

सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)

(भारत सरकार का उद्यम)

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

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

(A Government of India Enterprise)

संदर्भ/Ref: CTU/E/00/11th CMETS-ER

दिनांक/Date: 21-09-2022

वितरण सूची के अनुसार/ As per distribution list

विषय/Subject: पूर्वी क्षेत्र में पारेषण योजनाओं के विकास के लिए 11^{वीं} परामर्श बैठक की कार्यावली (सीएमईटीएस-ईआर) / Agenda for 11th Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)

महोदय /महोदया /Sir /Ma'am.

आईएसटीएस योजना और ओपन एक्सेस आवेदन प्रसंस्करण के लिए पूर्वी क्षेत्र में पारेषण योजनाओं के विकास के लिए 11^{वीं} परामर्श बैठक (सीएमईटीएस-ईआर) 28th सितंबर, 2022 (बुधवार) को वीडियो कॉन्फ्रेंसिंग के माध्यम से नीचे दिए गए विवरण के अनुसार आयोजित होने वाली है:

The 11th Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER) for ISTS planning and open access applications processing is scheduled to be held on 28th September, 2022 (Wednesday) through video conferencing as per details below:


विषय/Topic : 11th CMETS-ER
दिनांक/Date & समय/Time : 28th September 2022 at 11:00 AM
बैठक लिंक/ Meeting Link : MS-Teams (in email)

इस संबंध में बैठक की कार्यावली अलग से प्रसारित की जाएगी, जो सीटीयू वेबसाइट (www.ctuil.in >> *ISTS Planning and Coordination* >> *Consultation Meetings for ISTS* >> *ER*) पर भी उपलब्ध होगी। कृपया उपरोक्त लिंक के माध्यम से बैठक में शामिल होने और रिटर्न मेल के माध्यम से इस संबंध में भागीदार होने की पुष्टि करें।

In this regard, the agenda of the meeting shall be circulated separately and the same will also be available on CTU website (www.ctuil.in >> *ISTS Planning and Coordination* >> *Consultation Meetings for ISTS* >> *ER*). It is requested to join the meeting through the above link and send confirmation of participation in this regard through return mail.

धन्यवाद/Thanking you,

भवदीय / Yours faithfully,


(राजेश कुमार) / (Rajesh Kumar) 21/09/2022
महाप्रबंधक/ General Manager

A. वितरण सूची के अनुसार/ Distribution List:

1. Chief Engineer (PSP&A-II) Central Electricity Authority Sewa Bhawan, R.K.Puram New Delhi-110066	2. Member Secretary Eastern Regional Power Committee 14, Golf Club Road, Tollygunge Kolkata-700033
3. Director (SO) Power System Operation Corporation Ltd. (POSOCO) 9 th Floor, IFCI Towers, 61, Nehru Place, New Delhi-110016	4. Executive Director Eastern Regional Load Despatch Centre 14, Golf Club Road, Jubilee Park, Golf Gardens, Tollygunge, Kolkata, West Bengal - 700095
5. CMD Damodar Valley Corporation DVC Towers, VIP Road Kolkata-700054	6. CMD Odisha Power Transmission Corporation Ltd. (OPTCL) Bhoinagar Post Office, Jan path Bhubaneswar-751022
7. CMD Bihar State Power Transmission Company Ltd. (BSPTCL) Vidyut Bhavan, 4 th floor, Bailey Road Patna-800021	8. CMD Jharkhand Urja Sancharan Nigam Limited (JUSNL) Engineering Building, HEC, Dhurwa Ranchi -834004
9. Principal Chief Engineer cum Secretary Power Department Government of Sikkim Gangtok, Sikkim	10. Managing Director West Bengal State Electricity Transmission Company Ltd. (WBSETCL) Vidyut Bhavan, 8 th Floor, A-Block Salt Lake City, Kolkata-700091

B. विशेष आमंत्रित /Special invitee:

1. Director (Projects) Power Grid Corporation of India Ltd. "Saudamini", Plot No. 2, Sec-29, Gurugram Haryana-122001	2. Managing Director Haldia Energy Limited (HEL) 2A, Lord Sinha Road, First Floor, Kolkata, West Bengal - 700 071, Email: rabi.chowdhury@rpsq.in ; kakali@rpsq.in ;
3. Chairman CESC Limited CESC House, Chowringhee Square Kolkata – 700001 Email: kakali@rpsq.in ; rabi.chowdhury@rpsq.in	

C. आवेदन करता /Applicant:

1. Shri Milind Nigudkar Sr. General Manager Sembcorp Energy India Ltd. 5th Floor, Tower C, Building No.8 DLF Cyber City, Gurugram-122002, Haryana Email: milind.nigudkar@sembcorp.com jasvir.malik@sembcorp.com
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Agenda for 11th Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)

1. Confirmation of minutes of the previous meeting

The minutes of the 10th CMETS-ER held on 30-08-2022 were issued vide letter dated 08-09-2022. As no comments have been received, the minutes may be confirmed.

A. Application related matters in Eastern Region (ER)

2. LTA applications with injection in SR and drawl in ER

2.1. One no. of LTA application has been received from M/s Sembcorp Energy India Limited (SEIL) (erstwhile NCC Power Projects Private Limited) with injection at Nellore pooling station, Andhra Pradesh, SR and drawl at Baharampur switching station (POWERGRID) for onward transfer to Bangladesh in the month of August 2022:

Sl. No.	Applic-ation ID	Name of Applicant	Submi-ssion Date	Quantum of LTA	Start Date of LTA	End Date of LTA	Generation/ Injection Point	Drawl Point
1.	045020 0012	Sembcorp Energy India Limited	29-08-2022	200 (firm)	01-01-2023	31-05-2033	Nellore PS AP, SR	NVVN-Bangladesh through 400kV Baharampur (POWERGRID) switching station, West Bengal

2.2. M/s Sembcorp Energy India Limited (SEIL) was granted 740MW LTA vide intimation dated 04-06-2012 on target region (SR). Subsequently, 250MW LTA out of 740MW was firming up to ER/Bangladesh vide intimation dated 09-12-2019 (for onward transfer to Bangladesh). Now, M/s SEIL has submitted LTA application for 200MW towards change in target region from Southern Region to Eastern Region for transfer of 200MW from their generation project to Baharampur switching station in West Bengal (ER), India for onward transfer to Bangladesh from 01-01-2023 to 31-05-2033.

