

I/11453/2020



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली योजना एवं मूल्यांकन प्र भाग-II
Power System Planning & Appraisal Division-II

सेवा मे / To,

संलग्न सूची के अनुसार

As per list enclosed

विषय : पूर्व क्षेत्रीय विद्युत समिति (पारेषण योजना) की दूसरी बैठक की कार्यसूची।

Subject: 2nd meeting of Eastern Region Power Committee (Transmission Planning) (ERPCTP)- Agenda.

महोदय(Sir)/महोदया(Madam),

पूर्वी क्षेत्रीय विद्युत समिति (पारेषण योजना) (पूर्वक्षेत्रीय विद्युत समिति) की दूसरी बैठक 30 सितम्बर, 2020 की सुबह 10:30 बजे से वीडियो कॉन्फ्रेंसिंग द्वारा आयोजित की जायेगी। बैठक के लिए लिंक यथासमय साझा किया जाएगा। बैठक की कार्यसूची संलग्न है।

कृपया बैठक में सम्मिलित होने का कष्ट करें। सीटीयू और एसटीयू से यह भी अनुरोध है कि इस कार्यसूची में शामिल इंटर-स्टेट और इंट्रा-स्टेट के प्रस्तावों में अनुमानित निवेश और कार्यान्वयन की समय सीमा की सूचना 10 दिनों के भीतर केन्द्रीय विद्युत प्राधिकरण को सूचित करें।

The 2nd meeting of Eastern Regional Power Committee (Transmission Planning) (NERPCTP) will be held on 30th September, 2020 at 10:30 am through video conferencing. Link for the meeting will be shared in due course of time. Agenda for the meeting is enclosed.

Kindly make it convenient to attend the meeting. CTU and STUs are also requested to inform the tentative investment and time frame for implementation of ISTS and intra-state proposals covered in the Agenda, within 10 days to CEA.

भवदीय/Yours faithfully,

(प्रदीप जिंदल/ Pardeep Jindal)
मुख्य अभियंता/ Chief Engineer

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*Agenda for 1st meeting of Eastern Region Power Committee (Transmission Planning)***List of addressee:**

1. Member Secretary, Eastern Regional Power Committee, 14, Golf Club Road, Tollygange, Kolkata-700033. Tel. No. 033-24235199 Fax No.033-24171358	2. Managing Director, Bihar State Power Transmission Company, Vidyut Bhavan (4 th floor), Baily Road, Patna-800021. Tel. 0612-2504442 Fax No. 0612-2504557
3. Chairman-cum-Managing Director, Jharkhand Urja Sancharan Nigam Limited Engineering Building, H.E.C., Dhurwa, Ranchi-834004. Fax-0651-2400799	4. Chairman-cum-Managing Director, Orissa Power Transmission Corporation Ltd, Jan path, Bhubaneshwar-751022. Tel. No. 0674-2540098 Fax No.0674-2541904
5. Principal Chief Engineer cum Secretary, Power Department Government of Sikkim, Sikkim. Tel. No. 03592-2022440 Fax No.03592-202927	6. Managing Director, West Bengal State Electricity Transmission Company Ltd, Vidyut Bhavan (8 th Floor), A-block, Salt Lake City, Kolkata-700091. Tel. No. 033-23370206
7. Superintending Engineer, Electricity Department C/O Secretary (GA) Andaman and Nicobar Administration, Secretariat, Port Blair (AN)	8. Chief Operating Officer, Central Transmission Utility (CTU), Power Grid Corporation of India “Saudamini” Plot No. 2, Sector-29, Gurugram-122001
9. Director (System Operations), POSOCO B-9, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016 Tel. No. 26852843 Fax No. 2626524525, 26536901	10. Chairman-cum-Managing Director, Damodar Valley Corporation DVC Towers, VIP Road, Kolkata-700054.
11. Chairman-cum-Managing Director NTPC Limited, NTPC Bhawan, SCOPE Complex, Institutional Area, Lodhi Road, New Delhi - 110003	12. Chairman-cum-Managing Director NHPC Limited, N.H.P.C. Office Complex, Sector-33, Faridabad - 121003 (Haryana)
13. Chairman, Solar Energy Corporation of India Limited, 1st Floor, D-3, A Wing, Prius Platinum Building, District Centre, Saket, New Delhi - 110017.	

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Agenda for 2nd meeting of Eastern Region Power Committee (Transmission Planning)

1. Confirmation of the minutes of 1st meeting of Eastern Region Power Committee (Transmission Planning) (ERPCTP).

1.1 The minutes of the 1st meeting of 1st meeting of Eastern Region Power Committee (Transmission Planning) (ERPCTP) held on 14th Feb 2020 at Kolkata, West Bengal were circulated vide CEA letter No. CEA-PS-12-15/2/2018-PSPA-II Division-Part (1) dated 13th May, 2020.

1.2 GRIDCO vide their letter No. DC-CGM-PP-158/2019 (Part-I)/1552(4) dated 21.05.2020 has requested for amendment in item No. 26 of the Minutes. Accordingly, following views of GRIDCO, as presented before the committee are incorporated in the minutes by adding a para after 26.2 of the minutes:

“Govt. of Odisha vide Notification dated 20.12.2018 has (i) directed OPGC and GRIDCO to execute supplementary agreement to the existing PPA on same terms and conditions as the executed PPA for 50 % (660 MW), for another 25 % (330 MW) of OPGC expansion capacity from the date of COD of units 3&4 which is to be enhanced from 75% to 100% w.e.f. 1st April, 2023 & (ii) directed OPGC, GRIDCO and OPTCL to ensure evacuation of entire capacity of expansion project of OPGC through STU (OPTCL) network in due course.

In line with the above directions of Govt. of Odisha, GRIDCO has signed supplementary PPA with OPGC on 24th January. 2019.”

1.3 Members may confirm the minutes with proposed modifications.

A. ToR 2(i) – QUARTERLY REVIEW AND STRENGTHNING OF INTER-REGIONAL TRANSMISSION SYSTEM
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Carry out a quarterly review of the Transmission system in the region; asses the growth in generation capacity and the demand in various parts of the region; and draw up proposals for strengthening inter-Regional transmission system. The transmission planning is required to keep in mind the areas where the generation is likely to grow and areas where load demand will grow so that the transmission system at any point of time is capable to meet the demand in every corner of the country and comply with the mandate under the Tariff policy of developing transmission system ahead of the generation for ensuring smooth operation of the grid.

2. Quarterly Review of transmission line and substation

1.4 Following transmission lines have been commissioned in the Eastern Region during 2019-20:

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State/ Sector	Executi ng Agency	Transmissio n Lines	Voltag e Level (in KV)	Circui t Type	Lengt h (Ckm)	Commissionin g Month	Quarte r
Central Sector	PGCIL	Re- conducting of New Purnea - Purnea line	220	D/C	2	Dec-19	Q3
	PGCIL	400 kV S/C New Purnear - Gokarna line and 400 kV S/C New Purnear - Farakka line (part of Rajarhat - Purnea line)	400	S/C	302	Nov-19	Q3
	PGCIL	Nabinagar-II - Patna line (Q)	400	D/C	282	Jul-19	Q2
Private Sector	NILL						
Bihar	NILL						
Jharkhand	NILL						
Odisha	OPTCL	Balimela - Malkangiri 2nd Ckt.	220	S/C	21	Jan-20	Q4
	OPTCL	LILO of one ckt of Indravati - Thervali line at Jaypatna	220	D/C	32	Jul-19	Q2
	OPTCL	Bhanjanagar - Aska	220	D/C	57	May-19	Q1
West Bengal	NILL						
Sikkim	NILL						

1.5 Following substations/ICTs have been commissioned in the Eastern Region during 2019-20:

State/ Sector	Executi ng Agency	Substation/ ICTs	Voltag e Ratio	Transforma tion Capacity (MW/MVA)	Commissio ning Month	Quart er
Central Sector	PGCIL	Repl. of 1x315 MVA ICT with 1x500 MVA ICT at Pusauli s/s (ICT-II)	400/220	185	Jan-20	Q4
	PGCIL	Extn. at Banka s/s	400/132	315	Dec-19	Q3

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State/ Sector	Executi ng Agency	Substation/ ICTs	Voltag e Ratio	Transforma tion Capacity (MW/MVA)	Commissio ning Month	Quart er
Private Sector	PGCIL	Extn. at Lakhisarai s/s	400/132	315	Dec-19	Q3
	PGCIL	Jharsuguda (Sundargarh) S/ S (Addl.)	765/400	3000	Nov-19	Q3
	PGCIL	Uttra (Pindiabil) S/S	400/220	1000	Nov-19	Q3
	PGCIL	Alipurduar HVDC S/S	400/220	630	Nov-19	Q3
	PGCIL	Repl. at Malda (50-160)	220/132	110	Oct-19	Q3
	PGCIL	Extn. at Biharshariff	400/220	500	Sep-19	Q2
	PGCIL	Rajarhat (GIS) S/S (2x500 MVA) ICT-II	400/220	500	Aug-19	Q2
	PGCIL	Extn at Durgapur S/s (3rd ICT)	400/220	315	Jun-19	Q1
	DVC	Dhanbad (Auto- Xmer) T/F-I	220/132	160	Jan-20	Q4
	NILL					
Bihar	BSPTCL	Laukahi (Supaul new)	220/132/ 33	320	May-19	Q1
Jharkhan d	JUSNL	Govindpur GSS (PGCIL)	220/132/ 33	400	Nov-19	Q3
Odisha	OPTCL	Bolangir S/S	220/132	160	Feb-20	Q4
	OPTCL	Jaypatna T/F-II	220/132	160	Jan-20	Q4
	OPTCL	Lapanga S/S (ICT-II)	400/220	315	Aug-19	Q2
	OPTCL	Kashipur S/S	220/33	20	Jul-19	Q2
	OPTCL	Jaypatna S/S	220/132	160	Jul-19	Q2
	OPTCL	Aska S/S	220/132	320	Jun-19	Q1
West Bengal	WBSETC L	Rejinagar S/S	220/132	320	Oct-19	Q3
	WBSETC L	Gazol GIS	220/132	320	Jul-19	Q2
	WBSETC L	New Haldia NIZ GIS	220/132	160	Jun-19	Q1
Sikkim	NILL					

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1.6 Following transmission lines have been commissioned in the Eastern Region during Q1 of 2020-21 and upto August, 2020:

State/ Sector	Executin g Agency	Transmissio n Lines	Voltag e Level (in KV)	Circui t Type	Lengt h (Ckm)	Commissionin g Month	Quarte r
Central Sector	PGCIL	Baharampur (PG) - Bheramerar (Bangladesh) line (2nd Ckt.) - India Portion	400	D/C	172	May-20	Q1
	PGCIL	Rajarhat - Purnea line (Triple Snowbird) (Balance Portion)	400	D/C	420	July-20	Q2
Private Sector	NILL						
Bihar	NILL						
Jharkhand	JUSNL	Daltonganj (PG)- Garhwa	220	D/C	183	Aug-20	Q2
	JUSNL	Godda - Dumka line	220	D/C	142	Aug-20	Q2
	JUSNL	Godda - Lalmatia	220	D/C	44	Aug-20	Q2
	JUSNL	Jasidih - Dumka	220	D/C	149	Aug-20	Q2
	JUSNL	Jasidih - Giridih line	220	D/C	154	Aug-20	Q2
	OPTCL	LILO of Meramundali - Duburi Ckt-I at Goda	220	S/C	12	May-20	Q1
Odisha	OPTCL	Bolangir (OPTCL) - Bolangir (PGCIL)	220	D/C	3	July-20	Q2
West Bengal	NILL						
Sikkim	NILL						

1.7 Following substations/ICTs have been commissioned in the Eastern Region during Q1 of 2020-21 and upto August, 2020:

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State/ Sector	Execut ing Agenc y	Substation/ ICTs	Voltage Ratio (kV/kV)	Transfor mation Capacity (MW/MVA)	Commissioni ng Month	Quart er
Central Sector	PGCIL	Extan. at Maithon	400/220	500	July-20	Q2
Private Sector	NILL					
Bihar	NILL					
Jharkha nd	JUSNL	Garhwa	220/132	300	Aug-20	Q2
	JUSNL	Giridih S/S	220/132	300	Aug-20	Q2
	JUSNL	Godda GSS	220/132	300	Aug-20	Q2
	JUSNL	Jasidih S/S	220/132	300	Aug-20	Q2
Odisha	OPTCL	Goda S/S	220/132/33	320	May-20	Q1
	OPTCL	Joda S/S	220/132/33	160	July-20	Q2
West Bengal	NILL					
Sikkim	NILL					

1.8 Members may update/note.

3. Assessment of growth in generation capacity and demand in the region

1.9 The generation capacity plan of Eastern Region is as under:

State	Coal	Hydro	Solar	Gas	DG	2019-20	2021-22	2024-25
Bihar	660	0	0	0	0	660	1980	1980
Jharkhand	420	130	0	0	0	550	550	550
Odisha	1740	2142	0	0	0	3882	3882	3882
Sikkim	0	0	0	0	0	0	0	0
West Bengal	5290	986	0	100	0	6376	6046	6046
Central Sector	19050	1005	0	0	0	20055	24145	28345
Private	7667	1599	0	0	0	9266	9122	9239
Total	34827	5862	0	100	0	40789	45725	50042

1.10 Further, the actual/anticipated demand of states in Eastern region are as under:

	Peak Demand (in MW) according to 19th EPS			Actual
State	2019-20	2021-22	2024-25	Peak (2019-20)
Bihar	5,308	6,576	8,003	5,835
DVC	3,129	3,598	4,439	3,014

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Jharkhand*	3,332	3,755	4,385	1,396
Odisha	5,016	5,340	5,878	5,292
West Bengal*	9,919	10,528	11,624	9,263
Sikkim	154	170	197	115
Total	24,869	27,747	31,968	23,421

Excluding DVC part*1.11** Members may update.**4. Requirement for strengthening of Inter-regional transmission system**

1.12 Considering various availability factors, under different scenarios for thermal, gas, hydro, Wind/Solar etc., generation and demand load factor for North Eastern Region, the calculation of surplus-deficit, corresponding to following nine (09) scenarios have been made.

1.13 A total of 09 scenarios are considered as given below:

Scenario -1	Scenario -2	Scenario -3	Scenario -4	Scenario -5	Scenario -6	Scenario -7	Scenario -8	Scenario -9
February			June			August		
Noon	Evening Peak	Night off peak	Noon	Evening Peak	Night off peak	Noon	Evening Peak	Night off peak

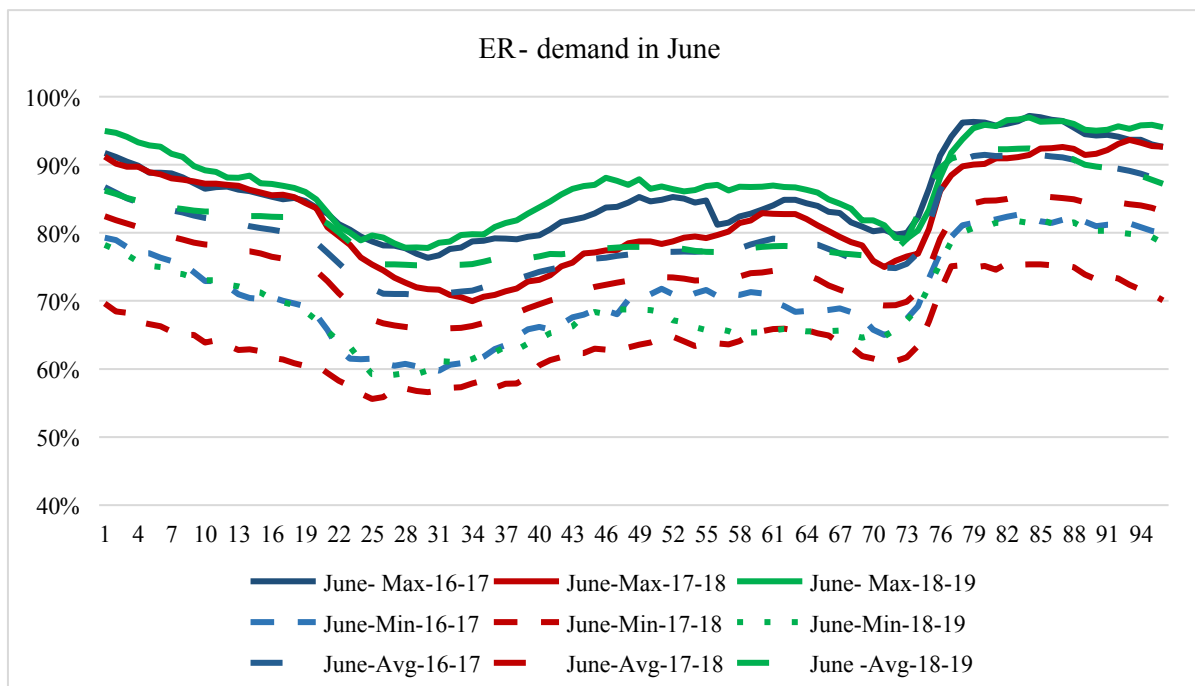
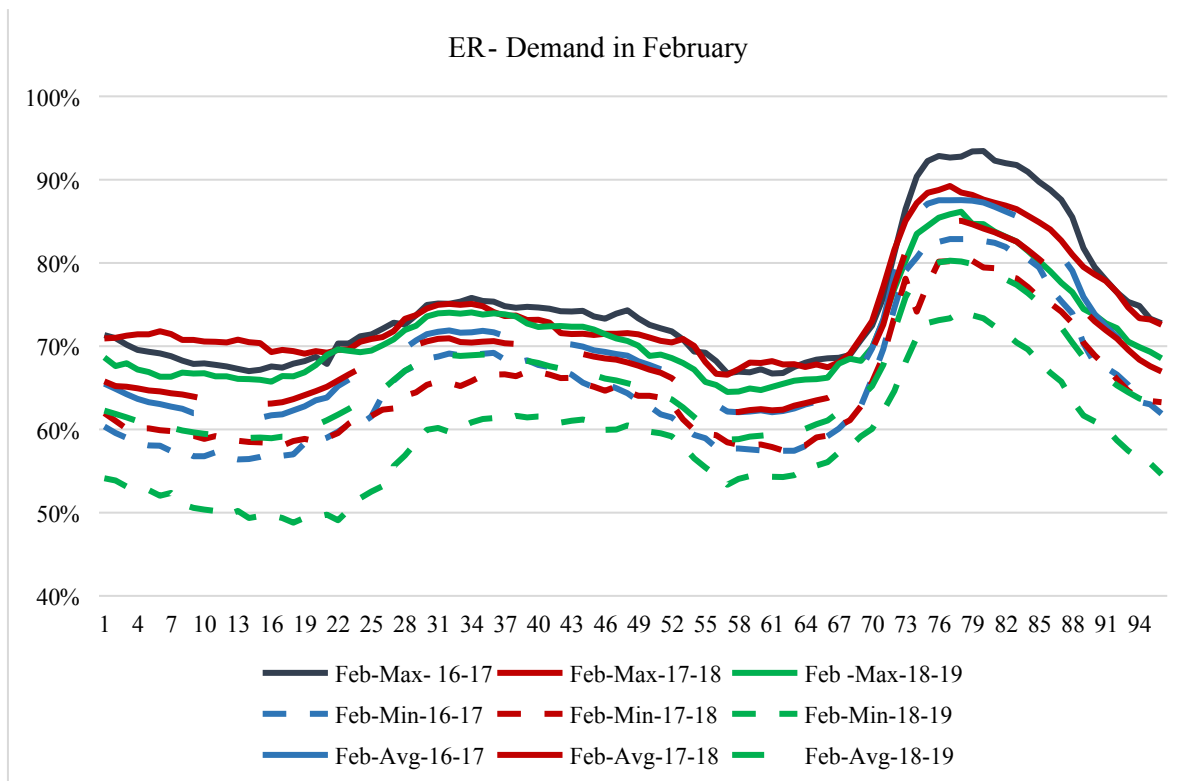
1.14 Demand Factor and Normalized Demand for the above 09 scenarios in ER is :

Demand Factor								
Scenario -1	Scenario -2	Scenario -3	Scenario -4	Scenario -5	Scenario -6	Scenario -7	Scenario -8	Scenario -9
0.68	0.9	0.55	0.78	0.95	0.66	0.75	0.97	0.7

1.15 Eastern Region Demand

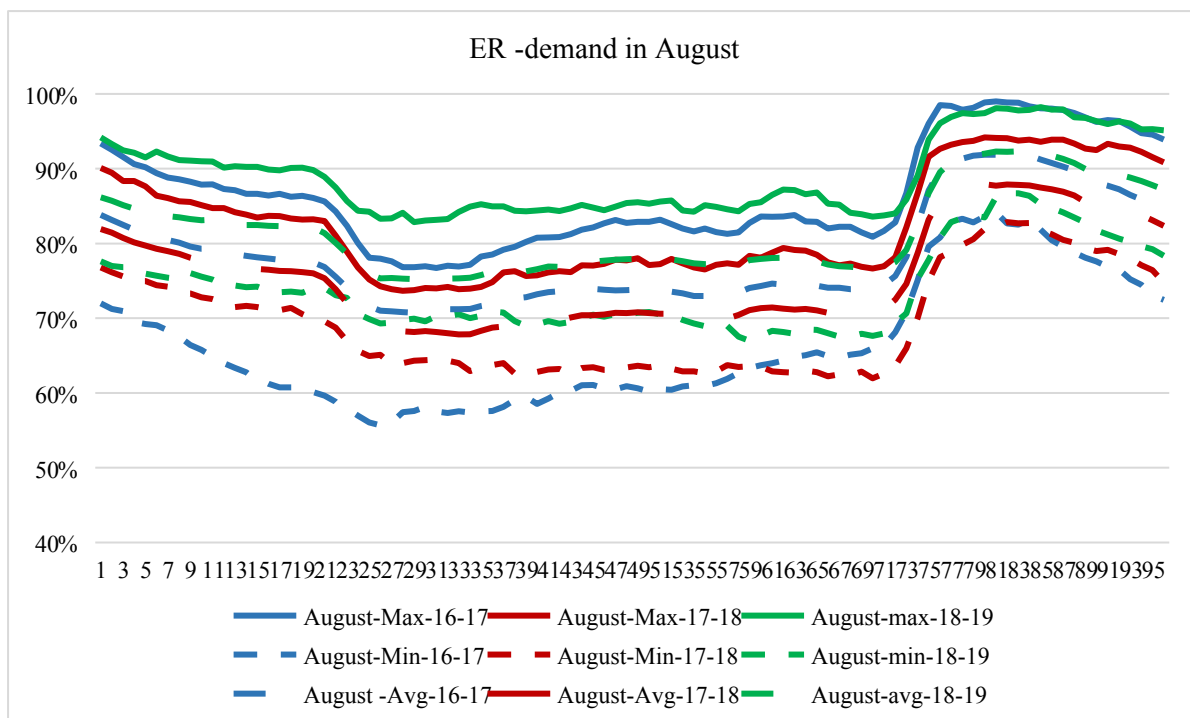
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1.16 Anticipated Demand could be calculated for ER Region (as given below)

Normalized Demand= Peak Demand x Demand Factor

	Sc-1	Sc-2	Sc-3	Sc-4	Sc-5	Sc-6	Sc-7	Sc-8	Sc-9
2019-20	16911	22382	13678	19398	23626	16414	18652	24123	17408
2021-22	18868	24972	15261	21643	26360	18313	20810	26915	19423
2024-25	21738	28771	17582	24935	30370	21099	23976	31009	22378

1.17 Anticipated Installed Capacity:

Installed Capacity						
	Coal	Hydro	Solar	Gas	DG	Total
2019-20	34827	5862	0	100	0	40789
2021-22	39667	5958	0	100	0	45725
2024-25	43247	6695	0	100	0	50042

1.18 Availability Factor for the above 09 scenarios in ER is:

Availability Factor for 09 scenarios:									
Scenario	Sc-1	Sc-2	Sc-3	Sc-4	Sc-5	Sc-6	Sc-7	Sc-8	Sc-9
Coal	0.7	0.8	0.6	0.7	0.8	0.6	0.7	0.8	0.6
Hydro	0.3	0.7	0.3	0.6	0.85	0.7	0.7	0.9	0.7
Solar	0.7	0	0	0.6	0	0	0.5	0	0
Gas	0	0.3	0	0	0.3	0	0	0.3	0

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DG	0	0	0	0	0	0	0	0	0
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1.19 Anticipated Generation Available:

	Sc-1	Sc-2	Sc-3	Sc-4	Sc-5	Sc-6	Sc-7	Sc-8	Sc-9
2019-20	26138	31995	22655	27896	32874	25000	28482	33167	25000
2021-22	29554	35934	25588	31342	36828	27971	31938	37126	27971
2024-25	32281	39314	27957	34290	40318	30635	34959	40653	30635

1.20 Accordingly, ER surplus/deficit scenario for the period 2019 to 2025 is given:

	Sc-1	Sc-2	Sc-3	Sc-4	Sc-5	Sc-6	Sc-7	Sc-8	Sc-9
2019-20	9227	9613	8977	8498	9249	8586	9831	9044	7591
2021-22	10686	10962	10327	9699	10468	9658	11127	10211	8548
2024-25	10543	10543	10374	9355	9949	9536	10983	9644	8257

Note: In case of high RE generation during June and August in SR, WR & NR, the ER despatch may have to be brought down. Thus reducing the surplus.

Max Surplus/Max deficit:

	Max Surplus
2019-20	9831
2021-22	11127
2024-25	10983

No deficit is estimated upto 2024-25.

1.21 Details of inter-regional links with Eastern region are given below:

Corridor	Present (Up to Oct'17)	Capacity Expected by 2022	2024-25
EAST-NORTH (ER-NR)			
Dehri-Sahupuri 220 kV S/c	130	130	130
Muzaffarpur-Gorakhpur 400 kV D/c (with Series Cap+TCSC)	2,000	2,000	2,000

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Corridor	Present (Up to Oct'17)	Capacity Expected by 2022	2024-25
Patna – Balia 400kV D/c (Quad)	1,600	1,600	1,600
Biharshariff – Balia 400kV D/c(Quad)	1,600	1,600	1,600
Barh – Balia 400kV D/c (Quad)	1,600	1,600	1,600
Gaya - Balia 765kV S/c	2,100	2,100	2,100
Sasaram-Allahabad/Varanasi 400kV D/C line (Sasaram HVDC back to back has been bypassed)	1,000	1,000	1,000
Sasaram - Fatehpur 765kV2x S/c	4,200	4,200	4,200
Barh-II-Gorakhpur 400kV D/c (Quad) line	1,600	1,600	1,600
Gaya-Varanasi 765 kV S/c line	2,100	2,100	2,100
LILO of Biswanath Chariali - Agra +/- 800 kV, 3000 MW HVDC Bi-pole at new pooling station in Alipurduar and addition of second 3000 MW module	3,000	3,000	3,000
Biharsharif-Varanasi 400kV D/c line (Quad)	1,600	1,600	1,600
Subtotal	22,530	22,530	22,530
EAST-WEST (ER-WR)			
Budhipadar-Korba 220 kV 3 ckts.	390	390	390
Rourkela-Raipur 400 kV D/c with series comp.+TCSC	1,400	1,400	1,400
Ranchi –Sipat 400 kV D/c with series comp.	1,200	1,200	1,200
Rourkela-Raipur 400 kV D/c (2 nd) with series comp.	1,400	1,400	1,400
Ranchi - Dharamjayagarh - WR Pooling Station 765kV S/c line	2,100	2,100	2,100
Ranchi - Dharamjayagarh 765kV 2nd S/c	2,100	2,100	2,100
Jharsuguda-Dharamjayagarh 765kV D/c line	4,200	4,200	4,200
Jharsuguda-Dharamjayagarh 765kV 2nd D/ c line		4,200	4,200
Jharsuguda- Raipur 765kV D/c line		4,200	4,200
Subtotal	12,790	21,190	21,190
EAST- SOUTH (ER-SR)			
Balimela-Upper Sileru 220kV S/c	130	130	130
Gazuwaka HVDC back-to-back	1,000	1,000	1,000
Talcher-Kolar HVDC bipole	2,000	2,000	2,000
Upgradation of Talcher-Kolar HVDC Bipole	500	500	500
Angul - Srikakulum 765 KV D/C line	4,200	4,200	4,200
Subtotal	7,830	7,830	7,830
EAST- NORTH EAST			
Birpara-Salakati 220kV D/c	260	260	350
		1,000	1,600

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Corridor	Present (Up to Oct'17)	Capacity Expected by 2022	2024-25
Malda - Bongaigaon 400 kV D/c	1,000		(After HTLS reconductoring)
Siliguri - Bongaigaon 400 kV D/c (Quad) line	1,600	1,600	1,600
Subtotal	2,860	2,860	3,550
Total	46,010	54410	55100

	Transmission Capacity (ER Export) (in MW)	Transmission Capacity (ER Import) (in MW)
June 2020 ATC*	11905+WR	4,355+SR+WR
By 2021-22	54,410	48,910
By 2024-25	55,100	49,600

*No simultaneous Export or Import capability provided by NLDC.

1.22 As there is sufficient inter-regional capacity to cater requirement of NER during surplus and deficit scenario, no additional links would be required by 2024-25.

