

**KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM**

**Present: Shri T.M.Manoharan, Chairman
Shri.K.Vikraman Nair, Member
Shri. S. Venugopal, Member**

In the matter of approval for reducing the contracted capacity from Regunathpur power plant from 150 MW to 50 MW and for contracting additional power to the tune of '100 MW from Mejia power plant in lieu of the reduced capacity from Regunathpur power plant.

Petitioner : Kerala State Electricity Board Limited
Vydyuthi Bhavanam, Pattom
Thiruvananthapuram

Order No. OP No. 32/2015 dated 21-01-2016

1. KSEB Ltd as per its letter No. KSEB/TRAC/ Power purchase/DVC/2015/2067 dated 07-08-2015 submitted a petition with following prayers.
 - (i) *Approval may kindly be granted to continue with the 100MW power contracted with Mejia power plant of DVC as per the PPA dated 29-04-2014 entered into between KSEBL and DVC.*
 - (ii) *Approval may kindly be granted to reduce the contracted capacity from Regunathpur power plant of DVC from 150 MW to 50 MW, so that KSEBL can maintain the existing LTA application dated 29-04-2014 without losing priority for getting LTA for the revised reduced capacity of '150'MW.*
 - (iii) *Approval may also be granted for procuring 100 MW from Mejia power plant of DVC, in lieu of the 100 MW power contracted from Regunathpur power plant of DVC for meeting the anticipated electricity shortages by 2018-19 and thereafter."*

2. KSEB Ltd has further submitted that,
- (i) Commission vide its letter dated 28-03-2014 had accorded in principle approval for the procurement of 250 MW RTC power from M/s Damodar Valley Corporation (DVC), for a period of 30 years.
 - (ii) M/s. DVC had offered the above mentioned 250 MW RTC power to KSEB Ltd at the rates determined by CERC, from their two thermal stations, as detailed below;
 - (a) 100 MW from coal fired Mejia Thermal Power Station (MTPS) Unit 7 & 8 with an installed capacity of 2x500 MW for 25years fromthe date of commencement of power supply.
 - (b) 150 MW from coal fired Regunathpur Thermal Power Station (RTPS) Unit 1 and 2 (Phase-I) with an installed capacity of 2x600 MW for 25 years from the date of commencement of power supply.
 - (iii) Though M/s DVC has offered to supply power from itstwo different generating stations namely, Mejia and Regunathpur power plants, the terms and conditions of supply of power from these two stations are covered under one power purchase agreement (PPA) entered into between M/s DVC and KSEBL, i.e., forprocuring '100 MW' RTCpower from DVC's Mejia Power plant and '150MW' RTC power from Regunathpur power plant of DVC. KSEBLtd had applied for long term open access (LTA) for availing power from both these plants, through single application dated 29.04.2014.
 - (iv) The commissioning of the Regunathpur Thermal Power Station (RTPS), from which M/s DVC has offered to supply of 150 MW RTC power, has been badly delayed and it is informed thatfurther delay cannot be ruled out. Further, the capital cost and the tariff for the power from RTPS may be much higher than that expected, mainlydue to the delay in commissioning of the project.
 - (v) In the meanwhile, M/s Maithon Power Ltd had offered to supply 150 MW RTC power to KSEB Ltd at CERC approved rates for 30 years. KSEBLtdvide the petition dated 29.06.2015 had requested permission for procuring 150 MW power from M/s Maithon Power Limited, in lieu of the

150 MW RTC power from Regunathpur Thermal Power Station (RTPS) of M/s DVC, the availability of which is uncertain due to the reasons explained above.

- (vi) The Commission had, vide the order dated 08.07.2015 in O.P. No. 23 of 2015, granted permission for procuring 150 MW RTC power from M/s Maithon Power Ltd, starting from June 2016 subject to the following conditions:
 - (1) KSEB Ltd. shall take all necessary and sufficient steps to ensure that this additional purchase of 150 MW RTC power from M/s Maithon Power Ltd., shall not entail in any payment of penalty or penal charges to M/s DVC., on account of the existing Power Purchase Agreement; and
 - (2) The purchase of power as per this proposal is in lieu of the power for which K.S.E.B.Ltd. had entered into agreement with M/s.DVC.
- (vii) Based on the approval granted by the Commission vide the order dated 08.07.2015, KSEB Ltd had, on 29.06.2015, entered into PPA with M/s Maithon Power Limited for procuring 150 MW RTC power at CERC approved rates for 30 years.
- (viii) Further, duly considering the directions issued by the Commission vide the order dated 08.07.2015, KSEB Ltd had initiated discussion with M/s DVC for cancelling the 150 MW power contracted from Regunathpur power plant of M/s DVC.
- (ix) Though M/s DVC is agreeable for cancelling the power contracted with M/s Regunathpur power plant, M/s DVC insists for procuring equal quantum (150 MW) from any of the other power plants of M/s DVC including Mejia/ Koderma/ Durgapur power plants of M/s DVC.
- (x) KSEB Ltd had applied LTA for the contracted power of 250 MW from DVC including 150 MW from Regunathpur power plant through a single LTA application dated 29.04.2014. If KSEB Ltd cancels the entire contracted capacity of 150 MW from Regunathpur power plant, the total

