ORDER

OF THE

WEST BENGAL ELECTRICITY REGULATORY COMMISSION

IN THE MATTER OF

CASE NO. OA- 475/ 23-24

IN RE APPLICATION SUBMITTED BY THE WEST BENGAL STATE ELECTRICITY TRANSMISSION COMPANY LIMITED FOR APPROVAL OF INCURRING CAPITAL EXPENDITURE OF AN ESTIMATED COST RS. 34289.93 LAKH FOR IMPLEMENTATION OF DIFFERENT NEW TRANSMISSION SCHEME IN TERMS OF REGULATION 2.8.2.3 AND PARAGRAPH 4.1(VI) OF SCHEDULE-2 OF THE WEST BENGAL ELECTRICITY REGULATORY COMMISSION (TERMS AND CONDITION OF TARIFF) REGULATIONS, 2011, AS AMENDED

PRESENT:

DR. MALLELA VENKATESWARA RAO, CHAIRPERSON

SRI PULAK KUMAR TEWARI, MEMBER

DATE: 16.08.2024

CASE IN BRIEF

1.0 The instant petition has been filed by West Bengal State Electricity Transmission Company Limited (in short 'WBSETCL') for approval of incurring Capital Expenditure of an estimated cost Rs. 34289.93 lakh for implementation of different transmission scheme in terms of regulation 2.8.2.3 and Paragraph 4.1 (vi) of Schedule-2 of the West Bengal Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2011, as amended from time to time (in short 'WBERC Tariff Regulations'). The Commission has admitted the application and registered in Case No. OA-475/23-24.

2.0 In the application, WBSETCL has submitted the brief description of the following scheme:

2.1 A. Upgradation of Barjora 132/33 kV Substation to 220/132/33 kV Substation by construction of 220 kV GIS with 02 nos. 220 kV feeder bays, 2x160 MVA 220/132/33 kV transformers, 03 nos. 132 kV feeder bays and associated transmission system.

2.1.1 Upgradation of existing Barjora 132/33 kV Sub-Station to 220/132/33 kV Sub-Station in the District Bankura was contemplated to supply adequate, reliable & quality power supply in and around Sonamukhi, Beliatore and Barjora 33/11 kV Substations and bulk consumers in Bakura District and to cope up future load growth including upcoming bulk power load with considerable demand at 132 kV voltage level in the vicinity maintaining proper voltage profile.

2.1.2 As per data available total 09 nos. bulk consumers with total maximum contract demand of around 70 MVA at 33 kV level have already applied for receiving power in that region of Barjora, Bankura.

2.1.3 Also 04 nos. bulk consumers with total maximum contract demand of around 128 MVA at 132 kV level have applied for connectivity. .

2.1.4 To meet up the huge bulk power demand alongwith upcoming load growth, proposal was initiated for construction of a new 220/132/33 kV substation inside the premises of Barjora Industrial park from where the above bulk load including bulk consumers may be provided with necessary power with shortest possible line length. Accordingly, the site was inspected with the representative of WBIDCL for identifying the proposed land.

2.1.5 But due to non-availability of required quantum of land in WBIDCL Barjora Industrial Park the scheme was dropped. Now as an alternative to the above scheme, up gradation of existing Barjora 132/33 kV substation to 220/132/33 kV substation by construction of 220 kV GIS alongwith construction of 220 kV D/C transmission line from DPL Unit-8, 220 kV substation, Durgapur to proposed Barjora 220 kV substation has been considered to meet up these upcoming bulk power loads. This will also improve the voltage profile in the area.

2.2 B. D/C LILO of Durgapur-Barjora 132 kV D/C Transmission Line (at tower location no. 18) at Bamunara 132 kV Substation by using underground cable (D/C RL = 1.55 Km (UG) along with construction of 04 nos. 132 kV Line bays at Bamunara 132 kV substation.

2.2.1 At present, Bamunara 132/33 kV substation has only double circuit (D/C) connectivity with DPL A-Zone 132 kV substation. DPL A-Zone 132 kV substation has one connectivity with DPL B-Zone 132 kV substation by single circuit (S/C) with High Temperature Low Sag (HTLS) conductor and another S/C connectivity with ACSR Panther (under upgradation with HTLS) with DPL Power Plant. Present peak demand of Bamunara 132 kV substation is around 112 MVA and DPL A-Zone 132 kV substation is around 110 MVA. Total cumulative load of DPL A-Zone and Bamunara 132 kV substation is around 180 MVA. Considering upcoming load scenario in that area, peak demand of DPL A-Zone and Bamunara 132 kV substation will be around 120 MW and 150 MW respectively which cannot be catered safely through 132 kV S/C DPL B-Zone – A-Zone HTLS line in case of tripping of another circuit.