1.23 Members may deliberate.

5. Review of Transmission system by system operator

1.24 Total Transfer Capability for June 2020 (as per NLDC report):

National Load Despatch Centre			
Total Transfer Capability for June 2020			
Corridor	Total Transfer Capability (TTC)	Reliability Margin	Available Transfer Capability (ATC)
NR-ER	2000	200	1800
W3-ER	No limit is being specified.		
SR-ER	No limit is being specified.		
NER-ER	2600	45	2555
ER-NR	5250	300	4950
ER-W3	No limit is being specified.		
ER-SR	5950	250	5700
ER-NER	1300	45	1255

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- 1.25 The operational constraints faced by the system operator during Q1 of 2020-21 are given below:

Transmission line constraints

Sl. No.	Transmission Element	Description of Constraints	Remedial Action
1	220 kV Patna-Sipara T/C	There are three 220 kV lines between Patna (POWERGRID) and Sipara (BSPTCL) S/s. Major loads of Patna are fed from 220 kV Sipara substation. The length of the line is extremely short (less than 500 m). Further, Sipara is connected with Khagaul as well as to Fatuah at 220 kV level and is partly feeding these loads also. This is leading to higher loading of 220 kV Patna-Sipara T/C and violation of N-1 security criteria constraint for most of the time.	<ol style="list-style-type: none"> 220 kV Patna PG-Khagaul 2 & 3 circuit has been commissioned which has reduced the loading to some extent on these ckts. As these ckts are of very short length (only 400 meters (ckt 1&2) & 200 m (ckt-3 which is twin zebra)) Ckt-1 and 2 are recommended for uprating by reconductoring with HTLS conductor. BSPTCL has informed that they have planned 400/220 kV Naubatpur, 400/220 kV Bakhtiyarpur, 400/220 kV Jakkanpur to ensure higher reliability by providing more in-feeds to the loads presently catered by Patna alone.
2	220 kV Durgapur (PG) – Parulia (DVC) D/C	Parulia (Durgapur) is a major load center in DVC control area. Due to decommissioning of DVC units (at Bokaro-B and CTPS) and low generation from internal plants particularly at Mejia and Waria, the load of Parulia and nearby area is practically met through importing large quantum of power from Durgapur substation of PG through 220 kV Durgapur(PG)-Parulia(DVC) D/C. This resulted in very high loading of above line and even crossed the N-1 security limit. In addition, it is observed from studies as well as established through trial operation that these loading further increase with 400 kV bus split operation of Durgapur (PG) and third 400/220 kV ICT operation at Durgapur which has already been taken into service from June 2019.	<ol style="list-style-type: none"> Reconductoring of 220 kV Durgapur(PG)-Parulia(DVC) D/C line with high capacity HTLS conductor or second 220 kV Durgapur(PG)-Parulia(DVC) D/C to be commissioned. Improve generation at Waria and Mejia. Planning and connecting the existing 400 kV generating stations of DVC at suitable locations of the 220 kV STU network by constructing 400/220 kV substation at existing Mejia-B and DSTPS power stations. <p>As per 7th State SCM decision:</p> <ol style="list-style-type: none"> DVC informed that LILO of 220 kV Waria-Parulia(DVC) D/C at DSTPS would reduce the loading of 220 kV Durgapur (PG)-Parulia

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Sl. No.	Transmission Element	Description of Constraints	Remedial Action
			<p>(DVC). The LILO would be completed within a year.</p> <p>2. Reducing the loading on 220 kV Waria-Bidhannagar(WB) D/C, whenever direction of power flow is towards Bidhannagar (one circuit had been kept open during split bus operation at 400 kv Durgapur): WBSETCL has planned installation of 400/220 kV 315 MVA 3rd ICT at Bidhan Nagar.</p> <p>As per 1st ERPC (Planning Committee) decision:</p> <p>1. Shifting of 400/220 kV, 315MVA ICT-1 from Durgapur-A section to Durgapur-B section has been agreed.</p> <p>2. Reconductoring of 220 kV Durgapur(PG)-Parulia D/C line with high capacity HTLS conductor or second 220 kV Durgapur-Parulia D/C has been proposed.</p> <p>Till implementation of the above measures Durgapur (PG) 400kV bus sections are being operated in integrated mode.</p>
3	220 kV Maithon-Dhanbad D/C and 220 kV Maithon-Kalyaneshwari D/C	<p>High loading of 220 kV Maithon-Dhanbad D/C and 220 kV Maithon-Kalyaneshwari D/C is observed due to</p> <ol style="list-style-type: none"> 1. Less generation at CTPS 2. Low/ NIL generation at Bokaro-B 3. Less generation at Koderma 	<p>Improve generation at CTPS, Bokaro-B and Koderma.</p> <p>Reconductoring of 220 kV Maithon-Dhanbad D/C and 220 kV Maithon-Kalyaneshwari D/C line with high capacity HTLS conductor.</p> <p>DVC need to strengthen their 220 kV intra-state Network to satisfy the N-1 reliability.</p>
4	220 kV Rajarhat-Newtown D/C and 220 kV Subhasgram-EMSS D/C	<p>These lines are not N-1 compliant. In this qtr, 220 kV Shubhasgram-EMSS loading is low however it is more during the summer season.</p>	<p>1. Commissioning of Rajarhat (POWERGRID) – New Town AA2 220 kV D/c, Rajarhat (PGCIL) – Barasat/Jeerat 220 kV D/c and Subashgram (PGCIL) –</p>

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Sl. No.	Transmission Element	Description of Constraints	Remedial Action
			<p>Baraipur 220 kV D/c.</p> <p>2. Load trimming scheme has been implemented on 220 kV Subhasgram-EMSS D/C..</p>
5	220 kv Mujaffarpur (PG)-Hazipur D/C and 220 kv Hazipur-Amnour D/C	These lines are not N-1 compliant.	<p>1. Commissioning of 400/220 kV Sitamarhi substation along with associated lines. In addition, 220 kV Amnour-Mujaffarpur D/C commissioning along with Proposed 220/132 kV Digha-Amnour connectivity will also result in better reliability.</p> <p>2. A new 400/220/132 kV substation at Chapra (2 X 500 MVA+2 X 200 MVA) has been proposed. The 220 kV connectivity has been proposed at 220 kV Chhapra(New)-Amnour D/C and 220 kV Chhapra(New)-Gopalganj D/C</p>
6	220 kV Gaya-(PG) - Bodhgaya D/C	These lines are not N-1 compliant.	<p>BSPTCL need to plan additional 220kV transmission system for taking care of the N-1 contingency of these circuits. With commissioning of 400/220 kV substation at Chandauti by LILO of Gaya-NPGC 400kV D/C line at 400 kV Chandauti and shifting of some load from Bodhgaya to this new substation loading of this line is expected to be reduced.</p>

ICT constraints

Sl. No.	Transmission Element	Description of Constraints	Remedial Action
1	400/220 kV 2 X 500 MVA ICTs at Maithon	220 kV side of 400 /220 kV substation at Maithon (PG) is connected with Dhanbad and Kalyaneswari S/stns of DVC and to Dumka S/Stn of JUSNL. As the generation of DVC thermal power plants connected at 220 kV level was low, DVC had to draw heavy power through Maithon ICT to meet these loads. Import by JUSNL through Maithon-Dumka D/C was also high.	After the implementation of 400 kV bus-splitting arrangement at Maithon loading of ICTs has somewhat reduced. Further, a 3 rd 500 MVA, 400/220 kV ICT is already planned for installation at Maithon, under ERSS-XX scheme.

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Sl. No.	Transmission Element	Description of Constraints	Remedial Action
2	400/132 kV 2 X 200 MVA Motihari ICT	Thus (n-1) security got violated. Motihari ICTs are feeding to loads of North Bihar as well as to Nepal through 132 kV Raxaul-Parwanipur circuits. Due to the increase in Load in North Bihar these ICTs do not satisfy N-1 Criteria.	<ol style="list-style-type: none"> 1. Commissioning of 400/220 kV Sitamarhi Substation, 400 kV Darbhanga-Sitamari-Motihari D/C lines and associated 220 kV and 132kV transmission system within Bihar would reduce the loading on the Motihari ICT. 2. Expediting the 3rd 315 MVA 400/132 kV ICT which is already planned for Motihari 3. Interim SPS has been implemented for Load trimming in the case of N-1 contingency.

Under voltage constraints

Sl. No.	Transmission Element	Description of Constraints	Remedial Action
1	Arambag	The voltage of Arambag fluctuates in the range 410-385 kV. The low voltage has been observed during peak hours of June (when load revival took place during unlock-1 phase of COVID-19 related lockdown) due to insufficient reactive power compensation at 220 kV and below levels.	In the 1st meeting of ERPCTP, WBSETCL informed that they have planned capacitor banks in various areas including 400 kV Arambag with 30 MVAR capacitor bank to be completed by 31st March 2020. West Bengal may update.

Over voltage constraints:

Sl. No.	Transmission Element	Description of Constraints	Remedial Action
1	400 kV Patna, NPGC	High voltage is observed during the off-peak hour due to lightly loaded condition of 400 kV Barh-Patna Q/C, 400 kV Patna-Balia Q/C lines, Patna-NPGC D/C. Power drawal by Bihar through 400/220 kV Patna ICTs reduces drastically whenever heavy rains or weather disturbances occur. This is also responsible for occurrence of high voltage	Barh units (2X660MW) to absorb reactive power up to capability limit and operation of NPGC units to its full planned capacity.
2	400 kV Barh	High voltage is observed during the off-peak hour due to the lightly loaded condition of 400 kV Barh-Patna Q/C and 400 kV Patna-Balia Q/C lines	Barh units (2X660MW) to absorb reactive power up to capability limit
3	400 kV Binaguri,	High voltage at Binaguri occurs during low hydro generation in	One circuit of Binaguri-Alipuduar had to be opened as last resort

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Sl. No.	Transmission Element	Description of Constraints	Remedial Action
		Sikkim and Bhutan. There are two long Qd Moose lines to Bongaigaon(NER) and four Qd. Moose lines to Alipurduar connected to Binaguri. Due to the extremely light loaded condition of the lines, high voltage was aggravated at Binaguri	
4	400 kV New PPSP	Light loading of 400kV NPPSP-Ranchi D/C and NPPSP-Arambag D/C lines, which are more than 200 km each and absence of PPSP units during part of the lean hours caused high voltage at New PPSP and other nearby stations.	Need of additional reactors at N. PPSP Or Purulia pump storage HPS. Presently one circuit of N. PPSP – Arambag 400 kV D/C line is being opened on daily basis to control voltage.
5	400 kV Maithon B	Lightly loaded condition of 400kV Gaya-Maithon Qd. Moose lines coupled with inadequate reactive power absorption by Mejia-B units caused high voltage at Maithon B	Additional reactive power planning may be considered at Maithon.
6	400 kV New Dubri	During lean hours Odisha's consumption at N. Duburi area falls to low values leading to an extremely underloaded condition of N. Duburi-Baripada and N. Duburi – Pandiabil 400kV lines	Addition of 125 MVAR shunt reactor at N. Duburi has already been planned by OPTCL
7	400 kV Koderma	Koderma TPS is connected to each of Gaya and Biharshariff through Qd. Moose D/C lines, besides to Bokaro-A TPS of DVC. During off-peak period the lines to Gaya and Biharshariff become extremely underloaded. DVC's own consumption through the 2X315 MVA 400/220 kV ICTs at KTPS is also low. Further, inadequate reactive power absorption by the units, one of which is sometimes not in service, at Koderma aggravates high voltage conditions.	Higher reactive power absorption by KTPS units during lean hours is necessary
8	400 kV Kharagpur, Kolaghat	Light loading of 400kV Kharagpur-Kolaghat D/C and 400kV Kharagpur – N. Chanditala D/C lines during lean hours and low generation at Kolaghat during COVID19 lockdown has caused high voltage at Kharagpur and Kolaghat and other nearby stations.	No Action as with gradual load restoration after COVID19 lockdown, high voltage occurrence has reduced.
9	400 kV DSTPS, Bokaro	Light loading of 400kV lines connected to DSTPS and Bokaro-A TPS with low generation at DSTPS and Bokaro during COVID19 lockdown has caused high voltage at DSTPS and Bokaro and other nearby stations.	No Action as with gradual load restoration after COVID19 lockdown, high voltage occurrence has reduced.
10	400 kV Jeypore	Light loading of lines connected to Jeypore together with low hydro generation in S. Odisha in off-peak during COVID19 lockdown caused	No Action as with gradual load restoration after COVID19 lockdown, high voltage occurrence has reduced.

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Sl. No.	Transmission Element	Description of Constraints	Remedial Action
		high voltage at Jeypore on some occasion.	

Note: Percentage High Voltage of these above nodes is calculated based on SCADA data.

1.26 As per operations feedback of POSOCO, no congestion was seen in the market for Q1 of 2020-21.

Congestion observed while processing STOA Applications						
महीना/ Month	Congestion on the Transmission Corridor	Congestion Period				Congestion (in MW)
		Date		Hours		
		From	To	From	To	
Apr-19	Nil	-	-	-	-	0
May-19	Nil	-	-	-	-	0
Jun-19	Nil	-	-	-	-	0
Jul-19	Nil	-	-	-	-	0
Aug-19	Nil	-	-	-	-	0
Sep-19	Nil	-	-	-	-	0
Oct-19	Nil	-	-	-	-	0
Nov-19	Nil	-	-	-	-	0
Dec-19	Nil	-	-	-	-	0
Jan-20	Nil	-	-	-	-	0
Feb-20	Nil	-	-	-	-	0
Mar-20	Nil	-	-	-	-	0
Apr-20	Nil	-	-	-	-	0
May-20	Nil	-	-	-	-	0
Jun-20	Nil	-	-	-	-	0

1.27 Members may deliberate.

B. ToR 2(ii) – ASSESSMENT OF TRANSMISSION SYSTEM REQUIREMENTS IN NEAR, MEDIUM AND LONG TERM AND FORMULATE TRANSMISSION SCHEME
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6. Modification in construction of 220 kV D/C Barjora-Burdwan line of DVC

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- 1.28 In the 1st ERPCTP meeting, DVC was requested to explore the option of either reconductoring of 220 kV D/C line between Durgapur (POWERGRID) and Parulia (DVC) with HTLS conductor having capacity of at least 1600A per circuit or their original proposal of second 220 kV D/C line between Durgapur (POWERGRID) and Parulia (DVC) (approx.-1km) by DVC [though bunching of each circuit with 1st D/c].
- 1.29 In this regard, DVC vide letter no. ED(SYM) G-III/1271 dated 19.02.2020 (Copy enclosed at **Annexure-I**) have informed that they will be executing their original proposal of second 220 kV D/C line between Durgapur (POWERGRID) and Parulia (DVC) (approx.-1km) – By DVC [though bunching of each circuit with 1st D/c] as reconductoring cannot be done.
- 1.30 DVC may note that alongwith above line works, upgradation of 220kV line bays at Parulia (DVC) end needs to be carried out by DVC and the same at Duragapur (POWERGRID) end need to be carried out by POWERGRID as deposit works of DVC, as agreed in the 1st meeting of ERPCTP. The completion target for the said works (new D/c line and associated bay upgradation) was earlier agreed as Mar 2021. DVC may update on the matter.
- 1.31 Members may note.
- 7. Interim connectivity to generation projects in ER through LILO arrangement**
- 1.32** In few cases generation projects were commissioned ahead of the anticipated commissioning of the associated transmission system. In such cases, generation projects were given temporary connectivity through loop-in & loop-out (LILO) of nearby transmission lines so as to enable them connect with the grid. The temporary connectivity through LILO was to be withdrawn after commissioning of the associated transmission system. Associated transmission system of some of such generation projects have been commissioned and their temporary connectivity through LILO has been disconnected; however, some generators are still connected through LILO arrangement. CERC in its order dated 07-10-2015 on Petition No.112/TT/13 and dated 28-09-2016 in Petition no. 30/MP/2014 has directed that the interim (LILO) arrangement has to be removed.
- 1.33** The progress of associated transmission system of IPPs and the deliberations in the 1st ERPC(TP) meeting is summarized as below:

Generation Project in ER connected through temporary LILO arrangement					
Sl. No.	Generation Project	IC (MW)	Present Connectivity through LILO	Final Connectivity Arrangement	Anticipated Completion Schedule
1	Sneha Kinetic Power Projects Pvt. Ltd.	2x48	LILO of one circuit of Teesta-III – Rangpo 400kV D/c line at	LILO of one circuit of Dikchu pool – Singhik D/c (Twin Moose)	The final connectivity of Dikchu HEP as LILO of one circuit of Dikchu pool – Singhik D/c line (220kV line operated at 132kV) at Dikchu HEP was agreed.

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	(Dikchu HEP)		Dikchu (<i>granted in Dec'14 by CERC</i>)	line (220kV line operated at 132kV) at Dikchu HEP	E&P Dept., Govt. of Sikkim stated that Dikchu pool - Singhik line is expected to be completed by December, 2020 and LILO portion by March 2021, by Govt. of Sikkim.
2	Shiga Energy Pvt. Ltd. (Tashiding HEP)	2x48.5	LILO of one circuit of Rangpo-New Melli 220kV D/c line at Tashiding through Tashiding-Legship Pool-New Melli 220kV D/c	Tashiding – Legship Pool 220kV D/c line	E&P Dept., Govt. of Sikkim stated that retendering for packages including Legship Pool has been done and the same is expected to be awarded by March 2020 with completion schedule of 15 months.

1.34 CTU may present. E&P Dept., Govt. of Sikkim may provide status update on above matters.

8. Uprating of bay equipment at Kahalgaon switchyard matching with capacity of Kahalgaon-Patna 400kV (Quad) D/C line- by POWERGRID

1.35 NTPC Ltd. for its Barh (3x660MW) STPP generation project in Bihar, was granted connectivity for 1980 MW through LILO of Kahalgaon - Patna 400kV (Quad) D/C line at Barh. Further, NTPC Ltd. has submitted data as per requisite details for signing of connection agreement for connectivity of its Barh STPP (3x660MW) Stage-1 generation project. In the 1st meeting of ERPCTP, POWERGRID had informed that they have observed that the rating of terminal bay equipment at Patna (POWERGRID) substation is 3150A, while the same at Kahalgaon (NTPC) switchyard is 2000A, which is not commensurate with the rating of the Kahalgaon - Patna 400kV (Quad) D/c line. In this regard, NTPC need to upgrade their switchyard matching with rating of the outgoing lines.

1.36 The matter was discussed in the 1st ERPCTP meeting and after deliberations following was decided:

(a) NTPC to plan for uprating the bay equipment at Kahalgaon switchyard with matching capacity of Kahalgaon-Patna 400kV (Quad) D/C line and inform the same within 1-2 weeks.

(b) NTPC to coordinate with ERPC and ERLDC regarding the outage planning for carrying out the work in switchyard.

1.37 CEA vide letter no. CEA-PS-12-15/2018-PSPA-II Division-Part(1) I/10154/2020 dated 18.06.2020 requested NTPC to send the plan at the earliest.

1.38 NTPC vide letter dated 20.07.2020 stated that Kahalgaon Switchyard Line & Jack Bus (Overhead Conductor) for both the 400KV Kahalgaon-Barh-1 & 2 lines at Kahalgaon end switchyard terminating with LILO at NTPC Barh end switchyard (Which was earlier known as Kh-Patna Line-1 & 2) are having

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'Quad Moose' Conductor. The associated bay equipments are rated at 2000A. In order to match with the capacity of the outgoing "400KV QUAD D/C Kahalgaon-Barh line" and terminal bay equipment at Patna (POWERGRID) substation which is at 3150A, Kahalgaon switchyard end associated bay equipments related to 400KV Kh-Barh-1 & 2 bays needs uprating from 2000A to 3150A.

- 1.39 As per the existing switchyard configuration at Kahalgaon, 6 nos. of Main & Tie bay and 2 nos. of Line bay equipments needs up-rating (A typical 400KV bay consists of one no. of Circuit Breaker, two nos. of Isolator and Current Transformers and in typical Line bay consists of CVT, CT, LA and Wave traps, in which only CT & Wave traps needs to be up-rated).
- 1.40 NTPC informed that on prima facie, for carrying out the above up-rating of the bay equipments, following are the challenges/constraints:
 - The existing Kahalgaon Switchyard is of One and Half Breaker Scheme. Shutdown of both main bus (400KV Bus-3&4) of Kahalgaon Switchyard may be required for bus side isolator replacement considering the clearance between bus side isolator and the nearest 400KV Bus-4 (Appx. 6.5m), which may not be adequate for carrying out the related erection and commissioning jobs.
 - Shutdown of both the main bus (i.e 400KV- Bus 3 & 4) will lead to outage of three nos. of 500 MW units for intermittent periods and hence, it will be having implications in terms of loss of Generation and revenue to the station.
 - Design validation for suitability and re-use of existing associated equipment's structure and foundation (i.e. their capability to withstand the increased loading). Accordingly, carrying out dismantling work of existing civil and structural works (if any) and construction of new equipment civil and structural works thereon.
 - Detailed outage planning with ERLDC and ERPC as NTPC Kahalgaon is an important constituent in the ER Grid and plays a major role in balancing of power flow in the region, any eventuality may affect the grid security.
- 1.41 Detailed work schedule enclosed at **Annexure-II**. The estimated time for completion of 'scope of work' will take approx. 14 months from the date of LOA. NTPC further informed that a brief scope of work of the associated job and BOQ of the associated identified bays has been already mapped and prepared for expediting the Pre-award activities and eventually letter of award (LOA) which is targeted to be awarded by 31.08.2020.
- 1.42 CTU may present. Members may discuss.
9. **Drawal of Power from 132kV Rihand (Pipri) (UPPTCL) – Sone Nagar (BSPTCL) at Nagaruntari TSS by LILO arrangement**

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- 1.1 JUSNL vide their letter dated 03.03.2020 (copy enclosed at **Annexure-III**), requested permission for drawal of power from 132kV Rihand(Pipri) (UPPTCL) – Sone Nagar (BSPTCL) at Nagaruntari TSS by LILO arrangement and placement of agenda before next standing committee of Eastern Region & Northern Region.
- 1.2 In this regard, comments from ERPC secretariat, ERLDC and BSPTCL have been received. Brief on the comments are mentioned below:
 1. ERPC secretariat has informed that the proposal was discussed in 101st OCC meeting of ERPC held on 26.09.2014 wherein JUSNL and Railways were advised to take mutual consent from Bihar and UP for construction of the line and place the proposal in Standing Committee on Power System Planning of Eastern Region. However, JSUNL had not approached CEA before implementation of the said LILO.
 2. UPPTCL has given their no objection for construction of LILO from ckt-1 on 132 kV Rihand(Pipri) – Sonenagar inter-state transmission line vide their letter no. 1622 ETD(M)/Traction dated 22.11.2014.
 3. ERLDC has mentioned the following :
 - (a) JUSNL has not clarified the maximum power intended to be drawn by Railways by LILO of 132kV Rihand-Sonenagar-1 line at Nagaruntari.
 - (b) The bay and equipment detail to be commissioned at the substation has not been provided by JUSNL
 - (c) The modality of supplying the traction load-whether radially from Sonenagar/Rihand (Pipri) or synchronized to both Rihand and Sonenagar also needs to be clarified.
 - (d) ERLDC has also raised the issue on changes in energy accounting between UP, Bihar and Jharkhand. Further, they presumed that Nagaruntari will be monitored and supervised by SLDC Jharkhand and Railways would be consumer of Jharkhand for drawal of power.
 4. BSPTCL has given no objection for construction of LILO from ckt-1 on 132 kV Rihand(Pipri)-Sonenagar inter-state transmission line. However, they have stated the following:
 - (a) CEA should assure that the privilege of getting power in case of exigencies from UPPTCL through ckt-1 of 132 kV Rihand(Pipri)-Sonenagar inter-regional transmission line should be continued as earlier and there should be no curtailment in power.
 - (b) Switching sub-station should be under the jurisdiction of JUSNL and not in the jurisdiction of Railways.

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- (c) Drawal of power by Railways through the said line will be included in the drawal of JUSNL.
- 1.3 The 132 kV Rihand (Pipri) (UP) - Sone Nagar (Bihar) is an important inter-state and inter-regional transmission line, connecting Bihar and UP, and passing through Jharkhand. Therefore, LILO of one circuit of this line at Nagaruntari need to be under jurisdiction of JUSNL for all operational and commercial purposes. However, Railway may draw power from Nagaruntari as a consumer of Jharkhand.
- 1.4 This 132 kV Rihand (Pipri) (UP) – Sone Nagar (Bihar) has already been approved for LILO at new Nabinagar 132/33kV substation (to be implemented by BSPTCL) in the 1st meeting of ERPC-TP.
- 1.5 CEA vide letter dated 11.06.2020, requested JUSNL to confirm/comment of the concerns raised by the stakeholders (Letter enclosed at **Annexure-IV**).
- 1.6 JUSNL vide letter dated 06.07.2020 (copy enclosed at **Annexure-V**) stated the following:
- (i) A maximum of 21 MVA power is intended to be drawn by Railways through proposed LILO arrangement.
 - (ii) 2.5 Km. 132 kV 3 ph LILO Line alongwith 02 Nos. 132 kV 3 ph feeder bays, 01 no. bus-coupler bays, 132 kV main & transfer bus are to be commissioned (single line diagram with equipment details attached).
 - (iii) The modality of supplying the traction load will be synchronised. It has been noted that these line section will remain under jurisdiction of RLDC.
 - (iv) It is confirmed that Nagaruntari will be monitored and supervised by SLDC, Jharkhand and Railways would be consumer of Jharkhand through JBVNL for drawl of power.
 - (v) Only UPPTCL may ensure that in case of exigencies, BSPTCL will get power through Ckt.-I of 132 kV Rihand – Sonenagar inter regional transmission line. However, JUSNL assures to maintain healthiness of this transmission line within jurisdiction of Jharkhand.
 - (vi) It is confirmed that switching sub-station at Nagaruntari will be under jurisdiction of JUSNL and not in the jurisdiction of Railways.
 - (vii) It is also confirmed that drawal of power by Railways through the said line will be included in the drawal of JUSNL.
- 1.7 Considering the above confirmations, CEA vide letter dated 14.07.2020 (copy enclosed at **Annexure-VI**) has conveyed that, in principle, CEA have no

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objection for JUSNL to make LILO of the 132 kV Rihand (Pipri, UPPTCL)-Sonenagar (BSPTCL) at Nagaruntari TSS.

1.8 Members may discuss.

10. **Augmentation of transformation capacity at 400/220kV Ranchi (POWERGRID) S/s – Agenda by CTU (POWERGRID)**

1.9 Presently, the 400/220kV Ranchi (POWERGRID) S/s is having the transformation capacity of 630MVA (2x315MVA ICT). From the load pattern of both ICTs, it has been observed that the power flow through both the transformers exceeds more than 400-450MW during peak hours, thereby not meeting the N-1 reliability criteria. Thus, with the same transformation capacity of 630MVA available at Ranchi, and considering the rate of rise of demand per year, the entire load may not be met with reliability in near future. Accordingly, it is proposed to augment the transformation capacity at Ranchi (POWERGRID) S/s to meet the N-1 reliability criteria and also take care of future demand growth.

1.10 It may be mentioned that Ranchi S/s is located towards the eastern side of Ranchi city. JUSNL has planned a new 400/220kV, 2x500MVA S/s at Mandar which is located towards the western side of the city. However, the same is yet to be awarded under intra-state TBCB scheme. This scheme is linked with the evacuation of PVUNL (3x800MW) thermal generation plant. Considering all these schemes to be commissioned in next 3-4 years, system studies have been carried out and it has been observed that the power flow in the existing ICTs at Ranchi is about 230MVA per ICT (**Exhibit-A**). In case of outage of one of the ICTs, the 2nd 315MVA ICT gets critically loaded upto 290MVA (**Exhibit-B**). Further, with the delay in implementation of PVUNL and its associated system, the ICTs at Ranchi gets loaded to about 310MVA per ICT in the base case itself (**Exhibit-C**). With the installation of 3rd 500MVA ICT at Ranchi, the power flow on the Ranchi ICTs is observed to be about 2x230+360MVA (**Exhibit-D**).

1.11 In view of the above, it is proposed to augment the transformation capacity at Ranchi S/s with additional 400/220kV, 500MVA ICT along with associated bays in ISTS to meet the N-1 reliability criteria and also to meet the growing power demand in and around Ranchi city.

1.12 CTU may present. Members may discuss.

C. ToR 2(iii) – APPLICATIONS FOR CONNECTIVITY AND ACCESS

11. **Connectivity application for Dibang HEP(2880 MW) and Teesta IV HEP (520 MW)**

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- 1.13 NHPC vide letter dated 04.08.2020 (copy enclosed at **Annexure-VII**) has applied for connectivity for the Teesta IV HE Project (520 MW), Sikkim.
- 1.14 CEA vide letter dated 03.07.2020 have submitted the pointwise reply regarding the Planning of Power evacuation system of Teesta IV HEP (copy enclosed at **Annexure-VIII**)
- 1.15 CTU may present. Members may discuss.

D. ToR 2(iv) – REVIEW OF UPSTREAM AND DOWNSTREAM NETWORK
12. Status of downstream 220kV or 132kV network by STUs from the various commissioned and under-construction ISTS substations

- 1.43 Numbers of ISTS sub-stations have been commissioned and some are under construction for which the downstream system is being implemented by the STUs. Based on the information provided by the states, updated information on planned/under-construction downstream system is as follows:

A. Existing substations:
(a) Rajarhat 400/220kV S/s (As informed by WBSETCL)

- i. Rajarhat (POWERGRID) – New Town AA3 220kV D/c – Commissioned
- ii. Rajarhat (POWERGRID) – New Town AA2 220kV D/c – June'21
- iii. Rajarhat (POWERGRID) – Barasat/Jeerat 220kV D/c – July'21

(b) Subashgram 400/220kV S/s (As informed by WBSETCL)

- i. Subashgram (POWERGRID) – Baraipur 220kV D/c line – Dec'20

(c) Pandiabil 400/220kV S/s (As informed by OPTCL)

- i. Pratapsasan (OPTCL) – Pandiabil (POWERGRID) 220kV D/c – June'20

(d) Bolangir 400/220kV S/s (As informed by OPTCL)

- i. LILO of one ckt of Sadeipalli – Kesinga 220kV D/c at Bolangir – June'20

(e) Keonjhar 400/220kV S/s (As informed by OPTCL)

- i. Keonjhar (POWERGRID) – Turumunga (OPTCL) 220kV D/c – Jun '21

(f) Daltonganj 400/220/132kV S/s (As informed by JUSNL)

- i. Daltonganj (POWERGRID) – Latehar 220kV D/c – June'20
- ii. Daltonganj (POWERGRID) – Garhwa 220kV D/c – March'20
- iii. Daltonganj (POWERGRID) – Chatarpur 132kV D/c – March'21

(g) Chaibasa 400/220kV S/s (As informed by JUSNL)

- i. Chaibasa (POWERGRID) – Jadugoda (JUSNL) 220kV D/c – Nov'22

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- i. Sitamarhi (New) – Motipur (BSPTCL) 220kV D/c line
- ii. Sitamarhi (New) – Raxaul (New) 220kV D/c (Twin Moose) line
- iii. Sitamarhi (New) – Runni Saidpur 132kV D/c line
- iv. LILO of Benipatti – Pupri 132kV S/c at Sitamarhi (New)

(i) Saharsa 400/220/132kV S/s: expected by Mar 2021

- i. Saharsa (New) – Khagaria 220kV D/c line
- ii. Saharsa (New) – Begusarai 220kV D/c line
- iii. Saharsa (New) – Saharsa 132kV D/c line formed by LILO of Saharsa – Banmankhi and Saharsa – Uda Kishanganj 132kV S/c lines

(j) Chandauti 400/220/132kV S/s: expected by Mar 2021

- i. LILO of Gaya (POWERGRID) – Sonenagar 220kV D/c at Chandauti (New)
- ii. LILO of Chandauti (BSPTCL) – Rafiganj 132kV S/c at Chandauti (New)
- iii. LILO of Chandauti (BSPTCL) – Sonenagar 132kV S/c at Chandauti (New)

As per the information provided by the BSPTCL, the works under B. (h), (i) & (j) above would be completed progressively from June 2020 to December 2020.