contracted capacity as per the PPA will get reduced to 100 MW from 250 MW.

- (xi) As per the 5th proviso to Regulation 12 of the CERC Connectivity Regulations, 2009, if there is change in more than 100 MW in the quantum of power to be interchanged using the inter-state transmission system, fresh application for LTA shall be made. Hence, if KSEB Ltd cancels the 150 MW power contracted from Regunathpur power plant, the present LTA application will automatically get cancelled and KSEB Ltd has to submit a fresh application for LTA for the 100 MW power contracted from Mejia power plant of DVC. However, as per the CERC connectivity regulations, if the change in capacity from the original LTA application is less than 100 MW, KSEB Ltd can continue with original LTA application dated 29.04.2014, so that the priority of the application for LTA for the 150 MW RTC power from DVC plants will not change.
- (xii) KSEB Ltd proposed to reduce the contracted capacity from Regunathpur plant from 150 MW RTC power to 50 MW RTC power, so that the net contracted capacity including 100 MW RTC power from Mejia power plant of M/s DVC would be 150 MW RTC power, and hence the priority in getting LTA for this 150 MW will not be adversely affected. Even if the commissioning of the Regunathpur plant (50 MW) is getting delayed, as per the CERC (Sharing of Transmission Charges and Losses) Regulations, M/s DVC has to bear the transmission charges for the contracted capacity.
- (xiii) Since M/s DVC insist on procuring the additional 100 MW from other plants in lieu of the 100 MW from Regunathpur plants of DVC, KSEB Ltd propose to procure additional 100 MW from Mejia power plant, considering its competitive indicative tariff, which is in the range of Rs.4.05 per unit to Rs.4.09 per unit as per the tariff petition filed before CERC.
- (xiv) KSEB Ltd is expecting electricity shortage by the year 2018-19, even after scheduling power from all tied up sources including 865 MW power tied up through DBFOO basis. Further, KSEB Ltd argues that, there will be

stagnation in generation capacity addition in the Country during coming years.

Analysis and Decision of the Commission

3. The Commission has appraised the proposal of KSEB Ltd in detail. The proposal of KSEB Ltd is for procuring additional 150 MW RTC power from DVC at the tariff determined by CERC. The quantum of power proposed for purchase is over and above the power contracted by KSEB Ltd through various sources inside and outside the State, the details of which are given below:
- (i) 150 MW RTC power contracted from M/s Maithon Power Ltd at CERC approved rate for 30 years from 30.12.2013. This power is being scheduled since December 2015. This purchase was approved by the Commission as per its order No. 2158/C.Engg/Maithon/2013 dated 26-12-2013.
 - (ii) Additional 150 MW RTC power, contracted from M/s Maithon Power Ltd at CERC approved rate for 30 years from June-2015, in lieu of the 150 MW RTC power from Regunathpur power plant of DVC. This additional 150 MW RTC power from M/s Maithon is expected to be scheduled from June 2016 onwards.
 - (iii) 'In principle' approval granted by the Commission vide the letter dated 28.03.2014 for procuring 100 MW RTC power from M/s Mejia Power plant of DVC at CERC approved rate for 25 years from the date of commencement of power supply. This power is expected to start scheduling from April 2016 onwards.
 - (iv) KSEB Ltd has already contracted 865 MW RTC power following DBFOO procedure, out of which, 315 MW is expected to start scheduling from December-2016 and balance 550 MW from October-2017 onwards. The approval of these purchases under DBFOO procedure has not yet been granted by the Commission for want of clarifications sought for by the Commission.

- (v) KSEB Ltd has reported that, an additional quantum of about 600 MW is expected as Central Government allocation from ongoing 'CGS and UMPPs' during the period from 2016-17 to 2020-21.
- (vi) KSEB Ltd has also reported that, an additional quantum of 300 MW is expected from the ongoing hydel projects and another 200 MW is expected from the solar installations.

