by each licensee on a short-term basis for the following month within three working days from the date of receipt of demand estimations from the licensees.
- The licensees to file tenders on the national DEEP portal for power procurement as communicated by SDLC. The licensees are also required to provide the details of quantum of power and prices offered by each of the bidders and quantum of power and the prices at which they intend to purchase the same.
- The Commission will give final decision regarding power procurement, quantum of power, prices and the conditions for power procurement.

2. Weekly Power Procurement Plan:

SLDC to provide details of short-term power requirements to the licensees by Wednesday of every week, for the immediately following week post demand assessment based on its own forecast, availability of power from all approved sources (including power from short-term after considering maintenance schedules of generating stations, transmission constraints, generation and transmission capacities likely to be added in the next week). Licensees may procure power in Term-Ahead Market (TAM).

3. Day-ahead Power Procurement Plan:

SLDC to provide the details of power requirement, every day by 10 AM to the licensees for the next day based on the same details as mentioned in the weekly power procurement plan. Licensees may procure power in Day-Ahead Market (DAM).

Intraday purchase:

The licensees may procure power from the Real-Time/Intraday Market, in case of any gap in between the supply and demand during intraday.

Bilateral contracts:

The licensees should not buy power via bilateral contracts under any situation except from the sources expressly approved by the Commission.

Benchmark Price for short-term power procurement:

The per unit weighted average price of energy determined by the Commission for that year will be the benchmark price for short-term procurement for that year.

Functions of Dedicated cell:

- To purchase energy in the RTM when the per unit landed prices of energy in the exchanges are below the per unit variable costs (VC) of energy from the approved stations in the margin under dispatch.
 - To sell surplus energy in RTM, Intraday, Day-Ahead/Week Ahead Market (including surplus from wind & solar in Green Term Ahead Market (GTAM)).
- The marginal per unit VC from the approved sources under dispatch will be the basis for such sale of surplus power.

Additional factors considered for Computation of landed prices of short-term procurement:

1. Reduction in the GCV values of coal due to storage of coal for longer duration (because of backing down/shutdown of approved thermal plants in order to accommodate market purchases).
2. Additional capital expenditure on account of reduction in life of thermal stations equipment's due to frequent backing down/shut down of approved thermal stations.
3. The impact of interest on account of the advance payments made to the Energy Exchanges towards power purchases.
4. Additional financial burden on the licensees (in the form of higher fixed cost) on account of higher coal availability at thermal stations due to backing down/shut down of approved thermal stations.

Furnishing of the information to the Commission:

Licensees to provide following period details to the Commission pertaining to the short-term power procurement:

- The details of RTM/Intraday/Day-Ahead power procurements & sales (block-wise quantum of power and per unit rate) by the end of every day.
- The details of weekly power procurement and sales in TAM for the next week and power supply status for the immediately previous week by the end of Wednesday of the present week.
- The details of sales & power procurements for the next month and power supply status for the immediate previous month by the end of the 10th day of the present month.

The draft regulation can be accessed [here](#)

CER Opinion

- 1) **Short-term Demand Estimation and Procurement Plan (Regulation 3, 4, 5, 6):** The draft Regulation provide provisions for the demand estimation and power procurement plan for short-term at three levels i.e. monthly, weekly and daily. It is suggested that the demand estimation as well as the power procurement plan proposed in this Regulation should be carried out at four levels instead of three levels namely: -
 - Monthly demand estimation and power procurement plan
 - Weekly demand estimation and power procurement plan
 - Day ahead estimation and power procurement plan
 - Demand estimation and power procurement plan for Real-time market (RTM), at least 8 to 10 blocks ahead before the RTM (to make final preparation for buy and sell in the RTM)
- 2) **Monthly Power Procurement Plan (Regulation 4):** As per the draft Regulation, “*the licensees shall float tenders on the national DEEP e-bidding portal to procure the power communicated by SLDC*”. However, it is suggested that the power procurement from different power market platforms (example: DEEP portal, DAM, RTM etc.) should be more based on the competitiveness of that platform. Limited liquidity and low competitiveness, particularly for power procurement through negotiated bilateral and trading, and DEEP portal, should only be resorted through competitive tenders that do not attract barriers to entry while keeping into mind the relative price rigidity and competitiveness of power procurement. A portfolio approach should allocate power procurement through various platforms
 - Banking of power
 - Competitive tendering process (that take relatively more time but allow for advance procurement that can extend up to months)
 - DEEP
 - Bilateral trading
 - Power Exchanges

A modelling analysis can be performed to identify relative share of various options in the portfolio based on dynamic nature of the market and need for power procurement.

- 3) **Comprehensive Nature of Power Procurement Plan:** The power procurement plan should be comprehensive in nature, and should also provide for a framework to decide how much power the distribution licensees should procure from DEEP portal, DAM/RTM or through trading licensees (keeping in view the reliability margin taking into account of the five percent spinning reserve). The proposed power procurement plan should also include some buffer for reliability.