2.3. Presently, 800MW LTA is operational at Baharampur S/s from various generators in India for onward transfer to Bangladesh, which includes 250MW to NVVN Ltd. (from various NTPC plants), 300MW to NVVN Ltd. (from DVC), 250MW to M/s SEIL. The Baharampur (India) – Bheramara (Bangladesh) interconnection comprises of 2x400kV D/c line along with 2x500MW HVDC back-to-back at Bheramara end. Thus, power transfer capacity for additional 200MW exists in the Baharampur – Bheramara interconnection.

2.4. The start date of subject LTA is 01-01-2023. Accordingly, studies have been carried out on All India load flow file for Dec 2022 timeframe for subject LTA requirement of 200MW from M/s SEIL in SR to Baharampur (POWERGRID) switching station in ER for onward transfer to Bangladesh. From the system studies, it is observed that line loadings are generally in order with the existing/under implementation transmission system for transfer of subject

200MW power from M/s SEIL generation project to Baharampur switching station in West Bengal (ER), India for onward transfer to Bangladesh. Study results in this regard are enclosed herewith as mentioned below:

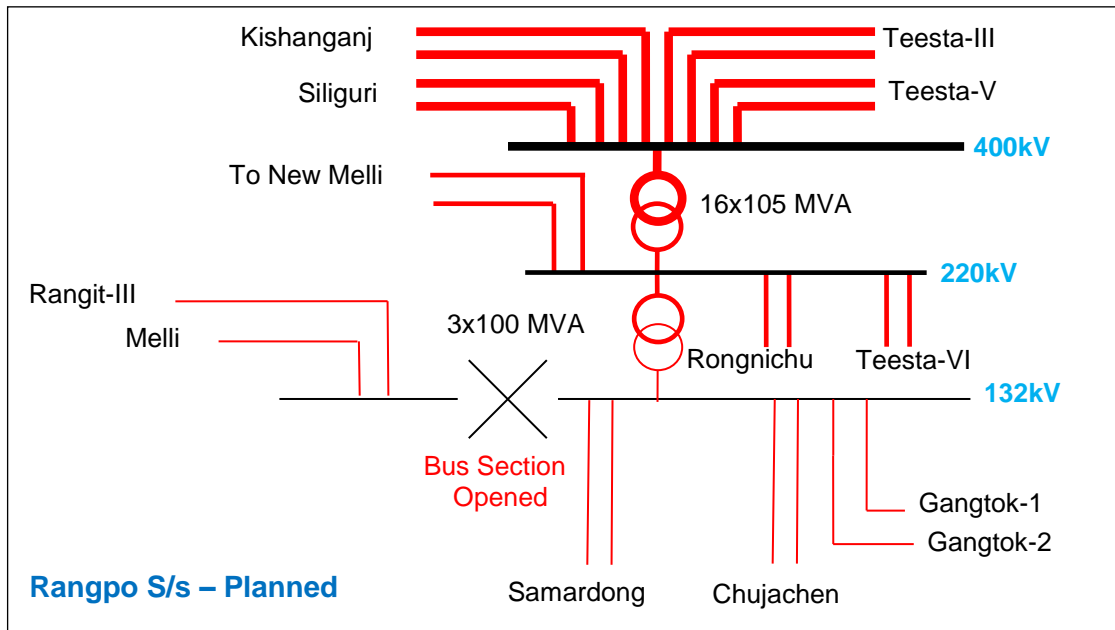
- **Base Case (without LTA): Exhibit-1A & 1B**
- **With 200MW LTA: Exhibit-2A & 2B**

2.5. In view the above, it is proposed that LTA may be granted to M/s Sembcorp Energy India Limited for transfer of 200MW power from their generation project to Baharampur switching station in West Bengal (ER) for onward transfer to Bangladesh w.e.f. 01-01-2023 to 31-05-2033.

B. ISTS expansion schemes in Eastern Region

3. Split bus arrangement at Rangpo 132kV bus

3.1. The Rangpo 400/220/123kV substation was commissioned in 2016 as part of transmission system implemented from phase-1 generation projects in Sikkim. In the scheme, split bus arrangement was planned at 132kV bus at Rangpo S/s so as to take care of heavy power flow towards Melli / Rangit-III 132kV lines during high injection from hydro projects at Rangpo S/s. Accordingly, following arrangement was planned:



3.2. As per inputs from POWERGRID, it is understood that the bus split arrangement at Rangpo S/s at 132kV level has been implemented differently (SLD is attached at **Annexure-IV**). Rangpo 132kV bus is having double bus (single CB) switching scheme. In view of implementation of 132kV differently than planned, it is understood that presently the substation is being operated with two single buses at 132kV level (by keeping the bus couplers open and bus sectionalisers closed), one bus having feeders from Rangit-III & Melli, and other bus having all other feeders & ICTs.

- 3.3. POWERGRID may share the expected date for implementation/completion of the planned scheme as indicated at schematic at para 3.1 above.
- 3.4. ERPC and ERLDC may also review the matter from operational point of view, and provide their observations.

