सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)

(भारत सरकार का उद्यम)

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

(A wholly owned subsidiary of Power Grid Corporation of India Limited)

(A Government of India Enterprise)

संदर्भ/Ref: CTU/E/00/5th CMETS-ER

दिनांक/Date: 22-04-2022

वितरण सूची के अनुसार/ As per Distribution List

विषय/ Subject: पूर्वी क्षेत्र में पारेषण योजनाओं के विकास के लिए 5वी परामर्श बैठक के कार्यवृत्त (सीएमईटीएस-ईआर) / Minutes of 5th Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)

महोदय/महोदया/ Sir/ Ma'am,

पूर्वी क्षेत्र में पारेषण योजनाओं के विकास के लिए **5वी** परामर्श बैठक **30th मार्च, 2022** को वीडियो कॉन्फ्रेंस के माध्यम से आयोजित की गई थी। इस संबंध में बैठक के कार्यवृत्त संलग्न है। यही CTUIL की वेबसाइट (*www.ctuil.in >> ISTS Planning and Coordination >> Consultation Meeting for ISTS >> Eastern Region*) पर भी उपलब्ध है।

The **5th** Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER) was held on **30th March, 2022** through video conferencing. In this regard, please find enclosed minutes of the meeting. The same is available on CTUIL website (*www.ctuil.in >> ISTS Planning and Coordination >> Consultation Meeting for ISTS >> Eastern Region*)

धन्यवाद/ Thanking you,

भवदीय / Yours faithfully,

(राजेश कुमार) / (Rajesh Kumar) 22/4/2022

महाप्रबंधक/ General Manager

A. वितरण सूची / Distribution List:

1.	**Chief Engineer (PSP&A-II)** Central Electricity Authority Sewa Bhawan, R.K.Puram New Delhi-110066	2.	**Director (SO)** Power System Operation Corporation Ltd. 9th Floor, IFCI Towers, 61, Nehru Place, New Delhi-110 016
3.	**Member Secretary** Eastern Regional Power Committee 14, Golf Club Road, Tollygunge Kolkata-700033	4.	**Executive Director** Eastern Regional Load Despatch Centre 14, Golf Club Road, Jubilee Park, Golf Gardens, Tollygunge, Kolkata, West Bengal - 700095
5.	**CMD** Damodar Valley Corporation DVC Towers, VIP Road Kolkata-700054	6.	**CMD** Odisha Power Transmission Corporation Ltd. (OPTCL) Bhoinagar Post Office, Jan path Bhubaneshwar-751022
7.	**CMD** Bihar State Power Transmission Company Ltd. (BSPTCL) Vidyut Bhavan, 4th floor, Bailey Road Patna-800021	8.	**CMD** Jharkhand Urja Sancharan Nigam Limited (JUSNL) Engineering Building, HEC, Dhurwa Ranchi -834004
9.	**Principal Chief Engineer cum Secretary** Power Department Government of Sikkim Gangtok, Sikkim	10.	**Managing Director** West Bengal State Electricity Transmission Company Ltd. (WBSETCL) Vidyut Bhavan, 8th Floor, A-Block Salt Lake City, Kolkata-700091

B. विशेष आमंत्रित / Special invitee:

Director (Projects)
Power Grid Corporation of India Ltd.
"Saudamini", Plot No. 2, Sec-29, Gurugram
Haryana-122001

Minutes of 5th Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)

CGM (CTU) welcomed the participants in the meeting. List of the participants is enclosed at **Annexure-I.**

CTU gave a presentation (copy enclosed at **Annexure-IV**) on the overview of ER grid for 2026-27 time-frame. It was mentioned that installed capacity and peak demand of ER is expected to grow to about 57GW and 35.7GW respectively. Despatch factors for different type of generation for nine different load-generation scenarios was presented. Accordingly, Load-Generation Balance (LGB) for nine scenarios including surplus/deficit in each scenario was also presented. It was noted that to meet the power import/export requirement of ER till 2026-27, the existing and under implementation ISTS strengthening systems shall be adequate.

WBSETCL also gave a presentation (copy enclosed at **Annexure-V**) regarding the future load generation of West Bengal grid. Further, details regarding upcoming strengthening in state grid in order to meet future demand was also presented. Expected timeline of commissioning of under construction intra-state schemes was also updated by the state.

All the stakeholders appreciated the initiative of sharing of future plan details of ISTS and intra-state schemes in CMETS as the same shall help in better transmission system planning due to availability of updated data and coordination among states, CTU, ERPC, ERLDC & other stakeholders. It was agreed that this shall be a continuous practice. Accordingly, it was agreed that BSPTCL and OPTCL would present regarding load-generation balance and upcoming intra-state schemes of Bihar and Odisha respectively for 2026-27 time-frame in the next CMETS-ER.

Agenda wise deliberations and decisions are given below:

1. Confirmation of minutes of the previous meeting

CTU informed that the minutes of the 4th meeting of CMETS-ER held on 25-02-2022 were issued vide letter dated 10-03-2022. As no comments have been received, the minutes were confirmed as circulated.

A. Application related matters in Eastern Region (ER)

2. LTA applications with injection in another region and drawl in ER

2.1. CTU informed that following LTA applications have been received from generation developer in NR and WR with drawl in ER in the month of Feb 2022:

Sl. No.	Application No.	Applicant Name	Application Date	Location of Generating Station	Type of Fuel	Start Date	End Date	Drawl Point
1	1200003712	NTPC Renewable Energy Limited	27-02-2022	Khavda-II PS, Gujarat	Solar	03-04-2024	02-04-2049	TSNPDCL/SR: 78.04 MW TSSPDCL/SR: 186.96 MW DVC/ER: 100 MW

Sl. No.	Application No.	Applicant Name	Application Date	Location of Generating Station	Type of Fuel	Start Date	End Date	Drawl Point
2	1200003764	Adani Renewable Energy Park Rajasthan Limited	28-02-2022	Fathegarh-II PS, Rajasthan	Solar	18-12-2023	18-12-2048	Target ER: 150MW

2.2. CTU informed that the above LTAs are proposed to be granted with transmission system expansion in WR and NR. These LTAs involves power transfer from NR and WR to ER, and no constraints are envisaged in above transfer of power to ER.

2.3. After deliberations, the above LTAs were agreed for grant along with identified system expansion in WR and NR.

3. Requirement of STU NoC from OPTCL for LTA Application no. 1200003586 from M/s Azure Power India Pvt. Ltd. (at Bhadla-II PS, Rajasthan) for transfer of 100MW power to GRIDCO, Odisha (ER)

3.1. CTU informed that LTA application (267MW) of M/s Azure Power India Pvt. Ltd. was discussed in 3rd CMETS-NR held on 28-01-2022 with beneficiaries as 100MW: WR (Target) & 167MW: ER (Target). The LTA application was also discussed in 3rd CMETS of SR, ER & WR for grant with target beneficiary in Eastern Region.

3.2. Now, M/s Azure vide their letter dated 17-02-2022 has requested to firm up their LTA on submission of PPA & PSA (without NoC). PPA/PSA (without NoC) has been submitted by M/s Azure for transfer of 167MW power to GRIDCO in ER. Request for NoC to OPTCL from CTU has already been sent on 16-03-2022.

3.3. OPTCL confirmed that they shall be issuing the STU NoC for the subject power transfer of 167MW from M/s Azure to GRIDCO w.e.f. 01st Dec 2023. M/s Azure, mentioned that they require NoC from 11th Nov 2023. Towards this, OPTCL mentioned that they will take up the matter with GRIDCO regarding issuance of NoC and also requested M/s Azure to take up the matter with GRIDCO.