(k) Dhanbad 400/220kV S/s: expected by Oct 2020

- i. In 1st ERPC(TP) meeting, JUSNL informed that the proposal was to make LILO of the 220 kV Tenughat – Govindpur D/c line at Jainamore and at Dhanbad. Out of this LILO at Jainamore would be completed by June' 20 and the proposed LILO at Dhanbad is being dropped. JUSNL was requested to reconsider their decision to drop 220kV LILO at Dhanbad and accordingly update CEA and CTU regarding 220kV downstream network at 400/220 kV Dhanbad S/s.
- ii. CEA vide letter no. CEA-PS-12-15/2/2018-PSPA-II Division-Part(1) I/10153/2020 dated 18.06.2020 have requested JUSNL to update regarding 220kV downstream network at 400/220 kV Dhanbad S/s to CEA/CTU at the earliest. JUSNL may update.

1.44 Members may update the status of the above.

13. Status of 400kV substations being implemented by STUs in ER under intra-state schemes

1.45 Following 400kV substations have been approved in the previous meetings under intra-state strengthening schemes in ER. Respective STUs are

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requested to update the expected date of award (if not already awarded) and commissioning schedule of the same:

Sl. No.	Substation	Transformation Capacity	Date of Award	220/132 kV outgoing lines (details to be provided by STU)	Completion Schedule
A	Bihar: to be implemented by BSPTCL/BGCL				
A1	Naubatpur GIS	400/220/132/33kV, 2x500MVA + 2x160MVA + 2x80MVA			Nov 2020
A2	Bakhtiyarpur GIS	400/220/132kV, 2x500MVA + 2x160MVA			Mar 2021
A3	Jakkanpur GIS	400/220/132/33kV, 2x500MVA + 3x160MVA + 4x80MVA			July 2020
A4	Chappra	400/220/132 kV, 2x500MVA + 2x200MVA			
B	Odisha: to be implemented by OPTCL				
B1	Meramundali-B	400/220kV, 2x500MVA			Dec 2020
B2	Narendrapur (New)	400/220kV, 2x500MVA			Dec 2023
B3	Khuntuni	400/220kV, 2x500MVA			Dec 2021
B4	Bhadrak	400/220kV, 2x500MVA			Dec 2021
B5	Paradeep	400/220kV, 2x500MVA			Jan 2022
B6	Begunia S/s along with Angul-Begunia 765kV D/c line and LILO of Pandiabil – Narendrapur 400kV D/c line at Begunia	765/400kV, 2x1500MVA			Expected by 2022
B7	Therubali 400kV switching station along with Narendrapur – Therubali – Jeypore 400kV D/	400kV switching station with 420kV, 1x125MVA bus reactor			Dec 2023

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Sl. No.	Substation	Transformation Capacity	Date of Award	220/132 kV outgoing lines (details to be provided by STU)	Completion Schedule
	c line				
C		Jharkhand: to be implemented by JUSNL			
C1	Jasidih	400/220kV, 2x500MVA	Systems are not yet awarded as the approval from JSERC is pending.		Nov 2022
C2	Chandil (New)	400/220kV, 2x500MVA			Nov 2022
C3	Koderma	400/220kV, 2x500MVA			Nov 2022
C4	Mander	400/220kV, 2x500MVA			Nov 2022
C5	Dumka (New)	400/220kV, 2x500MVA			Nov 2022
D		West Bengal: to be implemented by WBSETCL			
D1	Laxmikanthpur GIS	400/132kV, 2x315MVA			Aug 2022

1.46 BSPTCL, OPTCL, JUSNL and WBSETCL may update the status on the above.

E. ToR 2(v) – EXAMINE AND EVALUATE INTRA-STATE PROPOSALS

14. **Post-facto approval of LILO of 220 kV Purnea (PG)- Begusarai DCDS line at Khagaria (New)- by BSPTCL**

1.16 BSPTCL vide letter no. CE(P&E)/142/2019 dated 23.06.2020 (copy enclosed at **Annexure-IX**) have requested for “in-principle” approval for LILO of 220 kV Purnea(PG) –Begusarai DCDS at 220/132/33 kV Khagaria (New) GSS.

1.17 BSPTCL has mentioned that due to rising demand of Central and North Bihar, they had planned to construct 220/132/33 kV Khagaria (New) GSS with LILO of 220 kV Purnea(PG)-Begusarai DCDS. The scheme was approved by the Government of Bihar. However, the information of the above scheme could not be provided to CEA and Standing Committee. The LILO work of 220 kV Purnea(PG)-Begusarai DCDS (Zebra) at 220/132/33 kV Khagaria (New) GSS has been completed and is ready for charging.

1.18 Considering the facts, “post-facto in-principle” approval for LILO of 220 kV Purnea(PG)-Begusarai DCDS (Zebra) at 220/132/33 kV Khagaria (New) GSS

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was conveyed to BSPTCL vide CEA letter dated 26.06.2020 (copy enclosed at **Annexure-X**).

1.19 BSPTCL may present. Members may discuss.

15. Feeding 132 kV Power to 132/33 kV GSS Barsoi (BSPTCL) from 440/220/132 kV GSS Purnea (PGCIL) through jumpering of 132 kV Purnea (PG)- Kishanganj (Old) T/L to 132 kV Kishanganj (New)-Barsoi T/L at the point of overcrossing site.

1.47 BSPTCL vide letter dated 10.07.2020 (copy enclosed at **Annexure-XI**) have requested to allow them to draw 132 kV power for 132/33 KV GSS Barsoi from 400/220/132 KV GSS Purnea (PGCIL) through the jumpering of 132 KV Kishanganj (New)-Barsoi T /L with 132 KV Purnea (PG)-Kishanganj (Old) T /L at the overcrossing in view of threat to the tower caused by soil erosion by Mahananda river.

1.20 CTU vide email dated 14.06.2020 (Comments of CTU enclosed at **Annexure-XII**) mentioned that Kishanganj (New) 220/132kV, 2x160MVA ICTs in both cases are not N-1 compliant. It is understood that, 3rd 160MVA ICT is being installed. Further, from the load flow study results no other major power flow constraints are expected with the proposed interim arrangement.

1.48 Considering the facts, “in-principle” approval to feed Barsoi (BSPTCL) 132/33kV S/s from Purnea (POWERGRID) 220/132kV S/s through jumpering of 132kV S/c Purnea (POWERGRID) –Kishanganj (Old, BSPTCL) line to 132kV S/c on D/c Kishanganj (New, BSPTCL) – Barsoi line at the crossover point as an interim arrangement was conveyed to BSPTCL vide CEA letter dated 17.07.2020 (copy enclosed at **Annexure-XIII**).

1.49 BSPTCL may present. Members may discuss.

16. Creation of 220 kV bus at Banka (PG) and Lakhisarai (PG)

1.50 BSPTCL has stated that the Grid Sub-station constructed by BGCL i.e. Nawada(New), Shekhpura(New), Haveli Kharagpur (Jamalpur) and Gauradih (Sabour-New) are drawing power from Khizersarai (BGCL) and Khizersarai is dependent on Biharsharif (POWERGRID) and Gaya (POWERGRID). Also, the above mentioned grids are apparently on single source as the remote Gouradih GSS doesn't have any alternate power source. This is causing severe high voltage issue during off peak hours. In case of tripping of 220 kV Shekhpura (New) – Haveli Kharagpur D/C transmission line, N-1 criteria for Haveli Kharagpur and Shekhpura (New) is violated. To provide an alternate source 220 kV at Haveli Kharagpur and Gauradih and to maintain better voltage regulation, the GSS(s) require another source.

1.51 Accordingly, BSPTCL vide letter dated 27.01.2020 (copy enclosed at **Annexure-XIV**) has proposed for the creation of 220kV voltage level at existing 400/132 kV substations at Banka (PG) and Lakhisarai (PG).

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- 1.52 A meeting regarding the above issue was held on 10.09.2020 on VC wherein BSPTCL informed that they will review their proposal and accordingly submit to CEA.
- 1.53 BSPTCL may present. Members may discuss.

<p>F. ToR 2(vi) – REVIEW AND FACILITATE CONSTRUCTION OF INTER-REGIONAL GRID STRENGTHENING SCHEME</p>

17. Re-conductoring of Siliguri-Bongaigaon 400kV D/c Twin Moose line with Twin HTLS conductor, reconductoring of Alipurduar – Salakati (Bongaigaon) 220kV D/c line with Single HTLS

- 1.1 Reconductoring of the following transmission system have been agreed in the 1st meeting of NERPC-TP held on 08-11-2019 (extracts of minutes of 1st meeting NERPCTP enclosed at **Annexure-XV**):
- (i) Re-conductoring of Siliguri – Bongaigaon line with Twin HTLS conductor (ampacity of single HTLS shall be 1596A) along with requisite modifications in line bay equipment at both ends.
 - (ii) Re-conductoring of Alipurduar – Salakati (Bongaigaon) 220kV D/c line with single HTLS (ampacity of single HTLS shall be 1596A) along with requisite modifications in line bay equipment at both ends.
- 1.54 This proposal was also discussed in 1st ERPC-TP held on 14-02-2020 (extracts of minutes of 1st meeting ERPCTP enclosed at **Annexure-XVI**), wherein it was agreed that the re-conductoring works mentioned at para 19.1 to be implemented as ISTS. Completion time – Mar 2022.
- 1.55 POWERGRID to update the status. Members may discuss.

<p>G. CROSS BORDER INTERCONNECTIONS</p>
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18. Katihar (Bihar) – Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line

- 1.2 In the 19th meeting of Standing Committee on Power System Planning of ER held on 01-09-2017, Katihar (Bihar) – Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line (initially operated at 400kV) along with HVDC back-to-back at Parbotipur (2x500MW, 1x500MW with 400kV operation and 2nd 1x500MW with 765kV operation) was agreed (extract at **Annexure-XVII**).

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- 1.3 The issue was discussed in the 8th meeting of India-Bangladesh JTT-T held on 15-12-2019 & 06-03-2020 (copy of extracts of the minutes is enclosed at Annex-XVI)

- 1.56 In the 18th meeting of JWG on India-Bangladesh Cooperation in Power Sector held on 07th March 2020, following was deliberated:

“JWG noted the deliberations of the JTT-T.

JWG also noted the minutes of 17th JWG & JSC in the backdrop of joint declaration of Hon’ble Prime ministers of both India and Bangladesh issued on 5th Oct 2019 which clearly stated that “Both sides welcomed the agreement reached at the 17th meeting of JSC on Indo-Bangladesh cooperation in Power Sector held in Dhaka recently, to develop a 765kV Double Circuit cross-border electricity interconnection between Katihar (India), Parbotipur (Bangladesh) and Bornagar (India). While implementation modalities will be finalized, the Leaders noted that this additional capacity would enable more intra-regional electricity trade, including competitively-priced power generated from Hydro-electric power projects in India, Nepal and Bhutan”.

Against this background and in the spirit of the aforesaid declaration, it was agreed to go by the aforementioned opinion of Bangladesh side in 8th meeting of JTT-T (refer para 11(b) of the minutes), to take up the implementation of the 765kV Double Circuit cross-border electricity interconnection Katihar (India) - Parbotipur (Bangladesh) - Bornagar (India).

The location of synchronous interconnection at Parbotipur point is already fixed, however, the timeframe of Parbotipur synchronous interconnection and location & timeframe of other synchronous interconnection points in Bangladesh would be decided through further detailed Optimal Power Flow (OPF) and other necessary studies to be carried out by Bangladesh side.

It was also decided to place this before JSC and seek its guidance regarding implementation modalities, cost arrangements etc.”

- 1.57 Further, In the 18th meeting of JSC on India-Bangladesh Cooperation in Power Sector held on 07th March 2020, following was agreed:

“JSC endorsed the decision of JWG and also took note of the opinion of Bangladesh side recorded at para 11(b) and 11(c) of the minutes of 8th meeting of JTT-T.

Initiating the discussion on this issue, co-chair India mentioned that in the spirit of bilateral cooperation, as mentioned in the aforesaid deliberations, India would like to go ahead with the financing and construction of the entire 765kV D/C Katihar (India) – Parbotipur (Bangladesh) – Bornagar (India) cross border link. The Bangladesh side may synchronize through this link at

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Parbotipur at an appropriate time as suggested by JWG for drawal of power. Indian side further suggested that BIFPCL could be a possible entity for executing this project within the territory of Bangladesh.

Bangladesh side welcomed the proposal of India's financing and construction of the 765 kV D/c lines and mentioned that BIFPCL could not be the entity for executing this project as BIFPCL was created for setting up of generation project and could not deal with transmission projects, at present."

This is for information of the members.

- 1.58 Further, CTU has submitted a proposal and system studies for 765kV D/C Katihar (India) – Parbotipur (Bangladesh) – Bornagar (India) cross border link (The same is enclosed at **Annexure-XVIII**).
- 1.59 Members may discuss please.



दामोदर घाटी निगम DAMODAR VALLEY CORPORATION

No :- ED (SYM) G-11/1271

Dated:- 19.2.20

To
The Chief Engineer
PSPA – II
CEA, New Delhi

Sub:- Deliberation on Para 3.7.(ii) in connection to bunching of conductors for 220KV Parulia (DVC) and Parulia (PGCIL) Tie Line to support higher current transfer through this tie.

Ref :- (i) File No :- CEA -PS-12-15/13/2018 – PSPA – II Division
(ii) Agenda for 1st Meeting of ERPCTP which was held on 14.02.2020

Dear Sir

Reference subject deliberation was made during the 1st Meeting of ERPCTP on 14.02.2020 in connection to item No.:- 3.7 (ii) wherein suggestions were put forward by PGCIL to go for reconductoring of the 220KV Tie Line rather than opting for bunching of the conductors.

DVC would prefer to go in for bunching of the conductors by constructing a 1 Km (approx.) line rather than reconductoring for the reasons as stated below :-

(i) Normal Load Flow would continue in the existing 220KV connectivity during construction of the New 220KV Line. Shut down of the existing line would be only required during the following conditions:-

- (a) Replacement of 220KV Current Transformer
- (b) Replacement of Line Side and Transfer Bus Side isolators.
- (c) Connectivity of the Dead End Tower to the Line Gantry structure inside the Switchyards at both the ends

(ii) ROW issues would exist only during the construction of the New Line which can be handled appropriately without the disturbance of the existing connectivity.

However if ROW issue crops up during reconductoring (laying of old and new conductors on the ground, movement of conductor drums to the tower locations etc), it might jeopardise the entire project of reconductoring.

Under the above condition, DVC proposes that Bunching of conductor is acceptable rather than to go for reconductoring of the existing 220KV Parulia DVC – Parulia PGCIL Line.

Yours Faithfully

[Signature]
Executive Director (System)
DVC, Kolkata.

Copy to :-

Sh. Suresh AD
Pls discuss
25.2.2020

(i) The Member Secretary, ERPC, Kolkata.

No 205/PSPA-II
25/2/2020

Tentative Work Schedule for associated identified 400KV Switchyard Bay Equipments Up-rating including 400KV Fkk-1 Line Main Bay Re-conductoring from 'Twin' to 'Quad' Moose Conductor

Sl. No.	Activity	Duration in months from LOA	
		Start	Finish
1.0	Engineering		
1.1	Basic Engg. (Basic Layout Preparation and Input Finalisation).	00	01
1.2	Completion of Ordering of BOIs-400kV Switchyard Bay Equipments & Miscellaneous Items (Clamps and Connectors, Conductors etc.).	--	02
1.3	Completion of Detailed Engg. -400kV Layout, Switchyard Bay Equipments and Miscellaneous items (Layout approval and Equipment Drg. & Type Test Approval).	–	03
2.0	Manufacturing, Testing and Dispatch (Ex-Works)		
2.1	400kV Switchyard Equipments and Associated Misc. Items.	03	06
2.2	Establishment of site office & mobilization.	--	03
3.0	Equipment Dismantling, Civil Works and Structural Works		
3.1	400kV Switchyard Bay Equipments and other Misc. Civil & Structural works as per shutdown (outage planning with ERPC and ERLDC).	04	08
4.0	Equipment Erection		
4.1	400kV Switchyard Bay Equipments for associated Identified Equipments and Re-conductoring of 400KV Farakka-1 Main Bay as per shutdown (outage planning with ERPC and ERLDC).	06	10
5.0	Completion of Testing & Commissioning		
5.1	Testing and Commissioning of replaced associated identified 400KV bay equipments of 400KV Barh-1 and 2 Main and Line bays as per shutdown (outage planning with ERPC and ERLDC).	09	11
5.2	Testing and Commissioning of Balance identified bays including Re-Conductoring Work of 400KV Farakka -1 Main Bay Jack Bus (Quad Moose conversion).	11	13
6.0	Completion of Facilities		
6.1	Up-rating of all associated identified 400KV switchyard bay equipments and charging including 400KV Farakka Line-1 Jack bus (Quad Moose Conversion)) Stringing.	--	14

**JHARKHAND URJA SANCHARAN NIGAM LIMITED**

(CIN No. – U40108JH2013SGC001704)

Regd. Office – JUSNL (SLDC) Building, Kusai Colony, Doranda, Ranchi – 834002.

Fax No. – 0651 – 2400123 (E-mail – cejusnl@gmail.com)Letter NoG.M., C&M (NWBP)/ JUSNL
CE/Trans.(O&M)/220/2015-16

Dated

From,

Amar Nayak,
General Manager, Contract & Materials (non W.B. Project)

To,

Chief Engineer (PSP & A-II),
Power System Planning & Project Appraisal-II
3rd Floor (North), Sewa Bhawan,
R. K. Puram, New Delhi – 110066.(E-mail – pjindal@nic.in)**Sub: Request for placement of agenda before next standing committee of Eastern Region & Northern Region.**

- Ref:-
- 1) Decision taken in 101st OCC meeting held on 26.09.2014
 - 2) Minutes of meeting held on 16.12.2015 with Railway, ERPC, JUSNL and BSPTCL
 - 3) Letter no. 1622 dated ETD (M)/Traction dated 22.11.2014 of UPPTCL
 - 4) Letter no. 983 dated 17.02.2016 of Chief Engineer (Trans.), BSPTCL
 - 5) Letter no. RE/DNR/Gr.176/Trans./Nagaruntari dated 03.03.2016 of Railway Electrification, Danapur

Sir,

For the work of electrification of Garhwa Road - Chopan-Singrauli section, the power supply to overhead equipment has to be fed from Nagaruntari Traction sub-Station of Railway, which falls in the State of Jharkhand. The nearest 132 kV source in the state of Jharkhand is Garhwa Grid sub-Station which is 45 Km. away from Nagaruntari Railway Traction Sub-Station. As such feeding of Nagaruntari Railway Traction sub-Station from Garhwa Grid Sub-Station will involve lots of ROW issues and huge expenditure. There is 132 kV D/C Transmission line connected between Rihand(Pipri) of UPPTCL and Sone Nagar GSS of BSPTCL which is 03 Km. from the Nagaruntari TSS which can be used for giving 132 kV Supply to Nagaruntari Railway Traction Sub-Station by making LILO arrangement from running transmission line. As the ownership of above 132 kV transmission line is with BSPTCL and Nagaruntari falls in the state of Jharkhand, permission and power allocation is required from Bihar State Power (Holding) Company Ltd. (BSPHCL). Railway may avail power through open access also.

Railway has made correspondence and meeting with JUSNL, UPPTCL and BSPTCL authorities. UPPTCL has given their no objection for construction of LILO from Ckt.-I on 132 kV Rihand – Sone Nagar Inter State Transmission Line vide their letter no. 1622 dated ETD (M)/Traction dated 22.11.2014.

BSPTCL has also issued no objection for construction of LILO from Ckt.-I on 132 kV Rihand(Pipri) – Sone Nagar Inter State Transmission Line vide their letter no. 983 dated 17.02.2016.

JUSNL has already constructed above mention LILO as well as 132 kV bays in the TSS, Nagaruntari of Railway on the basis of request by Railway and NOC by BSPTCL and UPPTCL. The complete LILO arrangement is ready for charging.



As per MOM dated 16.12.2015 and NOC of BSPTCL, approval of standing committee of Eastern Region & Northan Region is required before flow of power. Permission for drawal of power from 132 kV running transmission line by LILO arrangement connected between Rihand(Pipri) of UPPTCL and Sone Nagar GSS of BSPTCL Ckt.-I, which is 03 Km. from the Nagaruntari TSS is solicited.

Submitted for needful decision in this matter.

Yours faithfully,

Encl: As above & line diagram of proposed connection.

Sd/-
General Manager, C&M (non W.B. Project)

Memo No. / Ranchi

dated

Copy forwarded to Member Secretary, Eastern Regional Power Committee, 14, Golf Club Road Tollygunje, Kolkata-700033 Kolkata for information and necessary action.

Encl: As above & line diagram of proposed connection.

Sd/-
General Manager, C&M (non W.B. Project)

Memo No. 316 / Ranchi

dated 03-03-2020

Copy forwarded to the **Dy. Chief Electrical Engineer**, Railway Electrification Danapur, Near Jagjeevan Stadium, P.O.-Khagaul, Dist.-Patna (Bihar) 801105/ **Divisional Railway Manager**, East-Central Railway, Dhanbad for information and necessary action.

Encl: As above & line diagram of proposed connection.

General Manager, C&M (non W.B. Project)

I/10083/2020



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II

Power System Planning & Appraisal Division-II

सेवा में / To,

Chairman-cum-Managing Director,
Jharkhand Urja Sancharan Nigam Limited
Engineering Building,
H.E.C., Dhurwa,
Ranchi-834004. Fax-0651-2400799

विषय/ Subject: Permission for drawal of power from 132kV Rihand(Pipri) (UPPTCL) – Sone Nagar (BSPTCL) at Nagaruntari TSS by LILO arrangement – regarding.

महोदय/ Sir,

This is in reference to JUSNL letter dated 03.03.2020, requesting permission for drawal of power from 132kV Rihand(Pipri) (UPPTCL) – Sone Nagar (BSPTCL) at Nagaruntari TSS by LILO arrangement and placement of agenda before next standing committee of Eastern Region & Northern Region.

In this regard, a meeting with all the concerned constituents was scheduled by CEA, but as a precautionary measure against Corona Virus, the meeting was postponed. Therefore, comments/observations were sought from all the constituents vide CEA letter dated 14.05.2020.

Comments from ERPC secretariat, ERLDC and BSPTCL have been received. Considering the comments, we have following observations:

1. ERPC secretariat has informed that the proposal was discussed in 101st OCC meeting of ERPC held on 26.09.2014 wherein JUSNL and Railways were advised to take mutual consent from Bihar and UP for construction of the line and place the proposal in Standing Committee on Power System Planning of Eastern Region (copy of comments enclosed at Annexure-I). However, JSUNL had not approached CEA before implementation of the said LILO.
2. UPPTCL has given their no objection for construction of LILO from ckt-1 on 132 kV Rihand(Pipri) – Sonenagar inter-state transmission line vide their letter no. 1622 ETD(M)/Traction dated 22.11.2014 (copy enclosed at Annexure-II).
3. ERLDC has mentioned the following (comments received from ERLDC are enclosed at Annexure-III):
 - (a) JUSNL has not clarified the maximum power intended to be drawn by Railways by LILO of 132kV Rihand-Sonenagar-1 line at Nagaruntari. **JUSNL may please provide this input.**
 - (b) The bay and equipment detail to be commissioned at the substation has not been provided by JUSNL. **JUSNL may please provide this input.**

(c) The modality of supplying the traction load-whether radially from Sonenagar/Rihand (Pipri) or synchronized to both Rihand and Sonenagar also needs to be clarified. **JUSNL may please note that these line section will remain under jurisdiction of RLDC.**

(d) ERLDC has also raised the issue on changes in energy accounting between UP, Bihar and Jharkhand. Further, they presumed that Nagaruntari will be monitored and supervised by SLDC Jharkhand and Railways would be consumer of Jharkhand for drawal of power. **JUSNL may please confirm.**

4. BSPTCL has given no objection for construction of LILO from ckt-1 on 132 kV Rihand(Pipri)-Sonenagar inter-state transmission line (copy enclosed at Annexure-IV). However, they have stated the following:

(a) CEA should assure that the privilege of getting power in case of exigencies from UPPTCL through ckt-1 of 132 kV Rihand(Pipri)-Sonenagar inter-regional transmission line should be continued as earlier and there should be no curtailment in power. **JUSNL may please confirm to address concern of BSPTCL.**

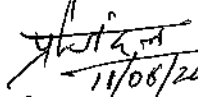
(b) Switching sub-station should be under the jurisdiction of JUSNL and not in the jurisdiction of Railways. **JUSNL may please confirm.**

(c) Drawal of power by Railways through the said line will be included in the drawal of JUSNL. **JUSNL may please confirm.**

5. The 132 kV Rihand (Pipri) (UP) - Sone Nagar (Bihar) is an important inter-state and inter-regional transmission line, connecting Bihar and UP, and passing through Jharkhand. Therefore, LILO of one circuit of this line at Nagaruntari need to be under jurisdiction of JUSNL for all operational and commercial purposes. However, Railway may draw power from Nagaruntari as a consumer of Jharkhand.

6. Considering above, it is requested that, JUSNL may please provide the information/confirmation on the issues raised by ERLDC and BSPTCL for further processing at our end.

भवदीय/Yours faithfully,


11/08/2020
(प्रदीप जिंदल/Pardeep Jindal)
मुख्य अभियंता / Chief Engineer

Re: drawal of power from LILO arrangement connected between Rihand(Pipri) of UPPTCL and Sone Nagar GSS from the Nagaruntari TSS

From : J Bandyopadhyay <mserpc-power@nic.in>

Mon, Jun 01, 2020 05:51 PM

Subject : Re: drawal of power from LILO arrangement connected between Rihand(Pipri) of UPPTCL and Sone Nagar GSS from the Nagaruntari TSS 1 attachment**To :** Chief Engineer (PSPA-II), CEA <cea-pspa2@gov.in>

Sir,

Comments from ERPC Secretariat on above mentioned subject are as follows:

1. The proposal was discussed in 101st OCC meeting held on 26th September 2014, wherein JUSNL and Railway were advised to take mutual consent from Bihar and Uttar Pradesh for construction of the line and place the proposal in Standing committee on power system planning. Abstract of the minutes are attached to the mail.
2. Jharkhand and Railway were once again placed this issue in 166th OCC Meeting held on 20th February 2020, wherein OCC advised JUSNL and Railway to approach PPSP division, CEA for necessary approval.

Regards

Office of Member Secretary
ERPC, Kolkata

----- Original Message -----

From: Chief Engineer (PSPA-II), CEA <cea-pspa2@gov.in>

To: J Bandyopadhyay <mserpc-power@nic.in>, D. K. Bauri SE <eeop.erpcc@gov.in>, mdcellbsptcl@gmail.com, eebspzgl@gmail.com, abhishek bsptcl <abhishek.bsptcl@hotmail.com>, cetrans@jusnl.in, Dir p jusnl <Dir.p.jusnl@gmail.com>, cetjusnl@gmail.com, ashok@powergridindia.com, subir@powergridindia.com, manish keshari <manish.keshari@powergridindia.com>, srnarasimhan@posoco.in, dk jain <dk.jain@posoco.in>, surajit banerjee <surajit.banerjee@posoco.in>, electricalg465@gmail.com, Director Power Supply RailwayBoard <deeps@rb.railnet.gov.in>, cedeecr@gmail.com

Cc: jindal pardeep <jindal_pardeep@yahoo.co.in>, B S Bairwa <bs.bairwa@nic.in>

Sent: Fri, 29 May 2020 14:36:01 +0530 (IST)

Subject: Re: drawal of power from LILO arrangement connected between Rihand(Pipri) of UPPTCL and Sone Nagar GSS from the Nagaruntari TSS

REMINDER-I

Sir

The comments of your organisation on the trailing email have not yet been received. It is requested to kindly send the comments at the earliest.

Regards
B.S. Bairwa
Director (PSPA-II)

From: "Chief Engineer (PSPA-II), CEA" <cea-pspa2@gov.in>
To: "J Bandyopadhyay" <mserpc-power@nic.in>, "D. K. Bauri SE" <eeop.erpc@gov.in>, "MD BSPTCL" <mdcellbsptcl@gmail.com>, "BSPTCL EE Ravi" <eeebpsgcl@gmail.com>, "BSPTCL abhishek" <abhishek.bsptcl@hotmail.com>, "CE(Transmission) JUSNL" <cetrans@jusnl.in>, "JUSNL Director project" <Dir.p.jusnl@gmail.com>, "JUSNL Chief official i.d." <cetjusnl@gmail.com>, "Ashok Pal" <ashok@powergridindia.com>, "COO CTU" <subir@powergridindia.com>, "CTU manish" <manish.keshari@powergridindia.com>, "POSOCO Dir(SO) Narasimhan" <srnarasimhan@posoco.in>, "dk jain ED ERLDC" <dk.jain@posoco.in>, "surajit banerjee SGM ERLDC" <surajit.banerjee@posoco.in>, "Railways ED another" <electricalg465@gmail.com>, "Director Power Supply RailwayBoard" <deeps@rb.railnet.gov.in>
Cc: "Chief Jindal" <jindal_pardeep@yahoo.co.in>, "B S Bairwa" <bs.bairwa@nic.in>
Sent: Thursday, May 14, 2020 4:10:13 PM
Subject: drawal of power from LILO arrangement connected between Rihand(Pipri) of UPPTCL and Sone Nagar GSS from the Nagaruntari TSS

Sir,
please find the attached letter regarding the subject stated above.

