KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM

Present : **Shri. Preman Dinaraj, Chairman**
Shri. S. Venugopal, Member

OP No. 57/2019

In the matter of : Approval to meet the contract demand of 7.1MVA on multiple 11kV feeders of M/s Embassy Taurus Techzone, Technopark Phase III campus

Petitioner : Electronics Technology Parks – Kerala (M/s. Technopark)

Petitioner represented by :
Sri. Sasi P M, CEO, Techhnopark
Smt. Jayanthi L , CFO, Technopark
Sri. Anfal, Deputy Manager, TechnoparK
Sri. Viswanathan.N Asst.Manager
Sri Bipin Sankar, Consultant, Technopark
Sri. Chnadran C D, Asst. Director, Winterfall
Sri. Binod Jose, Synergy, Winterfal
Sri. Sankara Muthuvel R, Sr. GM, Embassey Winterfall Realty
Smt. Praveena Senthilnathan, Synergy Winterfall

KSEB Ltd represented by :
Sri. Suresh A, EE, TRAC
Sri. Manoj G, AEE, TRAC

Order dated 28.01.2020

1. Electronics Technology Parks – Kerala (Hereinafter referred to as M/s. Technopark or the petitioner) on 06.08.2019, filed a petition before the Commission for the approval to meet the contract demand of 7.1MVA on multiple 11kV feeders of M/s Embassy Taurus Techzone, Technopark Phase III campus, with the following prayer;

   "To consider the facts mentioned in this petition and accord for allowing transmission of power to meet the demand of 7.1MVA at multiple 11kV feeders voltage level and treat this as an exceptional case and positively consider for meeting the demand of 7.1MVA for the Phase – III IT building constructed by M/s. Embassy Taurus Techzone."

2. The summary of the issues raised by the petitioner is given below,

   (i) M/s. Technopark leased out 10 acres of land from its Phase - III campus to the consumer M/s Embassy Taurus Tech zone (hereinafter

referred to as M/s Taurus). The consumer is constructing 10 Lakh square feet building at the leased out land and the expected electricity demand of the consumer is about 7.1MVA.

(ii) M/s Technopark has proposed to provide power supply to M/s Taurus from the 110kV Substation at Technopark Phase-III Campus through two 11kV feeders.

The total connected load at feeder-I is 3128.9kW (3476.6 kVA) and feeder II is 3229.5kW (3588.3kVA).

(iii) As per the Regulation 8 of the Supply Code, 2014, the maximum contract demand on a single 11kV feeder is limited to 3000kVA, otherwise supply has to be availed at higher voltage.

As per the first proviso to Regulation 8, the contract demand can be extended up to a maximum of 20% if the supply at appropriate higher voltage level is not feasible due to non availability of distribution line at such higher voltage level in that area of supply. Accordingly the maximum demand that can be allowed as per the first proviso to Regulation 8 of the Supply Code 2014 is 3.6 MVA at 11kV voltage level. Hence M/s Technopark proposes to provide supply to M/s Taurus through two 11kV feeders so that each feeder will have maximum 3.55MVA demand load, which is less than 3.6MVA.

(iv) The petitioner also submitted that multiple feeders at 11kV voltage level could not be provided to M/s Taurus as per the regulation 52 of the Supply Code 2014, wherein it is stipulated as follows,

*"**52. Supply of electricity to be given only at one point for same purpose at the same voltage level in a single premises.-**Supply shall be given only at one point for same purpose at the same voltage level in a single premises."*

Since the total demand of the consumer M/s Taurus is 7.1MVA, which is more than 3.6 MVA, the electrical inspectorate has not given approval to increase the contract demand beyond 3.6MVA on 11kV voltage level.

Hence the petitioner requested for the approval of the Commission for providing multiple feeders of 11kV, where each feeder demand is less than 3.6MVA.

(v) The petitioner has also submitted techno-economical justification of the scheme, which is summarized below.

(a) M/s Technopark propose to transfer power to M/s Taurus through two 11kV feeders which is 3 core x 500sqmm XLPE Aluminum 11kV cable.

(b) The maximum length of the feeder 1 & 2 is 2000m.

(c) The voltage drop through the feeders 1 and 2 at the maximum load current is 0.66% and 069% respectively. The voltage drop at the rated current carrying capacity of the feeders is 1.67% through both the feeders.