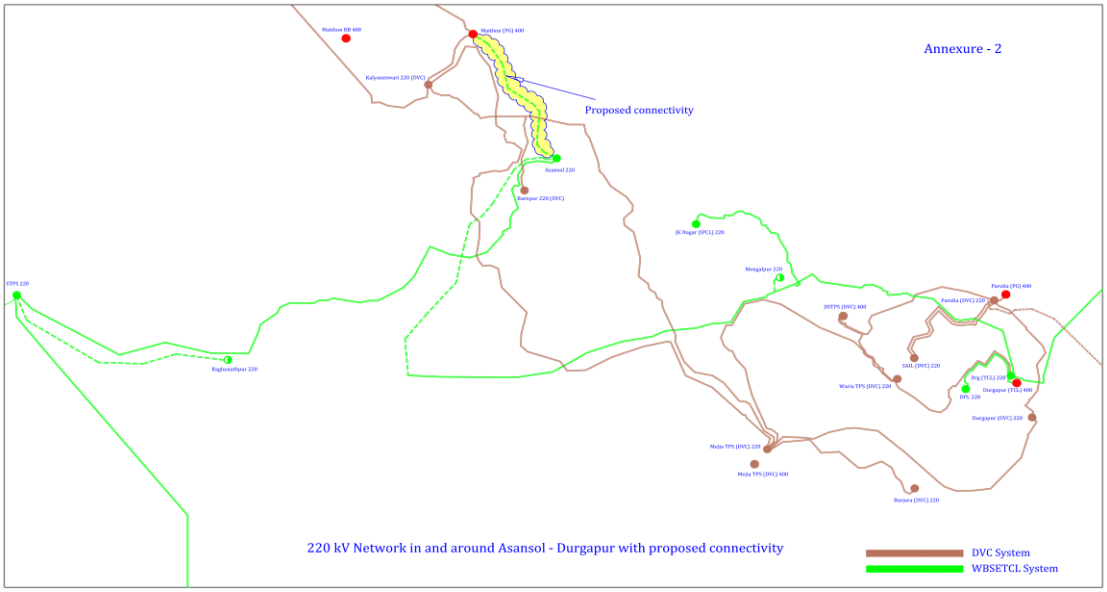
3.4. After detailed deliberation, it was noted that OPTCL is agreeable to issuance of STU NoC for the subject power transfer. It was further also agreed that M/s Azure needs to take up the matter with GRIDCO and OPTCL regarding expeditious issuance of NoC from OPTCL.

B. ISTS expansion schemes in Eastern Region

4. 2 no. of 220kV line bays at Maithon (POWERGRID) S/s for connecting Maithon (POWERGRID) – Asansol (WBSETCL) 220kV D/c line – Agenda by WBSETCL

4.1. CTU mentioned that WBSETCL has informed following in regard to the subject proposal:

(a) The load growth in Asansol area in west Burdwan district is taking place rapidly. Presently, power supply in the area is met from Asansol 220/132/33kV sub-station having transformation capacity of 2x160MVA + 4x50MVA. Maximum demand of the sub-station has already been reached over 150 MVA. One 220/33kV sub-station is under construction at Mongalpur in West Burdwan district to meet up-coming new loads, which is expected to be commissioned by 2022-23.



(b) Main source of power in this area is Santaldihi TPS (STPS) and Durgapur (Bidhannagar) 400/220kV sub-station. 400/220kV, 315MVA (3rd) ICT at Durgapur (Bidhannagar) is expected to be commissioned by 2022-23. Two nos. 220kV sub-station namely Asansol & JK Nagar are already connected with STPS & Durgapur (Bidhannagar) through STPS – Durgapur (Bidhannagar) 220kV D/c line (213MVA). Upcoming Mongalpur 220kV sub-station would be connected in the same line due to non-availability of corridor in the area.

(c) Presently, maximum demand of Asansol and JK Nagar 220kV sub-stations is around 150MVA and 130MVA respectively. Expected demand of Mongalpur 220kV sub-station is around 80MVA.

(d) Considering future load growth, for reliable operation of the grid in compliance of N-1 contingency, one new 220kV connectivity from a strong source at Asansol 220kV sub-station is required. Accordingly, Maithon (POWERGRID) – Asansol (WBSETCL) 220kV D/c line has been proposed under intra-state

4.2. CTU further mentioned that studies have been carried out for the proposed interconnection and following has been observed:

(a) Under normal operating condition in peak load scenario, about 150MW per circuit power flow is observed on the newly proposed Maithon (POWERGRID) – Asansol (WBSETCL) 220kV D/c line. Under N-1, about 270MW power flow is observed. Therefore, it is suggested to implement this line with high capacity conductor, such as Twin ACSR Moose or Single HTLS of 1600A rating.

(b) Upon implementation of the proposed line, power flow on Asansol – Mongalpur and Asansol – JK Nagar 220kV line sections increases and it is observed that under N-1 of any of the said two line sections, the other section gets critically loaded. Further, in case of low generation at DPL or Bakreswar the condition aggravates resulting in much higher loading in normal operating condition itself. Accordingly, it is proposed that along with implementation of Maithon (POWERGRID) – Asansol (WBSETCL) 220kV D/c line, reconductoring of Asansol – Mongalpur and Asansol – JK Nagar 220kV line sections with HTLS may also be taken up (HTLS of about 1600A).

4.3. CTU informed that POWERGRID has confirmed regarding availability of space for implementation of 2 no. 220kV new line bays at Maithon (POWERGRID) S/s.

4.4. In view of the above, following is proposed:

(a) Space allocation at Maithon (POWERGRID) ISTS S/s to WBSETCL: Space for implementation of 2 no. 220kV line bays would be provided at Maithon (POWERGRID) ISTS S/s for termination of Maithon (POWERGRID) – Asansol (WBSETCL) 220kV D/c intra-state line (Twin ACSR Moose or Single HTLS of 1600A rating) of WBSETCL.

4.5. WBSETCL informed that they planning to establish a new 220kV substation at Koylapur through LILO of Santaldih TPS – Asansol 220kV D/c line, and accordingly in case of space constraint at Asansol, the 220kV line from Maithon can be terminated at Koylapur. They further mentioned that, they shall be able to confirm regarding termination of line either at Asansol or Koylapur within a month.

4.6. ERLDC enquired about availability of transformation capacity at Maithon (POWERGRID) S/s for additional drawl by WBSETCL, as already DVC and JUSNL are having substantial drawls at Maithon (POWERGRID) S/s. CTU informed that considering the future demand projection of states and planned systems in ISTS & Intra-state, no constraint is envisaged in transformation capacity at Maithon (POWERGRID) S/s with additional 220kV line to Asansol.

4.7. CTU mentioned that implementation of Koylapur 220kV substation may require revised studies, as Koylapur to Asansol may also get critically loaded. Accordingly, it was proposed that upon confirmation from WBSETCL regarding availability of space at Asansol for termination of new 220kV D/c line, the proposal may be finalized.

4.8. After detailed deliberation, following was agreed:

(a) Within one month WBSETCL will confirm regarding availability of space at Asansol for implementation of Maithon (POWERGRID) – Asansol 220kV D/c line.

(b) If space is not available at Asansol, WBSETCL will provide the details such as line length of – new sections formed after LILO of Santaldih TPS – Asansol 220kV D/c line at Koylapur, Koylapur – Maithon etc. for carrying out revised system studies.

(c) The scheme would be again taken up for deliberation in CMETS-ER after receipt of inputs from WBSETCL and revised studies.