Regards,
PSPA-II Division, CEA
Phone no. : +91(11) 2619 8092

Power System Planning & Appraisal Division-II
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग -II
Central Electricity Authority
केंद्रीय विद्युत प्राधिकरण

 **101 OCC MINUTES.pdf**
118 KB

From : Chief Engineer (PSPA-II), CEA <cea-pspa2@gov.in>
Subject : Re: drawal of power from LILO arrangement connected between Rihand(Pipri) of UPPTCL and Sone Nagar GSS from the Nagaruntari TSS

Fri, May 29, 2020 02:36 PM

 2 attachments

To : J Bandyopadhyay <mserpc-power@nic.in>, D. K. Bauri SE <eeop.erpc@gov.in>, MD BSPTCL <mdcellbsptcl@gmail.com>, BSPTCL EE Ravi <eeebpsgcl@gmail.com>, BSPTCL abhishek <abhishek.bsptcl@hotmail.com>, CE(Transmission) JUSNL

<cetrans@jusnl.in>, JUSNL Director project
<Dir.p.jusnl@gmail.com>, JUSNL Chief official i.d.
<cetjusnl@gmail.com>, Ashok Pal <ashok@powergridindia.com>,
COO CTU <subir@powergridindia.com>, CTU manish
<manish.keshari@powergridindia.com>, POSOCO Dir(SO)
Narasimhan <srnarasimhan@posoco.in>, dk jain ED ERLDC
<dk.jain@posoco.in>, surajit banerjee SGM ERLDC
<surajit.banerjee@posoco.in>, Railways ED another
<electricalg465@gmail.com>, Director Power Supply RailwayBoard
<deeps@rb.railnet.gov.in>, cedeecr@gmail.com

Cc : Chief Jindal <jindal_pardeep@yahoo.co.in>, B S Bairwa
<bs.bairwa@nic.in>

REMINDER-I

Sir

The comments of your organisation on the trailing email have not yet been received. It is requested to kindly send the comments at the earliest.

Regards
B.S. Bairwa
Director (PSPA-II)

From: "Chief Engineer (PSPA-II), CEA" <cea-pspa2@gov.in>
To: "J Bandyopadhyay" <mserpc-power@nic.in>, "D. K. Bauri SE" <eeop.erpc@gov.in>, "MD BSPTCL" <mdcellbsptcl@gmail.com>, "BSPTCL EE Ravi" <eeebspgcl@gmail.com>, "BSPTCL abhishek" <abhishek.bsptcl@hotmail.com>, "CE(Transmission) JUSNL" <cetrans@jusnl.in>, "JUSNL Director project" <Dir.p.jusnl@gmail.com>, "JUSNL Chief official i.d." <cetjusnl@gmail.com>, "Ashok Pal" <ashok@powergridindia.com>, "COO CTU" <subir@powergridindia.com>, "CTU manish" <manish.keshari@powergridindia.com>, "POSOCO Dir(SO) Narasimhan" <srnarasimhan@posoco.in>, "dk jain ED ERLDC" <dk.jain@posoco.in>, "surajit banerjee SGM ERLDC" <surajit.banerjee@posoco.in>, "Railways ED another" <electricalg465@gmail.com>, "Director Power Supply RailwayBoard" <deeps@rb.railnet.gov.in>
Cc: "Chief Jindal" <jindal_pardeep@yahoo.co.in>, "B S Bairwa" <bs.bairwa@nic.in>
Sent: Thursday, May 14, 2020 4:10:13 PM
Subject: drawal of power from LILO arrangement connected between Rihand(Pipri) of UPPTCL and Sone Nagar GSS from the Nagaruntari TSS

Sir,
please find the attached letter regarding the subject stated above.

Regards,

PSPA-II Division, CEA
Phone no. : +91(11) 2619 8092

Power System Planning & Appraisal Division-II
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II
Central Electricity Authority
केंद्रीय विद्युत प्राधिकरण

 **Annex-I Rly..PDF.pdf**
225 KB

 **Nagaruntari TSS-reg.pdf**
188 KB

From : Chief Engineer (PSPA-II), CEA <cea-pspa2@gov.in>
Subject : drawal of power from LILO arrangement connected between
Rihand(Pipri) of UPPTCL and Sone Nagar GSS from the Nagaruntari
TSS

Thu, May 14, 2020 04:10 PM

 2 attachments

To : J Bandyopadhyay <mserpc-power@nic.in>, D. K. Bauri SE
<eeop.erp@gov.in>, MD BSPTCL <mdcellbsptcl@gmail.com>,
BSPTCL EE Ravi <eeebpspgcl@gmail.com>, BSPTCL abhishek
<abhishek.bsptcl@hotmail.com>, CE(Transmission) JUSNL
<cettrans@jusnl.in>, JUSNL Director project
<Dir.p.jusnl@gmail.com>, JUSNL Chief official i.d.
<cetjusnl@gmail.com>, Ashok Pal <ashok@powergridindia.com>,
COO CTU <subir@powergridindia.com>, CTU manish
<manish.keshari@powergridindia.com>, POSOCO Dir(SO)
Narasimhan <srnarasimhan@posoco.in>, dk jain ED ERLDC
<dk.jain@posoco.in>, surajit banerjee SGM ERLDC
<surajit.banerjee@posoco.in>, Railways ED another
<electricalg465@gmail.com>, Director Power Supply RailwayBoard
<deeps@rb.railnet.gov.in>

Cc : Chief Jindal <jindal_pardeep@yahoo.co.in>, B S Bairwa
<bs.bairwa@nic.in>

Sir,
please find the attached letter regarding the subject stated above.

Regards,

PSP&A-II Division, CEA
Phone no. : +91(11) 2619 8092

Power System Planning & Appraisal Division-II
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II
Central Electricity Authority
केंद्रीय विद्युत प्राधिकरण

 **Annex-I Rly..PDF.pdf**
225 KB

 **Nagaruntari TSS-reg.pdf**
188 KB

Eastern Regional Power Committee **Kolkata-33**

Salient Decisions taken in 101st OCC meeting held on 26.09.14

1. On feeding the upcoming traction sub-station at Nagaruntari by constructing LILO from 132kV Rihand- Sonenagar tie transmission line, OCC advised Railway to take mutual consent from Bihar and Utter Pradesh for making LILO on 132 kV Rihand-Sonenagar-I line. Further, OCC felt the proposal should be placed before standing committee on power system planning of ER for their guidance.
2. Regarding commercial issues of replacing insulators by Powerlinks, OCC felt the expert opinion would be placed in next commercial meeting for further decision.
3. On exemption of PPSP units from RGMO, OCC felt the issue is already pending in Appellate post CERC judgment on the same and advised WBSEDCL to place their justification before Appellate.
4. Regarding Kahalgaon bus-splitting scheme, NTPC informed that shortly they would submit the DPR to NLDC. Powergrid also informed that DPR for STATCOM would be submitted shortly to NLDC. OCC advised JSEB to submit the DPR immediately to NLDC.

Minutes of 101st OCC Meeting held on 26th Sep, 2014 at ERPC, Kolkata

List of participants is at **Annexure-A**.

Item no. A.1: Confirmation of minutes of 100th OCC meeting of ERPC held on 22.08.2014

The minutes were uploaded in ERPC website and circulated vide letter dated 01.09.14 to all the constituents. No comments were received till date.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 100th OCC Meeting.

PART B

Item no. B.1: O & M of 220kV Farakka –Lalmatia transmission system -- NTPC

Rajmahal area of ECL receives power supply from Farakka Super Thermal Power Station of NTPC through 220 kV Farakka –Lalmatia Transmission System (FLTS) at its Dhankunda sub-station, Lalmatia, JSEB.

220kV Farakka –Lalmatia transmission system (FLTS) was constructed by NTPC for which the fund was provided by ECL owner of the line is M/s. ECL. NTPC is doing the operation & maintenance of 220kV Farakka –Lalmatia transmission system along with its associated switchyard equipments and ECL is paying for the same.

At present JSEB is not only giving power to ECL Rajmahal but also to district Godda, Dumka through Farakka – Lalmatia line.

NTPC is facing a lot of problems in maintenance of the line as their expertise is in power generation, not in the transmission field. Recently, for restoration of collapsed tower of Farakka-Lalmatia transmission system, NTPC has taken help of PGCIL.

In view of above, it is requested to JSEB / PGCIL for operation & maintenance of 220kV Farakka –Lalmatia transmission system along with its associated switchyard equipments. NTPC will facilitate for transfer of operation & maintenance contract of 220kV Farakka –Lalmatia transmission system. M/S ECL has also consented for O & M agreement with JSEB / PGCIL, as discussed in ECL- NTPC meeting on dated 16.06.2014.

NTPC/ JSEB may update.

Deliberation in the meeting

JSEB informed that a meeting was held with ECL on 26th & 27th Aug, 2014 wherein ECL and JSEB agreed in principle and it has been taken up for ECL board approval.

Item no. B.2: Feeding the upcoming traction sub-station at Nagaruntari by constructing LILO from 132kV Rihand- Sonenagar tie transmission line---Railway

The Electrification of Garhwa Road- Chopan-Singrauli section in Dhanbad Division under East Central Railway is being carried out by Railway Electrification Danapur project under Central

Organisation for Railway Electrification, Allahabad. The above work was awarded on 15/10/2013 and is scheduled to be completed by 14/10/2015. The Electrification of the foresaid route shall include the construction of a Railway Traction Sub-Station (TSS) near Nagar Untari Railway Station for 2 phase connection with initial load of 3 MVA and extendable upto 21.6 MVA. It is pertinent to mention, that the upcoming Railway Traction Sub-Station is geographically located in Jharkhand State.

For feeding this Nagar Untari/TSS there are two options for power supply arrangement which are mentioned below:

- (i) From Garhwa Grid Sub- Station (Nearest GSS from proposed TSS), which is approx. 45Km away from proposed Nagar Untari TSS & there it requires a Transmission line of length 45 Km.
- (ii) From the 132kV Rihand –Sonenagar Tie Transmission Line after constructing a LILO arrangement and suitable transmission line up to the TSS (Traction Sub-Station). This proposal included the construction of a transmission line of 8 Km length along with the LILO arrangement on the Circuit-I of 132kV Rihand –Sonnenagar Transmission line. The said transmission line starts from Rihand (Uttar Pradesh) and passes via Jharkhand & finally terminates at Sonenagar(Bihar). It is pertinent to mention here that the Circuit-I of said transmission line is in charged condition and under No- Load.

It is in the National interest if this Traction Sub-Station is fed from above mentioned option (ii), as it involves construction of only 8 Km long transmission line to feed this TSS. The option (i) above will involve the construction of 45 Km transmission line, causing huge expenditure to be incurred.

In this regard the matter was discussed with JUSNL on 22.07.2014 & 25.08.2014 and JUSNL has agreed to take up the work mentioned in (ii) under deposit head provided permission is given by NRLDC, ERLDC, UPPTCL & BSPHCL and the letter for the same to all concerned has already has been sent by JUSNL.

Members may discuss and guide on,

- Feeding this TSS from Circuit-I of 132kV Rihand –Sonenagar Transmission line (Tie line) by providing LILO arrangement
- The institution / organisation from where the RE /DNR shall purchase the power and will execute the power purchase agreement.

Deliberation in the meeting

OCC advised Railway to take mutual consent from Bihar and Utter Pradesh for making LILO on 132 kV Rihand-Sonenagar-I line.

Further, OCC felt the proposal should be placed before standing committee on power system planning of ER for their guidance.

Item no. B.3: Agenda by Powergrid, Odisha

1) Maintenance of OPTCL Bays at Indravati s/s of POWERGRID: POWERGRID is attending to Routine & Emergency maintenances of OPTCL Bays located in Indravati s/s, in the overall interest of the system. The old Circuit Breakers (M/s BHEL make) need major overhauling urgently. OPTCL may be advised to take up the overhauling work and also to enter into formal agreement for Maintenance of the Bays by POWERGRID, as already communicated to M/s OPTCL.

उत्तर प्रदेश
विद्युत निगम
परकार का उपक्रम)

Office of the Executive Engineer
Electy Transmission Division
UP Power Trans. Corporation Ltd.
Paharabiya road- Mirzapur (U.P.)-231001
Email Id:- eectdmirzapur@upptcl.org



न लिमिटेड
महात्मा जवाहरलाल नेहरू
विद्युत प्रेषण सण्ड
उपग्रह पत्तन दानुसमिशन कारपोरेशन लि०
पथरहिमा रोड-मीरजापुर (उ०प्र०)-२३१००१
ई-मेल:- eectdmirzapur@upptcl.org

Ref: 183
Mob: 9415311059
36
20

No. 1622 ETD(M)/ traction

Dated/ 22.11.2014

Dy. Chief Electrical Engineer-II
Railway Electrification
Danapur

Subject:- Consent for making LLD from Circuit-I on 132KV Rihand-Sonenagar Tie
Transmission line for feeding the upcoming Railway TSS at Nagar Untari.

Ref:- Your office letter no RE/DNR/Gr.176/Trans./Nagar Untari.

Sir,

It is to bring to your kind notice that this Inter-state 132KV Rihand-Sonenagar Tie
Transmission line does not belong to Electricity Transmission Division/ UPPTCL and hence
UPPTCL do not have any objection for construction of LLD from circuit-I on 132KV Rihand-
Sonenagar inter-state line.

No. /ETD(M)/ of dated above:- 2014

(S.C. Tiwari)
Executive Engineer

Copy forwarded to Superintending Engineer, Electricity Transmission Circle
Mirzapur for information & necessary action.

(S.C. Tiwari)
Executive Engineer

पावर सिस्टम ऑपरेशन कर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)



पूर्वी क्षेत्रीय भार प्रेषण केंद्र, 14 गल्फ क्लब रोड, टालीगंज, कोलकाता - 700033

Eastern Regional Load Despatch Centre: 14, Golf Club Road, Tollygunge, Kolkata-700 033. CIN: U40105DL2009GOI188682

फ़ोन: 033- 24235755, 24174049 फ़ैक्स : 033-24235809/5029 Website: www.erldc.org, Email ID- erldc@posoco.in

ERLDC/SO/2020/

01-06-2020

Director, PSPA-II
CEA, N. Delhi

Sub: Drawal of power from JUSNL by Railways through LILO of 132kV Rihand(Pipri) (UPPTCL) – Sone Nagar (BSPTCL) at Nagaruntari (Railway) –reg.

Dear Sir,

This has reference to CEA- PSPA-II communication no I/9779/2020 dated NIL vide which comments / observations on the subject have been sought from ERLDC.

In this regard our observations are as follows:

1. 132kV Sonenagar and its neighbouring substations in Bihar like Aurangabad, Rafiganj etc. have no difficulty in meeting their demands from BSPTCL network due to existence of 220/132kV Sonenagar S/Stn, which in turn is connected to Gaya(PG) by a 220kV D/C line. The Rihand-Sonenagar 132kV line is generally used by Bihar under exigency, when there is major breakdown in BSPTCL system upstream of Sonenagar.
2. 132kV Rihand-Sonenagar-I line is generally kept in idle-charged condition from Rihand(UPPTCL) end.
3. JUSNL has not clarified the maximum power intended to be drawn by Railways by LILO of 132kV Rihand-Sonenagar-I line at Nagaruntari as well as the bay and equipment detail to be commissioned at the substation. Information on the present 132kV voltage profile at Sonenagar and Rihand is also required from BSPTCL and UPPTCL respectively. Further, modality of supplying the traction load - whether radially from Sonenagar / Rihand (Pipri) or synchronized to both Rihand and Sonenagar also needs to be clarified.
4. After obtaining clarifications on the above, a basic steady state simulation is required to be carried out with detailed model of BSPTCL, JUSNL and UPPTCL network, to identify the constraints, if any, for meeting the proposed railway load.
5. At present 132kV Rihand – Sonenagar is an inter-regional tie line between ER and NR. Power flow through this line at Rihand end is considered in the actual net exchange of UP while that at Sonenagar end is considered in the actual net exchange of Bihar. If this line is made LILO at Nagaruntari which would be substation within Jharkhand, then Rihand – Nagaruntari will be the new inter-regional tie between NR and ER and Sonenagar - Nagaruntari will be the new inter-state tie between Bihar and Jharkhand and net power drawal at Nagaruntari will be considered as that of

Contd...2

Jharkhand. It is presumed that Nagaruntari will be monitored and supervised by SLDC Jharkhand (similar to other TSSs like Japla, Tolra etc) and Railways would be a consumer of Jharkhand for drawal of power.

6. As already informed by JUSNL, the 132kV Nagaruntari TSS belongs to Railways while the 132 kV LILO lines as well as 132kV bays have been constructed by JUSNL, on the basis of request made by Railways. Therefore, ownership of the LILO and the bays needs to be clarified.

This is for kind information please.

Thanking you,

Yours faithfully,



(D. K. JAIN)
Executive Director

Copy for kind information:

1. MS, ERPC, Kolkata
2. Director(SO), POSOCO, NLDC
3. ED(NLDC), N. Delhi
4. ED, NRLDC, N. Delhi



BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA
A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna
CIN - U40102BR2012SGC018889

[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]

Head Office, VidyutBhawan, Bailey Road, Patna - 800021

E-mail address - ceplanningengg@gmail.com,

Website - www.bsptcl.in

Letter No/ _____ / BSPTCL,
CE(P&E)/137/2019

Patna Dated _____

From

Director(Projects)
Bihar State Power Transmission Company Limited, Patna.

To

Chief Engineer(PSP & AD-II)
Power System Planning & Project Appraisal-II
3rd Floor(North), Sewa Bhavan,
R.K Puram, New Delhi-110066

Sub- Drawl of power from by JUSNL/Railways through LILO of 132 KV Rihand(Pipri) (UPPTCL)-
Sonenagar(BSPTCL) at Nagaruntari(Railway)- reg

Ref:- CEA letter no.CEA-PS-12-15/2/2018-PSPA-II Division vide mail dated.

Sir,

With reference to the above, JUSNL has informed that on the request of Railway and taking requisite clearance, they have constructed the above mention LILO as well as 132 KV bays in the TSS, Nagaruntari which is under the jurisdiction of Jharkhand State and the LILO arrangement is ready for charge after getting approval of Standing committee of Eastern and Northern regions.

BSPTCL has noted the following points:

1. BSPTCL has already given No Objection on above construction.
2. In case of exigencies BSPTCL is drawing power from UPPTCL through above inter regional line.
3. After bifurcation of Bihar and Jharkhand, assets have also been divided accordingly the maintenance of above ISTS line is being done by both BSPTCL and JUSNL of their jurisdictions.
4. It was informed that to feed power to Nagaruntari TSS, railway will construct a switching Station/Mini Grid at Nagar Untari with minimum 20 MVA Power Transformer 132 KV with suitable protection and control system so that necessary protection of line and TSS may be taken from their end. In present scenario all the control and monitoring lies on BSPTCL.

BSPTCL comments/ observations on above as follows:

1. Since the TSS and LILO lines are under the jurisdiction of Jharkhand, they may give connection or take any decision on it, BSPTCL has no objection on it.

2. However, CEA should assure that the privilege of getting power in case of exigencies from UPPTCL through 132 KV Rihand - Sonenagar inter regional transmission line Ckt-1 to BSPTCL should be continued as earlier and there should be no curtailment in power.
3. Switching sub-station should be under the jurisdiction of JUSNL and not in the jurisdiction of Railways.
4. Drawal of power by Railways through the said line will be included in the darwal of JUSNL.
5. This is to inform CEA and JUSNL that BSPTCL is also constructing a 132/33 KV GSS at Nabinagar and LILO of the same line is being made at proposed GSS. The same has been approved in 1st ERPCTP meeting held on 14.02.2020 at Kolkata.

Yours Faithfully,

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.:

Dated:

Copy forwarded to COO(CTU), PGCIL, Plot no. 2, Saudamin, New IFFCO Chowk, sector-29, Haryana-122001 and Member Secretary, ERPC, 14th Golf Club, Tollygunj, WB-33 for kind information and necessary action.

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.:

Dated:

Copy forwarded to SLDC, BSPTCL for kind information and necessary action.

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.:

Dated:

Copy forwarded to Director (Operations), SBPDCL and Director (Projects), SBPDCL for kind information.

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.:

Dated:

Copy forwarded to Advisor (T), BSPTCL and Director (Operation), BSPTCL for kind information.

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.:

Dated:

Copy forwarded to Advisor (T), BSPHCL for kind information.

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.: 468

Dated: 09/06/2020

Copy forwarded to OSD to MD, BSPTCL for kind information.

(H.R. Panday)

Director (Projects), BSPTCL

As



Bihar State Power Transmission Company Ltd., Patna

A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna

CIN - U40102BR2012SGC018889

[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]

Head Office, Vidyut Bhawan, Bailey Road, Patna - 800021,

Telephone No. 0612 - 2504655,

Fax No. 0612 - 2504655

E-mail address - ce.trans664@gmail.com,

Website - www.bsptcl.in

Letter No. 983 /

Patna/ Dated. /

From,

Sri G.K. Choubey
Chief Engineer (Trans.)

To,

The Chief Project Manager
Railway Electrification, Danapur

Sub -

Regarding feeding power to Nagaruntari TSS through LILO of 132 KV Rihand-sonenagar (CKT-I) Transmission line.

Ref:-

Meeting held on 16.12.15 with concerned officials of Bihar, Jharkhand, Railway & ERPC in the conference room of Managing Director BSPTCL.

Sir,

With reference to the above, it is to inform that railway has agreed to pay all the charges to BSPTCL applicable as per provision of BERC and on this basis BSPTCL has no objection for construction of above said transmission line.

Since this transmission line is inter regional line between NR & ER, approval/consent from both Northern & Eastern region power committee have to be obtained before power flow.

Railway may discuss and settle all other balance issues with JUSNL regarding construction of LILO of Rihand-Sonenagar Ckt-I, at TSS Nagaruntari.

EEEPDM.
Pl. Put up.
01/03/16

EEEPDM
amv
03/03/16

Yours Faithfully
G.K. Choubey
(G. K. Choubey)
Chief Engineer (Transmission)

**JHARKHAND URJA SANCHARAN NIGAM LIMITED**

(CIN No. – U40108JH2013SGC001704)

Regd. Office – JUSNL (SLDC) Building, Kusai Colony, Doranda, Ranchi – 834002

Fax No. – 0651 – 2400123 (E-mail – edoperationjusnl@gmail.com)Letter No 652/ED (Operation), JUSNL
CE/Tr. O&M/ 220/2015-16Dated 06-07-2020

From,

Amar Nayak,
General Manager, Contract & Materials (non W.B. Project)

To,

Sri Pradeep Jindal,
Chief Engineer (PSPA),
CEA, Ministry of Power, Sewa Bhawan,
R. K. Puram-I, New Delhi – 110066e-mail – pjindal@nic.in**Sub: Permission for drawal of power from 132 kV Rihand (Pipri, UPPTCL) – Sonenagar (BSPTCL) at Nagaruntari TSS by LILO arrangement****Ref:** Your letter no. CEA-PS-12-15/15/2018-PSPA-II Division dated 11.06.2020

Sir,

With reference to above, this is to say that :-

- (i) A maximum of 21 MVA power is intended to be drawn by Railways through proposed LILO arrangement.
- (ii) 2.5 Km. 132 kV 3 ph LILO Line alongwith 02 Nos. 132 kV 3 ph feeder bays, 01 no. bus-coupler bays, 132 kV main & transfer bus are to be commissioned (single line diagram with equipment details attached).
- (iii) The modality of supplying the traction load will be synchronised. It has been noted that these line section will remain under jurisdiction of RLDC.
- (iv) It is confirmed that Nagaruntari will be monitored and supervised by SLDC, Jharkhand and Railways would be consumer of Jharkhand through JBVNL for drawl of power.
- (v) Only UPPTCL may ensure that in case of exigencies, BSPTCL will get power through Ckt.-I of 132 kV Rihand – Sonenagar inter regional transmission line. However JUSNL assures to maintain healthiness of this transmission line within jurisdiction of Jharkhand.
- (vi) It is confirmed that switching sub-station at Nagaruntari will be under jurisdiction of JUSNL and not in the jurisdiction of Railways.
- (vii) It is also confirmed that drawal of power by Railways through the said line will be included in the drawal of JUSNL.

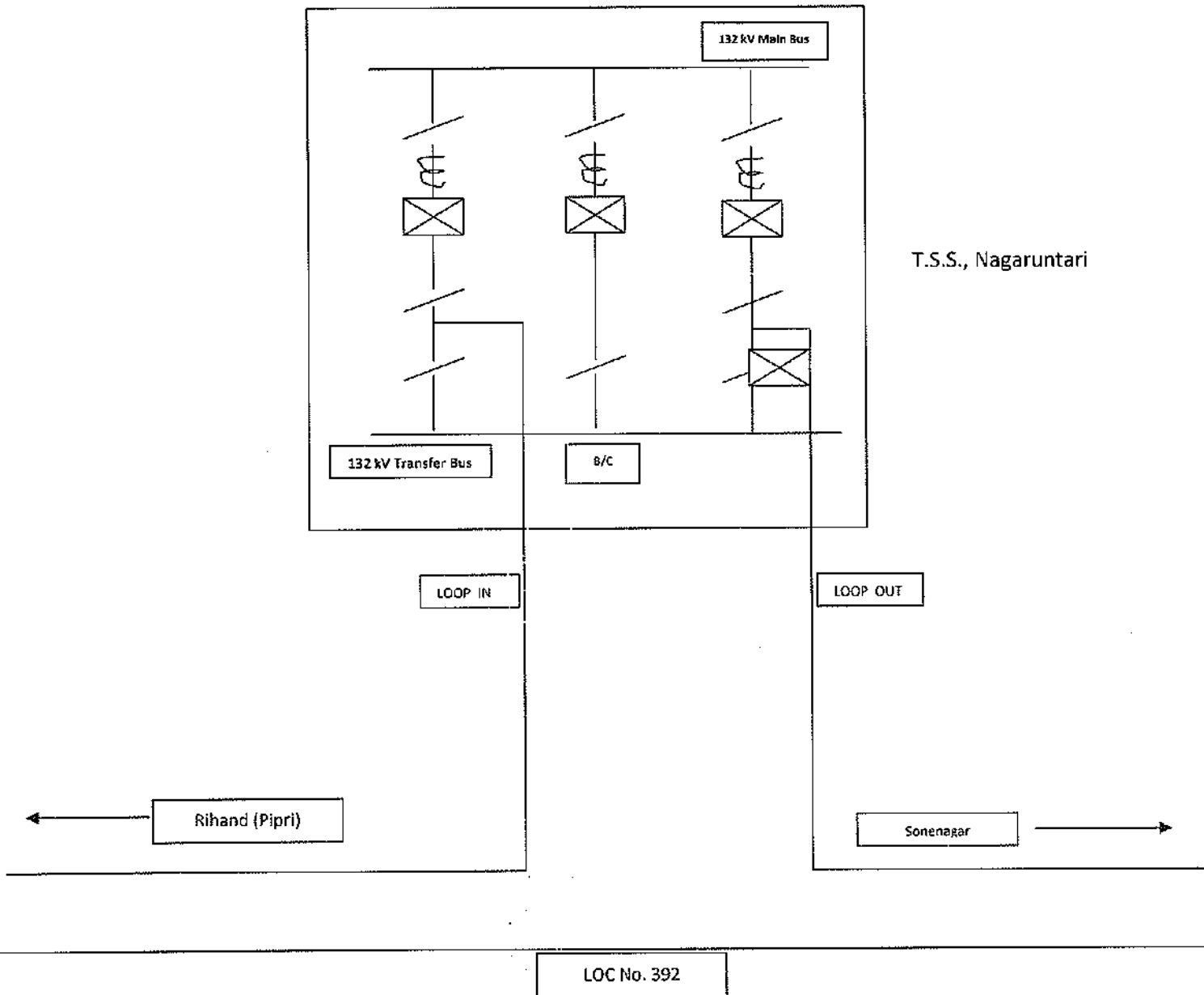
In light of above facts, further action may be taken for granting permission for drawal of power from 132 kV Rihand (Pipri, UPPTCL) – Sonenagar (BSPTCL) at Nagaruntari TSS by LILO arrangement

Encl. As above.

Yours faithfully,

General Manager, C&M (non W.B. Project)

Details of Bay and equipment to be commissioned at Nagaruntari TSS through LILO arrangement of 132 kV Rihand - Sonenagar transmission line



EQUIPMENT DETAILS



2500 A, 31.5 KA, SF6 CB with Support Structure



132kV CTs 1 Ph 600-300-150/1A, 5core 120% thermal rating, 31.5KA Accuracy Class 0.2S

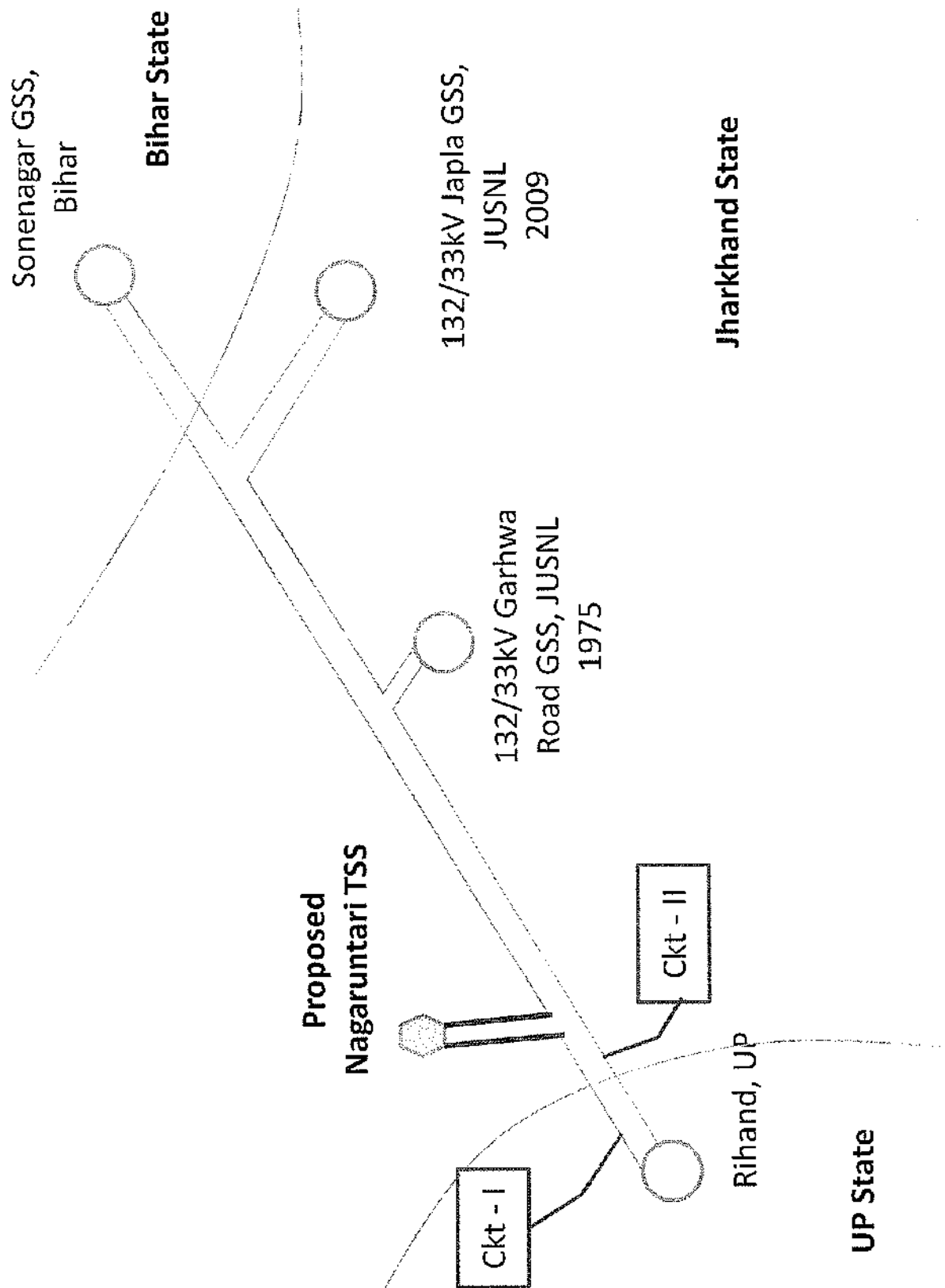


Isolator without E/S, 3 Ph, 1600 A 31.5 KA Motorised Double Break

Bus Bar — Single ACSR Zebra 3Phase

ds

Schematic Diagram



I/10492/2020



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II

Power System Planning & Appraisal Division-II

सेवा मे / To,

Chairman-cum-Managing Director,
Jharkhand Urja Sancharan Nigam Limited
Engineering Building,
H.E.C., Dhurwa,
Ranchi-834004. Fax-0651-2400799

**विषय/ Subject: LILO of 132 kV Rihand (Pipri, UPPTCL) – Sonenagar (BSPTCL)
at Nagaruntari TSS – regarding.**

Ref.: JUSNL letter no.652/ED(Operation)/CE/Tr.O&M/220/2015-16 dated
06.07.2020

महोदय/ Sir,

1. JUSNL vide their letter dated 03.03.2020 had requested permission for drawal of power from 132kV Rihand(Pipri) (UPPTCL) – Sone Nagar (BSPTCL) at Nagaruntari TSS by LILO arrangement and placement of agenda before next standing committee of Eastern Region & Northern Region.