(d) The petitioner also submitted the details of the fault level calculation.

(e) M/s Taurus has already setup 11/0.433kV Substation having 5 No of 1500kVA, 11/0.433kV Transformers and 1 No of 2000kVA, 11/0.433kV Transformer, HT&LT panels and other equipment.

In case the supply to M/s Taurus is provided at 33 kV level since the maximum load is 7.1 MVA, the petitioner M/s Technopark need to construct a 110/33kV substation having at least 8MVA capacity for providing 7.1MVA load to the consumer. The estimated cost of construction of Substation by the petitioner, M/s Technopark is about Rs.6 crore.

The consumer M/s Taurus also need to construct 33/11kV substation at the premises for feeding their load and the estimated cost of construction of substation by the consumer is about Rs 4.5 crore.

Thus the total cost to be incurred by the licensee, M/s. Technopark and consumer M/s.Taurus is about 10.5 Crores for providing supply at 33kV level. The above expense is unwanted and a burden to the licensee M/sTechnopark and consumer, M/s Taurus. Further the recurring expenses will be high in maintaining the substation.

(f) Considering the above, if the petitioner is allowed to provide contract demand upto 7.1MVA through two multiple 11kV feeders, there will be a considerable benefit to the licensee as well as the consumer.

3. The petitioner also summarized the benefit for providing electricity supply to consumer M/s Taurus through 2 number of 11kV feeder for meeting their demand of 7.1MVA, as below:

(i) There is no need to construct expensive 33/11kV substation. The consumer as well as the licensee will be relieved from the burden of constructing the substation.

(ii) There is no need for procuring the costly 33kV HT Cable.
The consumer is relieved from procuring and installation of 33kV HT Cable for evacuating power from the licensee's premises.

(iii) Land area for substation will be spared.
Expensive land of the Technopark will be spared and consumer can utilize the same for other purpose.

(iv) O&M expense.
The Technopark / consumer will be relieved from the O&M expenses for maintaining the Transformer bays and other equipment.

(v) Reduction of Technical losses.
If the supply is provided at 33 kV, the technical losses will be increased due to the two levels of voltage transformation, i.e., 110kV to 33kV at licensee's premises and 33kV to 11kV at the consumer premises.

(vi) Elimination of safety issues.
Safety issues arising out of the power transmission at 33 kV voltage and operation of 33 kV switchgear at the premises of the licensee / consumer could be eliminated.

(vii) The petitioner further submitted that the 2nd proviso to Regulation 8 of the Supply Code, 2014 provides as follows,

"Provided further that the limits of connected load or contract demand specified for different supply voltage levels as specified above may be exceeded in exceptional cases with the approval of the Commission, subject to the conditions stipulated in such approval."

Hence the petitioner, requested before the Commission to allow transmission of power to the consumer M/sTaurus to meet the demand of 7.1MVA at multiple 11kV feeder voltage level and treat this as an exceptional case and positively consider for exceeding the connections to two number 11kV feeders for meeting the demand of 7.1MVA of the consumer M/s Taurus.

4. KSEB Ltd, submitted the following remarks on the petition submitted by M/s Technopark.

(i) The proposal of the petitioner is serious violation of several stipulations in the Kerala Electricity Supply Code, 2014 (here in after referred as Supply Code, 2014). Providing electric connection having contract demand of 7.1 MVA at 11 kV level is the violation of the limits of voltage levels specified under Regulation 8 of the Supply Cod, 2014. The maximum load that can be connected at 11 kV is 3 MVA only. If the petitioner is allowed to connect 7.1 MVA at LT, it may results in enhancing the load limit by 237% over the norms specified in the Supply Code, 2014. There is exceptional circumstances warrant an exemption from the provisions of the Supply Code, 2014.

(ii) The reasoning of the petitioner that the proposed arrangement which feed power at lower voltage would reduce the losses is contradictory to

conventional wisdom. In the proposal of the petitioner, the line length get doubled and the current get increased by three times. The argument put forth by the petitioner that there would be transformation losses is also untrue.

(iii) M/s TAURUS having a contract demand above 1 MW, the expense for getting the connections shall be borne by the consumer as per the provisions of the Supply Code, 2014.