5. Establishment of 400/220kV substation at Joda – Agenda by OPTCL

5.1. CTU informed that the OPTCL vide letter no. Dir.(P)/BBSR/2021-22/Tech.22/154 dated 21-02-2022 has mentioned that a large number of industries are coming up in Joda area in Odisha. The major bulk loads as provided by Odisha are as follows:

Sl. No.	Load Centre	Load (MW)
1	Essar Minment	40
2	JSW Steel	75
3	Rungta Mines	148
4	Narbheram	20
5	Tata	40
6	Arcelor Mittal	38
7	JSPL	50
8	Triveni Earth Mover	100
	Total	**481**

5.2. It was further informed that:

(a) New 220kV switching station at Tikarpada along with Keonjhar - Tikarpada 220kV D/c line and LILO of TTPS - Joda 220kV line at Tikarpada was approved in 1st meeting of CMETS of Eastern Region held on 29-11-2021.

(b) Due to addition of about 480MW new load in Joda area, OPTCL has proposed for establishment of new 400/220kV S/s at Joda New and requested for ISTS connectivity from Rourkela 400/220kV and Keonjhar 400/220kV S/s alongwith LILO of Tikarpada – Joda 220kV line and Keonjhar – Joda 220kV line at Joda New.

5.3. CTU mentioned that out of two ISTS connectivity requested at para above, Rourkela is strongly connected to various parts in the grid viz. Talcher, Sundargarh, Ranchi, Chaibasa/Jamshedpur. However, Keonjhar is connected to the grid through LILO of Baripada – Rengali 400kV S/c line only. Considering 400/220kV Rourkela substation as a strong source, the ISTS connectivity to new 400/220kV Joda substation may preferably be provided through Rourkela substation. Further, as the loads at Joda New are major industrial loads, 400kV feed to Joda New substation may be provided from two sources. Accordingly, LILO of 400kV Talcher - Rourkela 400kV D/c line at Joda New would be a better solution.

5.4. It was mentioned that studies have been carried out for three different alternatives and following has been observed in the studies:

(a) Alternative-1: Rourkela – Joda New 400kV D/c line

Under the normal condition, the power flow is about 484MW per circuit with the proposed interconnection. However, under N-1 contingency of this line the loading is about 790MW, which is under the thermal limits.

(b) Alternative-2: Keonjhar – Joda New 400kV D/c line

Under the normal condition, the power flow is about 233MW per circuit with the proposed interconnection. However, under N-1 contingency of Keonjhar – Rengali 400kV S/c line, very low voltage and overloading in the 220kV lines emanating from Joda New substation have been observed. Accordingly, the proposal seems to be technically non-feasible.

(c) Alternative-3: Connectivity with proposed LILO of Rourkela (POWERGRID) – Talcher (NTPC) 400kV D/c line at Joda New substation

Under normal operating condition in peak load scenario about 460MW per circuit power flow is observed from Rourkela to Joda New 400kV section & about 41MW per circuit is observed from Talcher to Joda New 400kV section formed after proposed LILO. Under N-1 contingency of the either 400kV section power flow is observed to be under the thermal limits. However, it may be noted that 3x500MVA, 400/220kV ICTs are required to be installed by OPTCL to meet the N-1 contingency criteria under ICT outages.

(d) OPTCL may install 420kV, 2x125MVAr bus reactor at Joda New S/s for voltage control.

5.5. CTU informed that as the loads are industrial in nature, so dual source may be provided to the 400/220kV Joda new substation for reliable power supply. Accordingly, connectivity to Joda New 400/220kV substation may be provided through **Alternative-3** mentioned above viz. LILO of Rourkela (POWERGRID) – Talcher (NTPC) 400kV D/c line at Joda New substation. Regarding installation of ICTs, it was suggested that initially 2x500MVA ICTs may be installed and with progressive demand growth additional 500MVA ICT(s) may be installed for which adequate space provision may be kept at substation planning phase.

5.6. ERLDC mentioned that studies may also be carried out for case involving outage of Talcher – Kolar HVDC and off-peak demand condition, so that there is no power evacuation constraint. It was further clarified that with tripping of Talcher – Kolar HVDC, there is SPS which brings down generation at Talcher St-1 (4x500MW) till thermal limit of Talcher – Meramundali line is not violated. CTU mentioned that with implementation of Joda New substation, only additional load is added into the system and power evacuation constraint accordingly is not envisaged. Nevertheless, ERLDC requested to carry out a case for off-peak demand condition and considering HVDC outage.

5.7. DVC mentioned that with low generation at Talcher and additional demand at Joda New, the Joda – Jindal – Jamshedpur 220kV line may get critically loaded, and accordingly the same may also need to be studied. Further, ERLDC also mentioned about loop flows and critical loading in OPTCL network near Joda.

5.8. After detailed deliberation, it was agreed that in view of latest observations given by ERLDC and DVC, OPTCL would review the study file and revised joint studies may be carried out for implementation of new 400kV substation at Joda. The agenda may be again deliberated in CMETS-ER after joint studies.

6. Status of downstream 220kV or 132kV network by STUs from the various commissioned and under-construction ISTS substations in ER

6.1. CTU informed that numbers of ISTS sub-stations have been commissioned and some are under construction for which the downstream system is being implemented by the STUs.

6.2. Based on the information provided by the states, updated information on planned/under-construction downstream system is given at **Annexure-II.**

7. Status of 400kV substations being implemented by STUs in ER under intra-state schemes to be connected through ISTS

7.1. CTU informed that various 400kV substations have been approved in the intra-state strengthening schemes in ER having interconnection with ISTS grid involving LILO of ISTS lines or direct connection to ISTS substations.

7.2. Status of intra-state substations and associated lines as updated by STUs in the meeting is given at **Annexure-III**.

– x – x – x –

Annexure-I

List of participants of 4th Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)

Sl. No.	Name	Designation	Organization	Email id
1.	Sh. Jasbir Singh	CGM	CTU	jasbir@powergrid.in
2.	Sh. Rajesh Kumar	GM	CTU	rajeshkumar@powergrid.in
3.	Sh. Manish Ranjan Keshari	Manager	CTU	manish.keshari@powergrid.in
4.	Sh. Shyam Sunder Goyal	Manager	CTU	
5.	Sh. Anupam Kumar	Dy. Manager	CTU	i.anupamk@powergrid.in
6.	Sh. Abhilash Thakur	Engineer	CTU	abhilash.28@powergrid.in
7.	Sh. Amit Kumar	Engineer	CTU	emailamit0014@gmail.com
8.	Sh. P.P. Jena	EE	ERPC	ppjena.erpc@gov.in
9.	Sh. Amaresh Mallick	CGM	ERLDC	amareshmallick@posoco.in
10.	Sh. Saurav Kr Sahay	Chief Manager	ERLDC	saurav.sahay@posoco.in
11.	Sh. Shabari Pramanick	Manager	ERLDC	shabari.pramanick@posoco.in
12.	Sh. Chandan Kumar	Manager	ERLDC	chandan@posoco.in
13.	Sh. Jayanta Dutta	Chief Engineer	DVC	jayanta.dutta@dvc.gov.in
14.	Sh. Swarup Kumar Pal	Sr. Div. Engg	DVC	swarup.pal@dvc.gov.in
15.	Sh. Preetosh Ghosh	EE, SLDC	DVC	Preetosh.ghosh@dvc.gov.in
16.	Sh. Ranjan Das	Addl. CE	WBSETCL	cpd.wbsetcl@gmail.com
17.	Sh. R. L. Panda	Director project	OPTCL	
18.	Sh. C. R. Mishra	DGM	OPTCL	
19.	Sh. A. K. Banerjee	DGM	OPTCL	ele.akbanerjee@optcl.co.in
20.	Sh. Ajit Kumar Bhagat	Sr Manager	JUSNL	cetjusnl@gmail.com

