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ORDER

OF THE

WEST BENGAL ELECTRICITY REGULATORY COMMISSION

IN CASE NO. OA-278/18-19

IN REGARD TO THE APPLICATION SUBMITTED BY THE WEST BENGAL STATE ELECTRICITY TRANSMISSION COMPANY LIMITED (WBSETCL) FOR APPROVAL OF INCURRING CAPITAL EXPENDITURE OF AN ESTIMATED COST OF RS. 62224.36 LAKH FOR IMPLEMENTATION OF 9 NO NEW EHV SUBSTATIONS AND ASSOCIATED TRANSMISSION SYSTEM 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.

PRESENT:

SRI SUTIRTHA BHATTACHARYA, CHAIRPERSON

SRI DURGADAS GOSWAMI, MEMBER

SRI PULAK KUMAR TEWARI, MEMBER

DATE: 28.01.2020

West Bengal Electricity Regulatory Commission * New Town, Kolkata-163 *

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Facts in brief:

1.0 West Bengal State Electricity Transmission Company Limited (in short 'WBSETCL') submitted a petition vide letter dated 22.06.2018 for approval of incurring capital expenditure of an estimated cost of Rs. 62224.36 Lakhs for implementation of 9 nos. new EHV Substations and associated transmission system covered under paragraph 2.0 below 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 (in short 'Tariff Regulations').

2.0 In their petition WBSETCL submitted DPR for each of the nine (9) schemes. Brief descriptions of the schemes are as follows:

A) Construction of Mongalpur 220/33 kV Gas Insulated Substation (GIS) and associated transmission system (ATS):

WBSETCL has proposed for establishment of new 220/33 kV GIS at Mongalpur with 2x100 MVA 220/33 kV Transformers, two (2) numbers of 220 kV Feeder bays, twelve (12) numbers of 33 kV feeder bays (with Indoor VCB switchgear) along with construction of LILO of 220 kV Durgapur – Asansole S/c line at proposed Mongalpur 220 kV GIS.

The proposed substation will be located in Mongalpur in the Burdwan district of West Bengal. Establishment of 220/33 kV Substation at Mongalpur was contemplated to supply adequate, reliable and quality power in and around Lachipur, Mongalpur, to cope up with future load growth in these areas and to release new load of ECL by WBSEDCL.

Present peak demand of Lachipur 33/11 kV Substation is about 21 MVA and receives power mostly from Ukhra 132 kV Substation by 33 kV D/c line. Mongalpur 33/11 kV

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Substation with Maximum demand of 23 MVA also receives power from Ukhra 132 kV via Lachipur 33 kV through 33 kV D/c line. These substations are suffering from acute low voltage due to high load concentration and incoming feeder constraint. After establishment of the proposed Mongalpur 220 kV GIS, the referred 33 kV substations could be fed with shorter line length. Upcoming Raniganj 33 kV and Chanda/ Satgram 33 kV substation will be connected with proposed Mongalpur 220/33 kV GIS and other existing/ upcoming 33/11 kV substations at Jamuria, Diamond More etc. will also get strong alternative source. Further, WBSEDCL is going to release new load to Eastern Coalfield Ltd. (ECL) in this area.

Drawal of overhead transmission line is troublesome over the area under Eastern Coalfield Ltd. as the areas is too much congested. Now, to utilize the existing assets in efficient manner WBSETCL considered LILO of Durgapur – Asansole 220 kV S/c which is passing with 0.5 Km from the proposed site of Mongalpur substation as 220 kV connectivity of Mongalpur 220 kV GIS.

Construction of Mongalpur 220 kV Substation was prioritized by WBSEDCL in the coordination meeting between WBSEDCL and WBSETCL chaired by CMD, WBSEDCL held on 04.01.2017.

It was also submitted that, for establishment of the substation no land is required to be acquired as it will be constructed at the available vacant space within Mongalpur 33/11 kV substation of WBSEDCL. Process has been initiated to obtain permissive possession of said land from WBSEDCL authority.

B) Construction of Ramnagar 132/33 kV Gas Insulated Substation (GIS) and associated transmission system (ATS):

WBSETCL has proposed for establishment of new 132/33 kV GIS at Ramnagar with 2x50 MVA 132/33 kV Transformers, four (4) numbers of 132 kV Feeder Bays, ten (10)

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numbers of 33 kV feeder bays (with Indoor VCB) along with construction of D/c LILO of Bajkul – Contai 132 KV D/c line at proposed Ramnagar 132 kV GIS on M/c Tower.

The proposed substation will be located in Ramnagar in the East Midnapur district of West Bengal. Establishment of 132/33 kV Substation at Ramnagar was contemplated to supply adequate, reliable and quality power in the command area of 33/11 kV Substations of WBSEDCL at Ramnagar, Digha, Jinandipur and to cope up with future load growth in these areas.