Moreover, the power procurement plan should also account for the overall RPO commitments for the state utilities/DISCOMs and whether they need to procure or sell power in Green Term Ahead Market (GTAM) or Renewable Energy Certificates (RECs).

- 4) **Rephrasing the term ‘Whole State’ (Regulation 1, 4, 5):** The draft Regulation uses the term “*whole state*” at several places in this Regulation for the state of Andhra Pradesh. It may be reworded as ‘for the consumers of the licensees’, that are to be served by them (after adjusting the captive and open access consumers). ‘Whole state’ includes all of the electricity consumption including that through

captive and open access.

5. **Ratification by the Commission (Regulation 5 & 6):** As per the draft Regulation, “*all the weekly/Day-ahead power purchases shall got ratified by the Commission*”. It is suggested that this Regulation should have some guidelines available regarding the quantum of power, the distribution licensees should generally procure through different market platforms and the average price or the peak price they should be willing to pay. Furthermore, it needs to be clarified whether the ratification will be done against a criteria set by the Commission or will it be only a paperwork.
However, no such ratification is mentioned in the case of Intra-day power purchases. This should not serve as a loophole in the regulation. Any specific reason for the exclusion may be mentioned therein for the same.
6. **Role of Banking in Bilateral Contracts (Regulation 8):** The draft Regulation does not provide any provision for banking. Banking is one of the ‘revenue/cost’ neutral ‘power procurement’ offering little risk in terms of availability as well as prices thereof. It is suggested to add a provision for banking in case of bilateral contracts and may not even require ratification of the Commission if there are guidelines specified for the same. Also note that banking increases the cost only to the extent of intra-/inter-state transmission losses and charges thereof. Guidelines can provide for a framework for economic evaluation of banking transactions so that there is overall economic gain for the licensees and hence the final consumers.
7. **Benchmark Price for Short-Term Power Procurement (Regulation 9):** The draft Regulation does not provide the definition of ‘Benchmark price’. A ‘benchmark price’ should be separately defined for each type of the trade (DEEP, DAM, RTM etc.,) and the applicability of the benchmark should be clarified. It should be further clarified that the benchmark is applicable on average or as a minimum/maximum limit. A range of benchmark price may be separately notified by the Commission from time to time. However, the regulatory treatment if the price is below/above the benchmark price (for sale/buy) should be included in the regulation.
8. **Ministry of Power Guidelines on Short-Term Power Procurement (Regulation 10):** As per the draft Regulation, “*the distribution licensees shall scrupulously follow the guidelines of Ministry of Power, Govt while procuring short-term power*”. Since, these are the guidelines, the distribution licensees, if differing from it should identify the reasons thereof and get it approved/ratified by the Commission as applicable.
9. **Data/Information on Websites (Regulation 11):** The draft Regulation provide provisions for placing the information related to monthly/weekly/day-ahead power requirement communicated by SLDC to the licensees and the monthly/weekly/day ahead/intraday power procurements by the licensees on the SLDC and licensees’ websites. It is suggested to add a provision to ensure ease of accessibility of the current as well as archived data/information on the same through SLDC’s as well as licensee’s website through an identified webpage for the same.
10. **Reserve Shutdown (Regulation 12):** In order to identify generating units for backing down/reserve shutdown, a unit commitment modelling exercise should be undertaken on weekly basis for proper decision making regarding the reserve shutdown.
11. **Modelling Tools and Analysis:** Short-term demand forecasting, power procurement planning and unit commitment modelling are important modelling tools that should be utilized by the distribution licensees/SLDC to ensure that the decisions being undertaken are justified based on scientific methodologies taking into account the techno-economic aspects in an optimization framework.

Energy Analytics Lab (EAL), IIT Kanpur has developed models for short-term power procurement as well as unit commitment models and applied the same in the case of a previous study for the state of Uttar Pradesh¹ and, for an ongoing study being undertaken for the state of Chhattisgarh.

EAL's web portal (eal.iitk.ac.in) provides access to relevant market information and insights that help state entities to take informed decisions.

12. **Real-Time Data (Regulation 16):** As per the draft Regulation, *“The SLDC shall make available the real-time data of generation from all the sources/generators and demand to the dedicated monitoring cell of the licensees, and the Commission”*.

The Energy Analytics Lab (EAL) at IIT Kanpur has also developed **State-level Dashboards** providing snapshot of all the relevant information about selected state. This would soon also host a tool for merit order dispatch (MoD) taken the initiative to compile the available data and make it accessible in visualized form through its portal (eal.iitk.ac.in). This provides **near real-time data and analysis** as per availability from respective SLDCs.

¹ CER's book publication on 'Regulatory Framework for Long-term Demand Forecasting and Power Procurement Planning' Exhibit 2: "Power Procurement Strategy for Uttar Pradesh Corporation Limited (UPPCL) – A Study by IIT Kanpur". https://cer.iitk.sc.in/assets/downloads/CER_Monograph.pdf