4. Revised connectivity for Laxmikantpur 400/132kV S/s and split bus arrangement at Laxmikantpur S/s

- 4.1. In the 10th CMETS-ER held on 30-08-2022, following was deliberated:
 - (a) WBSETCL to share the demand data for various scenarios as requested by HEL.
 - (b) HEL to carry out requisite studies and to provide their decision on the LILO of Haldia – Subhasgram 400kV D/c line at 400/132kV New Laxmikantpur substation, prior to the next CMETS-ER meeting, so that the scheme can be finalized at the earliest.
- 4.2. Inputs from HEL as mentioned above are awaited.
- 4.3. HEL may present their observations and the decision for establishment of LILO of Haldia – Subhasgram 400kV D/c line at New Laxmikantpur 400/132kV substation.
- 4.4. Matter may be deliberated.

5. Modification in Eastern Region Expansion Scheme-XXXI (ERES-XXXI)

- 5.1. In 8th CMETS-ER held on 30-06-2022, Eastern Region Expansion Scheme-XXXI (ERES-XXXI) with implementation timeframe of 18 months from the date of allocation was agreed to be taken up in ISTS with following scope of works:
 - (a) Installation of new 420kV, 1x63MVA line reactor at Maithon-A end of Maithon-A – Kahalgaon-B ckt-1 400kV line along with new 700ohm NGR (with NGR bypass arrangement for operation of line reactor as a bus reactor)

Note: The existing 50MVA line reactor along with NGR in this line at Maithon-A end may be decommissioned prior to commissioning of above new 63MVA line reactor and NGR.
 - (b) Installation of new 420kV, 1x125MVA bus reactor along with associated bay at Jamshedpur (POWERGRID) S/s
- 5.2. After further studies and considering past operational experiences, size of the NGR has reviewed and it has been observed that even NGR of 500ohms would be technically suitable in the proposed 63MVA line reactor. Accordingly, the scope of works under ERES-XXXI is proposed to be modified as detailed below keeping the implementation timeframe of 18 months from the date of allocation:
 - (a) Installation of new 420kV, 1x63MVA line reactor at Maithon-A end of Maithon-A – Kahalgaon-B ckt-1 400kV line along with new **500ohm NGR**

(with NGR bypass arrangement for operation of line reactor as a bus reactor)

Note: The existing 50MVAR line reactor along with NGR in this line at Maithon-A end may be decommissioned prior to commissioning of above new 63MVAR line reactor and NGR.

- (b) Installation of new 420kV, 1x125MVAR bus reactor along with associated bay at Jamshedpur (POWERGRID) S/s

5.3. Members may approve

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

6.1. 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 given at **Annexure-I**.

6.2. STUs may update the status of downstream system given at **Annexure-I** prior to the meeting for further deliberations in the meeting, if any.

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

7.1. Various 400kV substations have been approved in the intra-state strengthening schemes in ER having interconnection with ISTS grid involving LILO of ISTS lines or direct connection to ISTS substations. Status of such intra-state substations as per available information is given at **Annexure-II**.

7.2. STUs may update the status of the transmission system given at **Annexure-II** prior to the meeting for further deliberations in the meeting, if any.

8. Status of space allocated at various ISTS substations to STUs for implementation of line bays under intra state system) for their intra state lines

8.1. Space at various ISTS substations have been allocated to STUs for creation of line bays for termination of their new intra-state lines. List of such ISTS substations as per available information is given at **Annexure-III**.

8.2. STUs may update the status of the bays given at **Annexure-III** prior to the meeting for further deliberations in the meeting, if any.

Annexure-I**Status of Downstream Transmission Network in ER**

Sl. No.	ISTS S/s	State	Voltage ratio, Trans. Cap	Downstream Voltage level (kV)	Unutilised bays	Status of ISTS bay	STU lines for unutilised bays	Status of Lines	
								Date of Award	Completion schedule
1.	Chaibasa	Jharkhand	400/220kV, 2x315MVA	220	2	Existing bay	Chaibasa (POWERGRID) – Jadugoda (JUSNL) 220kV D/c		Will be taken up in future. No firm plan as of now.
2.	Daltonganj	Jharkhand	400/220/132kV, 2x315MVA+ 2x160MVA	132	2	Existing bay	Daltonganj (POWERGRID) – Chatarpur 132kV D/c	22-10-2019	Expected by 31-03-2023.
3.	Dhanbad	Jharkhand	400/220kV	220	4	Existing bay	LILO of 1 st circuit of 220kV Dumka – Govindpur D/c line at Dhanbad (23km)	Bid evaluation is in progress. Price bid opened. Additional funds are required, proposal sent to state govt. for approval	Expected by Dec 2023.
							LILO of 2 nd circuit of 220kV Dumka – Govindpur D/c line at Dhanbad		
4.	Keonjhar	Odisha	400/220kV, 2x315MVA	220	2	Existing bay	Keonjhar (POWERGRID) – Turumunga (OPTCL) 220kV D/c		Expected by Dec 2022.
5.	Subashgram	West Bengal	400/220kV, 3x315MVA	220	2	Existing bay	Subashgram (POWERGRID) – Baraipur 220kV D/c line		220kV Baruipur substation charged. 132kV downstream delayed due to RoW. Expected by Oct 2022.

Sl. No.	ISTS S/s	State	Voltage ratio, Trans. Cap	Downstream Voltage level (kV)	Unutilised bays	Status of ISTS bay	STU lines for unutilised bays	Status of Lines	
								Date of Award	Completion schedule
6.	Rajarhat	West Bengal	400/220kV, 2x500MVA	220	2	Existing bay	Rajarhat (POWERGRID) – New Town AA2C 220kV D/c		Cable laying has completed. cable termination work is going on which is expected by Sep 2022. Line would be charge upon completion of same. Substation is expected by Dec 2022.
7.	Sitamarhi (New)	Bihar	400/220/132kV, 2x500MVA + 2x200MVA	132	2	Existing bay	LILO of Benipatti - Pupri 132kV S/c at Sitamarhi (New)		Expected by Mar 2023
8.	Saharsa (New)	Bihar	400/220/132kV, 2x500MVA + 2x200MVA	132	2-ISTS (addln.4 by state)	Existing bay	Saharsa (New) - Saharsa 132kV D/c line formed by LILO of Saharsa - Banmankhi and Saharsa - Uda Kishanganj 132kV S/c line		04 nos. of bays are under construction by BSPTCL at Saharsa (New). Two bays are expected in Oct 2022, and balance two in Dec 2022.
9.	Banka	Bihar	400/220/132kV, 2x500MVA + 2x200 & 1x315MVA	220	2	Under Bidding	Banka (POWERGRID) – Goradih (Sabour New) 220kV D/c line	Funds tied up. Tender open on 30 th Aug	Expected by Mar '24