Present peak demand of Ramnagar 33/11 kV substation is about 13.5 MVA and it receives power mostly from Contai 132 kV substation by 33 kV S/c line via Jinandipur 33 kV substation with approx. line length of 27 Km. There is another standby 33 kV source from Egra 220 kV via Chorpalia 33 KV with approx. line length of 30 Km. Present peak demand of Jinandipur and Chorpalia 33 kV substation are 6 MVA and 9 MVA respectively. Further, Digha 33/11 kB substation with present peak demand of 12 MVA receives power from Ramnagar 33 kV substation through 33 kV single circuit. All these substations are suffering from acute low voltage problem due to drawal of power by long and overloaded 33 kV lines. After establishment of the proposed Ramnagar 132 kV GIS, the referred 33 kV substation could be fed with shorter line length.

Present aggregated maximum demand of these 33 kV substations is around 40 MVA, which may exceed 50 MVA at the end of the year 2021-22 as projected by WBSEDCL. Construction of another 33/11 kV substation at Mandarmoni is under progress which will also be fed from Ramnagar 132 kV.

Presently, there is space constraint at both Egra 220 kV and Contai 132 kV substations to accommodate further new transformer and 33 kV bays and thus establishment of another 132 kV substation in between Egra and Contai is urgently needed to off load both of these substations.

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The proposed 132 kV substation at Ramnagar will be connected with Bajkul and Contai 132 kV substation and both Bajkul and Contai substations are connected with strong 220 kV source. Evacuation of 200 MW Solar Power Generation from Mandarmani Solar Park is also envisaged through Ramnagar 132 kV substation in future.

Construction of Ramnagar 132 kV substation was prioritised by WBSEDCL in the coordination meeting between WBSEDCL and WBSETCL chaired by CMD, WBSEDCL held on 04.01.2017.

It was also submitted that construction of 132/33 kV substation at Ramnagar with D/c 132 kV connectivity with both Egra and Contai substation was considered in the approved Rolling Plan of WBSETCL, upto 2018-19.

It was also submitted that, for establishment of 132 kV GIS at Ramnagar no land is required to be acquired as it will be constructed at the available space within Ramnagar 33/11 kV substation of WBSEDCL. Permissive possession of land has already been obtained from WBSEDCL.

C) Construction of Panchami 132 / 33 kV Gas Insulated Substation (GIS) and associated transmission system (ATS):

WBSETCL has proposed for establishment of new 132/33 kV GIS at Panchami with 2x50 MVA 132/33 kV transformers, four (4) numbers of 132 kV Feeder bays, six (6) numbers of 33 kV feeder bays (with Indoor VCB) along with construction of 132 kV D/c Sadaipur - Panchami Transmission line and 132 kV D/c Transmission line from the LILO point of Sainthia – Rampurhat – Kuli line towards Rampurhat to the proposed Panchami 132 kV GIS to establish Kuli – Panchami 132 kV D/c connectivity and two (2) numbers of 132 kV AIS bays at Sadaipur 220 kV substation.

The proposed substation will be located at Panchami in the Birbhum district of West Bengal. Establishment of 132/33 kV substation at Panchami was contemplated to

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supply adequate, reliable and quality power in Panchami, Mollarpur area in Birbhum and to cope up with future load growth in these areas.

At present, power supply in these areas is maintained mostly from Sainthia 132 kV substation. Present load of Panchami 33/11 kV substation of WBSEDCL is about 26 MVA and gets power from Sainthia through a 33 kV feeder of approx. length of 32 Km. The area is suffering from acute low voltage due to overloading of long 33 kV lines. The situation becomes most acute during Boro season. Additional two no. 33/11 kV substations at Panchami – II (Harisingha) and Kastogora are under construction by WBSEDCL to cater quality power with expected new load demand at Panchami and adjacent area. Considering normal load growth rate, aggregated load of these three substations is expected to be of the tune of 50 MVA at the end of 2021-22. Further, as reported by WBSEDCL, some additional load which is likely to be incidental on the proposed Panchami 132 kV GIS are load demand of around 40 MVA for proposed coal mines to be shortly started by the Govt. of West Bengal and around 25 MVA load of running crusher units, which are running by diesel due to low voltage problem within the area.

132 kV D/c connectivity with Sadaipur 220 kV substation is considered as primary source of Panchami 132 kV GIS. Further, to enhance system reliability, another 132 kV D/c connectivity is contemplated from Kuli 132 kV GIS, which will be established by utilizing a part of existing Kuli -Rampurhat – Sainthia 132 kV D/c line via LILO.

Acute low voltage problem at Panchami area was pointed out in the meeting taken by Hon'ble MIC, Power & NES at Suri, Birbhum on 24.08.2016. Construction of Panchami 132 kV substation was prioritized by WBSEDCL in the coordination meeting between WBSEDCL and WBSETCL chaired by CMD, WBSEDCL held on 04.01.2017.