2. This proposal was earlier discussed in 101st OCC meeting of ERPC held on 26.09.2014 wherein JUSNL and Railways were advised to take mutual consent from Bihar and UP for construction of the line and place the proposal in Standing Committee on Power System Planning of Eastern Region.

As the proposal was not sent by JUSNL for the Standing Committee of ER, we had sought comments from ERPC Secretariat, ERLDC and BSPTCL, which have been received on 01-06-2020, 01-06-2020 and 09-06-2020, respectively. Considering these comments, clarifications were requested from JUSNL vide our letter dated 11.06.2020 (copy enclosed at **Annexure-I**).

3. JUSNL vide their letter dated 06-07-2020, as referred above, has furnished these clarifications/confirmations. In particular, JUSNL has confirmed that Nagaruntari TSS will be monitored and supervised by SLDC, Jharkhand and

I/10492/2020

Railways would be consumer of Jharkhand through JBVNL for drawl of power. They have also confirmed that 132 kV Rihand-Sonenagar line shall remain under the jurisdiction of RLDC. JUSNL has also confirmed that the sub-station at Nagaruntari will be under jurisdiction of JUSNL and not in the jurisdiction of Railways and drawl of power by Railways through the said line will be included in the drawl of JUSNL. (Copy of JUSNL letter is enclosed at **Annexure-II**).

4. Considering the above confirmations, it is conveyed that, in principle, we have no objection for JUSNL to make LILO of the 132 kV Rihand (Pipri,UPPTCL) – Sonenagar (BSPTCL) at Nagaruntari TSS.

This scheme will be put up in the forthcoming meeting of ERPCTP for concurrence.

भवदीय/Yours faithfully,



(प्रदीप जिंदल/Pardeep Jindal)

मुख्य अभियंता / Chief Engineer

Copy to :

1. Member Secretary, ERPC, Kolkata
2. Director (Projects), BSPTCL, Patna
3. Director (Projects), UPPTCL, Lucknow
4. COO (CTU-Plg), POWERGRID, Gurugram
5. Executive Director, ERLDC, Kolkata



एनएचपीसी लिमिटेड

(भारत सरकार का उद्यम)

NHPC Limited

(A Govt. of India Enterprise)

ISO-9001, 14001 & IS 18001 Certified Company

एनएच/टी&आरई/2020/ 536

दिनांक: 04.08.2020

To,
Sh. Pardeep Jindal
Chief Engineer
Power System Planning & Appraisal Division-II
Central Electricity Authority
Sewa Bhawan, R.K. Puram
New Delhi-110066

Sub: Application of Connectivity for Dibang Multipurpose HE Project(2880MW) and Teesta IV HE Project (520MW).

Sir,

As suggested by CEA in various letters regarding application of connectivity as per CERC's connectivity, LTA/MTOA Regulation 2009, NHPC has applied for Connectivity for the following two Projects.

1. Dibang Multipurpose HE Project (2880MW), Arunachal Pradesh
2. Teesta IV HE Project (520MW), Sikkim

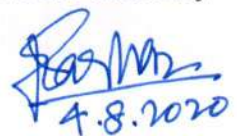
Copy of above mentioned connectivity applications are enclosed for ready reference.

This is for your kind information and necessary action please.

Thanking you.

Encl: As above

Yours faithfully


 4.8.2020

(J C Sarkar)

General Manager (T&RE)-I

Application for Grant of Connectivity

Application No. 1200002798

Name of Applicant (Organization) NHPC Ltd.

Address for Correspondence CORPORATE OFFICE, SECTOR-33, FARIDABAD-121003 , Haryana , India

Contact Details

Prime Contact Person : J.R. CHAUDHARY
 Designation : EXECUTIVE DIRECTOR
 Phone No.(Landline) : 01292259922
 Phone No.(Mobile) : 9810875116
 Fax :
 E-Mail : trenhpc@gmail.com

 Alternate Contact Person : DEBAJIT CHATTOPADHYAY
 Designation : EXECUTIVE DIRECTOR
 Phone No.(Landline) :
 Phone No.(Mobile) : 9800321161
 Fax :
 E-Mail : dcnhpc@yahoo.co.in
 PAN No : AAACN0149C
 GST No :

Nature of the Applicant Generator (other than captive)

Details for Connectivity

Capacity(MW) for which connectivity is required 520.00

Date from which connectivity is required Feb 28, 2027

Location of the Generating Station / Bulk Consumer

Nearest Village / Town : MANGAN
 District : NORTH SIKKIM
 State : Sikkim
 Latitude : 27 25 N TO 27 30 N
 Longitude : 88 30 E TO 88 32 30 E

Installed Capacity & Commissioning Schedule of the Generating Station

S. No.	Installed Capacity of the Generating Station	Commissioning Schedule of the Generating Station Date
1	130	Feb 28, 2027
2	130	Mar 31, 2027
3	130	Apr 30, 2027
4	130	May 31, 2027

Application for Grant of Connectivity

Application No. 1200002798

Details of the Generating Station

Name of the Power Plant : TEESTA HYDROELECTRIC PROJECT (STAGE-IV)
 Promoter : NHPC Ltd.
 Fuel : HYDEL
 Source of Fuel : TEESTA
 Generation Voltage : 11 KV
 Step-up Voltage : 400 KV
 Is it an identified project of CEA : Yes
 Base Load / Peaking :

Details of Nearest 765/400/220/132 KV sub-stations

Sub-Station-1

Voltage levels available : 400 KV
 Owner : POWER GRID
 Distance(Km) : 60.000
 Sub Station : RANGPO

Details of RTGS/NEFT (Application Fee)

UTR1	: CTK1129614	Amount (in Rs.)	: 662999.00
UTR2	:	Amount (in Rs.)	: 0.00
UTR3	:	Amount (in Rs.)	: 0.00
Date	: 2020-07-20		
Bank Name	: STATE BANK OF INDIA		
Branch Name	: CAG-II, NEW DELHI		

Bank Account details in case of Refund of Application Fee

IFSC Code : SBIN0017313
 Bank Account No : 00000010813608692
 Beneficiary Company Name : NHPC Ltd.
 Name of Bank : STATE BANK OF INDIA
 Branch Details : CAG-II, NEW DELHI

Detail of Documents Enclosed with the Application

S. No.	Status	Date of Issue	Description
1	YES		Duly notarised Affidavit in original as per FORMAT-CON-1
2	NO		Authorisation by the Central/State Government as Renewable Power Park Developer
3	NO		Site identification
4	NO		Land acquisition
5	NO		Environmental clearance for the power station
6	NO		Forest Clearance (if applicable) for the land for the power station
7	NO		Fuel Arrangements
8	NO		Water linkage
9	NO		Consortium Agreement of Lead Generator

Application for Grant of Connectivity

Application No. 1200002798

I confirm that I am well aware of the CERC Regulations & Detailed Procedure and all the details entered by me are in conformity with the Regulations. I hereby agree and acknowledge that in case of any deficiency in the application, I shall have only one opportunity to rectify the deficiencies within the stipulated time period (as per Regulations/Procedure) whereafter the application shall be liable for rejection at my risk and responsibility.

Submission Date: Aug 3, 2020

Submission Time: 15:15:17

Name of the Authorized Signatory:**Digital Signature****Company Stamp(Mandatory) :**

एन एच पी सी लिमिटेड
(भारत सरकार का उद्यम)
NHPC Limited
(A Govt. of India Enterprises)
NHPC Office Complex
Sector-33, Faridabad-121 003
Haryana, India

I/10348/2020

Annexure-VIII



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II
Power System Planning & Appraisal Division-II

To

Executive Director (T&RE)
 NHPC Office Complex,
 Sector-33, Faridabad,
 Haryana-121003

Subject: Planning of Power Evacuation System of Teesta-IV HE Project(520MW) at Sikkim – regarding.

Ref : 1. NHPC letter no. NH/RE/ED/2020-21/323-24 dated 22.04.2020
 2. CEA letter no. CEA-PS-12-15/6/2018-PSPA-II Division dated 21.05.2020
 3. NHPC letter no. NH/T&RE/ED/2020/402-404 dated 02.06.2020
 4. CEA letter no. CEA-PS-12-15/6/2018-PSPA-II Division dated 09.06.2020
 5. NHPC letter no. NH/T&RE/ED/2020/444 dated 18.06.2020

Sir,

This has reference to NHPC letter dated 18.06.2020, submitting point wise reply to CEA's letter dated 09.06.2020. Considering, above mentioned references, following is informed:

1. Requirement of Bus Reactor at Teesta-IV Generation Switchyard :

From the documents furnished by NHPC with letter dated 18.06.2020, it is found that a provision of 2x80 MVR bus reactor has been kept in the SLD and switchyard plan of Teesta-IV HEP. The matter was discussed with officials of NHPC and it was emerged that NHPC may provide only 1x80 MVAR capacity bus reactor in the generation switchyard.

2. Reactive Power Capabilities of Teesta-IV Machines :

NHPC has mentioned that Teesta-IV E&M works are in tendering process. The machine capability curve of all the generating units shall be submitted by the E&M contractor during detail engineering. They have also added that as per the machine generating curve of the similar in other NHPC projects, each generating unit of Teesta-IV at rated capacity of 145 MVA, 0.9 PF, can

I/10348/2020

generate and absorb 63 MVAR (approx..) in generation mode. Further, the machines would have synchronous condenser mode capability of 80 MVAR (approx.) Lag and Line charging capability of 111 MVAR (approx.) lead.

Accordingly, out of two reactors, one reactor is being dropped considering that Teesta –IV machines will have above mentioned reactive power capabilities including in synchronous condenser mode.

3. Requirement of space for spare line bays :

After examining the documents/ diagrams furnished by NHPC and considering the constraint of space at the generation switchyard, we may drop the requirement of space for four (4) line bays.

4. Application for connectivity as required under CERC regulations :

CTU has informed that NHPC had not applied for seeking connectivity / LTA for this project. As such the generation switchyard provisions, as informed vide our letter dated 21.05.2020 and as amended in this letter are tentative.

The provisions of the switchyard can only be finalized after processing of connectivity/LTA application by CTU in accordance with regulations of CERC. Therefore, you are again requested to apply for connectivity/LTA to CTU at the earliest.

Yours faithfully,

(B.S. Bairwa)
Director

Copy to :

1. Chief Engineer (HPA), Central Electricity Authority
2. COO, CTU, POWERGRID



BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA
A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna
CIN - U40102BR2012SGC018889

[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]

Head Office, VidyutBhawan, Bailey Road, Patna - 800021

E-mail address - ceplanningengg@gmail.com,

Website - www.bsptcl.in

Letter No/ _____ / BSPTCL, Patna
CE(P&E)/142/2019

Dated _____

From,

Director (Projects)

Bihar State Power Transmission Company Limited, Patna.

To,

Pradeep Jindal,

Chief Engineer - PSPA II,
Central Electricity Authority,
SewaBhawan, R.K. Puram,
New Delhi-110066.

Sub - Regarding post-facto approval of LILO of 220 kV Purnea PG - Begusarai DCDS line at Khagaria (New).

Ref: 1. MoM of 18th SCM, dated 19.08.2016.
2. BSPTCL-06/2014/987, dated 25.03.2015.

Sir,

With reference to the above, this is to inform that 220/132/33 kV Khagaria (New) Grid Sub-station (GSS) and its connectivity as 220 kV Saharsa (New) - Khagaria (New) have been planned and being executed after detailed studies by CTU and duly approved by CEA in the 18th standing committee. This line is under construction and shall take some time in commissioning.

It is pertinent to mention that to meet the rising demand of Central and North Bihar, it was planned to construct 220/132/33 kV Khagaria (New) GSS with LILO of 220 kV Purnea (PG) - Begusarai DCDS which is under operation. The route length of the transmission line is 183 km.

This scheme has been approved by the Government of Bihar (Copy enclosed as Annexure 1). However, the information of the above scheme couldn't be provided to the CEA and Standing Committee.

The LILO work of 220 kV Purnea (PG) - Khagaria (New) DCDS (Zebra) at 220/132/33 kV Khagaria (New) GSS has been completed and is ready for charging and to supply power to 220/132/33 kV Khagaria GSS which will enable BSPTCL to meet the rising demand of Central and North Bihar.

It is requested to kindly provide '**in principle**' approval of LILO of 220 kV Purnea (PG) - Begusarai DCDS at 220/132/33 kV Khagaria (New) GSS in order to commission 220/132/33 kV Khagaria GSS which is also ready for commissioning whereas the commissioning of 220 kV D/C Saharsa (New,PGCIL) - Khagaria (New) DCDS will take some time as 400/220/132 kV Saharsa (New,PGCIL) is under construction and instruct ERLDC to allow as well as to issue necessary code for the first time charging of the transmission line.

It is also to inform that the proposal for the above scheme will be placed as BSPTCL agenda item in the upcoming meeting of Eastern Region Power Committee on Transmission Planning for deliberation, kind consideration and necessary rectification with post-facto approval LILO of 220 kV Purnea PG - Begusarai DCDS line at 220/132/33 kV Khagaria (New) GSS.

Enc.: As above.

Yours Faithfully,

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Ab

Memo no.:

Dated:

Copy forwarded to COO(CTU), PGCIL, Plot no. 2, Saudamin, New IFFCO Chowk, sector-29, Haryana-122001 and Member Secretary, ERPC, 14th Golf Club, Tollygunj, WB-33, ED, ERLDC, 14th Golf Club, Tollygunj, WB-33 for kind information and necessary action.

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.:

Dated:

Copy forwarded to CE, Project 1, BSPTCL / CE, Project 2, BSPTCL / CE (SO), BSPTCL for kind information and necessary action.

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.:

Dated:

Copy forwarded to Advisor (T), BSPTCL and Director (Operation), BSPTCL for kind information.

Sd/-

(H.R. Panday)

Director (Projects), BSPTCL

Memo no.: 508

Dated: 23/06/2020

Copy forwarded to OSD to MD, BSPTCL for kind information.

Handwritten signature and date 23/06

(H.R. Panday)

Director (Projects), BSPTCL

Handwritten initials AB



महालेखाकार (लेखा एवं हक),
बिहार, वीरचन्द पटेल मार्ग, पटना।

CE (Trans)
vz

विषय:-

बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि0 के अन्तर्गत 220 के0भी0 डबल सर्किट लाईन बेगूसराय-पूर्णिया (पावरग्रिड) (RL-183 किलोमीटर) के मध्य (2x160+2x50) एम0भी0ए0 क्षमता का 220/132/33 के0भी0 नये ग्रिड सब-स्टेशन के निर्माण हेतु कुल 106.09 करोड़ रुपये की योजना की स्वीकृति एवं योजना के कार्यान्वयन हेतु वित्तीय वर्ष 2014-15 में 2.7004 करोड़ (दो करोड़ सत्तर लाख चार हजार) रुपये बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि0 को उपलब्ध कराने की स्वीकृति प्रदान करने के संबंध में।

आदेश:

स्वीकृत।
बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि0 के अन्तर्गत 220 के0भी0 डबल सर्किट लाईन बेगूसराय-पूर्णिया (पावरग्रिड) (RL-183 किलोमीटर) के मध्य (2x160+2x50) एम0भी0ए0 क्षमता का 220/132/33 के0भी0 नये ग्रिड सब-स्टेशन के निर्माण होने से उत्तरी एवं मध्य बिहार के वर्तमान एवं भविष्य में बढ़े हुए विद्युत मांग की पूर्ति तथा निकटवर्ती ग्रिड सब-स्टेशन में अतिरिक्त विद्युत माध्यम उपलब्ध कराने से गुणवत्तापूर्ण बिजली उचित विद्युत विभव के साथ उपलब्ध हो सकेगी।

2. बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि0 में विद्युत संचरण के क्षमता विस्तार, गुणवत्तापूर्ण एवं निर्बाध उपलब्धता हेतु 220 के0भी0 डबल सर्किट लाईन बेगूसराय-पूर्णिया (पावरग्रिड) (RL-183 किलोमीटर) की लम्बाई ज्यादा होने के कारण इसका रख-रखाव एवं संचालन कठिन एवं अव्यवहारिक है। इसके स्थायित्व हेतु लाईन के मध्य (2x160+2x50) एम0भी0ए0 क्षमता का 220/132/33 के0भी0 नये ग्रिड सब-स्टेशन एवं संबंधित संचरण लाईन के निर्माण की आवश्यकता है। इस योजना के कार्यान्वयन हेतु योजना की कुल लागत 106.09 करोड़ रुपये आकलित की गयी है।

3. राज्य सरकार द्वारा बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि0 के अन्तर्गत 220 के0भी0 डबल सर्किट लाईन बेगूसराय-पूर्णिया (पावरग्रिड) (RL-183 किलोमीटर) के मध्य (2x160+2x50) एम0भी0ए0 क्षमता का 220/132/33 के0भी0 नये ग्रिड सब-स्टेशन के निर्माण हेतु कुल 106.09 करोड़ रुपये की योजना की स्वीकृति एवं योजना के कार्यान्वयन हेतु वित्तीय वर्ष 2014-15 में 2.7004 करोड़ (दो करोड़ सत्तर लाख चार हजार) रुपये बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि0 को उपलब्ध कराने की स्वीकृति प्रदान की जाती है।

4. यह राशि मुख्य शीर्ष 4801-बिजली परियोजनाओं पर पूँजीगत परिव्यय-उप मुख्यशीर्ष -05 संचरण तथा वितरण लघु शीर्ष-190 सार्वजनिक क्षेत्र के तथा अन्य उपक्रमों में निवेश मांग सं0 -10 उपशीर्ष-0105 बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि0 की परियोजना विपत्र कोड-P4801051900105 विषय शीर्ष 5401-निवेश के अन्तर्गत उपबंधित राशि से विकलनीय होगा।

कृप0ऊ0.....

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2/4/15

331/Dir/P
04-04-15

Supd
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5. इस राशि की निकारी उप सचिव-सह-निकारी एवं व्ययन पदाधिकारी, उपाय विभाग, बिहार, पटना के द्वारा सचिवालय कोषागार, सिंचाई भवन, पटना से कर इसका भुगतान भारतीय स्टेट बैंक, सचिवालय शाखा सिंचाई भवन, पटना के द्वारा बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि०, पटना को केनरा बैंक, साउथ गाँधी मैदान शाखा, पटना के चालू खाता संख्या-0352101042062 आई०एफ०एस०सी० कोड CNRB0000352 में R.T.G.S के द्वारा की जायगी।
6. वित्त विभाग के परिपत्र संख्या 7355 दिनांक 05.10.2007 के अनुसार इसमें प्राधिकार पत्र की आवश्यकता नहीं है।
7. उक्त योजना की स्वीकृति सक्षम प्राधिकार मंत्रिपरिषद् का अनुमोदन संचिका संख्या- प्र०२/बि०स्टे०पा०ट्रा०कं०लि०-०६/२०१४ के पृष्ठ संख्या ०८/टि० पर दिनांक २४.०३.२०१५ को प्राप्त है।
8. राज्यादेश में आन्तरिक वित्तीय सलाहकार की सहमति संचिका संख्या- प्र०२/बि०स्टे०पा०ट्रा०कं०लि०-०६/२०१४ के पृष्ठ संख्या-१०/टि० पर दिनांक २५.०३.२०१५ को प्राप्त है।

बिहार राज्यपाल के आदेश से

ह०/-

अपर सचिव, ऊर्जा विभाग

ज्ञापांक - प्र०२/बि०स्टे०पा०ट्रा०कं०लि०-०६/२०१४

दिनांक

प्रतिलिपि कोषागार पदाधिकारी, सचिवालय कोषागार, सिंचाई भवन, पटना को सूचना एवं आवश्यक कार्रवाई हेतु प्रेषित।

ह०/-

अपर सचिव, ऊर्जा विभाग

ज्ञापांक : प्र०२/बि०स्टे०पा०ट्रा०कं०लि०-०६/२०१४ १४७ पटना, दिनांक : २५-०३-१५
प्रतिलिपि:- वित्त विभाग, बजट शाखा/बजट शाखा, ऊर्जा विभाग, पटना/उप सचिव-सह-निकारी एवं व्ययन पदाधिकारी, ऊर्जा विभाग, पटना/लेखा शाखा, ऊर्जा विभाग (तीन प्रतियों में), पटना/आई०टी० मैनेजर, ऊर्जा विभाग, पटना/अध्यक्ष-सह-प्रबन्ध निदेशक, बिहार स्टेट पावर (होलिडिंग) कम्पनी लि०/प्रबन्ध निदेशक, बिहार स्टेट पावर ट्रान्समिशन कम्पनी लि०, पटना को सूचना एवं आवश्यक कार्रवाई हेतु प्रेषित।

अपर सचिव, ऊर्जा विभाग



Government of India
Ministry of Power
Central Electricity Authority
System Planning & Project Appraisal Division
Sewa Bhawan, R. K. Puram, New Delhi-110066
Website: www.cea.nic.in



No. 66/5/SP&PA-2016/ -139-150

Dated: 19.08.2016

-As per List Enclosed-

Sub: Summary record of discussions of the 18th meeting of the Standing Committee on Power System Planning of Eastern Region on 13.06.2016 at Kolkata.

Sir/Madam,

Minutes of the meeting for the 18th Standing Committee Meeting on Power System Planning in Eastern Region held on 13.06.2016 at Kolkata is uploaded on the CEA website: www.cea.nic.in. (path to access: Wings of CEA/Power Systems/Standing Committee on Power System Planning/EASTERN REGION).

Yours faithfully,

Rishika
19/08/2016
(Rishika Sharan)
Director (PSPA-2)

Copy for kind information to:

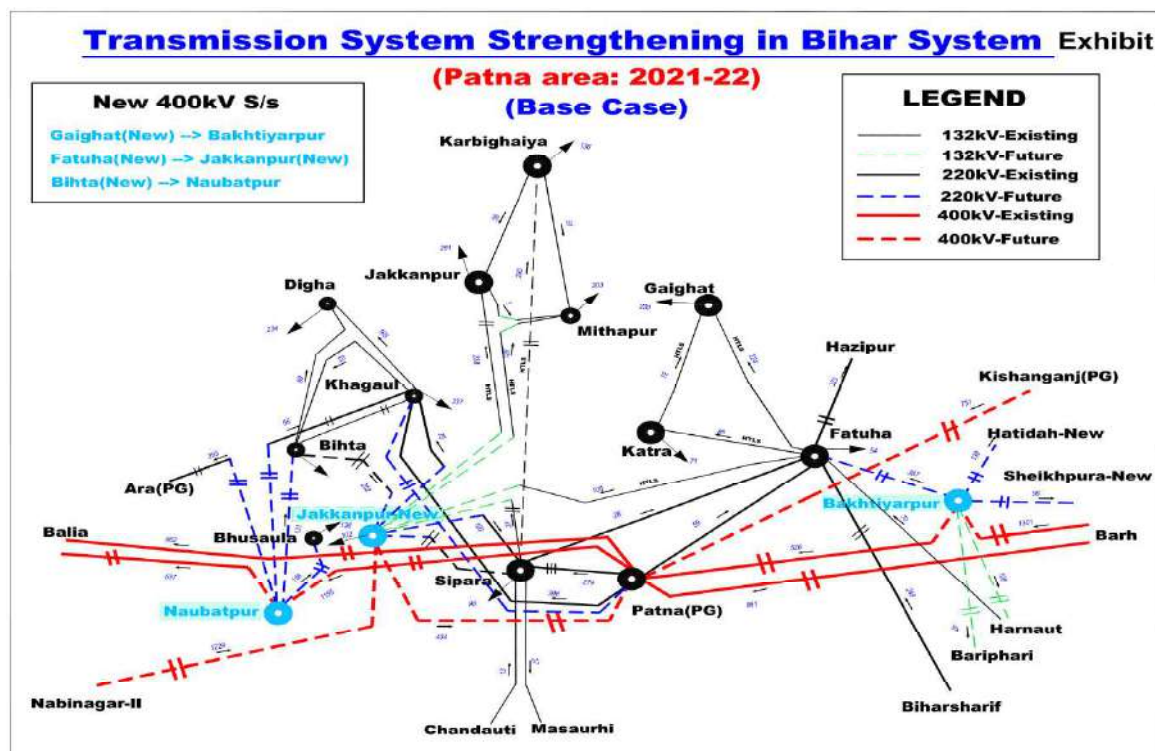
1) PPS to Chairperson/Member(PS), CEA

List of addressee:

1. Member Secretary, Eastern Regional Power Committee, 14, Golf Club Road, Tollygange, Kolkata-700033. Tel. No. 033-24235199 Fax No.033-24171358	2. Director (Projects), Power Grid Corporation of India "Saudamini" Plot No. 2, Sector-29, Gurgaon-122001 Tel. No. 0124-2571816 Fax No.0124-2571932
3. Executive Director (System), Damodar Valley Corporation DVC Towers, VIP Road, Kolkata-700054. Tel. 033-23557939 Fax No. 033-23554841	4. Managing Director, Bihar State Power Transmission Company, Vidyut Bhavan, Baily Road, Patna-800021. Tel. 0612-2504442 Fax No. 0612-2504557

- iv) Dumraon (New)- Buxarn (BSPTCL) 132 kV D/C
- v) Dumraon (New)- Jagdishpur (BSPTCL) 132 kV D/C
- f) **LILO of one circuit of Purnea-Naugachia / Khagaria 132 kV D/C line at Katihar (BSPTCL)**

12.6 Schematic showing the transmission system around Patna is given below:



12.7 After deliberations, members agree for establishment of 3 no. 400kV GIS sub-stations at Naubatpur, Bakhtiyarpur and Jakkampur in place of Bihta, Gaighat and Fatuha respectively along with down-linking 220kV & 132kV works and other transmission works mentioned above as **Phase-IV - Part-II** transmission works to be implemented by BSPTCL as intra-state transmission works.

13.0 Additional ISTS 400 kV sub-stations in Bihar along with down linking system by BSPTCL

13.1 Director (PSPA-2) stated that BSPTCL had informed that the demand of Bihar has increased to 3226 MW under unrestricted condition in Sep., 2015 and may go up to 8774 MW by 2018-19 due to segregation of agricultural feeders. BSPTCL and POWERGRID have carried out detailed load flow studies jointly to evolve transmission system requirement for the end of 13th plan period i.e. 2021-22 considering load demand of Bihar as 11000 MW (Study Report was enclosed at Annexure-V of the agenda). The studies have, interalia, recommended

- iii) 2x125MVA, 420kV bus reactors along with bays
- iv) **400kV Line bays** (along with space for switchable line reactor): 4 nos. for above LILO lines
- v) **220kV Line bays**: 4 nos. for LILO of Gaya (POWERGRID) – Sonenagar 220kV D/c at both Bodhgaya (BSPTCL) and Chandauti (New) substations, so as to form Gaya (POWERGRID) – Bodhgaya (BSPTCL) – Chandauti (New) – Sonenagar 220kV D/c line (**LILOs to be done by BSPTCL**)
- vi) **132kV Line Bays**: 4 nos. for LILO of Chandauti – Rafiganj and Chandauti – Sonenagar 132kV S/c lines (**LILOs to be done by BSPTCL**)
- vii) **Space for**
 - 400/220kV, 2x500MVA ICT along with associated bays
 - 220/132kV, 2x200MVA ICTs along with associated bays
 - 400kV line bays (including space for switchable line reactor): 6 nos.
 - 220kV line bays: 4 nos.
 - 132kV line bays: 4 nos.