Annexure-II

Status of 400kV & 220kV substations being implemented by STUs in ER under intra-state schemes to be connected to ISTS

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule
A Bihar (to be implemented by BSPTCL/BGCL)				
I	Bakhtiyarpur GIS	400/220/132kV, 2x500MVA + 2x160MVA	26.11.2019	Progressively from Oct'22 to Dec'22.
a)	LILO of both circuits of Barh – Patna (PG) 400kV D/c (Quad) line-1 at Bakhtiyarpur 400 kV 2xD/C	400kV 2xD/c	26.11.2019	Line ready to be charged matching with Bakhtiyarpur S/s.
ii	Chappra (New)	400/220/132kV, 2x500MVA + 2x200MVA	Funds not yet tied up	SOR rates increased. Cabinet approval to be taken up.
a)	LILO of 400 kV Barh (NTPC) - Motihari (DMTCL) D/C (Quad) transmission line at Chappra	400kV 2xD/c	Funds not yet tied up	SOR rates increased. Cabinet approval to be taken up.
B Odisha (to be implemented by OPTCL)				
I	Digapahandi	400/220kV, 2x500MVA	Tendering activity to be taken up shortly along with Pandiabili-Digapahandi 400kV D/c line	2025-26
a)	Digapahandi – Therubali – Jeypore 400kV D/c line	400kV D/c	To be taken after tending of Digapahandi S/s	2025-26
II	Therubali	400kV switching station along with 420kV, 1x125MVA r bus reactor	Survey completed. Land schedule is under preparation	2026-27
III	Bhadrak	400/220kV, 2x500MVA	Tendering is in hold	2024-25

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule
a)	LILO of Baripada – Duburi and Baripada – Pandiabili 400kV line sections at Bhadrak	400kV D/c	Tendering in progress	2024-25
IV	Paradeep*	400/220kV, 2x500MVA		24 months
a)	Paradeep – Duburi 400kV D/c line	400kV D/c	Line package awarded May'22 and substation package send to government for approval	24 months
V	Paradeep*	765/400kV, 2x1500MVA	Survey completed. Land schedule is under preparation	2026-27
a)	Angul (POWERGRID) – Paradeep (OPTCL) 765kV D/c line	765kV D/c	Survey completed. Land schedule is under preparation	2026-27
VI	Begunia	765/400kV, 2x1500MVA	Kept in abeyance	Kept in abeyance
a)	Angul – Begunia 765kV D/c line	765kV D/c	Kept in abeyance	Kept in abeyance
b)	LILO of Pandiabil – Digapahandi 400kV D/c line at Begunia	400kV D/c	Kept in abeyance	Kept in abeyance
C	Jharkhand (to be implemented by JUSNL)			
I	Chandil (New)	400/220kV, 2x500MVA	Bid opened on 13-07-2022. Technical Evaluation of entire scope has been started.	24 months
a)	PVUNL – Chandil 400kV D/c (Quad) line	400kV D/c (Quad)		
b)	Chandil – Chaibasa (POWERGRID) 400kV D/c (Quad) line	400kV D/c (Quad)		
c)	Chandil – Dhanbad 400kV D/c (Quad) line	400kV D/c (Quad)		
II	Koderma	400/220/132/33kV, 2x500MVA + 2x200MVA + 2x80MVA		
a)	PVUNL – Koderma 400kV D/c (Quad) line	400kV D/c (Quad)		
III	Latehar			

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule
a)	Patratu – Latehar 400kV D/c line	400kV D/c	Forest Stage-I clearance is awaited.	Feb 2023
b)	Latehar – Chandwa (POWERGRID) 400kV D/c line	400kV D/c	All clearances have been obtained. Works for 20km is pending due to theft of line.	Dec 2022
IV	Jasidih	400/220kV, 2x500MVA	-	No firm plan now. To be taken up in future.
a)	Koderma (JUSNL) – Jasidih 400kV D/c (Quad) line	400kV D/c (Quad)	-	
b)	Jasidih – Dumka 400kV D/c (Quad) line	400kV D/c (Quad)	-	
V	Mander	400/220kV, 2x500MVA	-	
a)	LILO of Patratu – Ranchi (New) 400kV D/c line at Mander	400kV 2xD/c	-	
VI	Dumka (New)	400/220kV, 2x500MVA	-	
a)	Dumka (New) – Dhanbad (ISTS) 400kV D/c (Quad) line	400kV D/c (Quad)	-	
D West Bengal (to be implemented by WBSETCL)				
I	Laxmikantpur GIS[#]	400/132kV, 2x315MVA	Land identified. In process of acquisition. Expected by Dec 2024	
a)	LILO of Haldia – Subhasgram 400kV D/c line at Laxmikantpur	400kV D/c	-	Expected by Dec 2024
II	Falakata	220/132kV, 2x160MVA	Initial civil works have been started	Mar 2024
a)	LILO of Birpara – Alipurduar 220kV D/c line at Falakata substation	220kV 2xD/c		Mar 2024