It was also submitted that, for establishment of 132 kV GIS at Panchami no land is required to be acquired as it will be constructed at the available space marked for

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Panchami II (Harisingha) 33/11 kV substation of WBSEDCL. Process has been initiated to obtain permissive possession of said land from WBSEDCL authority.

D) Construction of Labhpur 132/33 kV Gas Insulated Substation (GIS) and associated transmission system (ATS):

WBSETCL has proposed for establishment of new 132/33 kV GIS at Labhpur with 2x50 MVA 132/33 kV transformers, two (2) numbers of 132 kV Feeder bays, ten (10) numbers of 33 kV feeder bays (with Indoor VCB) along with construction of 132 kV D/c Bolpur - Labhpur Transmission Line and construction of two (2) numbers of 132 kV AIS Bays at Bolpur 132 kV substation.

The proposed sub-station will be located at Labhpur in Birbhum District of West Bengal. Establishment of 132/33 kV Substation at Labhpur was contemplated to supply adequate, reliable and quality power in Labhpur, Nanoor, Ahmedpur, Hatia, Khujutipara and Kirnahar area in Birbhum and to cope up with future load growth in these areas.

Present load of Labhpur 33/11 kV substation of WBSEDCL is about 20 MVA and gets power from Bolpur through a 33 kv feeder of approx. length of 27 Km and alternatively Labhpur 33/11 kV substation can avail power from Sainthia 132 kV substation through a single circuit connectivity via Ahmedpur 33 kV substation. Kirnahar 33/11 kV substation of WBSEDCL with present load about 16 MVA has only connectivity with Labhpur 33/11 kV substation. This area is suffering from acute low voltage problem due to incoming feeder constraint and overloading of long 33 kV line which becomes most severe during Boro season. Further, during the Boro season in March, 2017, Sainthia 132 kV substation recorded peak load at about 90% of its transformer capacity of 2x50 MVA and Bolpur 132 kV substation with transformer capacity of 3x50 MVA recorded peak load of 106 MVA. Another 33/11 kV substation at Hatia is under construction which will also be connected with Labhpur 33 kV Bus. Therefore, the

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aggregated load which will be incidental on Labhpur substation is expected to the tune of 50 MVA initially.

132 kV D/c connectivity with Bolpur 132 kV substation is considered as source of Labhpur 132 kV GIS. At present, Bolpur 132 kV substation is connected with Durgapur 220 kV substation and Sadaipur 220 kV substation through 132 kV D/c lines.

Acute low voltage at Labhpur area was pointed out in the meeting taken by Hon'ble MIC, Power and NES at Suri, Birbhum on 24.08.2016. Construction of Labhpur 132 kV substation was prioritized by WBSEDCL in the coordination meeting between WBSEDCL and WBSETCL chaired by CMD, WBSEDCL held on 04.01.2017.

It was further submitted that, for establishment of 132 kV GIS at Labhpur no land is required to be acquired as it will be constructed at the available vacant space within Labhpur 33/11 kV substation of WBSEDCL. Process has been initiated to obtain permissive possession of said land from WBSEDCL authority.

E) Construction of Kushmundi 132/33 kV Gas Insulated Substation (GIS) and associated transmission system (ATS):

WBSETCL has proposed for establishment of new 132/33 kV GIS at Kushmundi with 2x50 MVA 132/33 kV Transformers, two (2) numbers of 132 kV feeder bays, ten (10) numbers of 33 kV feeder bays (with Indoor VCB) along with construction S/c LILO of Raiganj – Gangarampur 132 kV S/c at proposed Kushmundi 132 kV GIS.

The proposed substation will be located at Kushmundi in the Dakshin Dinajpur district of West Bengal. Establishment of 132/33 kV substation at Kushmundi was contemplated to supply adequate, reliable and quality power in and around Kaliaganj, Kushmundi, Itahar and Harirampur in Dakshin Dinajpur District and to cope up with future load growth in these areas.

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At present, power supply of these areas is maintained from Raiganj 132 kV and Gangarampur 132 kV substation. Kushmundi 33/11 kV substation draws power from Gangarampur 132 kV substation via Buniadpur 33 kV substation through 33 kV line of approx. length of 25 Km. Harirampur 33 kV substation has connectivity with Kushmundi and Buniadpur 33 kV substation and is 18 Km apart from Kushmundi. Kaliaganj 33 kV substation draws power from Raiganj 132 kV substation through 2 nos. of 33 kV feeders via Hemtabad 33 kV substation. Itahar 33 kV substation also receives power from Raiganj source via Raiganj 33 kV substation and is 22 Km apart. All these substations are suffering from acute low voltage problem due to drawal of power by long 33 kV lines. After establishment of the proposed Kushmundi 132 kV GIS, the referred 33 kV substation could be fed with shorter line length.