Sl. No.	Name	Designation	Organization	Email id
21.	Sh. Rajdeep Bhattacharjee	ESE, RE Kolkata	BSPHCL	rekolbsphcl@gmail.com
22.	Sh. H R Panday	Director (Projects)	BSPTCL	dir.proj.bsptcl@gmail.com
23.	Sh. Ratan Kumar	CE (P1)	BSPTCL	
24.	Sh. D K Jha	CE(P&E)	BSPTCL	ceplanningengg@gmail.com
25.	Sh. R S Prasad	ESE(P&E)	BSPTCL	eeebspgcl@gmail.com
26.	Sh. Abhishek Kumar	EEE(P&E)	BSPTCL	abhishek.bsptcl@hotmail.com
27.	Sh. Praveen Kumar	EEE(STU)	BSPTCL	stubsptcl2019@gmail.com
28.	Sh. Shankar Kumar	CE(P2)	BSPTCL	
29.	Sh. Sanjai Kumar Singh	Manager	Bihar Grid Co. Ltd	Sanjai.singh@powergrid.in
30.	Sh. Naseem Iqbal	SGM	Bihar Grid Co. Ltd	
31.	Sh. Shashank Gupta	Senior engineer	Azure Power	Shashank.gupta@azurepower.com

Annexure-II

Status of Downstream Transmission Network in ER

Sl. No.	ISTS S/s	State	Voltage ratio, Trans. Cap	Downstream Voltage level (kV)	Unutilised bays	Status of ISTS bay	STU lines for unutilised bays	Status of Lines	
								Date of Award	Completion schedule
1.	Chaibasa	Jharkhand	400/220kV, 2x315MVA	220	2	Existing bay	Chaibasa (POWERGRID) – Jadugoda (JUSNL) 220kV D/c		Will be taken up in future. No firm plan as of now.
2.	Daltonganj	Jharkhand	400/220/132kV, 2x315MVA+ 2x160MVA	132	2	Existing bay	Daltonganj (POWERGRID) – Chatarpur 132kV D/c	22-10-2019	Expected by 21-10-2022.
3.	Dhanbad	Jharkhand	400/220kV	220	4	Existing bay	LILO of 1st circuit of 220kV Dumka – Govindpur D/c line at Dhanbad (23km)	Tender has been floated.	Dec 2023
							LILO of 2nd circuit of 220kV Dumka – Govindpur D/c line at Dhanbad	Survey and estimation are being taken up. Thereafter, funding will be tied up.	
4.	Bolangir	Odisha	400/220kV, 2x315MVA	220	2	Existing bay	LILO of one ckt. of Sadeipalli – Kesinga 220kV D/c at Bolangir		Charged on 5th Mar'22.
5.	Keonjhar	Odisha	400/220kV, 2x315MVA	220	2	Existing bay	Keonjhar (POWERGRID) – Turumunga (OPTCL) 220kV D/c		Expected by Jun'22.
6.	Pandiabil	Odisha	400/220kV, 2x500MVA	220	2	Existing bay	Pratapsasan (OPTCL) – Pandiabil (POWERGRID) 220kV D/c		Expected by April'22.
7.	Subashgram	West Bengal	400/220kV, 3x315MVA	220	2	Existing bay	Subashgram (POWERGRID) – Baraipur 220kV D/c line		Testing is going on. Expected by Apr'22.
8.	Rajarhat	West Bengal	400/220kV, 2x500MVA	220	4	Existing bay	Rajarhat (POWERGRID) – New Town AA2C 220kV D/c		Severe ROW (12km) in cable laying. Expected by Oct 2022.
							Rajarhat (POWERGRID) – Barasat/Jeerat 220kV D/c		Expected by June'22.
9.	Sitamarhi (New)	Bihar	400/220/132kV, 2x500MVA + 2x200MVA	132	2	Existing bay	LILO of Benipatti - Pupri 132kV S/c at Sitamarhi (New)		Expected by May'22.

Sl. No.	ISTS S/s	State	Voltage ratio, Trans. Cap	Downstream Voltage level (kV)	Unuti-lised bays	Status of ISTS bay	STU lines for unutilised bays	Status of Lines	
								Date of Award	Completion schedule
10.	Saharsa (New)	Bihar	400/220/132kV, 2x500MVA + 2x200MVA	220	4	Existing bay	Saharsa (New) - Khagaria 220kV D/c line		Charging process going on. Expected to be charged by April'22.
							Saharsa (New) - Begusarai 220kV D/c line		Expected by April'22.
				132	2-ISTS (addln.4 by state)		Saharsa (New) - Saharsa 132kV D/c line formed by LILO of Saharsa - Banmankhi and Saharsa - Uda Kishanganj 132kV S/c line		04 nos. of bays are under construction by BSPTCL at Saharsa (New). Expected by Aug'22.
11.	Banka	Bihar	400/220/132kV, 2x500MVA + 2x200 & 1x315MVA	220	2	Under Bidding	Banka (POWERGRID) – Goradih (Sabour New) 220kV D/c line	Funds tied up. Tendering is expected shortly.	18 months from award.

Annexure-III

Status of 400kV substations being implemented by STUs in ER under intra-state schemes to be connected to ISTS

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule
A	**Bihar (to be implemented by BSPTCL/BGCL)**			
I	**Naubatpur GIS**	400/220/132/33kV, 2x500MVA + 2x160MVA + 2x80MVA	26.04.2018	Charged on 17th Mar 2022.
a)	LILO of circuits 3 & 4 of Patna (PG)-Balia 400 kV D/c (Quad) line at Naubatpur 400 kV 2x D/C	400kV 2x D/C	26.04.2018	Charged on 17th Mar 2022.
b)	LILO of both circuits of Ara (PG) – Khagaul (BSPTCL) line at Naubatpur (New) 220 kV 2xD/C	220kV 2xD/C	26.04.2018	Expected in Apr'22.
II	**Bakhtiyarpur GIS**	400/220/132kV, 2x500MVA + 2x160MVA	26.11.2019	Progressively from Aug'22 to Dec'22.
a)	LILO of both circuits of Barh – Patna (PG) 400kV D/c (Quad) line-1 at Bakhtiyarpur 400 kV 2xD/C	400kV 2xD/c	26.11.2019	Line ready to be charged matching with Bakhtiyarpur S/s.
III	**Jakkanpur GIS**	400/220/132/33kV, 2x500MVA + 3x160MVA + 4x80MVA	26.04.2018	Expected in Apr'22.
a)	LILO of both circuits of Nabinagar-II – Patna (PG) 400kV D/c at Jakkanpur	400kV 2xD/c	26.04.2018	Expected in Apr'22
IV	**Chappra (New)**	400/220/132kV, 2x500MVA + 2x200MVA	Funds not yet tied up	State Govt approval under process.
a)	LILO of 400 kV Barh (NTPC) - Motihari (DMTCL) D/C (Quad) transmission line at Chappra	400kV 2xD/c	Funds not yet tied up	State Govt approval under process.
B	**Odisha (to be implemented by OPTCL)**			
I	**Meramundali-B**	400/220kV, 2x500MVA	-	ICT-1 charged & ICT-2 on 23rd Mar'22.
II	**Digapahandi**	400/220kV, 2x500MVA	Survey in progress	2025-26
a)	Digapahandi – Therubali – Jeypore 400kV D/c line	400kV D/c	Survey in progress	2025-26
III	**Therubali**	400kV switching station along with 420kV, 1x125MVAr bus reactor	Survey in progress	2025-26
IV	**Bhadrak**	400/220kV, 2x500MVA	Tendering in progress	2024-25
a)	LILO of Baripada – Duburi and Baripada – Pandiabili 400kV line sections at Bhadrak	400kV D/c	Tendering in progress	2024-25