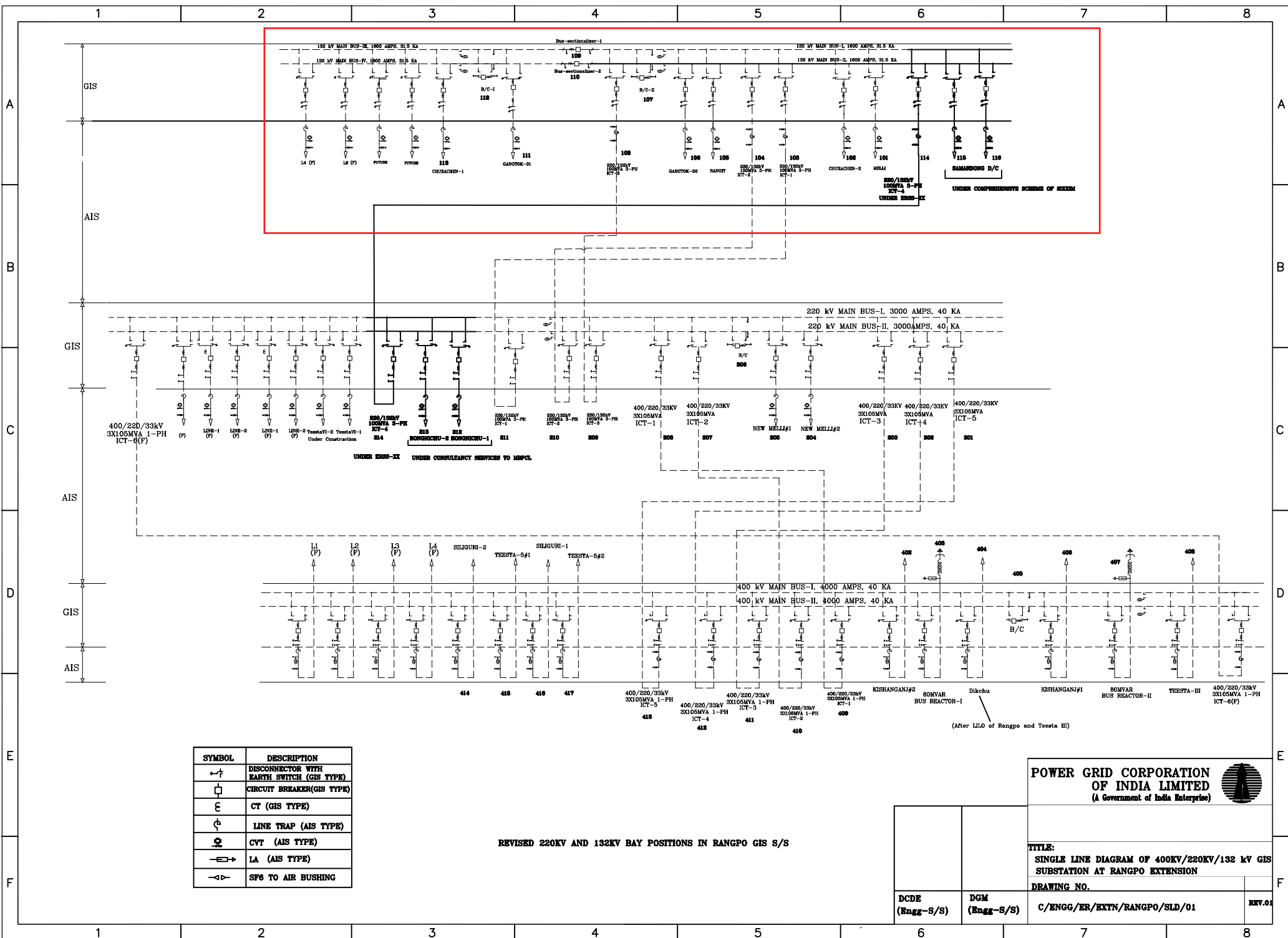
** As per inputs from OPTCL: Paradeep 765/400kV S/s shall be established at a different location from the already under-construction Paradeep 400/220kV S/s, accordingly, 400kV 2xD/c line shall be established between two substations.*

The 400kV infeed to New Laxmikantpur 400/132kV S/s is under discussion in the item no 3. Based on the deliberations, the lines would be updated, if required.

Annexure-III

Space allocated at various ISTS substations to STUs for implementation of line bays under intra state system for their intra state lines


Sl. No.	Substation/ Location	Space for	Date of award of line and bays	Completion Schedule	Agreed in CMETS-ER
1.	Angul (POWERGRID)	2 nos. 765kV lines bays for termination of Angul (POWERGRID) – Paradeep 765kV D/c line (including suitable switchable line reactors)		Survey is going on. Expected by 2025-26	1 st
2.	Rourkela (POWERGRID)	2 No. 220kV lines bays for termination of Rourkela (POWERGRID) – Tarkera 220kV D/c (HTLS) line		Would be taken up after reconductoring of 1 st D/c line.	1 st & 7 th
3.	Keonjhar (POWERGRID)	2 No. 220kV lines bays for termination of Keonjhar (POWERGRID) – Tikarpada 220kV D/c line	NIT yet to be taken up	Expected by 2024-25	1 st
4.	Maithon (POWERGRID)	2 No. 220kV lines bays for implementation of Maithon (POWERGRID) – Asansol 220kV D/c line		Survey completed.	7 th



SYMBOL	DESCRIPTION
	DISCONNECTOR WITH EARTH SWITCH (GIS TYPE)
	CIRCUIT BREAKER (GIS TYPE)
	CT (GIS TYPE)
	LINE TRAP (AIS TYPE)
	CVT (AIS TYPE)
	LA (AIS TYPE)
	SF6 TO AIR BUSHING

REVISED 220KV AND 132KV BAY POSITIONS IN RANGPO GIS S/S

POWER GRID CORPORATION OF INDIA LIMITED
 (A Government of India Enterprise)