2.2.2 Considering the above situation, D/C LILO of Durgapur-Barjora 132 kV D/C Transmission Line (at tower location no. 18) at Bamunara 132 kV substation by using underground cable (D/C RL = 1.55 km UG) along with construction of 04 nos. 132 kV bays at Bamunara 132 kV substation has been considered for strengthening of network in DPL area.

2.2.3 After establishment of Bamunara-Durgapur 132 kV D/C connectivity and Bamunara Barjora 132 kV D/C connectivity, Bamunara and A-Zone 132 kV substation will get another 02 nos. sources. The scheme will meet the upcoming load demand including bulk consumer in that area, strengthen the existing network and make the system reliable.

2.3 C. Replacement of existing Panther Conductor by high capacity HTLS Conductor along with 132 kV CT in respect of different 132 kV D/C Transmission lines of WBSETCL

2.3.1 The Transmission Lines, a) KTPP-Bagnan 132 kV D/C Transmission Line (R.L.~ 8.0 kM), b) Howrah-Liluah 132 kV D/C Transmission Line (R.L. ~ 13.1 kM), c) Domjur-Uluberia 132 kV D/C Transmission Line (R.L. ~ 27.0 kM), d) Jeerat-Gaighata 132 kV D/C Transmission Line (R.L. ~ 24.0 kM) and e) Durgapur-Barjora 132 kV D/C Transmission Line (A portion upto LILO point from Durgapur to Bamunara) (Length ~ 9.172 CKM) are catering power to the vast area of Medinipur (West), Howrah, Burdwan (West), Bankura and North 24 Parganas District. Presently, all the above lines are giving power in full capacity of the installed conductor. Failure of any circuit of the above line may lead to failure of the other circuit and may also lead to prolong power interruption in a vast area of Medinipur (West), Howrah, Burdwan (West), Bankura and North 24 Parganas District. And also, to combat the future load growth as forecasted by WBSEDCL, the replacement of the existing conductor by high ampacity HTLS conductor is required.

2.3.2 The load flow study reveals that, the replacement of the existing conductor by high ampacity HTLS conductor for the above lines is required.

2.3.3 After establishment of the proposed scheme, N-1 contingency of the above Transmission Lines will be maintained which in turn will increase operational flexibility of transmission system in those region. The scheme will also meet the upcoming load demand including bulk consumer in that area, strengthen the existing network and make the system more reliable.

2.4 D. LILO of 400 kV PPSP-Durgapur S/C transmission line at proposed BAPL 400 kV Substation. (S/C RL = 0.55 Km)

2.4.1 Kazi Nazrul Islam (BAPL) Airport, a project under Bengal Aerotropolise Projects Limited (BAPL) is a domestic airport located at Andal, Burdwan (West) in West Bengal.

2.4.2 BAPL Authority approached WBSEDCL for construction of one EHV Substation at the premises of BAPL Airport at Andal, Burdwan (West) to cater the upcoming projected load of Airport for future expansion of its township project, commercial loads etc. As submitted by WBSEDCL, maximum projected load demand of BAPL Airport upto 2024 is around 200 MVA.

2.4.3 Construction of 01 no. 400 kV substation at the premises of BAPL Airport, Andal, District-Burdwan (West) has been proposed. For this, 400 kV connectivity through S/C LILO of PPSP-Durgapur 400 kV S/C line has been proposed at BAPL 400 kV substation to supply adequate, reliable & quality power supply in BAPL airport area, strengthening of transmission network in and around Burdwan (W) area and to cope up future load growth including upcoming bulk power loads in the vicinity maintaining proper voltage profile.

3.0 The project cost as submitted by WBSETCL alongwith DPRs for the 4 (four) projects covered under paragraph 2 above are as given below:

Sl.No		Description	Rs. in Lakhs
A	i	Upgradation of Barjora 132/33 kV Substation to 220/132/33 kV Substation with 02 nos. 220 kV feeder bays, 2x160 MVA 220/132/33 kV transformers, 03 nos. 132 kV feeder bays and allied works	7398.57
	ii	Supervision Charge @10%	739.86
	iii	IDC	755.01
		(a) Total Cost for construction at Barjora Sub Station	**8893.44**
	i	Construction of 220 kV D/C transmission lines from proposed Barjora 220/132/33 kV Substation (which will be upgraded from 132/33 to 220/132/33 kV) to DPL Unit-8 220 kV substation at Durgapur (D/C O/H RL = 19.198 km approx..)	5462.76
	ii	Supervision Charge @10%	546.28
	iii	IDC	452.87
		(b) Total Cost for associated Transmission Lines	**6461.91**
		(A) Total Project cost [(a)+(b)]	**15355.35**
B	i	Construction of 04 nos. 132 kV line bays at Bamunara 132 kV Sub-station	482.48
	ii	Supervision Charge @10%	48.25
	iii	IDC	22.77
		(a) Total Cost for construction of line Bays at Bamunara sub Station	**553.50**
	i	D/C LILO using underground cable at 132 kV Bamunara Sub-station i.r.o. Durgapur-Barjora 132 kV D/C transmission line at tower location no. 18 (RL=1.55 km (UG))	5702.14
	ii	Supervision Charge @10%	570.21
	iii	IDC	269.06
		(b)Total Cost for D/C LILO	**6541.41**
		(B) Total Project Cost (a)+(b)	**7094.91**