Note: Under the scope of BSPTCL

- i) *Reconductoring of Chandauti – Rafiganj – Sonenagar 132kV S/c line with HTLS conductor of 240MVA (ampacity - 1050A)*
 - ii) *LILO of Chandauti – Rafiganj 132kV S/c line at Chandauti (New)*
 - iii) *Reconductoring of Chandauti – Sonenagar 132kV S/c line with HTLS conductor of 240MVA (ampacity - 1050A)*
 - iv) *LILO of Chandauti – Sonenagar 132kV S/c line at Chandauti (New)*
- 3) **Saharsa (New) S/s & associated interconnections (to be implemented as ISTS)**
- i) 400/220/132kV, 2x500MVA + 2x200MVA new S/s at Saharsa
 - ii) LILO of Kishanganj – Patna 400kV D/c (Quad) line of POWERGRID at Saharsa (New)
 - iii) 2x125MVA, 420kV bus reactors along with bays
 - iv) **400kV Line bays** (along with space for switchable line reactor): 4 nos. for above LILO lines
 - v) **220kV line bays**: 4 nos. for Saharsa (New) – Begusarai 220kV D/c and Saharsa (New) – Khagaria (New) 220kV D/c lines (**lines to be constructed by BSPTCL**)

- (a) LILO of both circuits of Purnea (POWERGRID) – Khagaria (New) 220kV D/c at Korha (New)

4) Augmentation of ICTs at following sub-station of BSPTCL (to be implemented by BSPTCL)

Substation	kV - 1	kV -2	Rating	Loading	N-1 Loading	Through additional ICT	Through Replacement
Bihta New	132	220	2x160	2x180	257	3 rd 200 ICT	
Chapra New	132	220	2x160	2x116	175	3 rd 160 ICT	
Gopalganj	132	220	2x160	2x159	232	3 rd 160 ICT	
Darbhangha	132	220	3x100	3x93	119		3x100 by 3x200
Hazipur	132	220	3x100	3x88	108		3x100 by 3x200
Khagaul	132	220	4x100	4x126	150		4x100 by 4x200
Kishanganj New	132	220	2x160	2x162	238	3 rd 160 ICT	
Sipara	132	220	2x150+1x160	2x142+151	170		2x150+160 by 3x200
Sonenagar	132	220	2x160	2x147	205	3 rd 160 ICT	

5) Reconductoring of 132kV BSTPCL transmission lines with HTLS conductor of 240MVA (1050A ampacity) – to be implemented by BSPTCL

- i) Kanti – SKMCH 132kV D/c
- ii) Dehri – Banjari 132kV S/c
- iii) Barauni – Begusarai 132kV D/c
- iv) Mithapur – Karbhigaiya 132kV S/c
- v) Arrah (POWERGRID) – Arrah 132kV S/c
- vi) Lakhisarai (POWERGRID) – Lakhisarai 132kV D/c
- vii) Chhapra (New) – Chhapra 132kV D/c
- viii) Kishanganj (Old) – Kishanganj (New) 132kV D/c
- ix) Chandauti – Tekari 132kV D/c
- x) Kahalgaon – Sabour 132kV S/c
- xi) Kahalgaon – Kahalgaon (BSPTCL) 132kV S/c
- xii) Dehri – Sonenagar 132kV D/c
- xiii) Biharsharif – Baripahari 132kV D/c

6) Stringing of 2nd Circuit (to be implemented by BSPTCL)

- i) Stringing of 2nd circuit of Saharsa – Sonebarsa 132kV S/c on D/c
- ii) Stringing of 2nd circuit of Muzaffarpur – SKMCH 132kV S/c on D/c

7) Scheme modification (to be implemented by BSPTCL)

I/10278/2020



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II

Power System Planning & Appraisal Division-II

सेवा मे / To,

Managing Director,
Bihar State Power Transmission Company,
Vidyut Bhavan (4th floor), Baily Road,
Patna-800021.
Tel. 0612-2504442

विषय/ Subject: Post-facto approval of LILO of 220 kV Purnea (PG)- Begusarai DCDS line at Khagaria (New)- regarding.

महोदय/ Sir,

This is in reference to BSPTCL letter no. CE(P&E)/142/2019 dated 23.06.2020 regarding the subject stated above requesting for "in-principle" approval for LILO of 220 kV Purnea(PG)-Begusarai DCDS at 220/132/33 kV Khagaria (New) GSS.

BSPTCL has mentioned that due to rising demand of Central and North Bihar, they had planned to construct 220/132/33 kV Khagaria (New) GSS with LILO of 220 kV Purnea(PG)-Begusarai DCDS. The scheme was approved by the Government of Bihar. However, the information of the above scheme could not be provided to CEA and Standing Committee. The LILO work of 220 kV Purnea(PG)-Begusarai DCDS (Zebra) at 220/132/33 kV Khagaria (New) GSS has been completed and is ready for charging.

Considering the facts, "post-facto in-principle" approval for LILO of 220 kV Purnea(PG) - Begusarai DCDS at 220/132/33 kV Khagaria (New) GSS is hereby conveyed to BSPTCL. The scheme would be put up in the forthcoming meeting of ERPCTP for concurrence.

भवदीय/Yours faithfully,

(प्रदीप जिंदल/Pardeep Jindal)

मुख्य अभियंता / Chief Engineer



BIHAR STATE POWER TRANSMISSION COMPANY LIMITED, PATNA

Regd. Office :- Vidyut Bhawan, Bailey Road, Patna-21

CIN NO :- U40102BR2012SGC018889

Annexure-XI

PH. :-0612-2504229.

Fax No:-0612-2504557.

e-mail :cetransom.bsptcl@gmail.com

Letter No.....256...../ Patna,
C.E./ Trans. (O&M)/Misc-/2019

Dated...10.07.2020/

From,

Uttam Kumar
Director (Operation),
BSPTCL, Patna.

To,

Sri Pradeep Jindal
Chief Engineer, Power system planning & appraisal division-II
Central Electricity Authority,
Seva Bhawan, R.K.Puram-1 New Delhi-110066

Sub:- Regarding approval for feeding 132 KV Power to 132/33 KV GSS Barsoi (BSPTCL) from 400/220/132 KV GSS Purnea (PGCIL) through jumpering of 132 KV Purnea (PG)-Kishanganj (Old) T/L to 132 KV Kishanganj (New)-Barsoi T/L at the point of overcrossing site.

Sir,

With reference to subject noted above, this is to say that due to threat to the tower caused by soil erosion by Mahananda river, we are unable to feed GSS Barsoi from 220/132 KV GSS Kishanganj (New) through 132 KV Kishanganj (New)- Barsoi T/L.

Presently, GSS Barsoi is getting power from Kishanganj (Old) GSS through jumpering of 132 KV Kishanganj (New)-Barsoi T/L with 132 KV Purnea (PG)-Kishanganj (Old) T/L at the point of overcrossing (A hand sketch is attached for your reference). But this is causing overloading of 220/132 KV, 2X160 MVA transformer at Kishanganj (New) GSS. It is relevant to mention here that 220/132/33 KV Kishanganj (New) GSS also feeds 132 KV power to Nepal.

Although, ERLDC has been requested to allow the feeding of 132 KV power to Barsoi GSS from Purnea (PG) SS through the same arrangement but ERLDC sought approval from standing committee or any higher forum (Email communication is attached).

Under above circumstances, it is hereby requested to allow BSPTCL to draw 132 KV power for 132/33 KV GSS Barsoi from 400/220/132 KV GSS Purnea (PGCIL) through the jumpering of 132 KV Kishanganj (New)-Barsoi T/L with 132 KV Purnea (PG)-Kishanganj (Old) T/L at the overcrossing in view of alarming flood situation in the Northern Region of Bihar.

Enclosure - As above.

Regards

(Uttam Kumar)

Director (Operation), BSPTCL Patna



Chief Engineer TransOM <cetransom.bsptcl@gmail.com>

Fwd: First time charging document of Gss Barsoi from Gss Purnea(PG)

1 message

SLDC Patna <sldc.bseb@gmail.com>

Fri, Jul 10, 2020 at 12:31 PM

To: Chief Engineer TransOM <cetransom.bsptcl@gmail.com>

----- Forwarded message -----

From: **ERLDC FTC Grid Element** <ftcer@posoco.in>

Date: Mon 6 Jul, 2020, 1:02 PM

Subject: RE: First time charging document of Gss Barsoi from Gss Purnea(PG)

To: SLDC Patna <sldc.bseb@gmail.com>, ce.sysop@gmail.com
<ce.sysop@gmail.com>Cc: D K Jain (डी के जैन) <dk.jain@posoco.in>, Amaresh Mallick (अमरेश मल्लिक)
<amareshmallick@posoco.in>, Shyamal Konar (श्यामल कोनार) <konar_s@posoco.in>,
T R Mohapatra (टी आर मोहापात्रा) <trmohapatra@posoco.in>, Chandan Mallick (चंदन
मलिक) <chandan.mallick@posoco.in>, Gaurav Agarwal(गौरव अगरवाल)
<gaurav.agarwal@posoco.in>, Premkant Kumar Singh (प्रेमकांत कुमार सिंह)
<premkant@posoco.in>, Sudeep Kumar {सुदीप कुमार} (sudeepkumar@powergridindia.
com) <sudeepkumar@powergridindia.com>, ankur@powergridindia.com
<ankur@powergridindia.com>, Sanjay {????} <singhsk@powergridindia.com>

Sir/Madam,

Please refer to the FTC request received from SLDC, Bihar regarding
“reconfiguration of 132 kv Purnea(PG)-Kishanganj(old) and 132 kv Kishanganj (new)-
Barsoi T/L so as to feed power to GSS Barsoi either from Purnea(PG) or from Kishanganj (old)” in
trailing mail.

Reconfiguration or change of any tie-line requires approval from standing committee
or any higher forum. Please submit the approval of any higher forum regarding this
reconfiguration.

Chandan Mallick**Dy. Mgr (SO), ERLDC****POSOCO**

Sent from [Mail](#) for Windows 10

From: [SLDC Patna](#)

Sent: 06 July 2020 12:31

To: [ERLDC FTC Grid Element](#); [Chandan Mallick \(चंदन मलिक\)](#)

Subject: Fwd: First time charging document of Gss Barsoi from Gss Purnea(PG)

kindly refer the trailing mail regarding first time charging formats for reconfiguration of 132 kv Purnea(PG)-Kishanganj(old) and 132 kv Kishanganj (new)-Barsoi T/L so as to feed power to GSS Barsoi either from Purnea(PG) or from Kishanganj (old).

SCE/ESE(SLDC)

State Load Despatch Centre

Bihar State Power Transmission Company Ltd. Patna

Mobile: +91 7763818083, 7763818084, 7763818085, 7763818086

Telephone: 0612-2504090

Fax: 0612-2504557

E-mail: sldc.bseb@gmail.com

web: <http://www.bsptcl.in>

NOTE: sldcbsptcl@gmail.com is the email id of dept. of ULDC

----- Forwarded message -----

From: **Ajit Bishwas** <aeebarsoi18@gmail.com>

Date: Fri, Jul 3, 2020 at 9:13 PM

Subject: First time charging document of Gss Barsoi from Gss Purnea(PG)

To: SLDC Patna <sldc.bseb@gmail.com>

Cc: Division Purnea <eexetdpurnea@gmail.com>, Er.Mithilesh Kumar <esetcpurnea1@gmail.com>, <gmtrzbhagalpur@gmail.com>

Sir,

Kindly find the attachment.

Regards

AEE TSD BARSOI

----- Forwarded message -----

From: **Division Purnea** <eexetdpurnea@gmail.com>

Date: Fri 3 Jul, 2020, 9:07 PM

Subject: 'CamScanner 07-03-2020 20.52.53.pdf'

To: <sldc.bseb@gmail.com>

Cc: <aeebarsoi18@gmail.com>, <esetcpurnea1@gmail.com>

* This e-mail is an official email of Power System Operation Corporation Ltd (POSOCO), is confidential and intended to use by the addressee only. If the message is received by anyone other than the addressee, please return the message to the sender by replying to it and then delete the message from your computer. Internet e-mails are not necessarily secure. The Power System Operation Corporation Ltd. (POSOCO) does not accept responsibility for changes made to this message after it was sent. Whilst all reasonable care has been taken to avoid the transmission of viruses, it is the responsibility of the recipient to ensure that the onward transmission, opening or use of this message and any attachments will not adversely affect its systems or data. No responsibility is accepted by the POSOCO in this regard and the recipient should carry out such virus and other checks as it considers appropriate. Visit our website at www.posoco.in *

→ = Blue arrow indicate
 Current power flow
 → = Red arrow indicate
 Power flow after tapping

N

220KV GSS KISHANGANG (NEW)

GSS KISHANGANG (OLD)

E

GSS Purnea (PH)
132KV Purnea (PH)

Kishangang (old) T/L

W

GSS BARSOI

opening Jumper

Overcrossing

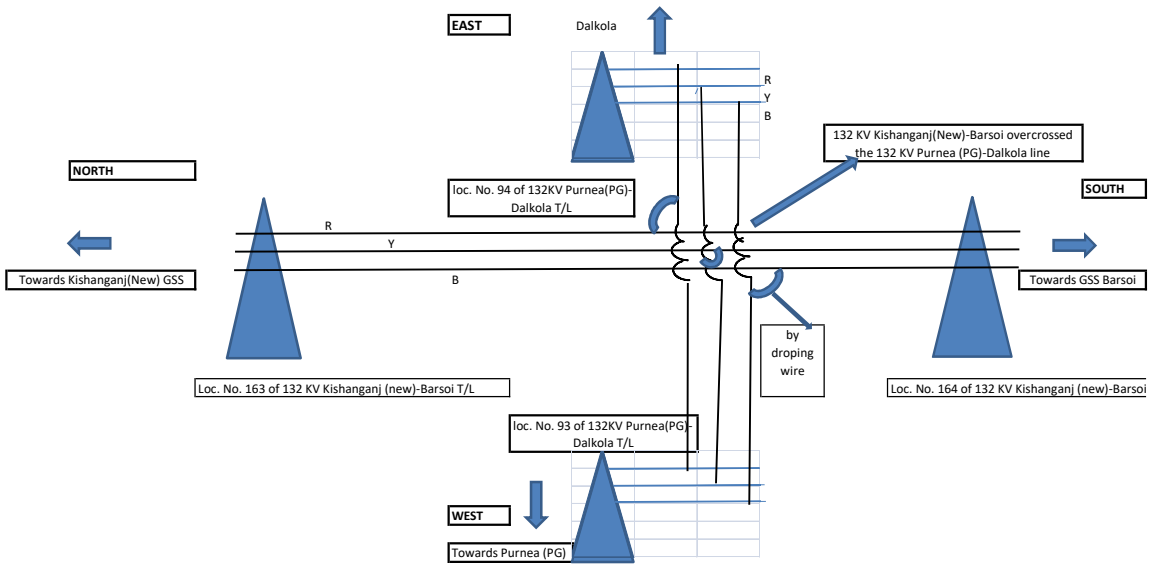
132KV Barsoi - Kishangang T/L

GSS JALIHOLA (WBSTCL)

GSS BARSOI

Date / 15/11/2022
 By / *[Signature]*
 Order / *[Signature]*

S



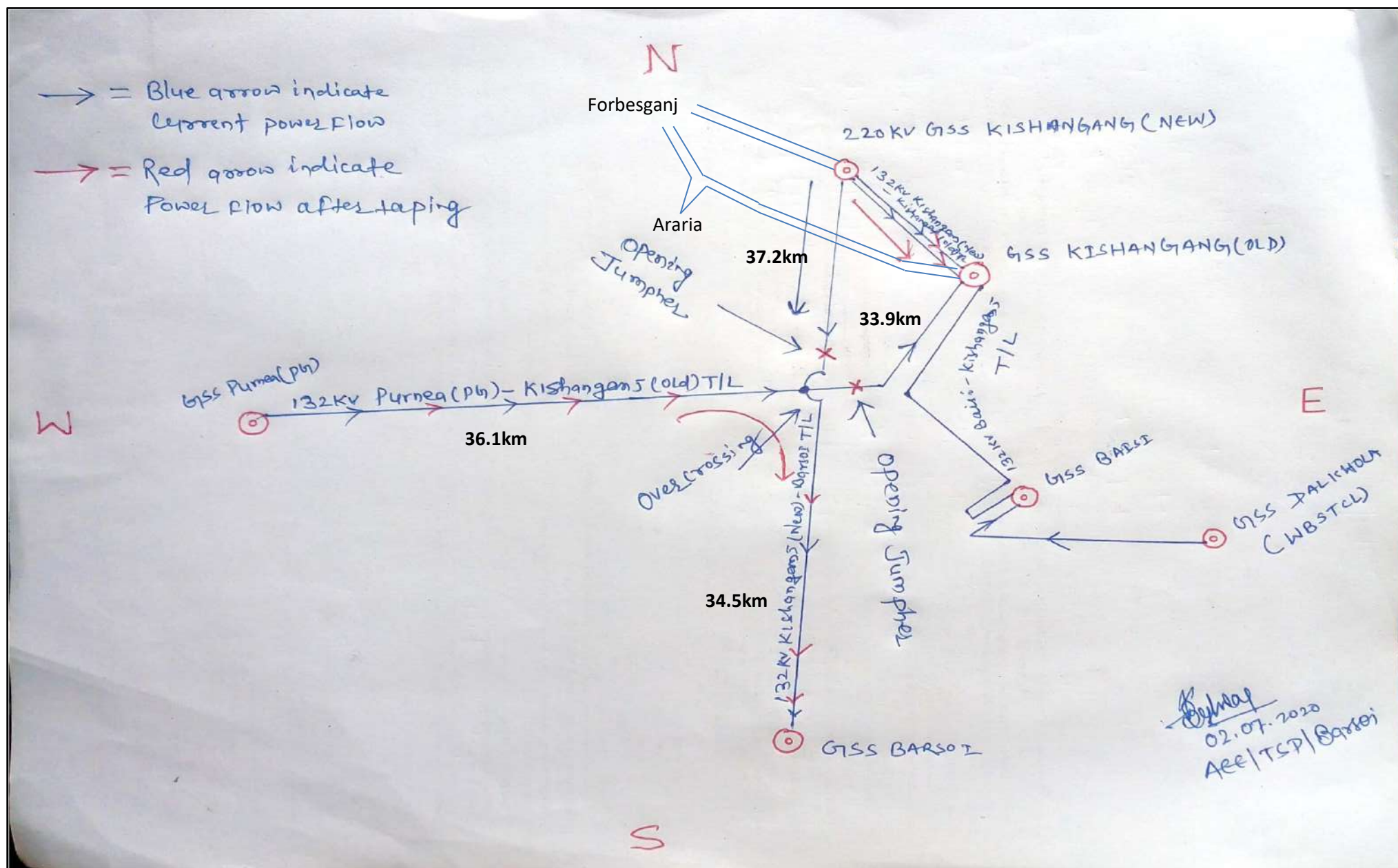
T/L

Interim arrangement to feed Barsoi (BSPTCL) 132/33kV S/s

BSPTCL has proposed interim arrangement to feed Barsoi (BSPTCL) 132/33kV S/s from Purnea (POWERGRID) 220/132kV S/s through jumpering of 132kV S/c Purnea (POWERGRID) –Kishanganj (Old, BSPTCL) line to 132kV S/c on D/c Kishanganj (New, BSPTCL) – Barsoi line at the crossover point. The interim arrangement has been proposed due to tower damage in Barsoi – Kishanganj (New) 132kV line, which is the only line for supplying power to Barsoi S/s.

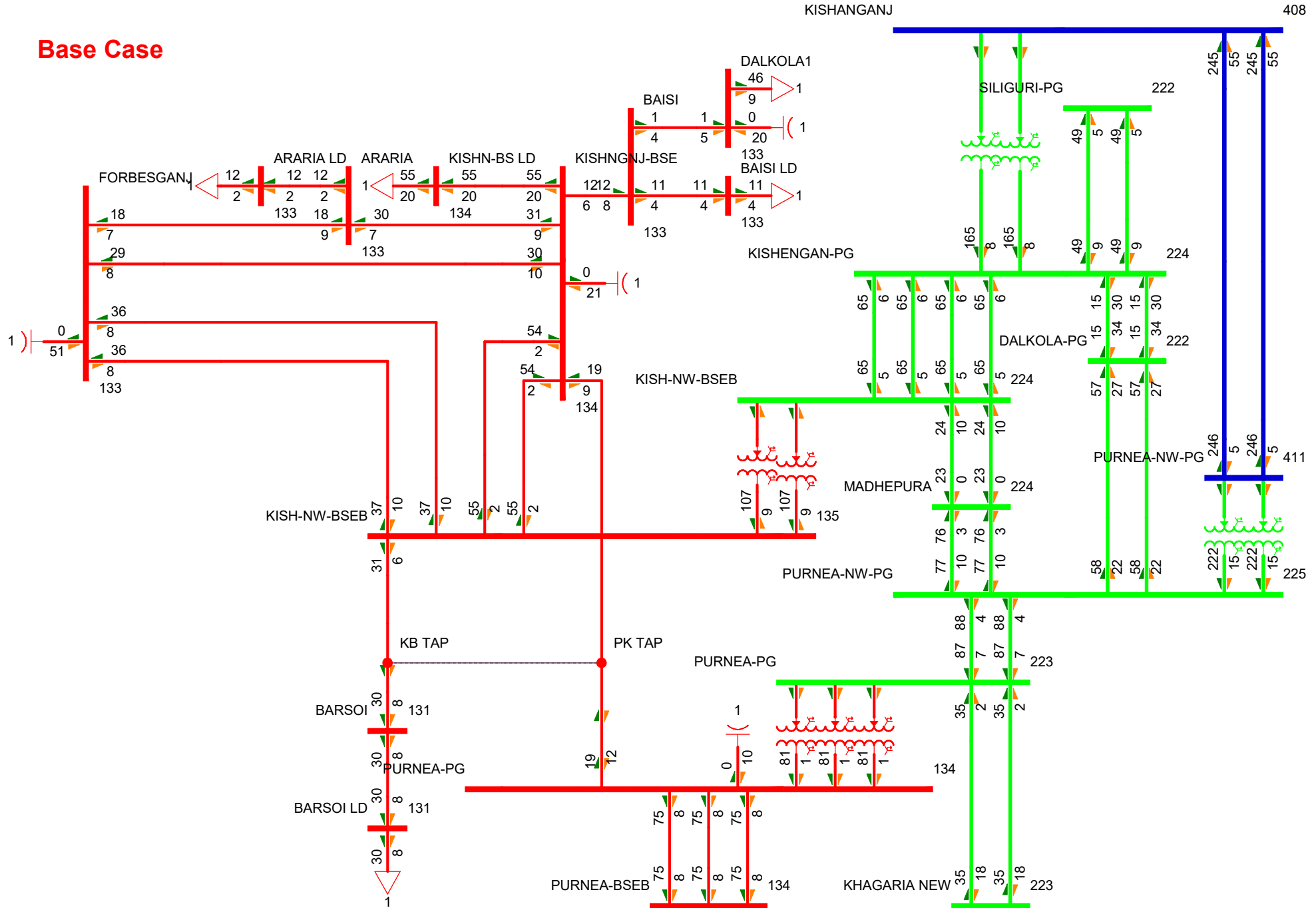
CEA vide letter dated 13-07-2020 has sought comments of CTU (POWERGRID) on the proposed interim arrangement. In this regard, observations of CTU (POWERGRID) are as follows:

- The present power demand at Barsoi is about 30MW.
- Length of different sections as obtained from BSPTCL has been marked in the schematic sent by them at **Annexure-1**. With the proposed arrangement, Barsoi would be radially fed from Purnea (POWERGRID) S/s through Purnea (POWERGRID) – Barsoi 132kV S/c line section of about 70.6km (formed after interim arrangement).
- The transformation capacity available at 400kV and 220kV substations in Purnea and Kishanganj areas are as follows:
 - New Purnea (POWERGRID): 400/220kV, 2x500MVA
 - Purnea (POWERGRID): 220/132kV, 3x160MVA
 - Kishanganj (POWERGRID): 400/220kV, 2x500MVA
 - Kishanganj (New, BSPTCL): 220/132kV, 2x160MVA [fed from Kishanganj (POWERGRID) through 220kV 2xD/c lines]
- Studies have been carried out considering the above transformation capacity and power demand at Barsoi for normal case and also with the proposed interim arrangement. The same is enclosed as **Exhibit-1A** and **Exhibit-1B**.
- Kishanganj (New) 220/132kV, 2x160MVA ICTs in both cases are not N-1 compliant. It is understood that, 3rd 160MVA ICT is being installed.
- From the load flow study results no other major power flow constraints are expected with the proposed interim arrangement.



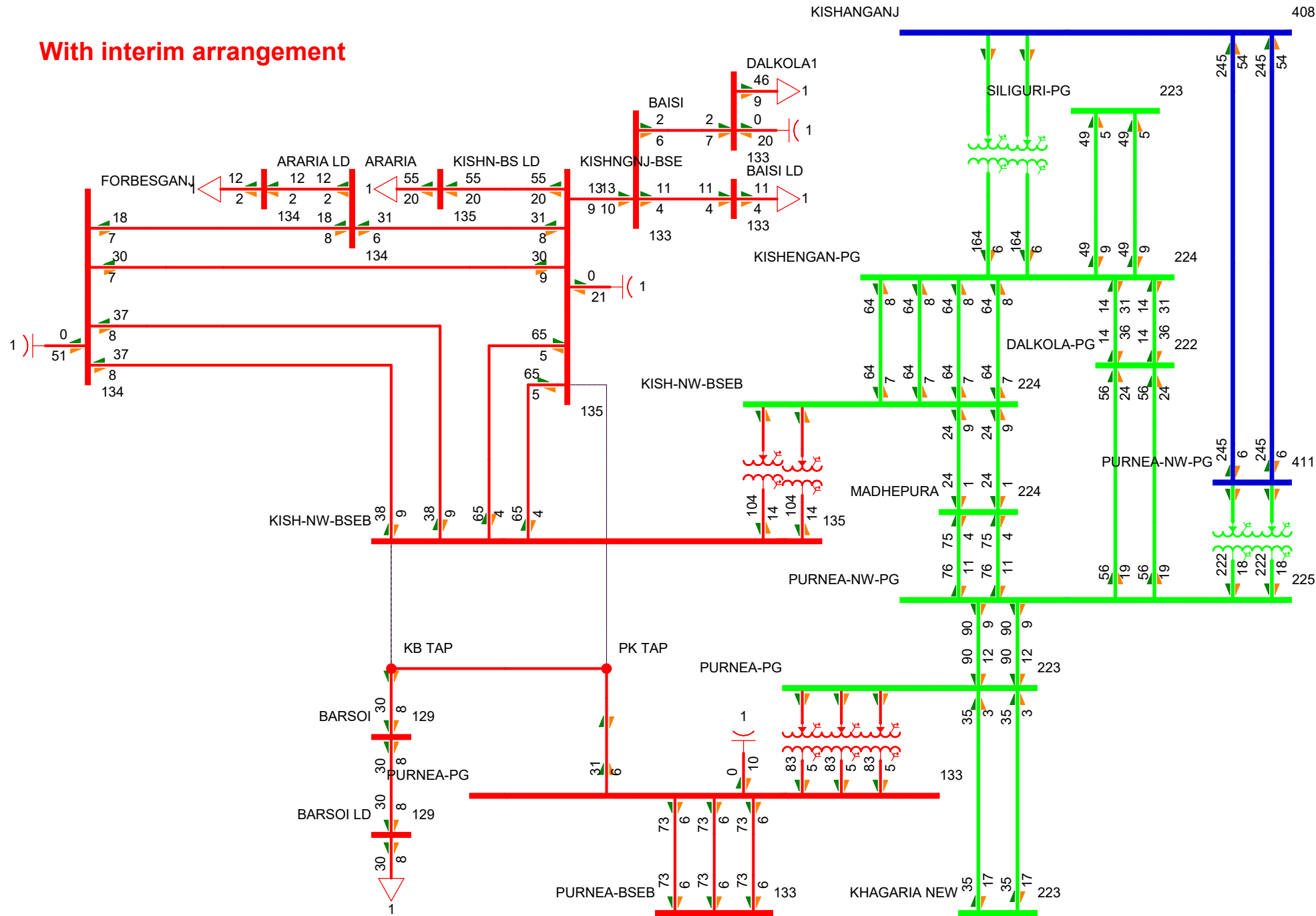
Interim Arrangement to feed Barsoi 132/33kV S/s

Base Case



Interim Arrangement to feed Barsoi 132/33kV S/s

With interim arrangement



I/10578/2020

Annexure-XIII



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II
Power System Planning & Appraisal Division-II

सेवा मे / To,

Director (Operation),
 Bihar State Power Transmission Company,
 Vidyut Bhavan (4th floor), Baily Road,
 Patna-800021.

विषय/ Subject: Feeding 132 kV power to 132/33 kV GSS Barsoi (BSPTCL) from 400/220/132 kV GSS Purnea (PGCIL) through jumpering of 132 kV Purnea (PG)-Kishanganj (Old) T/L to 132 kV Kishanganj (New)-Barsoi T/L at the point of overcrossing site – regarding.

Ref: BSPTCL letter no. CE/Trans(O&M)/Misc/2019/256 dated 10.07.2020

महोदय/ Sir,

This is in reference to BSPTCL letter dated 10.07.2020 on the above subject requesting to allow BSPTCL to draw 132 kV power for 132/33 KV GSS Barsoi from 400/220/132 KV GSS Purnea (PGCIL) through the jumpering of 132 KV Kishanganj (New)-Barsoi T /L with 132 KV Purnea (PG)-Kishanganj (Old) T /L at the overcrossing in view of threat to the tower caused by soil erosion by Mahananda river.

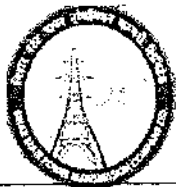
We have obtained comments from CTU on the issues (Comments of CTU enclosed at Annex-I). CTU mentioned that Kishanganj (New) 220/132kV, 2x160MVA ICTs in both cases are not N-1 compliant. It is understood that, 3rd 160MVA ICT is being installed. Further, from the load flow study results no other major power flow constraints are expected with the proposed interim arrangement.

Considering the facts, "in-principle" approval to feed Barsoi (BSPTCL) 132/33kV S/s from Purnea (POWERGRID) 220/132kV S/s through jumpering of 132kV S/c Purnea (POWERGRID) –Kishanganj (Old, BSPTCL) line to 132kV S/c on D/c Kishanganj (New, BSPTCL) – Barsoi line at the crossover point as an interim arrangement is hereby conveyed to BSPTCL.

The scheme would be put up in the forthcoming meeting of ERPCTP for concurrence.

भवदीय/Yours faithfully,

(प्रदीप जिंदल/Pardeep Jindal)
 मुख्य अभियंता / Chief Engineer



Bihar State Power Transmission Company Ltd., Patna

A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna

CIN-U40102BR2012SGC018889

[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]

Head Office, VidyutBhawan, Bailey Road, Patna -800021

Letter No.: 128, BSPTCL, Patna
CE(P&E)-04/2017

Date: 27/01/2020

From,

H R Panday
Director (Projects), BSPTCL

To,

Pradeep Jindal
Chief Engineer - PSPA II,
Central Electricity Authority,
Sewa Bhawan, R K Puram,
New Delhi-110066.