5. The Commission admitted the petition as OP No 57/2019 and the hearing on the petition held at Technopark on 21.11.2019. Sri. Anfal presented the petition on behalf of the petitioner and Sri. Manoj, G, Asst Executive Engineer presented the remarks of KSEB Ltd.

6. The summary of the issues raised by the petitioner during the hearing is given below.

(i) The project consists of office building having Ground+ Upper Ground floor + 11 upper floors.

Multi Level Carparking attached to the office building with Ground floor, Mezanine floor and 7 Upper floors.

Total saleable area is approximately 10,05,720 sq.ft and total build up area is 15,00,000 sq.ft.

(ii) Total load at the tenant area is estimated as follows.

- Lighting load - 0.5 VA/ sq.ft
- Raw power - 0.5 VA/ sq.ft
- AHUs - 1.5 VA/ sq.ft
- UPS power - 2.5 VA/ sq.ft

Total - 5 VA/sq.ft

The load at the common parking areas are estimated @0.30 VA/ sq.ft.

Based on the above, the total electrical load estimated is given below.

Consolidated electrical load estimate

Sl No	Description	Connected load in kVA	Maximum contract demand in kVA
1	Office zone-1	3620.6	2262.9
2	Office zone-2	3620.6	2262.9
3	Utility loads	2645.8	1181.1
4	Water cooled chiller and pumploads	1596.9	1357.4
	Total	11483.9	7064.3

(iii) Technopark has dedicated 110/11 kV primary substation feeding the designated campus through 11 kV RMUs. Power supply to the plot will be extended from the adjacent 11 kV RMUs through two number of dedicated feeders. The HT consumer unit and HT metering will be located within the plot adjacent to the road, subject to the approval of Technopark.

(iv) The proposed metering facility will have two 11 kV supply with summation metering. For common area load the metering will be based on HT metering at HT consumer unit. For tenants, energy monitoring and billing will be based on LT metering for each tenant at the tenant feeders, at each floor panel.

Main LT panel feeders will have Energy meters for power analysis and outgoing feeders will have Multi-Function Meters (MFM) for dual kWh monitoring.

(v) The petitioner submitted that availing supply through two 11kV feeders is the best option presently available to them.

7. KSEB Ltd during the hearing submitted that, the Commission may consider its written submission dated 20.11.2019 while finalizing the petition.

Analysis and Decision

8. The Commission examined the petition filed by M/s Technopark and the comments of KSEB Ltd as per the provisions of the Electricity Act, 2003, and Supply Code, 2014 and other relevant facts and circumstances of the case in detail.

9. The basic issue raised by the petitioner is to grant approval to connect 7.1 MVA load at 11 kV feeder for M/s Embassy Taurus Techzone, Technopark Phase-III Campus (M/s TAURUS).

The following issues emerge during examination of the provisions of the Electricity Act, 2003 and Kerala Electricity Supply Code 2014:

(i) Regulation 8 of the Supply Code, 2014 specify the 'supply voltage for different connected load or contract demand, which is extracted below for ready reference.

"8. Supply voltages for different connected loads or contract demands.- The supply voltage levels for different connected loads or contract demands for new connections or for gross connected load or contract demand consequent to revision of connected load or contract demand, shall be as follows:-

Supply voltage	Maximum connected load (for those without demand based metering)	Maximum contract demand (for those with demand based metering)
240 V(single phase)	5 kW	
415V(three phase)	100 kVA	100kVA
11kV		3000 kVA
22kV		6000 kVA
33 kV		12000kVA
66 kV		20000kVA
110 kV		40000kVA
220 kV		>40000 kVA

Provided that the limit of connected load or contract demand specified for different supply voltage levels may be exceeded up to a maximum of twenty percent if ***supply at the appropriate higher voltage level is not feasible due to non-availability of distribution line at such higher voltage level in that area of supply:***

Provided further that the limits of connected load or contract demand specified for different supply voltage levels as specified above may be exceeded in **exceptional cases** with the approval of the Commission, subject to the conditions stipulated in such approval.

(ii) As seen from the Table above, the maximum load that can be connected at LT is 3 MVA. Since the 22 kV distribution system is not very common at present, if the load is more than 3 MVA, the licensee has to provide supply to the consumer at 33 kV only.