Sl.No		Description	Rs. in Lakhs
C		**a. KTPP-Bagnan 132 kV D/C Transmission Line (R.L.= 8.0 Km)**	
	i	Estimated cost for supply of materials including all	881.69
	ii	Estimated cost for erection of materials including all	134.29
	iii	Supervision Cost @ 10%	101.60
		Total Cost (a)	**1117.58**
		b. Howrah-Liluah 132 kV D/C Transmission Line (R.L.= 13.1 Km)	
	i	Estimated cost for supply of materials including all	1433.61
	ii	Estimated cost for erection of materials including all	219.16
	iii	Supervision Cost @ 10%	165.28
		Total Cost (b)	**1818.05**
		c. Domjur-Uluberia 132 kV D/C Transmission Line (R.L.= 27.0 Km)	
	i	Estimated cost for supply of materials including all	2953.80
	ii	Estimated cost for erection of materials including all	451.62
	iii	Supervision Cost @ 10%	340.54
		Total Cost (c)	**3745.96**
		d. Jeerat-Gaighata 132 kV D/C Transmission Line (R.L.= 24.0 Km)	
	i	Estimated cost for supply of materials including all	2607.90
	ii	Estimated cost for erection of materials including all	400.14
	iii	Supervision Cost @ 10%	300.80
		Total Cost (d)	**3308.84**
		e. Durgapur-Barjora 132 kV D/C Transmission Line (A portion upto LILO point for Bamunara) (Length = 9.172 CKM)	
	i	Estimated cost for supply of materials including all	522.85
	ii	Estimated cost for erection of materials including all	78.26
	iii	Supervision Cost @ 10%	60.11
		Total Cost (e)	**661.22**
		Total Cost (a)+(b)+(c)+(d)+(e)	**10651.65**
		IDC	1056.30
		(C) Total Project Cost	**11707.95**
D	i	LILO of 400 kV PPSP-Durgapur S/C transmission line at	110.23
	ii	Supervision charges @ 10%	11.02
	iii	IDC	10.47
		(D) Total Project Cost	**131.72**
		Grand Total . (A)+(B)+(C)+(D)	**34289.93**

4.0 WBSETCL in their petition has submitted that all the projects are in pre tender engineering stage and the tender will be published shortly. Letter of Award (LoA) for implementation of the schemes will be issued after obtaining approval from the Commission.

OBSERVATION

5.0 The Commission observes that, in terms of Regulation 2.8.2.3 of the WBERC Tariff Regulations, approval of the Commission for investment in new transmission project is mandatory after 31.12.2007. The Commission also observes that the regulation inter-alia specifies approval of the project shall be taken before investment is made in order to minimize the investment risk.

6.0 The Commission further observes the following:

6.1 The proposed projects for upgradation of Barjora 132/33/11 kV to 220/132/33 kV substation with construction of associated transmission lines and proposed D/C connectivity by LILO of Durgapur- Barjora 132 kV Transmission line at Bamunara Sub-station alongwith construction of 04 nos line bays at Bamunara sub-station will cater growing load demand in and around the areas in the District of Bankura and District of Burdwan (West) respectively and to supply adequate, reliable & quality power in the vicinity.

6.2 The proposed scheme of replacement of existing Panther conductor by high capacity HTLS conductor 132 kV CT in respect of different transmission lines of WBSETCL in the district of Medinipur (West), Howrah, Burdwan (West), Bankura and North 24 parganas are required to maintain the N-1 contingency of the above transmission lines and also to increase the operational flexibility of the transmission lines in those regions. With the implementation of the schemes WBSETCL will also be able to meet the upcoming load demand in those areas, strengthening the existing network and to make the system more reliable.

6.3 The proposed scheme for LILO of 400 kV PPSP-Durgapur S/c transmission line at proposed BAPL substation is required for adequate, reliable and quality power supply in

BAPL Airport area, Andal and Durgapur and also to strengthen the transmission network and to cope up the future load growth in the areas.