TITLE:
 SINGLE LINE DIAGRAM OF 400KV/220KV/132 kV GIS SUBSTATION AT RANGPO EXTENSION

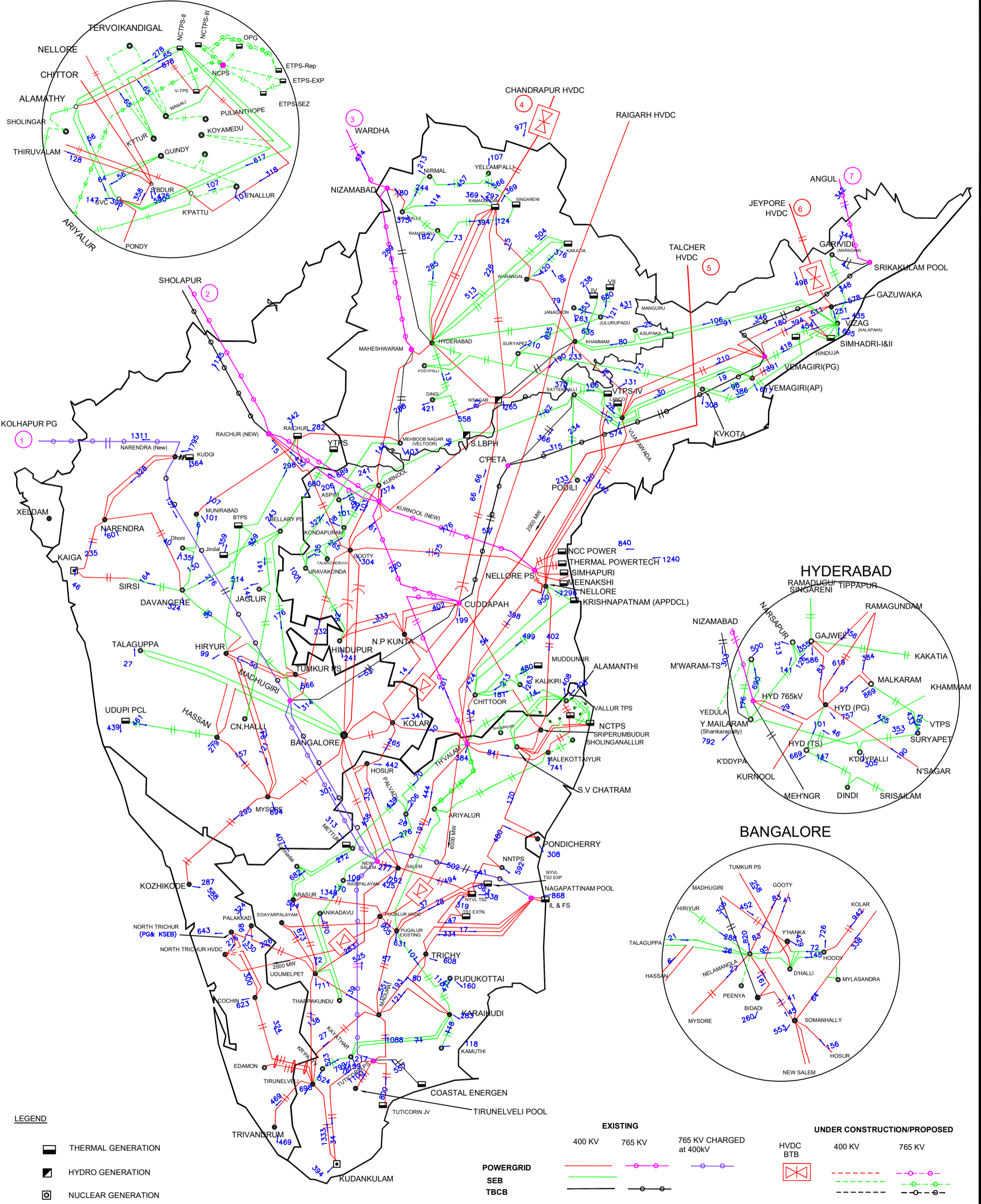
DRAWING NO.
 C/ENGG/ER/EXTN/RANGPO/SLD/01

DCDE (Engg-S/S) **DGM (Engg-S/S)**

REV.01

POWER MAP OF SOUTHERN REGION (765/400 KV LINES)