However, the first proviso to the Regulation 8 of the Supply Code 2014 does mention that, if it is not feasible to provide supply at higher voltage level due to non availability of distribution lines, the load limit specified under Regulation 8 of the Supply Code, 2014 can be enhanced by 20%. Thus, under such circumstances, the maximum load that can be connected under 11 kV can be enhanced from 3 MVA to 3.60 MVA.

Further, the second proviso to the Supply Code, 2014 permits that, under **exceptional** circumstances the load limit specified under Regulation 8 of the Supply Code 2014 can be enhanced with the approval of the Commission, subject to the conditions specified in such approval. The word exceptional is not defined in the Supply Code, 2014. However, as per the dictionary meaning, the word ' exceptional' is defined as 'unusual'. So, as per the second proviso to Regulation 8, if the load limit is to be enhanced further, in such cases the licensee is required to fully justify and satisfy the Commission what such 'exceptional' circumstances are which warrant enhancement of the load limit upwards from the load limit specified under Regulation -8.

The Commission notes that, the petitioner M/s Technopark has not submitted any such exceptional circumstances which warrant enhancement of the connect load or contract demand beyond the limit specified under Regulation 8 of the Supply Code, 2014.

(iii) The Commission has specified the maximum load that can be connected at different voltage level duly considering the following.

- Safety of the distribution system to be maintained by the licensee.
- Reduce the electricity losses. It is an established fact that, the distribution losses in the 'low voltage distribution system' is much higher than the 'High Voltage distribution System.

The Commission has also noted the maximum load allowed to connect at LT in the neighboring States and the details are given below.

Supply Voltage	11 kV	22 kV	33 kV
	(Maximum load allowed to connect)		
AP	1.5 MVA		5MVA
Telangana	1.5 MVA		5MVA
Tamilnadu	3 MVA	5 MVA	10 MVA
Karnataka	2 MVA		7.5 MVA
Model supply code notified by FoR	2 MVA		10 MVA
Kerala	3 MVA	6 MVA	12 MVA

Thus it can be seen that the load limit specified by this Commission is more than the load limit specified in nearby States to connect at 11 kV.

(iv) As per the Regulation 52 of the Supply Code, 2014, in a single premise, supply of electricity shall be given only at one point for same purpose at the same voltage level. The Regulation 52 is extracted below for ready reference.

"52. Supply of electricity to be given only at one point for same purpose at the same voltage level in a single premises.- Supply shall be given only at one point for same purpose at the same voltage level in a single premises."

10. The Commission notes that M/s Embassy Taurus Techzone IT park (M/s Taurus) is developing a big IT Infrastructure building having a total saleable area of 10,05,720 square feet and total build up area of about 15,00,000 square feet. The total contract demand estimated is 7.064 MVA. M/s Technopark has proposed to provide power supply to M/s Taurus from their existing 110 kV substation at Technopark Phase-III campus.

As seen from the foregoing analysis, the estimated load of the consumer is 136% higher than the maximum load limit specified to be connected at 11 kV system of the licensee. Further, as detailed under paragraph 9(iv) above, as per the Regulation 52 of the Supply Code, 2014, the licensee M/s Technopark has to provide supply to M/s TAURUS only at one point for meeting their entire electricity requirement.

Considering the provisions of the Electricity Act, 2003 and Supply Code, 2014, the licensee M/s Technopark has to provide electricity supply to M/s TAURUS at 33 kV level, by augmenting and/or upgrading the existing distribution system of the licensee at the cost of the consumer.

Order of the Commission

11. The Commission, after examining the petition filed by the petitioner M/s Technopark and the comments of KSEB Ltd as per the provisions of the Electricity Act, 2003 and Kerala Electricity Supply Code, 2014, hereby the orders that,

(1) The prayer of the petitioner to grant approval to meet the contract demand of 7.1 MVA on multiple 11 kV feeders on M/s Embassy Taurus Techzone, Technopark Phase-III campus, is rejected.

(2) The licensee M/s Technopark has to provide electricity supply to M/s TAURUS at 33 kV level, by augmenting and/or upgrading the existing distribution system of the licensee at the cost of the consumer.

Petition disposed of accordingly**.**

Sd/-
S.Venugopal
Member

Sd/-
Preman Dinaraj
Chairman

Approved for issue

C R Satheesh Chandran**,**
Administrative Officer,
(in charge of the Secretary)