Sub:- Regarding 220 kV Bus creation at Banka (PG) or/and Lakhisarai (PG).

Sir,

With reference to the above, it is pertinent to mention that the Grid Sub-stations constructed by BGCL i.e., Nawada(New), Sheikhpura(New), Haveli Kharagpur and Goradih are drawing power from Khizersarai (BGCL). and Khizersarai is dependent on Biharsarai and Gaya (PG). Also, the above mentioned grids are apparently on single source as the remote GSS Goradih doesn't have any alternate power source. This is creating severe voltage rise issue during off peak hours.

It may also be noted that in case of tripping in 220 kV Sheikhpura (New) – Haveli Kharagpur D/C transmission line, N-1 criterion for Haveli Kharagpur and Gouradih is violated.

To provide an alternate 220 kV source at Gouradih and Haveli Kharagpur, and to maintain the voltage regulation, the GSS(s) require another source(s).

It is requested to kindly advice about the feasibility of creation of 220 kV voltage level at existing 400/132 kV Banka (PG) or Lakhisarai (PG) so that it may be possible to connect the above mentioned GSS(s) for better voltage regulation and to avoid violation of N-1 criterion.

Yours faithfully,

(H R Panday)

Director (Projects), BSPTCL

Ab

St. B. S/13, Dir
3/2/2020

Sh. Sunyash AD
Pls. discuss
3.2.2020

PSPA-II-No-121
31/1/20

SPED-POST

11

20.3. TSECL stated that at Palatana, one bay is already utilised for Palatana-Udaipur 132 line and other bay would be used for Palatana-Udaipur 132kV second line.

20.4. TSECL stated that they would update about use of ISTS bays at Surajmaninagar (TSECL). However, regarding P.K.Bari, TSECL informed that they had written to Secretary (Power) for considering the P.K.Bari (ISTS) – P.K.Bari (TSECL) 132kV D/c line to be built under ISTS.

20.5. The updated table is given below:

Substation	Upgraded 400kV line	No. of vacant bays	Bays vacant from	New transmission line for termination in vacant bays	Expected commissioning
Silchar 400/132kV (POWERGRID)	Silchar – Imphal	2	Jan 2019	Silchar – Ghungur 132kV D/c	Dec 2021
Silchar 400/132kV (POWERGRID)	Silchar – P.K.Bari	2	Expected from Jul 2020	Silchar – Udarbond 132kV D/c	-
P.K.Bari (TSECL) 132kV S/s	Silchar – P.K.Bari	2	Expected from Jul 2020	P.K.Bari (ISTS) – P.K.Bari (TSECL) 132kV D/c line	-
Palatana (OTPC)	Palatana – Surajmaninagar	2	Expected from Jul 2020	Palatana – Udaipur 132kV S/c: existing Palatana – Udaipur 132kV (2 nd) S/c line	-
Surajmaninagar (TSECL) 132kV S/s	Palatana – Surajmaninagar	2	Expected from Jul 2020	To be identified by TSECL.	-

21. Reconductoring of Siliguri-Bongaigaon 400kV D/c Twin Moose line with Twin HTLS conductor, reconductoring of Alipurduar – Salakati (Bongaigaon) 220kV D/c line with Single HTLS, and establishment of Bornagar S/s – Agenda by POWERGRID

21.1. Representative of CTU stated that in the 1st meeting of NERSCCTP held on 29-11-2018 it was decided to take up “Reconductoring of Siliguri – Bongaigaon line with Twin HTLS conductor (ampacity of single HTLS shall be 1596A, which is equivalent to Twin ACSR Moose conductor for 45°C ambient and 85°C maximum conductor

temperature) along with requisite modifications in line bay equipment at both ends with implementation of Bornagar – Parbotipur (Bangladesh) – Katihar 765kV (initially to be operated at 400kV) D/c cross border line”. However, implementation of Bornagar – Parbotipur (Bangladesh) – Katihar 765kV D/c cross-border India-Bangladesh line is yet to be taken up. Under N-1-1 of the quad moose line viz. Alipurduar – Bornagar/Bongaigaon, loading on the remaining twin moose line would be close to/beyond thermal rating. Moreover, any further lower availability of generation in NER during low hydro scenario shall only aggravate the

situation under N-1-1. Further, from the study results it was observed that the Alipurduar – Salakati (Bongaigaon) 220kV D/c line is also getting over loaded under N-1-1 of Alipurduar – Bornagar/Bongaigaon 400kV D/c (Quad) line.

- 21.2. Accordingly, it was proposed to take-up reconductoring of Siliguri – Bongaigaon line with Twin HTLS conductor (ampacity of single HTLS shall be 1596A, which is equivalent to Twin ACSR Moose conductor for 45°C ambient and 85°C maximum conductor temperature) along with requisite modifications in line bay equipment at both ends, without linking its implementation with Bornagar – Parbotipur (Bangladesh) – Katihar 765kV D/c line and reconductoring of the Alipurduar – Salakati (Bongaigaon) 220kV D/c line with single HTLS (*ampacity of single HTLS shall be 1596A, which is equivalent to Twin ACSR Moose conductor for 45°C ambient and 85°C maximum conductor temperature*) along with requisite modifications in line bay equipment at both ends.
- 21.3. Further, construction of 400kV Bornagar substation as switching station along with connectivities was to be implemented as ISTS in the 7th SCM of NER held on 17-05-2018. However, keeping in view the requirement of 2nd node for reliable supply of power in NER and requirement of power import in low hydro scenario, it was proposed that construction of 400kV Bornagar substation as switching station along with connectivities to be taken up for implementation delinking with Katihar – Parbotipur – Bornagar 765kV D/c line project.
- 21.4. POSOCO raised apprehension in giving shutdown for Siliguri – Bongaigaon 400kV D/c line for smooth operation of NER grid. CTU stated that a similar proposal of reconductoring Siliguri-Rangpo line for evacuation of Sikkim's power in Eastern Region was agreed as the reconductoring was proposed section by section with small outage periods/span by span. In case of reconductoring of Siliguri – Bongaigaon 400kV D/c line, there are availability of parallel transmission corridor as well as HVDC. Further, outage will be only taken after POSOCO's approval. Regarding shutdown of Alipurduar – Salakati (Bongaigaon) 220kV D/c for reconductoring, POSOCO stated there would not be any issue.
- 21.5. After detailed deliberation the following were agreed:
- Reconductoring of Siliguri – Bongaigaon 400kV D/c line with Twin HTLS conductor (*ampacity of single HTLS shall be 1596A, which is equivalent to Twin ACSR Moose conductor for 45°C ambient and 85°C maximum conductor temperature*) along with requisite modifications in line bay equipment at both ends – under ISTS. The reconductoring will be carried out in accordance with outage permission from ERPC/NERPC/NLDC.
 - Reconductoring of the Alipurduar – Salakati (Bongaigaon) 220kV D/c line with single HTLS (*ampacity of single HTLS shall be 1596A, which is equivalent to Twin ACSR Moose conductor for 45°C ambient and 85°C*

maximum conductor temperature) along with requisite modifications in line bay equipment at both ends – under ISTS

- c) Construction of 400kV Bornagar substation would be taken up after finalisation of Katihar – Parbotipur – Bornagar 765kV D/c line project.

21.6. It was informed that LILO of Alipurduar – Salakati (Bongaigaon) 220kV D/c is proposed at Gossaigaon under intra state system strengthening by Assam. Assam was requested to LILO the line with similar rating conductor, for which AEGCL was agreed.

22. Conversion of 2 nos. 63 MVAR Line Reactors at Biswanath Chariali end of Biswanath Chariali – Lower Subansiri 400kV (2nd) D/c line to Bus Reactors- Agenda by POWERGRID

22.1. Representative of CTU stated that four (4) nos. 420kV, 63MVAR line reactors were planned for the Lower Subansiri – Biswanath Chariali 400kV 2xD/c lines at Biswanath Chariali end. In view high voltage at 400kV level at Biswanath Chariali, Balipara and Ranganadi substations for most part of the day, some of the 400kV lines were kept out of service during off-peak hours. To control the undesirable voltage excursions, two out of four 420kV, 63 MVAR line reactors at Biswanath Chariali end to be utilized as Bus Reactors through suitable modifications in existing 400kV line bays like installation/provision of NGR by-pass scheme, controlled switching device etc. were approved in the 6th meeting of NER-SCM held on 03-10-2016.

22.2. From the operational feedback of POSOCO it was observed that voltages at Biswanath Chariali, Balipara, Misa, and Ranganadi are on higher side most of the time. An 80MVAR bus reactor at Ranganadi has already been planned.

22.3. To further limit undesirable high voltage at 400kV level in NER, CTU proposed to convert the other two out of four 420kV, 63 MVAR line reactors at Biswanath Chariali end (of Lower Subansiri – Biswanath Chariali 400kV 2xD/c lines) also as bus reactors through suitable modifications in existing 400kV line bays like installation/provision of NGR by-pass scheme, controlled switching device etc. under ISTS.

22.4. After detailed deliberations conversion of remaining two 420kV, 63 MVAR line reactors at Biswanath Chariali end (of Lower Subansiri – Biswanath Chariali 400kV 2xD/c lines) as bus reactors through suitable modifications in existing 400kV line bays like installation/provision of NGR by-pass scheme, controlled switching device etc. under ISTS was agreed .

I/9764/2020



भारत सरकार
 Government of India
 विद्युत मंत्रालय
 Ministry of Power
 केंद्रीय विद्युत प्राधिकरण
 Central Electricity Authority
 विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II
 Power System Planning & Appraisal Division-II

सेवा में / To,

संलग्न सूची के अनुसार
 As per list enclosed

विषय : पूर्वी क्षेत्रीय विद्युत समिति (पारेषण योजना) (ERPCTP) की पहली बैठक का कार्यवृत्त ।

Subject: 1st meeting of Eastern Region Power Committee (Transmission Planning) (ERPCTP) – Minutes.

महोदय(Sir)/महोदया(Madam),

पूर्वी क्षेत्रीय विद्युत समिति (पारेषण योजना) (ERPCTP) की पहली बैठक 14 फरवरी 2020 को कोलकाता, पश्चिम बंगाल में आयोजित की गई थी । बैठक का कार्यवृत्त संलग्न है ।

The 1st meeting of Eastern Region Power Committee (Transmission Planning) (ERPCTP) was held on 14th February 2020 at Kolkata, West Bengal. Minutes of the meeting are enclosed herewith.

भवदीय/Yours faithfully,

P. Jindal
 13/05/2020

(प्रदीप जिंदल/ Pardeep Jindal)

मुख्य अभियंता/ Chief Engineer

Copy for kind information to:

- 1) PPS to Chairperson/ Member (PS), CEA

As mentioned in the SECI letter dated 07.02.2020, out of 7 developers, NOC for 5 developers are pending.

33.3 GRIDCO, JBVNL and BSPHCL stated that they will look into the matter.

34. Issue regarding non-availability of shutdown at Malda S/s for commissioning of ICTs at Malda & Siliguri under ERSS-XVII (Part-B) scheme

34.1 Representative of POWERGRID stated that the ERSS-XVII (Part-B) scheme inter alia includes augmentation of transformation capacity at various substations in ER viz. Gaya, Malda, New Siliguri, Durgapur, Jeypore, and Rourkela. The augmentation at Malda S/s has been planned through replacement of 400/220kV, 2x315MVA ICTs with 2x500MVA ICTs and one of the ICTs released after replacement is to be installed as 3rd 400/220kV, 1x315MVA ICT at New Siliguri S/s.

34.2 He added that augmentation of transformation capacity at Gaya and Durgapur has been completed and that at other substations under ERSS-XVII (Part-B) except Malda and New Siliguri substations is under progress and are expected to be completed by Feb/Mar 2020. The 400/220kV, 2x500MVA ICTs have reached at Malda S/s long back and are lying idle there for last many months as consent for shutdown for replacement of 2x315MVA ICTs is yet to be obtained from grid operator. The matter was also discussed in the 158th meeting of OCC.

34.3 He requested that WBSETCL/POSOCO may be urged upon to allow shutdown of the existing 400/220kV, 2x315MVA ICTs at Malda S/s for replacement of the same without any further delay, as the same is hampering the project completion schedule. After the receipt of permission for shutdown, the replacement of ICTs at Malda and installation of 3rd 315MVA ICT (released from Malda) at New Siliguri would take about three months' time.

34.4 Members opined that this issue of allowing shutdown of a transmission element is under the purview of RPCs and not of this committee. Accordingly, POWERGRID was advised to approach ERPC for shutdown related issue. However, delay in commissioning of ICTs due to non-availability of shutdown was noted.

35. Re-conductoring of Siliguri-Bongaigaon 400kV D/c Twin Moose line with Twin HTLS conductor, reconductoring of Alipurduar – Salakati (Bongaigaon) 220kV D/c line with Single HTLS

35.1 Director (PSPA-II), CEA stated that reconductoring of the following transmission system have been agreed in the 1st meeting of NERPC-TP held on 08-11-2019 (extracts of minutes of 1st meeting NERPCTP enclosed at **Annexure-VII**):

- (i) Re-conductoring of Siliguri – Bongaigaon line with Twin HTLS conductor (ampacity of single HTLS shall be 1596A) along with requisite modifications in line bay equipment at both ends.
 - (ii) Re-conductoring of Alipurduar – Salakati (Bongaigaon) 220kV D/c line with single HTLS (ampacity of single HTLS shall be 1596A) along with requisite modifications in line bay equipment at both ends.
- 35.2 Director (SO) stated that seeing the present flow and partial utilization of existing Agra-Alipurduar-BNC HVDC link the re-conductoring may be relooked, he further added that simulation studies justifying this re-conductoring should also be placed with agenda.
- 35.3 Representative of CTU stated that the scheme has already been approved in the 1st NERPC-TP meeting held on 08-11-2019, wherein reconductoring of Siliguri – Bongaigaon 400kV D/c line and Alipurduar – Salakati (Bongaigaon) 220kV D/c line was agreed. Study results are enclosed at **Annexure-VIII**.
- 35.4 It was agreed that the re-conductoring works mentioned at para 35.1 to be implemented as ISTS. Completion time – Mar 2022.



भारत सरकार
Government of India

विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II
Power System Planning & Appraisal Division-II

संख्या : 66/5/2017/PSPA-2/1430-1444

Dated: 09.11.2017

To
As per List Enclosed


विषय : पूर्वी क्षेत्र के लिए विद्युत प्रणाली योजना पर स्थायी समिति की 19 वीं बैठक का कार्यवृत्त।

Subject: Minutes of 19th Meeting of Standing Committee on Power System Planning for Eastern Region.

Sir/Madam,

Minutes of 19th Meeting of Standing Committee on Power System Planning for Eastern Region held on 01st September, 2017 at Kolkata is uploaded on the CEA website: ([www.cea.nic.in/Wings/Power Systems/PAP&A-II/Standing Committee on Power System Planning/Eastern Region](http://www.cea.nic.in/Wings/Power%20Systems/PAP&A-II/Standing%20Committee%20on%20Power%20System%20Planning/Eastern%20Region)).

Yours faithfully,


(रिषिका शरण /Rishika Sharan)
निदेशक/ Director

Copy for kind information to:

- 1) PPS to Member PS, CEA

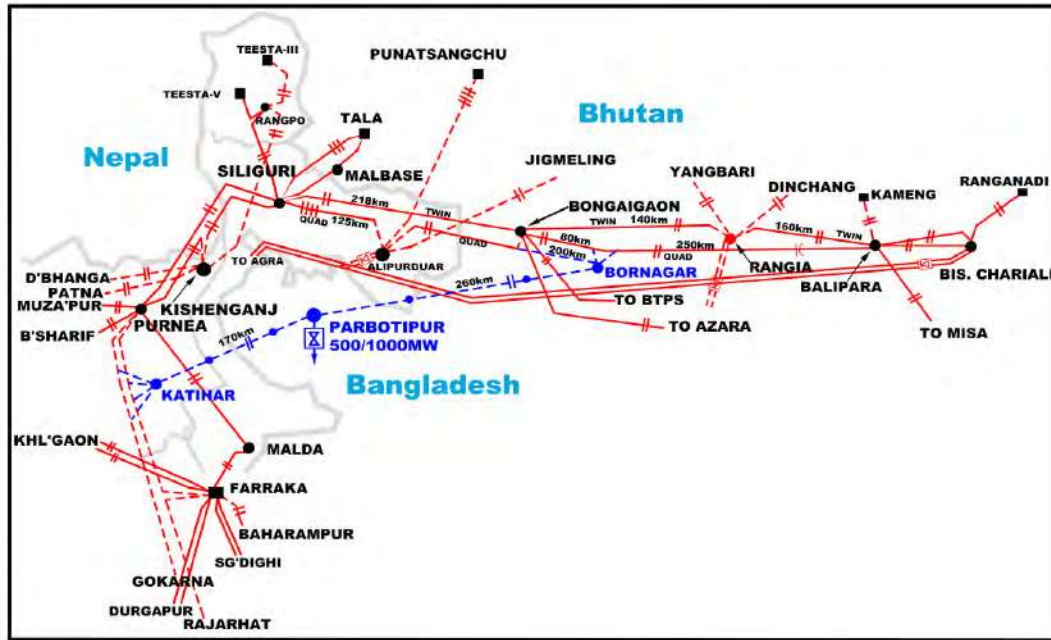
of this line at Baharampur S/s (India) through Regulated Tariff Mechanism by POWERGRID.

- 12.4 Members agreed and noted that Baharampur (India) – Bheramara (Bangladesh) 2nd 400kV D/c line (within Indian territory) along with 2 no. 400kV line bays for termination of this line at Baharampur S/s would be executed by POWERGRID through Regulated Tariff Mechanism.

13. **High Capacity India-Bangladesh AC Corridor and Formation of 400kV nodes in NER-ER Corridor**

- 13.1 Representative of CTU informed that during 6th SCM of NER, it was stated that at present ER is connected to NER primarily through 400/220kV Bongaigaon S/s in NER. In case of any eventuality at Bongaigaon S/s, there is no second AC connectivity with NER from NEW grid. Therefore, it was agreed that there is need for 2nd 400kV AC node for interconnection with national grid. The same was taken into account while planning new interconnection between India and Bangladesh. The new interconnection between India and Bangladesh has been planned with high capacity AC link (765kV line to be initially operated at 400kV) to interconnect Bangladesh with Eastern Region (ER) and North Eastern Region (NER) of Indian grid. The scheme was discussed in the 11th India-Bangladesh JSC/JWG meeting held on 13th July 2016. The scheme consists of establishment and interconnection of following substations in NER, ER and Bangladesh.

- **In NER:** In view of space constraint at Bongaigaon S/s and to provide a reliable take off point in NER, it was proposed to establish new 400kV substation (to be upgraded to 765kV level in future) at Bornagar in Assam, about 50km away from Bongaigaon, through LILO of Bongaigaon – Balipara 400kV D/c (quad) line at Bornagar and extension of Alipurduar-Bongaigaon 400kV D/c line to Bornagar substation. Bornagar substation would also act as alternative in-feed to NER in addition to Bongaigaon.
- **In ER:** A new 400kV substation (to be upgraded to 765kV level in future) was proposed as a probable take-off point at Katihar (near Purnea) in ER through LILO of both circuits of Rajarhat-Purnea 400kV D/c line (one circuit via Gokarna and other circuit via Farakka).
- **In Bangladesh:** A new 400/230kV substation at Parbotipur (to be upgraded to 765kV level in future) was proposed for the drawl of power by Bangladesh. The proposed interconnection has been planned to connect Parbotipur in Bangladesh to Katihar in Eastern Region and Bornagar in North Eastern Region through 765kV D/c line (to be initially operated at 400kV) for supply of 500MW power to Bangladesh in Phase-I.



- Bangladesh will draw the power at Parbotipur through HVDC back-to-back.
- In Phase-II, this interconnection would be upgraded to 765kV for transfer of about 1000MW power to Bangladesh along with upgradation of associated AC substations and augmentation of HVDC terminal at Parbotipur with another block of 500MW.
- In the process, Bangladesh would be connected both ER & NER of Indian grid ensuring reliable power supply at Parbotipur.

13.2 Accordingly, the following scope of work is proposed:

Phase-I

Indian Side:

- New 400kV substation (upgradable to 765kV at a later date) at Bornagar (Assam) with LILO of Balipara - Bongaigaon 400kV D/c (quad) line at Bornagar.
- Disconnection of Alipurduar-Bongaigaon 400kV D/c (quad) line from Bongaigaon and extension of the same to Bornagar with 400kV D/C (quad) line so as to form Alipurduar-Bornagar 400kV D/c (quad) line.
- New 400kV substation (upgradable to 765kV at a later date) at Katihar (Bihar) with LILO of both circuits of Purnea - Rajarhat 400kV D/c (triple snowbird) line (one circuit via Gokarna and other circuit via Farakka).

Common:

- Katihar (ER) - Parbotipur (Bangladesh) - Bornagar (NER) 765kV D/c line to be initially operated at 400KV

Bangladesh Side:

- 1x500MW, HVDC Back-to-back converter station at Parbotipur

Phase-II

Indian Side:

- Upgradation of Katihar and Bornagar substations from 400kV to 765kV
- Operation of Katihar - Parbotipur - Bornagar 765kV D/c line at its rated voltage
- Other system strengthening in ER and NER (to be identified at alter date)

Bangladesh Side:

- Augmentation of HVDC back-to-back substation at Parbotipur (Bangladesh) by another 1x500MW (total 2x500 MW) block
- Upgradation of Parbotipur substation from 400kV to 765kV

13.3 Further, PGCIL stated that detailed scope of works is at **Annexure-13.1**. This scheme has already been discussed and agreed in the 6th NER SCM held on 03rd Oct 2016 at Imphal. The project report of the above scheme was discussed in the 12th India-Bangladesh JWG/JSC meetings held on 10th-11th Dec 2016, wherein it has been agreed that the modalities of implementation and commercial arrangement etc. need to be worked out by Joint Technical Team (JTT) of India and Bangladesh.

13.4 Director, BSPTCL expressed that, in case new 765/400kV substation established at Katihar with Katihar - Parbotipur – Bornagar 765kV link, 220kV level at Katihar S/s may be created as ISTS to interconnect intra-state network of BSPTCL for improving reliability.

13.5 Chief Engineer(PSPA-2) stated that a separate meeting at CEA may be held regarding creation of 220kV level at proposed 765/400kV Katihar sub-station based on load growth at Katihar. He further added that ,in case 220kV level at Katihar sub-station is required, the same may be created in the matching time frame of Katihar - Parbotipur - Bornagar 765kV link.

13.6 With regard to requirement of OPGW, POWERGRID representative mentioned following points:

- **LILO of 400kV D/c Bongaigaon-Balipara (Quad) at 400kV Bornagar:** To provide OPGW connectivity to Bornagar, 330km of OPGW(24 Fibre) along with communication equipment is proposed to be laid on main line i.e. 400kV D/C Bongaigaon-Balipara (Quad) along with STM-16 communication equipments at 400kV Bongaigaon and Balipara S/s by POWERGRID.
- **LILO of both ckts of 400 KV Purnea – Rajarhat at 400 KV Katihar S/s:** To provide OPGW connectivity to 400kV Katihar S/s, 172km of OPGW(24 Fibre) along with associated communication equipment to be installed on Farakka - Purnea section by POWERGRID. OPGW is being laid on Rajarhat-Farakka (347km) section including LILO at Gokarna.

13.7 Members agreed for followings:

- (a) High Capacity India-Bangladesh AC Corridor through Katihar - Parbotipur - Bornagar 765kV D/c line (scope mentioned at para 13.2).
- (b) A separate meeting at CEA regarding creation of 220kV level at proposed 765/400kV Katihar sub-station based on load growth at Katihar. Members

agreed further that, in case 220kV level at Katihar sub-station as ISTS is required, the same may be created in the matching time frame of Katihar - Parbotipur - Bornagar 765kV link.

14. Additional power supply to Nepal through Muzaffarpur-Dhalkebar transmission line

14.1 Director (PSPA-2), CEA informed that Muzaffarpur-Dhalkebar 400kV D/c line is being operated at 132kV in view of non-readiness of 220kV level at Dhalkebar by Nepal. For 132kV operation of the line and supply of about 80MW power to Nepal, one 100MVA, 220/132kV ICT was installed at Muzaffarpur by POWERGRID as an interim arrangement. In view of low hydro scenario in Nepal in winters, Govt. of Nepal requested for installation of 2nd 220/132kV, 100MVA ICT at Muzaffarpur for additional power supply.

14.2 Further, she stated that a meeting was held at CEA on 02-12-2016, wherein installation of 2nd 220/132kV, 100MVA ICT at Muzaffarpur (spare ICT obtained after replacement of ICT at Purnea) by POWERGRID as a goodwill gesture for supply of about 145MW power to Nepal was agreed with following SPS settings at Muzaffarpur S/s:

- *The power supply to Nepal would be disconnected by opening Muzaffarpur – Dhalkebar 132kV line in case,*

(a) The power flow through any of the 400/220kV transformers (2x315 + 1x500MVA) at Muzaffarpur exceeds more than 310MW (for 315MVA) and 490MW (for 500MVA).

Or

(b) If power flow through Muzaffarpur – Dhalkebar 132kV line is more than 140MW.

- *There is no disruption of power supply to Bihar through the Muzaffarpur S/s.*

14.3 Representative of CTU informed that ICT has already been installed by POWERGRID and upto 145MW (170MVA) power is being supplied to Nepal through the cross-border link. Loading beyond 140MW (160MVA) upto 145MW (170MVA) would be allowed only for five minutes. Beyond 145MW (170MW), the cross-border link would be instantaneously tripped.

14.4 Representative of CTU stated that 220kV operation of the link is expected in the end of January 2018 subject to readiness of 220kV level at Dhalkebar by Nepal. After this the spare 220/132kV, 2x100MVA ICTs at Muzaffarpur could be released.

14.5 Members agreed for post facto approval for utilisation of 220/132kV, 100MVA ICT released from Purnea for installation at Muzaffarpur (for supply of additional power to Nepal), till operation of Muzaffarpur – Dhalkebar line at 220kV.

15. Modification in - Transmission System for Transfer of power from generation projects in Sikkim to NR/WR (Part-B1)

Augmentation of transformation capacity at 400/220kV Ranchi (POWERGRID) S/s – Agenda by CTU (POWERGRID)

- 1.1 This link would serve as an additional tie in ER-NER corridor for reliable power transfer between the regions. In lean hydro season, power would be transferred from ER to NER to meet power deficit in NER, Bangladesh and Myanmar. During high hydro in NER & Bhutan, the surplus could be transferred from NER to ER. From the studies it has been observed that about 1400MW is transferred from ER to NER through this link during low hydro in NER, Sikkim, and Bhutan (refer **Exhibit-2B**). In this case, the Biswanath Chariali – Alipurduar section of Biswanath Chariali – Alipurduar – Agra HVDC is run at minimum level of about 300MW, whereas Alipurduar – Agar section is run at 1000MW. In case of high hydro scenario, about 1000MW is transferred from NER to ER through this link (refer **Exhibit-1B**).
- 1.2 When Bangladesh synchronises at Parbotipur in future, this link would facilitate transfer of about 1000MW power to Bangladesh from Indian grid and the remaining capacity of the link i.e. about 2000MW may be utilised for power transfer between ER and NER.
- 1.3 The implementation modalities for this link are yet to be finalised. Pending same, it is proposed that implementation of Katihar (Bihar) – Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line along with associated substations with following detailed scope of works may be approved. The scheme may be named as “ER (India) – Bangladesh – NER (India) 765kV interconnection”:

A. In Indian territory

- (a) Establishment of new 765/400kV, 2x1500MVA (7x500MVA single phase units including one spare unit) substation at Katihar (Bihar)
 - (i) 765kV Line bays: 2 no.
 - 2 no. for Katihar (Bihar) – Parbotipur (Bangladesh) 765kV D/c line
 - (ii) 400kV Line bays: 4 no.
 - 4 no. for LILO of both circuits of New Purnea – Rajarhat 400kV D/c (Triple Snowbird) line (one ckt via Gokarna and other ckt via Farakka) at Katihar
 - (iii) 765kV bus reactor along with associated bay: 2x330MVAR (7x110MVAR single phase units including one spare unit)
 - (iv) 420kV bus reactor along with associated bay: 2x125MVAR
 - (v) Shifting of 2 no. 420kV, 80MVAR switchable line reactors at New Purnea end of New Purnea – Gokarna/Farakka – Rajarhat 400 kV D/c

(Triple Snowbird) line from New Purnea to Katihar end as switchable line reactor in Katihar – Gokarna/Farakka – Rajarhat 400kV D/c (Triple Snowbird) line

(vi) Space for future expansion:

- 765/400kV, 1x1500MVA (3x500MVA single phase units) ICT along with associated bays
- 765kV line bay (along with switchable line reactor): 6 no.
- 400kV line bay (along with switchable line reactor): 8 no.
- 765kV bus reactor along with associated bay: 2x330MVAR (7x110MVAR single phase units including one spare unit)
- 420kV bus reactor along with associated bay: 2x125MVAR
- Establishment of 400/220kV, 3x500MVA ICTs along with associated bays
- 220kV line bays: 8 no.

(b) Establishment of new 765/400kV, 2x1500MVA (7x500MVA single phase units including one spare unit) substation at Bornagar (Assam)

(i) 765kV Line bays: 2 no.

- 2 no. for Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line

(ii) 400kV Line bays: 6 nos.