CHENNAI - INSET



LEGEND

- THERMAL GENERATION
- HYDRO GENERATION
- NUCLEAR GENERATION

EXISTING

- 400 KV
- 765 KV
- 765 KV CHARGED at 400KV

UNDER CONSTRUCTION/PROPOSED

- 400 KV
- 765 KV

POWERGRID

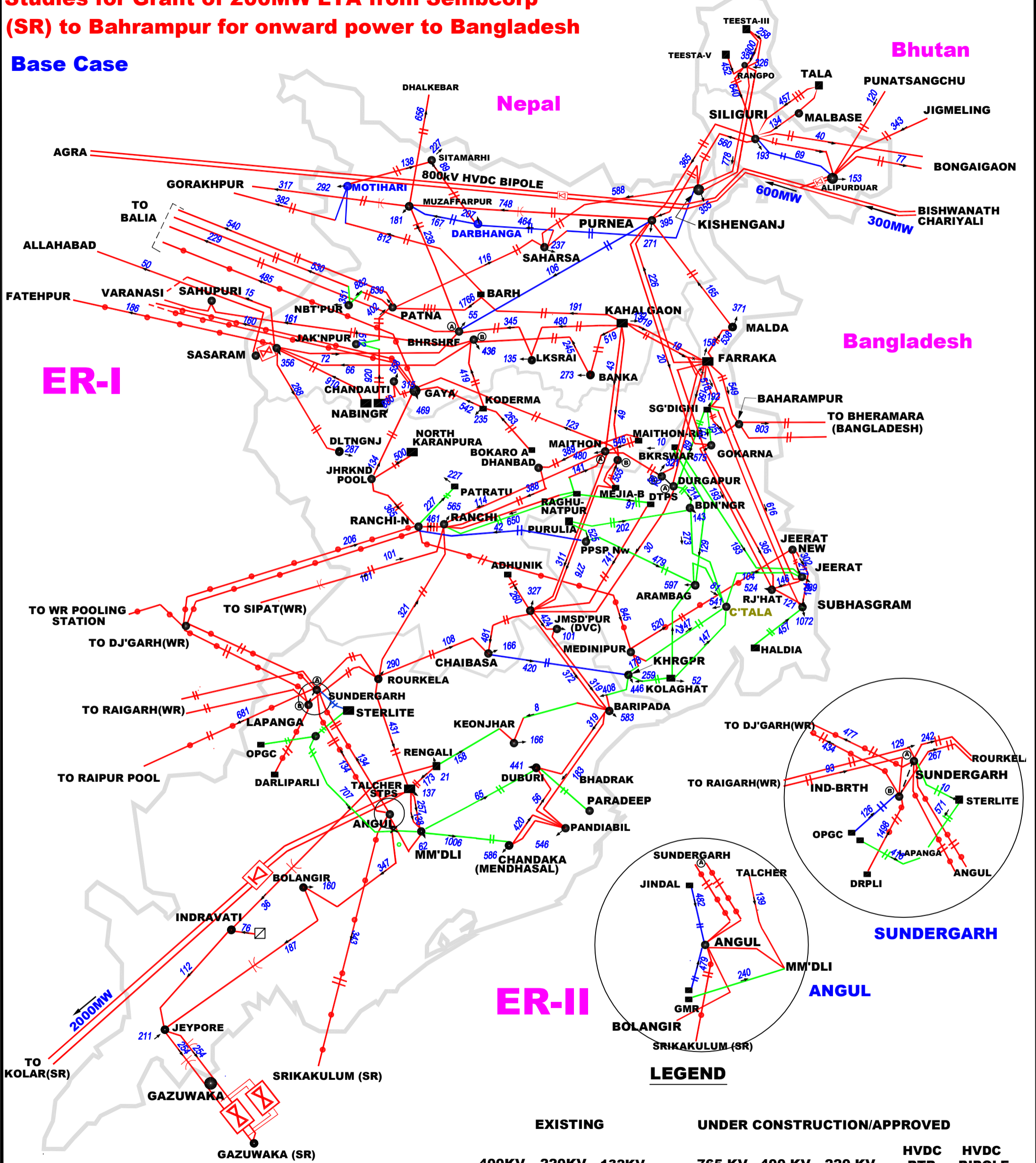
- SEB
- TBCB

HVDC BTB

POWER MAP OF EASTERN REGION

Studies for Grant of 200MW LTA from Sembcorp (SR) to Bahrampur for onward power to Bangladesh