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule
V	**Paradeep***			
a)	Paradeep	400kV	Line package awarded and substation awarded in May'22	24 months
b)	Paradeep	765kV		2025-26
c)	Angul (POWERGRID) – Paradeep (OPTCL) 765kV D/c line	765kV D/c	Survey in progress	2025-26
VI	**Begunia**	765/400kV, 2x1500MVA	Kept in abeyance	Kept in abeyance
a)	Angul – Begunia 765kV D/c line	765kV D/c	Kept in abeyance	Kept in abeyance
b)	LILO of Pandiabil – Digapahandi 400kV D/c line at Begunia	400kV D/c	Kept in abeyance	Kept in abeyance
C	**Jharkhand (to be implemented by JUSNL)**			
I	**Jasidih**	400/220kV, 2x500MVA	-	No firm plan now. To be taken up in future.
II	**Chandil (New)**	400/220kV, 2x500MVA	NIT has been floated on 05-03-2022. Bid opening in Apr'22.	24 months
a)	Chandil – Chaibasa (POWERGRID) 400kV D/c line	400kV D/c		
III	**Koderma**	400/220/132/33kV, 2x500MVA + 2x200MVA + 2x80MVA		
IV	**Mander**	400/220kV, 2x500MVA	-	No firm plan now. To be taken up in future.
a)	LILO of Patratu – Ranchi (New) 400kV D/c line at Mander	400kV 2xD/c	-	No firm plan now. To be taken up in future.
V	**Dumka (New)**	400/220kV, 2x500MVA	-	No firm plan now. To be taken up in future.
a)	Dumka (New) – Dhanbad (ISTS) 400kV D/c line	400kV D/c	-	No firm plan now. To be taken up in future.
D	**West Bengal (to be implemented by WBSETCL)**			
I	**Laxmikantpur GIS**	400/132kV, 2x315MVA	Land identified. In process of acquisition. Expected by Dec 2024	
a)	LILO of Haldia – Subhasgram 400kV D/c line at Laxmikantpur	400kV D/c	-	Expected by Dec 2024

** OPTCL informed that Paradeep 765/400kV is different that of already under-construction Paradeep 400/220kV S/s, accordingly, they are planning 400kV 2xD/c line between two substations.*

Annexure-IV

Load Generation balance of Eastern Region – 2026-27

Installed Capacity & Peak Demand 2026-27

State	Thermal	Hydro	Solar	Total	EPS Peak Demand
Bihar	1820	45	700	**2565**	9308
Jharkhand	2400	130	0	**2530**	6626
Odisha	2490	2193	403	**5086**	6273
West Bengal	6065	1474	0	**7539**	15680
Sikkim	0	14	0	**14**	216
Central	24440	5819	0	**30259**	
IPP	4150	5012	0	**9162**	
Total	**41365**	**14686**	**1103**	**57154**	**35674**

Scenario wise generation despatch and Demand factor

Scenario No & Name	Generation Dispatch Factors		Demand Factor
	Hydro	Solar	
1-Aug Solar Max	70%	80%	83%
2-Aug Peak Load	90%	0%	97%
3-Aug Night Off Peak	70%	0%	88%
4-Jun Solar Max	70%	85%	84%
5-Jun Peak Load	90%	0%	99%
6-Jun Night Off Peak	70%	0%	84%
7-Feb Solar Max	30%	90%	69%
8-Feb Peak Load	60%	0%	81%
9-Feb Night Off Peak	30%	0%	54%

Thermal generations dispatch have been considered based on Merit order data

Scenario wise Demand Considered

States/Scenario	1	2	3	4	5	6	7	8	9
Bihar	7065	8311	3138	6618	7861	4450	5295	6286	3230
Jharkhand	1552	1826	1413	1562	1856	1258	1584	1880	1158
DVC-JH	2354	2769	3538	2605	3095	3597	2561	3040	2412
DVC-WB	1339	1575	2012	1482	1760	2046	1457	1729	1372
Odisha	6094	7169	8299	6238	7410	5914	5249	6232	3867
West Bengal	10785	12687	12905	11157	13253	12749	8031	9534	7119
Sikkim	119	140	19	116	138	57	185	220	120
Total	**29308**	**34477**	**31324**	**29778**	**35373**	**30071**	**24362**	**28921**	**19278**

State wise drawl from ISTS

Drawl from ISTS	Aug'26			Jun'26			Feb'27		
Scenario No	1	2	3	4	5	6	7	8	9
State	Solar Max	Peak Load	Off Peak	Solar Max	Peak Load	Off Peak	Solar Max	Peak Load	Off Peak
Bihar	6474	6724	2106	5991	6699	4537	4651	4712	2215
Jharkhand	439	-331	2	151	-301	173	225	-238	-201
DVC	3693	4344	5550	4087	4855	4017	4017	4769	3785
Odisha	3423	3937	5507	3546	4179	2839	3222	3361	2203
West Bengal	9753	9312	9825	10125	9878	5111	6577	6601	4964
Sikkim	109	128	9	106	125	175	181	212	116
Central	-6603	-12073	-11366	-9821	-17925	-15845	-14044	-24266	-16568
IPP	-4916	-6687	-5684	-4916	-6687	-5684	-3786	-6535	-4554
Total	**12370**	**5354**	**5948**	**9270**	**824**	**-4677**	**1043**	**-11383**	**-8040**

Region wise Surplus/ Deficit and IR flows

Surplus(+)/Deficit(-)		Aug'26			Jun'26			Feb'27		
Scenario No		1	2	3	4	5	6	7	8	9
Region	Demand	Solar Max	Peak Load	Off Peak	Solar Max	Peak Load	Off Peak	Solar Max	Peak Load	Off Peak
NR	91294	17317	-18302	-17347	14106	-28391	-20707	28432	-10390	-2738
WR	89080	-2053	17079	15612	-3278	21428	17606	-10740	7989	8598
SR	78584	-1263	6922	6477	1228	7441	3700	-13709	-8521	-13337
ER	33513	-12370	-5354	-5948	-9270	-824	-1034	-1043	11383	8040
NER	6303	-1020	-346	91	-668	345	434	-1827	-461	-563
		610	0	-1115	2116	0	0	1113	0	0
IR Flows		Aug'26			Jun'26			Feb'27		
Scenario No		1	2	3	4	5	6	7	8	9
Corridor	TTC(Apr'23)	Solar Max	Peak Load	Off Peak	Solar Max	Peak Load	Off Peak	Solar Max	Peak Load	Off Peak
WR-NR	25500	-4993	18628	16980	-4505	24235	17642	-19915	4007	662
ER-NR	6900	-8876	-949	-645	-5268	3114	1995	-5592	5412	1697
ER-WR	-	-4628	-4650	-6229	-4034	-5639	-5404	-417	2354	2116
ER-SR	5450	3183	2692	2537	3379	2815	3386	5007	4107	4546
WR-SR	16000	-1505	-8250	-8556	-3391	-9851	-6546	8466	4759	8730
NER-ER	-2000	272	-996	-501	574	-219	-148	-498	-1073	-1164

Annexure-V

5th Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)