ORDER

7.0 The Commission after consideration all the facts and the project reports submitted by WBSETCL, accords approval of the investment proposal in terms of regulation 2.8.2.3 of the West Bengal Electricity Regulatory Commission (Terms and Condition of Tariff) Regulations, 2011, as amended with the details as given below subject to approval of project cost in terms of regulation 2.8.5 of the WBERC Tariff Regulations:

Sl.No.		Description	Rs. in Lakhs
A	a	Upgradation of Barjora 132/33 kV Substation to 220/132/33 kV Substation with 02 nos. 220 kV feeder bays, 2x160 MVA 220/132/33 kV transformers, 03 nos. 132 kV feeder bays and allied works including Supervision cost and IDC.	**8893.44**
	b	Construction of 220 kV D/C transmission lines from proposed Barjora 220/132/33 kV Substation (which will be upgraded from 132/33 to 220/132/33 kV) to DPL Unit-8 220 kV substation at Durgapur (D/C O/HRL = 19.198 km approx.) including Supervision cost and IDC	**6461.91**
	c	**(A) Total Project cost [(a)+(b)]**	**15355.35**
B	a	Construction of 04 nos. 132 kV line bays at Bamunara 132 kV Sub-station including Supervision cost and IDC	**553.50**
	b	D/C LILO using underground cable at 132 kV Bamunara Sub-station i.r.o. Durgapur-Barjora 132 kV D/C transmission line at tower location no. 18 (RL=1.55 km (UG)) including Supervision cost and IDC	**6541.41**
	c	**(B) Total Project Cost [(a)+(b)]**	**7094.91**
C		Replacement of existing Panther conductor by high capacity HTLS conductor 132 kV CT in respect of different transmission lines of WBSETCL including Supervision cost	
	a	KTPP-Bagnan 132 kV D/C Transmission Line (R.L.= 8.0 Km)	**1117.58**
	b	Howrah-Liluah 132 kV D/C Transmission Line (R.L.= 13.1 Km)	**1818.05**
	c	Domjur-Uluberia 132 kV D/C Transmission Line (R.L.= 27.0 Km)	**3745.96**

Sl.No.		Description	Rs. in Lakhs
	d	Jeerat-Gaighata 132 kV D/C Transmission Line (R.L.= 24.0 Km)	**3308.84**
	e	Durgapur-Barjora 132 kV D/C Transmission Line (A portion upto LILO point for Bamunara) (Length = 9.172 CKM)	**661.22**
	f	**Total Project Cost without IDC [(a)+(b)+(c)+(d)+(e)]**	**10651.65**
	g	Interest during construction (IDC)	**1056.30**
		Total Project Cost including supervision and IDC [(f)+(g)]	**11707.95**
D		LILO of 400 kV PPSP-Durgapur S/C transmission line at proposed BAPL 400 Kv Substation (S/C rl=0.55 km) including Supervision cost and IDC	**131.72**
Total project cost for 4 (four) different Scheme [(A)+(B)+(C)+(D)]			**34289.93**

8.0 The Commission also gives the following directions:

(i) For the purpose of capitalization WBSETCL will have to seek approval of the Commission for the project cost along with actual interest during construction and all actual expenditure incurred or apportioned to the project cost on account of spares, transportation, insurance, tax, establishment charges, tools and plants, audit and accounts, maintenance and losses during construction and consultancy charges and also any actual expenditure met out of contingency. WBSETCL is to provide the cost break-up of each scheme showing the actual vis-à-vis estimation included in the total project cost as above.

(ii) WBSETCL shall ensure proper metering arrangement in line with Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended from time to time and arrangement for real time data display at SLDC control room before energization of the sub-station and associated Transmission Systems.

(iii) On completion of each project WBSETCL shall submit the COD and a benefit analysis of the project separately before the Commission.

(iv) Original project cost is required to be approved in terms of Regulation 2.8.5 of the WBERC Tariff Regulations. Commission may disallow any excess of project cost on capitalization over approved cost if it finds the justifications furnished are not adequate.

(v) In case of escalation in project cost in any scheme, WBSETCL shall take due approval from the Commission before capitalization of assets.

9.0 The Petition is thus disposed of.

10.0 WBSETCL shall download the copy of the order from the website of the Commission and act on it. Certified copy of the order, if applied for, be given to the parties on completion of formalities laid down in the West Bengal Electricity Regulatory Commission (Conduct of Business) Regulations, 2013, as amended and on submission of necessary fees.

Sd/-

(PULAK KUMAR TEWARI)

MEMBER

Sd/-

(MALLELA VENKATESWARA RAO)

CHAIRPERSON

Dated : 16.08.2024

Sd/-

(SECRETARY)