4. The anticipated electricity demand and supply position of the State based on the 18th Electric Power Survey Report (EPS Report) and availability from various sources are summarized below.

Table-1.
Energy demand and availability

Year	Energy Demand (18th EPS)	Energy Availability (MU)							Shortfall	Short fall as (%) of total demand
		Hydel	CGS	DBFOO (865 MW)*	TATA Maithon (300 MW)*	DVC (150 MW)*	Case-1 bid (Medium term)(400 MW)*	Total		
	(MU)	(MU)	(MU)	(MU)	(MU)	(MU)	(MU)	(MU)	(MU)	(%)
2015-16	24915	7102	9066	0	435	0	1128	17732	7183	28.8
2016-17	26584	7232	10234	739	1801	1054	2708	23766	2818	10.6
2017-18	28080	7310	11484	4168	1953	1054		25969	2111	7.5
2018-19	29595	7546	11948	6119	2000	1054		28666	929	3.1
2019-20	31198	7585	12215	6119	2094	1054		29066	2132	6.8
2020-21	32895	7608	12662	6119	2094	1054		29537	3358	10.2
2021-22	34691	7608	13257	6119	2094	1054		30131	4560	13.1
2022-23	36583	7608	14228	6119	2094	1054		31103	5480	15.0
2023-24	38577	7608	14943	6119	2094	1054		31818	6759	17.5
2024-25	40677	7608	14943	6119	2094	1054		31818	8859	21.8
2025-26	42890	7608	14943	6119	2094	1054		31818	11072	25.8
2026-27	45221	7608	14943	6119	2094	1054		31818	13403	29.6

*Energy availability at State periphery

Table-2
Peak demand and availability

Year	Peak Demand (18th EPS)	Power Availability (MW)							Shortfall	Short fall as (%) of total demand
		Hydel	CGS	DBFOO (865 MW)	TATA Maithon (300 MW)	DVC (150 MW)	Case-1 bid (Medium term)(400 MW)	Total		
	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(%)
2015-16	4386	1675	1335	0	140	0	397	3547	839	19.1
2016-17	4669	1691	1504	299	262	142	397	4295	374	8.0
2017-18	4931	1751	1578	822	262	142		4555	376	7.6
2018-19	5198	1821	1591	822	281	142		4657	541	10.4
2019-20	5479	1821	1671	822	281	142		4737	742	13.5
2020-21	5777	1830	1751	822	281	142		4826	951	16.5
2021-22	6093	1830	1907	822	281	142		4982	1111	18.2
2022-23	6426	1830	1983	822	281	142		5058	1368	21.3
2023-24	6777	1830	1983	822	281	142		5058	1719	25.4
2024-25	7147	1830	1983	822	281	142		5058	2089	29.2
2025-26	7536	1830	1983	822	281	142		5058	2478	32.9
2026-27	7946	1830	1983	822	281	142		5058	2888	36.3

5. As detailed above, the energy shortages expected in the State is about 3% to 10%' of the energy demand as per 18thEPS Report, during the next five years and whereas the peak shortages during the said period would be about 10% only.
6. The Commission has noted that, the actual energy demand in the State has been less by about 7% to 8% compared to the energy requirement as per the 18thEPS Report and the actual peak demand has been less up to 12% compared to the peak power requirement as per the said report. The details are given below.

Table-3
Comparison of actual electricity demand with 18thEPS Report

Year	Comparison on Annual Energy Demand			Comparison on Peak demand		
	Energy demand as per 18 th EPS report	Actual energy demand met	Reduction in demand over 18 th EPS report	Peak demand as per 18 th EPS report	Peak demand met	Reduction in demand over 18 th EPS report
	(MU)	(MU)	(%)	(MW)	(MW)	(%)
2012-13	20971	19891	5.15	3683	3268	11.27
2013-14	22233	20524	7.69	3903	3558	8.84
2014-15	23554	21582	8.37	4137	3643	11.94