- 2 no. for Alipurduar – Bornagar 400kV D/c (Quad) line [formed after shifting of Alipurduar – Bongaigaon 400kV D/c (quad) line from Bongaigaon to Bornagar]
- 4 no. for LILO of both circuits of Balipara – Bongaigaon 400kV D/c (Quad) line

(iii) 765kV bus reactor along with associated bay: 2x240MVAR (7x80MVAR single phase units including one spare unit)

(iv) 420kV bus reactor along with associated bay: 2x125MVAR

(v) 765kV, 2x240MVAR (6x80MVAR single phase units) switchable line reactors at Bornagar end, one reactor on each circuit of Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line

(vi) Installation of 2 no. 420kV, 80MVAR switchable line reactors at Bornagar end of Alipurduar – Bornagar 400kV D/c (Quad) line

(vii) Shifting of 2 no. 420kV, 63MVAR line reactors from Bongaigaon end of Balipara – Bongaigaon 400kV D/c (Quad) line to Bornagar end as switchable line reactor in Bornagar – Balipara 400kV D/c (Quad) line

(viii) Space for future expansion:

- 765/400kV, 1x1500MVA (3x500MVA single phase units) ICT along with associated bays
- 765kV line bay (along with switchable line reactor): 6 no.
- 400kV line bay (along with switchable line reactor): 6 no.
- 765kV bus reactor along with associated bay: 2x240MVAR (7x80MVAR single phase units including one spare unit)
- 420kV bus reactor along with associated bay: 2x125MVAR
- Establishment of 400/220kV, 3x500MVA ICTs along with associated bays
- 220kV line bays: 8 no.

(c) Katihar (Bihar) – Parbotipur (Bangladesh) 765kV D/c line (Indian portion)

(d) Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line (Indian Bangladesh)

(e) LILO of both circuits of New Purnea – Rajarhat 400kV D/c (Triple Snowbird) line (one circuit via Gokarna and other circuit via Farakka) at Katihar

(f) LILO of both circuits of Balipara – Bongaigaon 400kV D/c (Quad) line at Bornagar

(g) Disconnection of Alipurduar – Bongaigaon 400kV D/c (Quad) line from Bongaigaon and extension of the same to Bornagar with 400kV D/c (Quad) line so as to form Alipurduar – Bornagar 400kV D/c (Quad) line

B. In Bangladesh territory

(a) Establishment of 765kV switching station at Parbotipur (Bangladesh)

(i) 765kV Line bays: 4 no.

- 2 no. 765kV line bays for Katihar (Assam) – Parbotipur (Bangladesh) 765kV D/c line
- 2 no. 765kV line bays for Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line

(ii) 765kV bus reactor along with associated bay: 2x240MVAR (7x80MVAR single phase units including one spare unit)

- (iii) 765kV, 2x240MVAR (6x80MVAR single phase units) switchable line reactor at Parbotipur end, one reactor on each circuit of Katihar (Bihar) – Parbotipur (Bangladesh) 765kV D/c line
- (iv) 765kV, 2x240MVAR (6x80MVAR single phase units) switchable line reactor at Parbotipur end, one reactor on each circuit of Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line
- (v) Space for future expansion:
 - Establishment of 765/400/230kV, 2x1500MVA (7x500MVA single phase units including one spare unit) + 2x750MVA (7x250MVA single phase units including one spare unit) ICTs along with associated bays
 - 765kV line bay (along with switchable line reactor): 4 no.
 - 400kV line bay (along with switchable line reactor): 6 no.
 - 765kV bus reactor along with associated bay: 1x240MVAR (4x80MVA single phase units including one spare unit)
 - 420kV bus reactor along with associated bay: 2x125MVAR
 - 230kV line bays: 10 no.
- (b) Katihar (Bihar) – Parbotipur (Bangladesh) 765kV D/c line (Bangladesh portion)
- (c) Parbotipur (Bangladesh) – Bornagar (Assam) 765kV D/c line (Bangladesh portion)

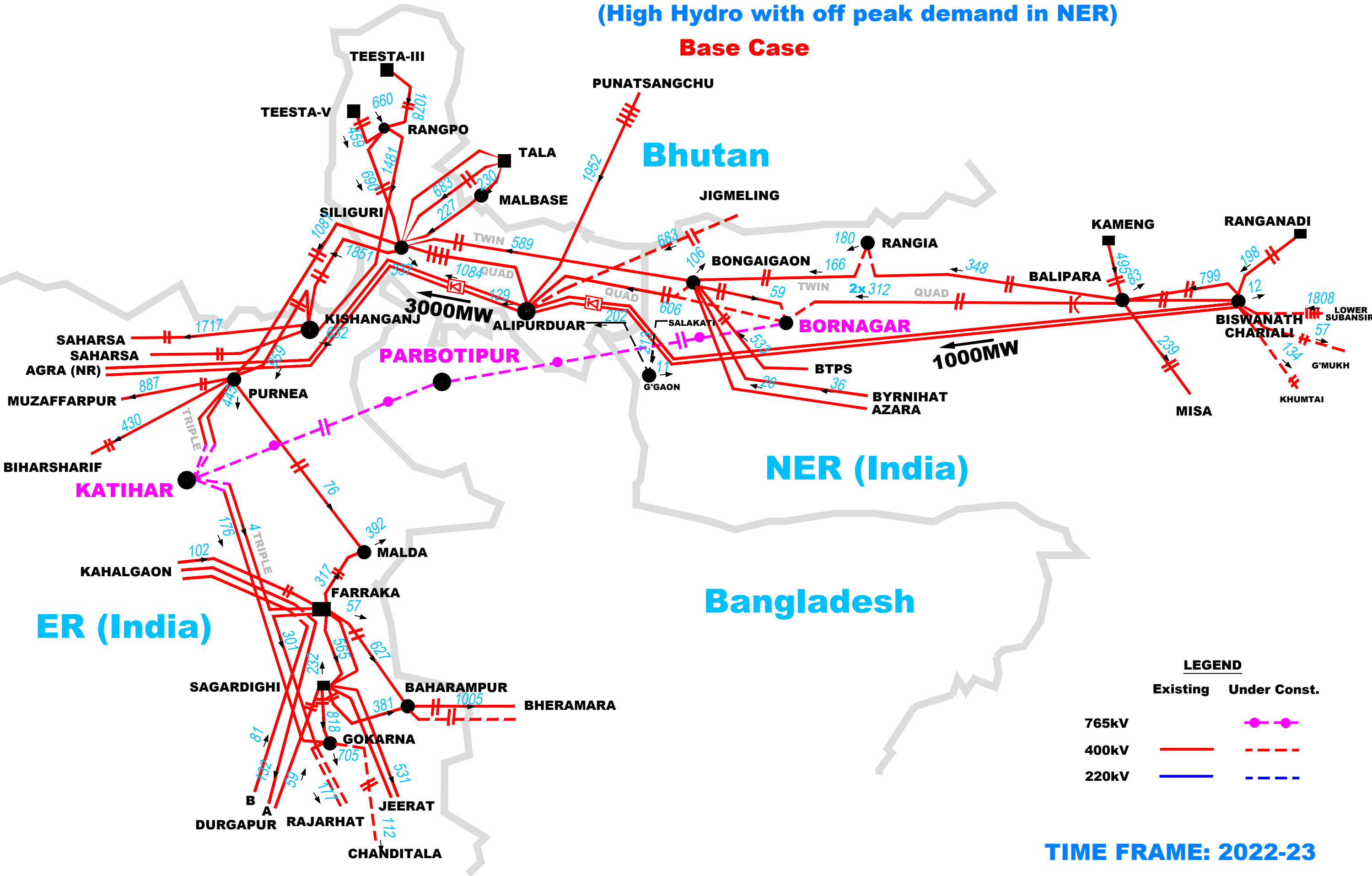
1.4 Schematic of the above scope is at **Exhibit-3.**

1.5 Members may approve.

Katihar (ER) - Bornagar (NER) 765kV D/c line

(High Hydro with off peak demand in NER)

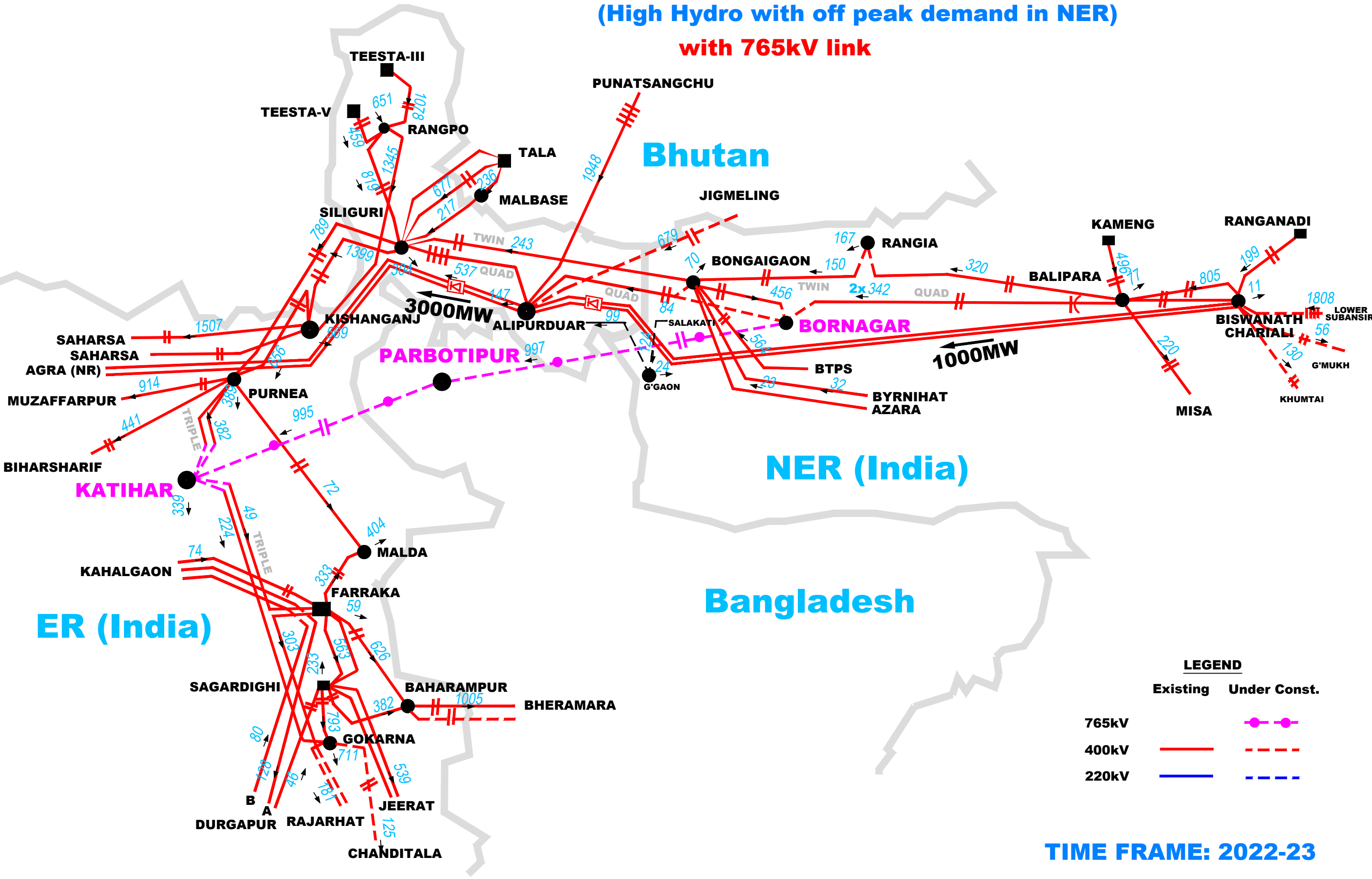
Base Case



Katihar (ER) - Bornagar (NER) 765kV D/c line

(High Hydro with off peak demand in NER)

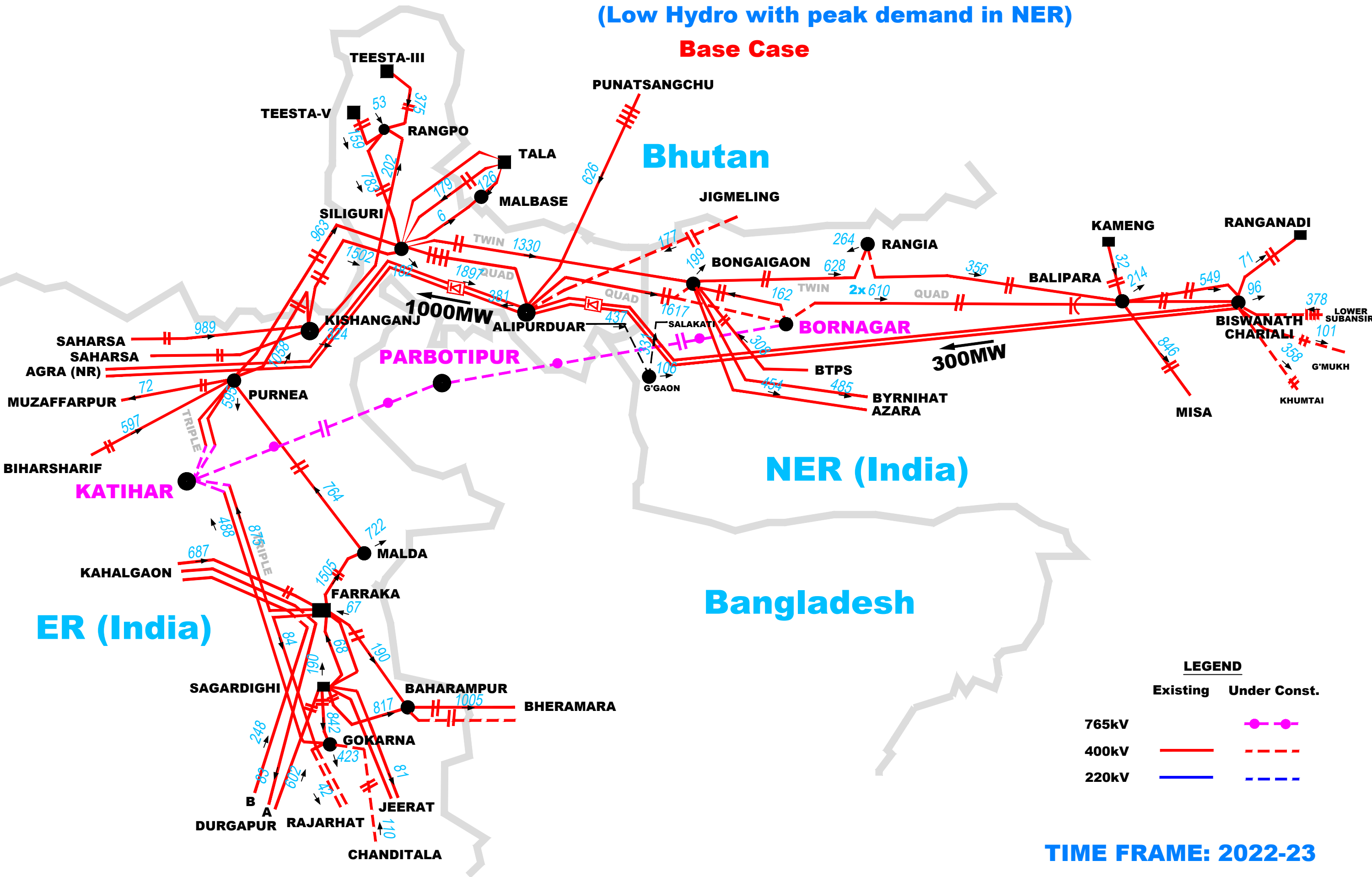
with 765kV link



Katihar (ER) - Bornagar (NER) 765kV D/c line

(Low Hydro with peak demand in NER)

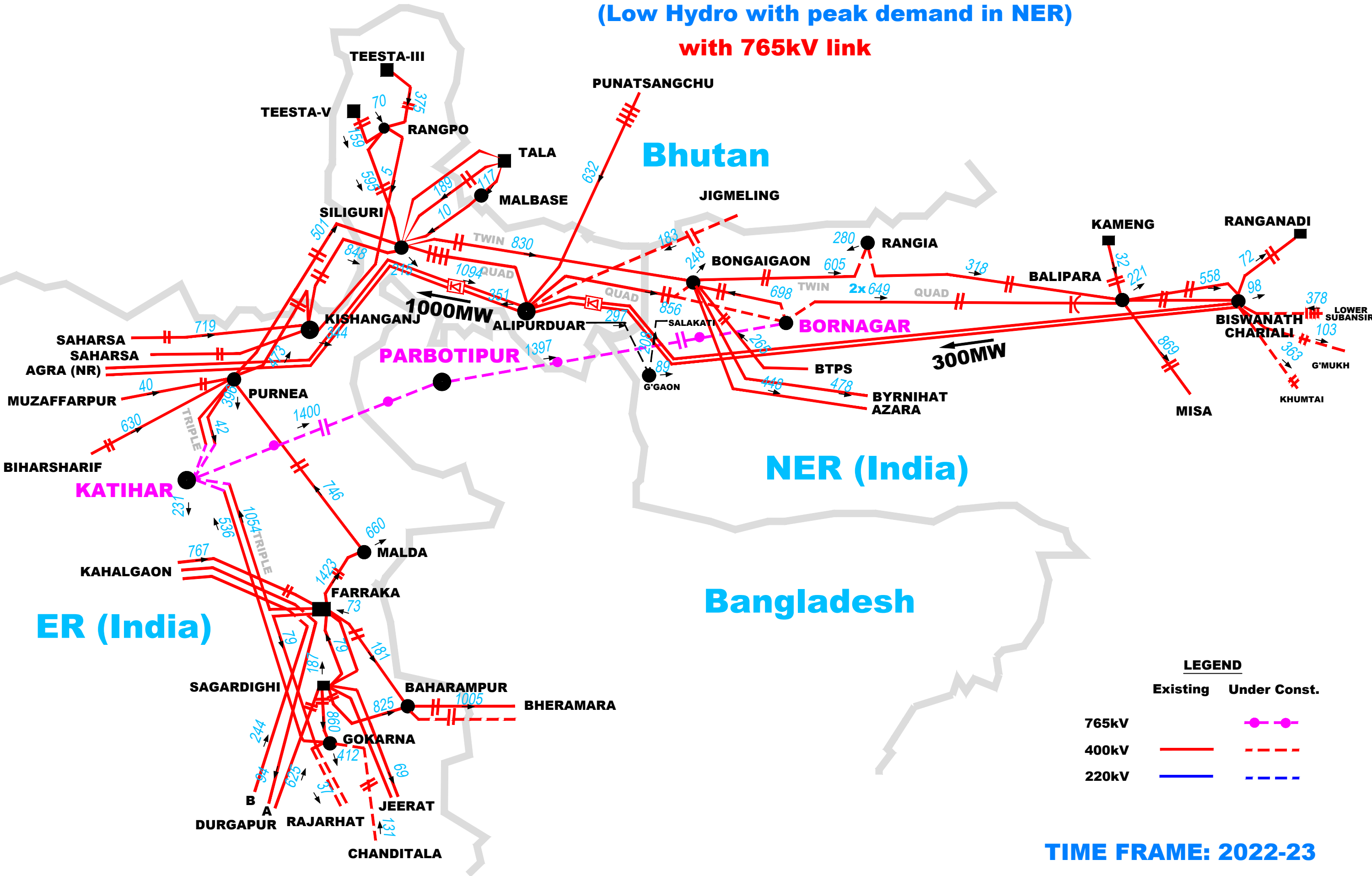
Base Case



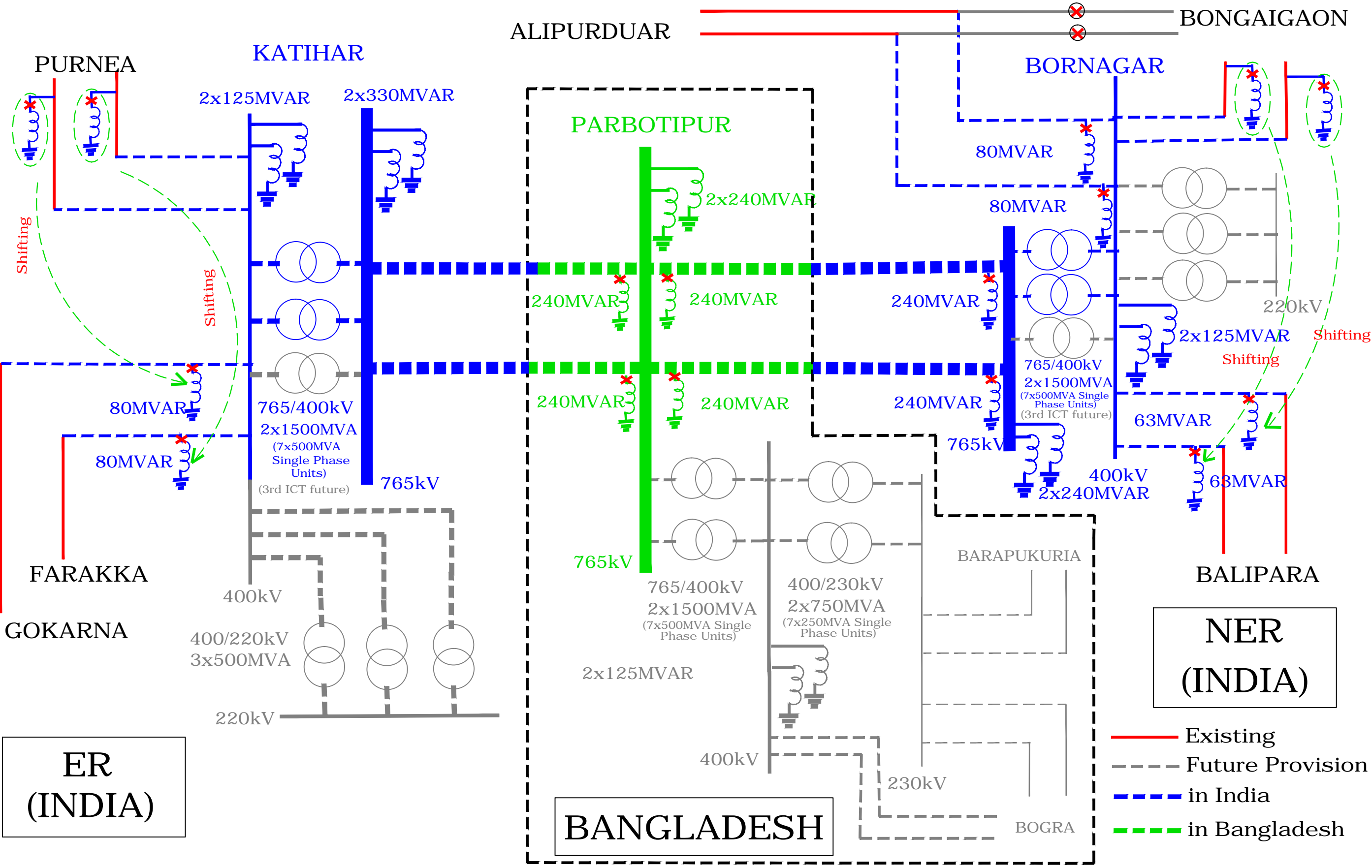
Katihar (ER) - Bornagar (NER) 765kV D/c line

(Low Hydro with peak demand in NER)

with 765kV link



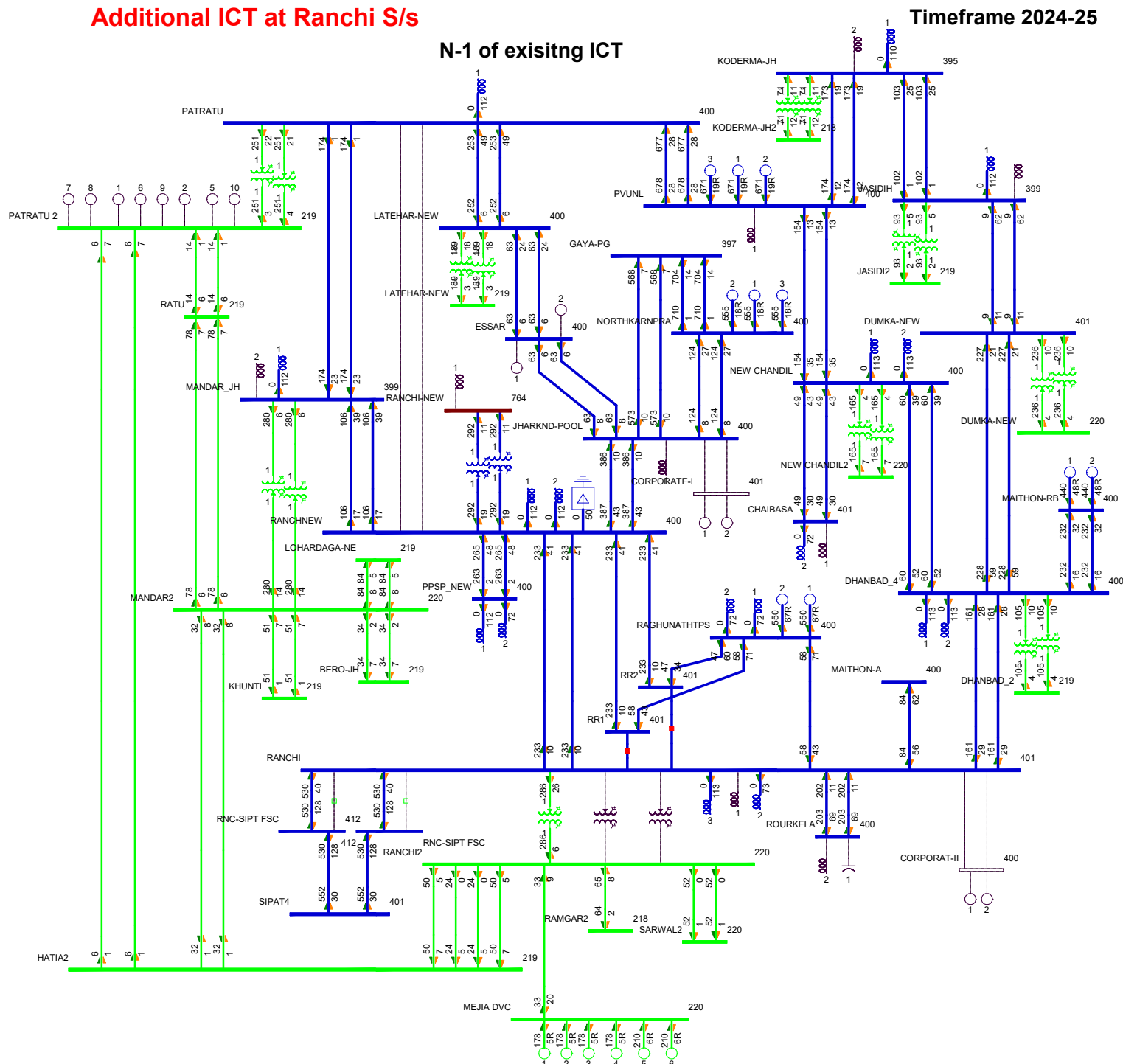
INTERCONNECTION OF NORTHERN PART OF BANGLADESH WITH INDIAN GRID



Base case



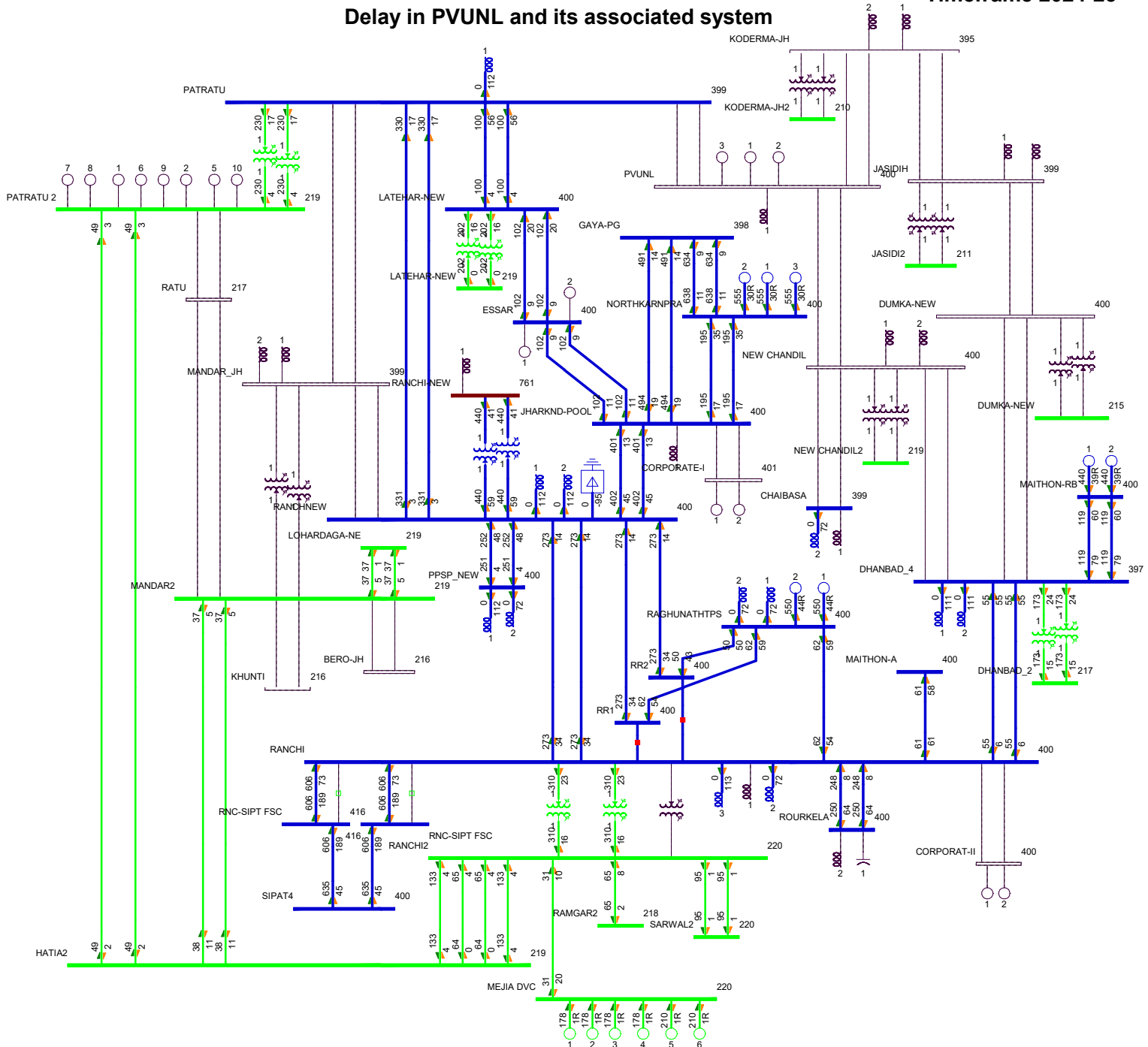
N-1 of existng ICT



Additional ICT at Ranchi S/s

Delay in PVUNL and its associated system

Timeframe 2024-25



Additional ICT at Ranchi S/s

Proposal of 3rd 1x500MVA ICT at Ranchi

Timeframe 2024-25