30th March 2022

Presented by

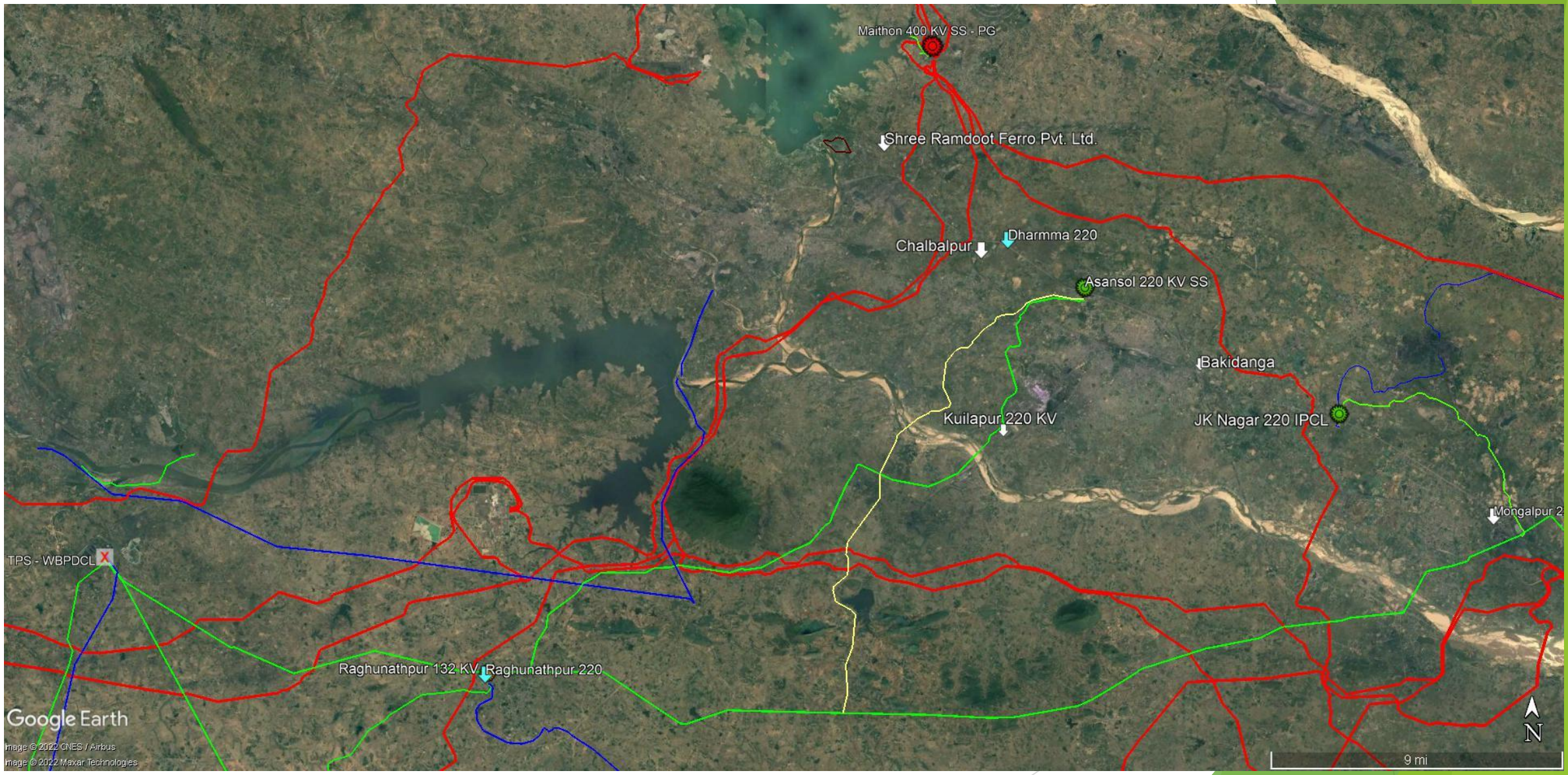
West Bengal State Electricity Transmission Company Limited

1. Maithon(PG)-Asansol (WBSETCL) 220 KV D/C connectivity (Agenda – B.4):

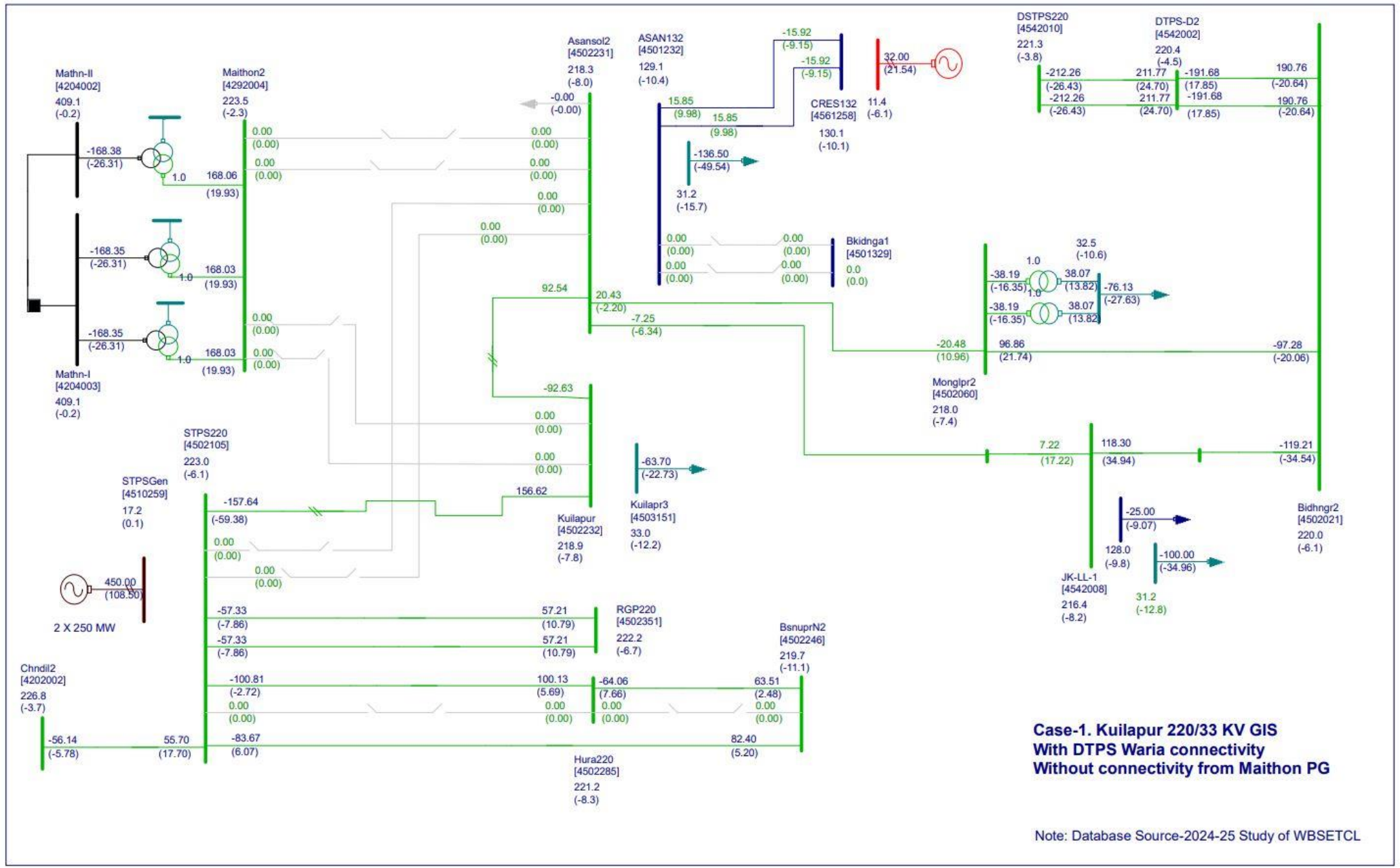
Reasons for the proposal:

- ✓ **Maximum demand of Asansol and JK Nagar 220kV sub-stations are around 150MVA and 130MVA respectively. Expected demand of upcoming Mongalpur 220kV sub-station will be around 80MVA.**
- ✓ **Main source of power in this area is Santaldihi TPS (STPS) and Durgapur (Bidhannagar) 400/220kV sub-station.**
- ✓ **WBSEDCL and IPCL have a landscape of huge load growth in and around Kuilapur, Mangalpur and for some megacity projects by BAPL.**
- ✓ **Considering above and for reliable operation of the grid in compliance of N-1 contingency, one new 220kV connectivity from a strong source at Asansol 220kV sub-station has been found essential. Accordingly, Maithon (POWERGRID) – Asansol (WBSETCL) 220kV D/C line has been proposed by WBSETCL under intra-state.**

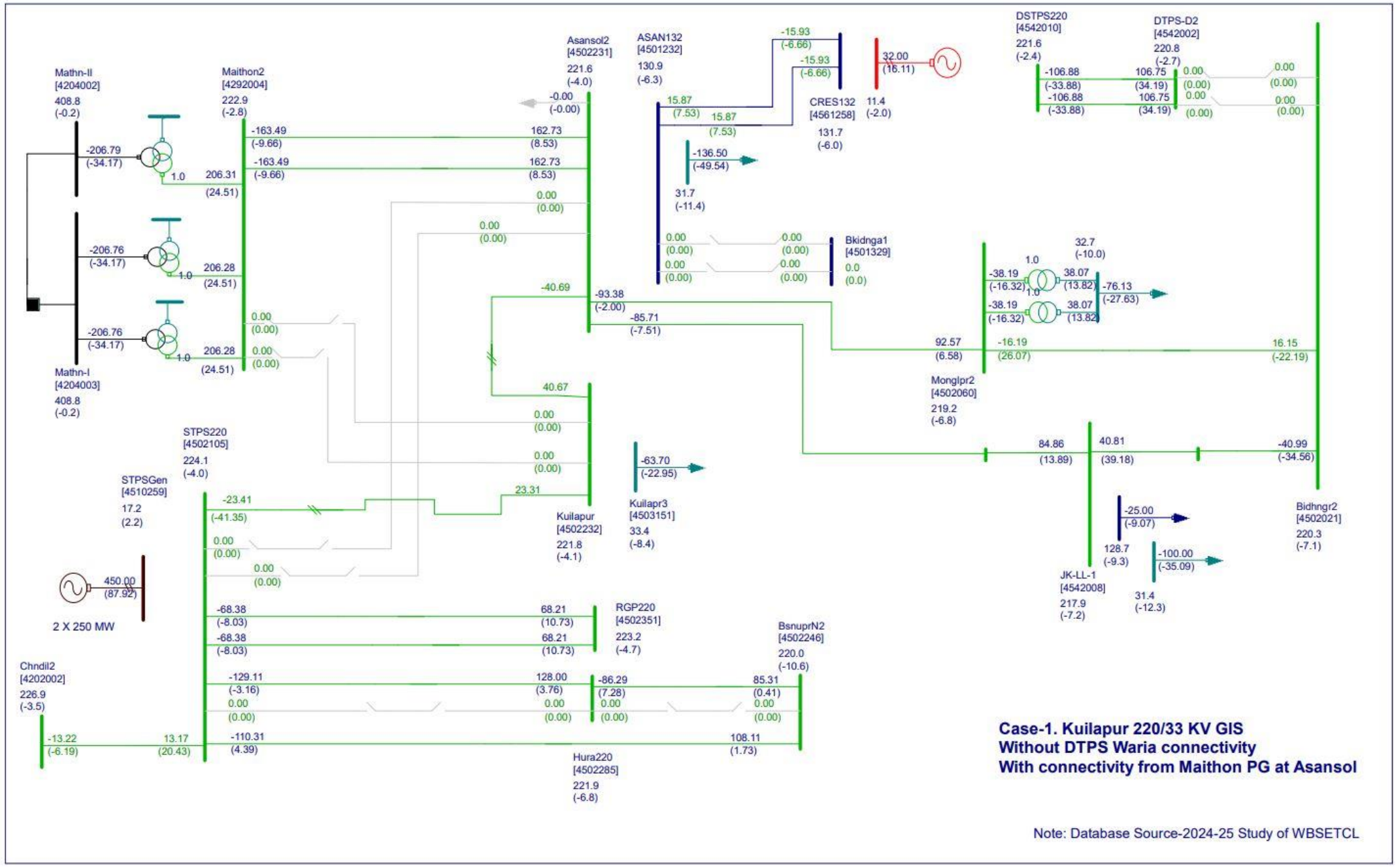
Maithon(PG)-Asansol (WBSETCL) connectivity (contd....):



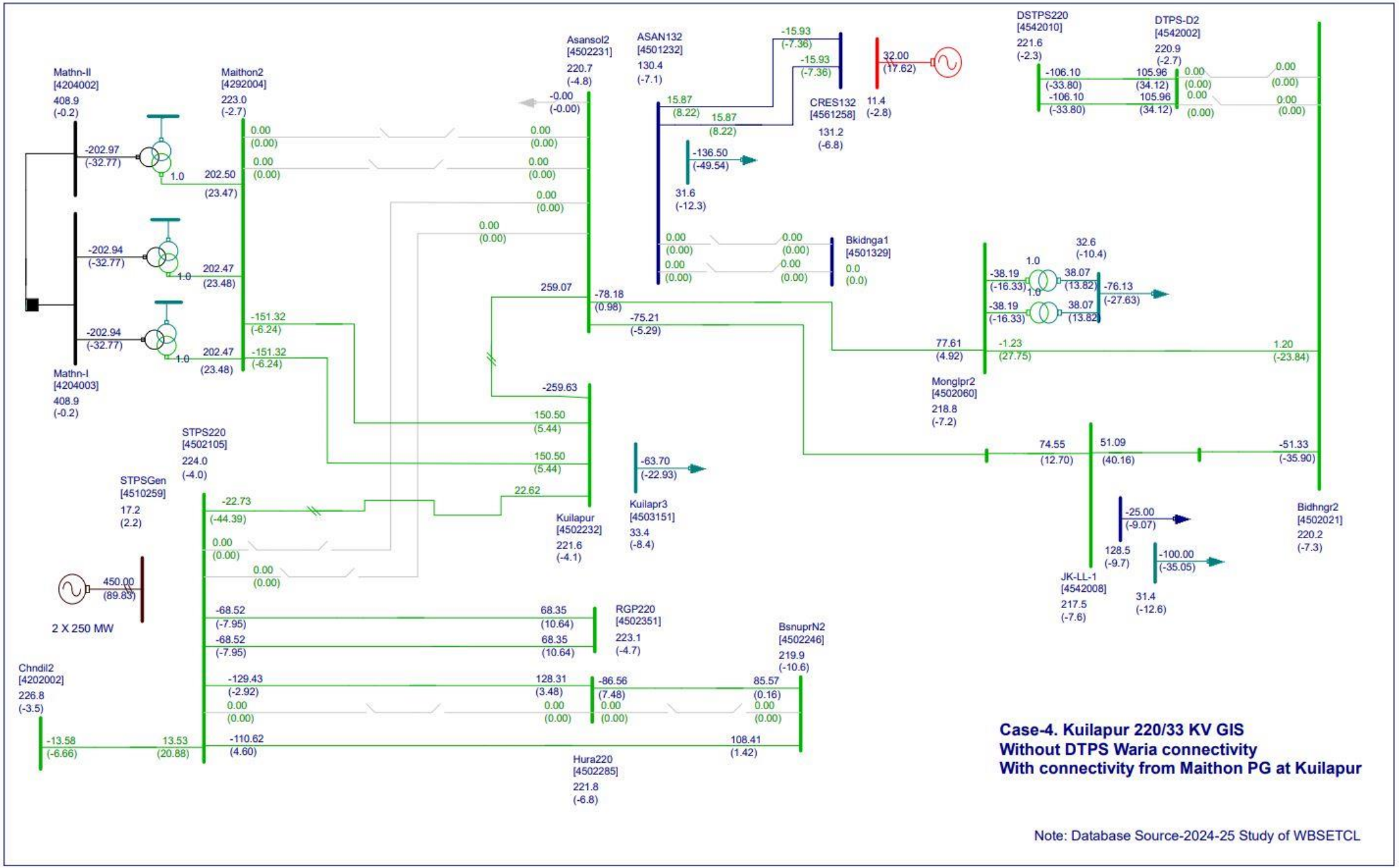
Maithon(PG)-Asansol (WBSETCL) connectivity (contd....):