Present aggregated maximum demand of these 33 kV substation is around 40 MVA which may exceed 68 MVA at the end of 2021-22 as proposed by WBSEDCL. Considering higher load requirement in and around Kaliaganj and Kushmundi, WBSEDCL has proposed for establishment of 132 kV substation at Kushmundi to mitigate low voltage problem in the areas under Itahar and Harirampur blocks. Buniadpur 33/11 kV substation with present maximum demand about 17 MVA will also get strong alternative source.

LILO of Raiganj – Gangarampur 132 kV S/c line which passes within 0.5 Km from the proposed location of the substation has been considered as 132 kV connectivity of Kushmundi 132 kV GIS.

Construction of Kushmundi 132 kV substation was prioritized by WBSEDCL in the coordination meeting between WBSEDCL and WBSETCL chaired by CMD, WBSEDCL held on 04.01.2017.

It was further submitted that, for establishment of 132 kV GIS at Kushmundi no land is required to be acquired as it will be constructed at the available vacant space within

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Kushmundi 33/11 kV substation of WBSEDCL. Process has been initiated to obtain permissive possession of said land from WBSEDCL authority.

F) Construction of Harishchandrapur 132/33 kV Gas Insulated Substation (GIS) and associated transmission system (ATS):

WBSETCL has proposed for establishment of new 132/33 kV GIS at Harishchandrapur with 2x50 MVA 132/33 kV Transformers, four (4) numbers of 132 kV Feeder bays, ten (10) numbers of 33 KV feeder bays (with Indoor VCB Switchgear) along with construction of D/c LILO of Malda – Samsi – Raiganj 132 kV D/C Transmission line at proposed Harishchandrapur 132 kV GIS.

It was submitted that the proposed substation will be located at Harishchandrapur in the Malda district of West Bengal. Establishment of 132/33 kV Substation at Harishchandrapur was contemplated to supply adequate, reliable and quality power in the command area of Harishchandrapur, Tulsihata, Ashapur, Chanchal and Bhaluka 33/11 kV substations in Malda District and to cope up with future load growth in these areas.

At present, power supply of these areas is maintained from Samsi 132 kV substation. Samsi 132 kV substation with transformer capacity of (50+2x31.5) MVA is the only EHV source in the northern part of Malda District and present maximum demand is about 82 MVA. Present load of Harishchandrapur 33/11 kV substation of WBSEDCL is about 22 MVA and getting power from Samsi 132/33 kV substation via Chanchal 33/11 kV substation through 33 kV feeder. Present load of Chanchal 33 kV substation is about 25 MVA. Both Chanchal and Harishchandrapur are suffering from acute low voltage problem due to incoming feeder constraint and overloading of long 33 kV lines. Chanchal has another 33 kV connectivity with Raiganj 132 kV substation which is located over 30 Km radially from Chanchal. After establishment of the proposed Harishchandrapur 132 kV GIS, above 33 kV sub-stations could be fed with shorter line

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length. Connectivity of upcoming Ashapur and Tulsihata 33/11 kV substation will be established from proposed Harishchandrapur 132 kV GIS. Further, Chanchal, Bhaluka and Harirampur 33/11 kV substations which are 20 Km apart from the proposed substation will also get strong alternative source. The expected demand to be incident on the proposed Harishchandrapur 132/33 kV GIS is around 42 MVA as projected by WBSEDCL.

Malda – Samsi – Raiganj 132 kV D/c line passes about 28 Km apart from the proposed location of the substation. However, after commissioning of Gazol 220 kV, the said line will be reconfigured as Gazol – Raiganj 132 kV D/c. LILO of the said line has been considered as 132 kV connectivity of the proposed Harishchandrapur 132 kV GIS which will establish connectivity with Gazol and Raiganj.

Construction of Harishchandrapur 132 kV substation was prioritized by WBSEDCL in the coordination meeting between WBSEDCL and WBSETCL chaired by CMD, WBSEDCL held on 04.01.2017.

It was further submitted that, for establishment of 132 kV GIS at Harishchandrapur no land is required to be acquired as it will be constructed at the available vacant space within Harishchandrapur 33/11 kV substation of WBSEDCL. Process has been initiated to obtain permissive possession of said land from WBSEDCL authority.

G) Construction of Kona 132/33 kV Gas Insulated Substation (GIS) and associated transmission system (ATS):

WBSETCL has proposed for establishment of new 132/33 kV GIS at Kona with 3x50 MVA 132/33 kV Transformers, four (4) numbers of 132 kV Feeder bays, twelve (12) numbers of 33 KV feeder bays (with Indoor VCB Switchgear) along with construction of S/c LILO of Liluah – Rishra 132 kV S/c Line and Liluah – Dankuni 132 kV S/c Line at proposed Kona 132 kV GIS.

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