Base Case



ER-I

ER-II

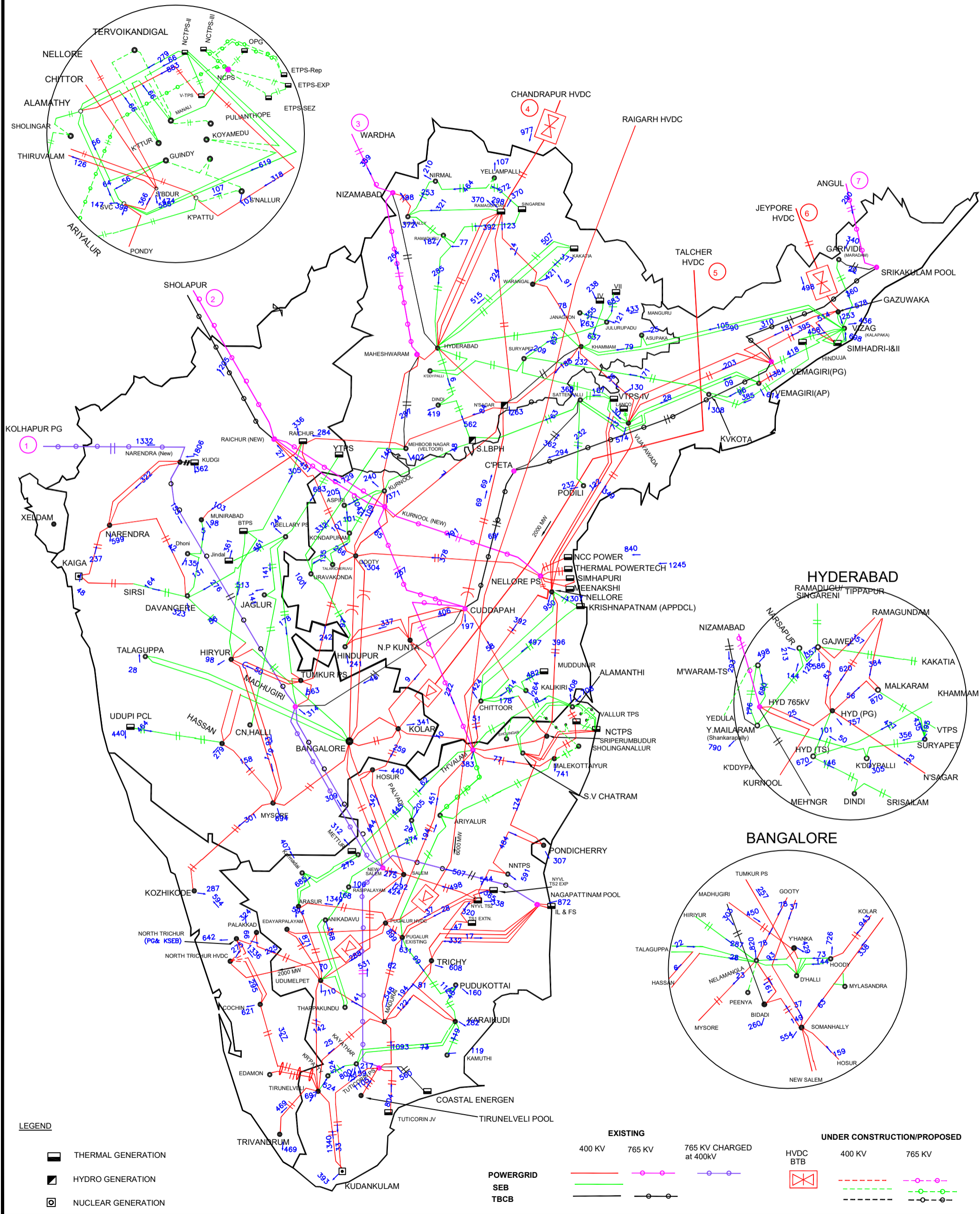
LEGEND

	EXISTING			UNDER CONSTRUCTION/APPROVED			HVDC BTB	HVDC BIPOLE
POWERGRID	400KV	220KV	132KV	765 KV	400 KV	220 KV		
TBCB								
SEB								

Time-frame: 01st Jan 2023

POWER MAP OF SOUTHERN REGION (765/400 KV LINES)

CHENNAI - INSET



LEGEND

- THERMAL GENERATION
- HYDRO GENERATION
- NUCLEAR GENERATION

EXISTING

- 400 KV
- 765 KV
- 765 KV CHARGED at 400KV

POWERGRID

- SEB
- TBCB

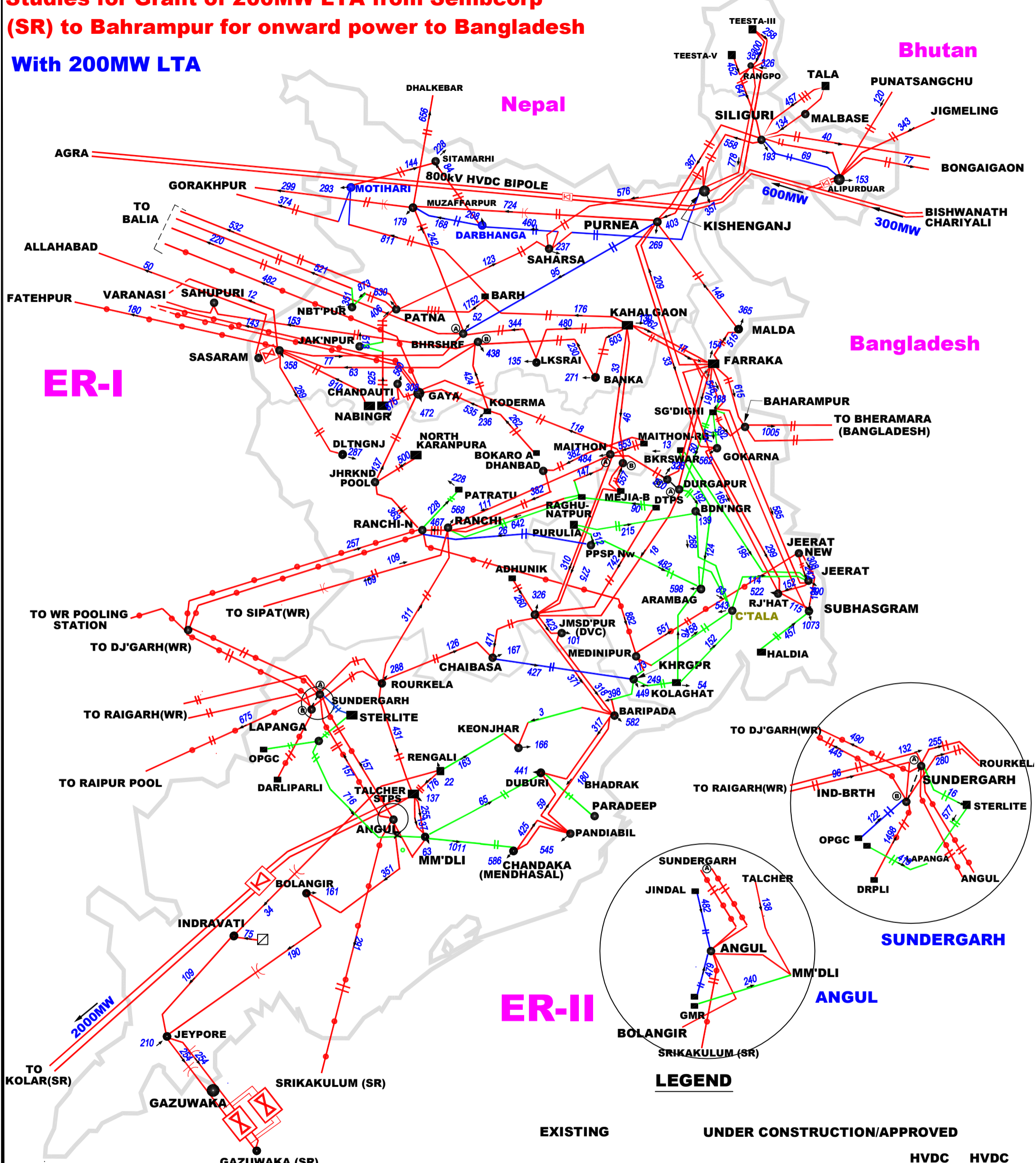
UNDER CONSTRUCTION/PROPOSED

- HVDC BTB
- 400 KV
- 765 KV

POWER MAP OF EASTERN REGION

Studies for Grant of 200MW LTA from Sembcorp (SR) to Bahrampur for onward power to Bangladesh

With 200MW LTA



ER-I

ER-II

LEGEND

	EXISTING			UNDER CONSTRUCTION/APPROVED			HVDC BTB	HVDC BIPOLE
POWERGRID	400KV	220KV	132KV	765 KV	400 KV	220 KV		
TBCB								
SEB								

Time-frame: 01st Jan 2023