Maithon(PG)-Asansol (WBSETCL) connectivity (contd....):



Maithon(PG)-Asansol (WBSETCL) connectivity (contd....):



2. Status of Works in Progress of 220 KV and downstream networks (Agenda - B.6):

SL	DISTRICT	VOLTAGE (KV)	NAME OF SS	TRF MVA	TARGET YEAR
1	Hooghly	220	Belmuri 220 KV SS	320	2022-2023
2	Howrah	220	Jangalpur 220 KV SS	420	2022-2023
3	North 24 Paraganas	220	NT AA-IIC 220 KV SS	520	Oct-22
4	South 24 Paraganas	220	Baruipur 220 KV SS	420	Apr-22
5	Alipurduar	220	Falakata 220 KV SS	420	2023-2024
6	Howrah	220	Food Park 220 KV SS	100	2023-2024
7	Paschim Bardhaman	220	Mangalpur 220 KV SS	200	2023-2024
8	Paschim Bardhaman	220	AB-Zone 220 KV SS	320	2023-2024
			Total MVA=	2720	

- Works for 15 Nos. of 132 KV Sub-station are also in progress. After completion of the 23 Nos of Sub-stations, 4196 MVA of Transformation capacity and nearly 1500 CKM of Transmission lines of different voltage level will be added to the system.

3. Status of 400 KV SS being implemented by STU, West Bengal (Agenda - B.7) :

SL	DISTRICT	VOLTAGE (KV)	NAME OF SS	TRF MVA	TARGET YEAR	REMARKS
1	24 Paraganas(S)	400/132/33	New Laxmikantapur 400 KV GIS	2X 315 + 2X50=730	2024-2025	12.72 acres of Land for the SS is identified and is in the process of acquisition. As per plan and as approved in the 2nd ERSCT in 2019, 400 KV D/C LILO of Haldia(HEL)-Subhasgram line was considered. WBSETCL is also submitting a proposal to make S/C LILO of Jeerat(PG)-Subhasgram(PG) 400 KV D/C Line (Under const) at proposed New Laxmikantapur (LILO RL=50 KM approx) for strengthening the power network and supply of quality power in south 24 PGN district and the coastal areas.

4. Sub-stations planned by STU upto 2026-27:

SL	NAME OF DIST	VOLTAGE(KV)	NAME OF SS	PROPOSED MVA	TARGET YEAR
1	Purba Bardhaman	400	Satgachia 400 KV SS	1000	2024-2025
2	South 24 Paraganas	400	New Laxmikantapur 400 KV SS	730	2024-2025
3	Purulia	400	New PPSP 400/132 KV SS	200	2025-2026
4	Hooghly	220	Khanakul 220 KV SS	100	2023-2024
5	Purulia	220	Raghunathpur 220 KV SS	320	2023-2024
6	Birbhum	220	Kotasur 220 KV SS	320	2025-2026
7	Howrah	220	Jagadishpur 220 KV SS	420	2025-2026
8	North 24 Paraganas	220	Deganga 220 KV SS	420	2025-2026
9	Paschim Medinipur	220	CK Road 220 KV SS	320	2025-2026
10	Purba Bardhaman	220	Mahachanda 220 KV SS	320	2026-2027
			Total MVA=	4150	

- There are plan for 16 Nos. of 132 KV Sub-station and 01 No. 66 KV SS upto 2026-27. After completion of the 27 Nos of Sub-stations, 5809 MVA of Transformation capacity and nearly 3500 CKM of Transmission lines of different voltage level will be added to the system.

5. LGBR Data iro WBSETCL :

		2026-27								
		Jun-26			Aug-26			Feb-27		
		Late night	evening peak	afternoon	Late night	evening peak	afternoon	Late night	evening peak	afternoon
Demand Side	Consumer Demand	**6345**	**8990**	**7495**	**6345**	**8750**	**7010**	**3865**	**5610**	**5150**
	PPSP (pump load)	**1000**	**0**	**0**	**1000**	**0**	**0**	**1000**	**0**	**0**
	Total Demand (A)	**7345**	**8990**	**7495**	**7345**	**8750**	**7010**	**4865**	**5610**	**5150**
Availability side	BTPS	105	105	105	105	105	105	150	150	150
	BKTPP	800	800	800	800	800	750	670	680	670
	KTPP	315	315	315	315	315	315	500	500	500
	SGTPP	1730	1730	1730	1730	1730	1450	1150	1200	1150
	STPS	385	385	385	385	385	385	370	370	370
	Sub- Total WBPDCL (a)	**3335**	**3335**	**3335**	**3335**	**3335**	**3005**	**2840**	**2900**	**2840**
	DPL Generation	370	370	370	370	370	370	210	220	220
	Hiranmoyee Energy	200	200	200	200	200	200	200	200	200
	Sub-Total other state generation (b)	**570**	**570**	**570**	**570**	**570**	**570**	**410**	**420**	**420**
	WBSEDCL Hydel	100	100	100	100	100	100	45	50	50
	PPSP	0	900	0	0	900	0	0	445	0
	Sub total WBSEDCL generation (c)	**100**	**1000**	**100**	**100**	**1000**	**100**	**45**	**495**	**50**
	TLDP 3	110	130	100	130	130	130	0	50	0
	TLDP 4	130	160	125	160	160	160	0	60	0
	Sub-Total TLDP Generation (d)	**240**	**290**	**225**	**290**	**290**	**290**	**0**	**110**	**0**
	ISGS + LTOA of WBSEDCL (e)	**2450**	**2450**	**2406**	**2570**	**2570**	**2200**	**1380**	**1475**	**1380**
	state internal Solar & other renewable	0	0	300	0	0	300	0	0	125
	state internal non Solar renewable	110	110	110	110	110	110	100	110	100
	Mandarmoni Solar									
	NVVNL Bundle Power (Solar)	0	0	50	0	0	50	0	0	50
	Non Solar renewable from outside state	300	300	300	300	300	286	90	100	90
	solar renewable energy from outside state	0	0	99	0	0	99	0	0	95
	Sub-total Renewable (f)	**410**	**410**	**859**	**410**	**410**	**845**	**190**	**210**	**460**
	STOA (g)	**240**	**935**	**0**	**70**	**575**	**0**	**0**	**0**	**0**
	Total Availability B =(a+b+c+d+e+f+g)	**7345**	**8990**	**7495**	**7345**	**8750**	**7010**	**4865**	**5610**	**5150**

Thank you