7. Government of India, Bureau of Energy Efficiency, Government of Kerala, Energy Management Centre and such other institutions are implementing energy conservation programmes with a view to minimizing consumption of energy and peak load by introduction of energy efficient equipment and efficient and economic use of energy. Therefore it has to be reasonably concluded that the present trend in reduction in demand over the energy and power requirement as per the 18thEPS Report will continue and it has to be taken into account, while assessing the energy and power requirements of the State. The Commission is of the considered view that, the State may have only limited shortages in the next five to six years, which can easily be managed by short term purchases and purchases from power exchanges.
8. The Commission has also noted that,
- (i) In our Country, the short-term market including transactions through energy exchanges has been maturing over the years. At present, about 10 to 15% of the total energy transactions are being done through short-term market, deviation settlement (formerly UI) and through short-term bi-lateral transactions etc. The prices of electricity derived through the short-term market including exchanges, especially during night off-peak hours is much less than the rate derived through long term contracts. The rate of power during peak hours is also around Rs.5/- per unit in the southern region, presumably due to the transmission constraints in the southern region (SR). The rate of power in the other regions where NEW grid is operational is comparatively lower than the rates in Southern Region. In order to avail the benefit of competitive price of short-term market for the best interest of the consumers of the State, KSEB Ltd shall have to procure about 10 to 15% of the daily demand from short-term market and balance only need be met through long-term contracts.
 - (ii) The inter-regional transmission constraints between SR and NEW grid are expected to ease out with the commissioning of the Raigarh- Pugalur transmission system and other inter-state transmission lines. At present

there are five 400kV sub-stations in the State functioning at Thiruvananthapuram, Pallikara (Ernakulam), Madakkathara (Thrissur), Kanjikode (Palakkad) and Areacode (Malappuram). Madurai – Thiruvananthapuram 400 kV line, Udumalpet – Madakkathara 400 kV line, Udumalpet – Kanjikode 400 kV line, Madakkathara – Pallikara 400 kV line and Mysore- Areacode 400 kV line are operational. With the commissioning of the above 400 kV sub-stations and lines, the import capacity of the State has increased to about 3000 MW (72 MU/day), and the State can import cheaper power available in generation rich Eastern and Western regions. Further, Edamon-Pallikara 400 kV line is under construction.

9. In order to ascertain the need for granting approval for the third prayer of the KSEB Ltd for procuring 100 MW from Mejia power plant of DVC in lieu of the 100 MW power contracted from Regunathpur power plant of DVC for meeting the anticipated electricity shortages by 2018-19', the Commission hereby direct the KSEB Ltd to submit the following details before the Commission within one month from the date of receipt of this order.
- (i) KSEB Ltd shall, appraise the energy demand and supply position for the next '12' years including overall cost of power purchase, duly considering:
 - (a) the existing and proposed hydel capacity;
 - (b) Existing and expected capacity addition/allocation from CGS;
 - (c) power available from long term contracts entered into by KSEB Ltd with TATA Maithon, DVC and power contracted through DBFOO basis;
 - (d) the capacity availability from the proposed solar installations; and
 - (e) the capacity from other renewable energy sources.
 - (ii) KSEB Ltd shall, also submit a detailed sensitivity analysis on the demand and supply position including cost, duly considering with the following.
 - (a) Recent trend in reduction in actual demand over 18th Power survey (both energy demand and peak demand).

- (b) Seasonal variation in electricity demand.
- (c) A part of the demand (about 10 to 15% of the electricity demand) may be earmarked to be met through short-term market and its impacts on long term contract and in overall cost of power purchase.

The Commission will take appropriate decision on the third prayer of KSEB Ltd after receiving above details from KSEB Ltd.

- 10. However, Commission here by approves the first prayer of the KSEB Ltd to continue with the 100 MW power contracted with Mejia Power Plant of DVC as per the PPA dated 29.04.2014 entered into between KSEB Ltd and M/s DVC.
- 11. The Commission also approves the second prayer of the KSEB Ltd to reduce the contracted capacity from Regunathpur power plant of DVC from 150 MW to 50 MW, so that KSEB Ltd can maintain the existing LTA application dated 29-04-2014 without losing priority for getting LTA for the revised reduced capacity of 150' MW.

12. **Order of the Commission**

In view of the facts and circumstances explained above,

- (i) Commission hereby approves the first prayer of the KSEB Ltd to continue with the 100 MW RTC power from Mejia Power Plant, contracted with DVC as per the PPA dated 29.04.2014 entered into between KSEB Ltd and M/s DVC.
- (ii) Commission does also approve the second prayer of the KSEB Ltd to reduce the contracted capacity from Regunathpur power plant of DVC from 150 MW to 50 MW, so that KSEB Ltd can maintain the existing LTA application dated 29.04.2014 without losing priority for getting LTA for the revised reduced capacity of 150 MW.

- (iii) Commission will take appropriate decision on the third prayer of KSEB Ltd, after receiving the details called for by the Commission from KSEB Ltd, as directed under paragraph-9 of this order.

Petition disposed of and it is ordered accordingly.

Sd/-
S. Venugopal
Member

Sd/-
K.Vikraman Nair
Member

Sd/-
T.M.Manoharan
Chairman

Approved for issue,

Santhosh Kumar.K.B
Secretary