

CHAPTER – 1

INTRODUCTION

1.0 A brief Profile of the State Transmission Utility - KPTCL

The Karnataka Power Transmission Corporation Limited, (KPTCL) is a transmission licensee under Section 14 and a State Transmission Utility (STU) under Section 39 of the Electricity Act, 2003 (hereinafter, referred to as the Act).

The KPTCL is a Company incorporated on 28th July, 1999, registered under the Companies Act, 1956 and has commenced its operations from 1st August, 1999. Initially the KPTCL performed the functions of both Transmission and Distribution of electricity in the State, which were earlier carried out by the erstwhile the Karnataka Electricity Board (KEB).

After unbundling and formation of separate Distribution Companies, the KPTCL was assigned the functions of transmission of power from 1st June, 2002 as a Transmission Company, which also functions as the State Transmission Utility (STU) in Karnataka. The Distribution business was entrusted to the newly created Electricity Supply Companies (ESCOMs).

The bulk power purchase activity was separated from the functions of KPTCL as per the Electricity Act, 2003 from 10th June, 2005 and the KPTCL became an exclusive transmission company. The co-ordination of bulk power purchase activities has been vested with the newly formed Power Company of Karnataka Ltd., (PCKL).

The KPTCL enables the ESCOMs to supply electricity to around 2.75 Crores consumers of different categories spread over the State covering an area of about 1.92 lakh square kilometers. To transmit power from different sources of generation, besides the CTU network, KPTCL, as on 31.03.2021, has 1258 substations and 38841 Ckt. kms of transmission lines which include 66 kV, 110 kV, 220 kV and 400 kV lines spread over the State.

To carry out its functions in a smooth and effective manner, the KPTCL has created six transmission zones, each headed by a Chief Engineer; sixteen

circles, each headed by a Superintending Engineer; and sixty-two divisions, each headed by an Executive Engineer. The operation and maintenance of the transmission system in the State is looked after by thirty-five Transmission Line and Substation Maintenance Sub-divisions. Also, there are twenty-seven Transmission major works divisions to carry out the construction activities related to transmission system of the State.

Further, there are six Relay testing Circles covering sixteen relay Testing Divisions for protection, troubleshooting and maintenance of protective relays, metering and testing. These relay testing wings also carry out the pre-commissioning tests of new sub-stations, besides testing of interface meters at regular periods. Separate Hotline wing headed by the Chief Engineer is established. Separate hotline Circle is established with 2 hotline Divisions and 6 Sub-divisions to facilitate live line work (without taking LC) using hot stick method and also bare hand technique using insulated elevated platform for replacing punctured / broken insulator / deteriorated jumps and establish connectivity of receiving station / sub-station.

1.1 KPTCL at a glance:

Sl. No	Particulars		31.03.2021
1.	Generation Capacity (connected to Transmission System)	MW	
	a) KPC Hydro and Thermal	MW	8852
	b) CGS (Karnataka Share)	MW	4415
	c) NCE, IPPs and Others	MW	17256
2.	No. of Receiving Sub-Stations		
	a) 400 kV	Nos.	8
	b) 220 kV	Nos.	114
	c) 110 kV	Nos.	446
	d) 66 kV	Nos.	693
3	Length of Tr. Lines		
	a) 400 kV	CKms.	3701
	b) 220 kV	CKms.	12192
	c) 110 kV	CKms.	11191
	d) 66 kV	CKms.	11787
3.	Gross Assets as at the end of FY21	Rs. in Crores	24,289.31
4.	Total employees:		
	a) Sanctioned	Nos.	16,348
	b) Working	Nos.	9,735
5.	Demand for Transmission charges of Power to ESCOMs (FY21), wheeling and Miscellaneous Charges	Rs. in Crores	3,898.52
6.	Collection of transmission charges	Rs. in Crores	3,082.86
Source: KPTCL –SLDC load curve, KPTCL Website, APR Filing and Annual Accounts			

1.2 Transmission capacity of KPTCL in FY21:

The total transmission capacity in the State was 23078 MW during FY21. The ESCOM-wise transmission capacity for FY21 is as follows:

ESCOM WISE TRANSMISSION CAPACITY IN MW – FY21

Company	Capacity in MW
BESCOM	11556
MESCOM	1785
CESC	2592
HESCOM	4425
GESCOM	2720
TOTAL	23078