

# सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)

(भारत सरकार का उदयम)

## 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/00/9<sup>th</sup> CMETS-ER

दिनांक/Date: 25-07-2022

वितरण सूची के अनुसार/ As per distribution list

विषय/Subject: पूर्वी क्षेत्र में पारेषण योजनाओं के विकास के लिए 9<sup>वीं</sup> परामर्श बैठक की कार्यावली (सीएमईटीएस-ईआर) / Agenda for 9<sup>th</sup> 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 9<sup>वीं</sup> परामर्श बैठक (सीएमईटीएस-ईआर) 29 जुलाई, 2022 (शुक्रवार) को वीडियो कॉन्फ्रेंसिंग के माध्यम से नीचे दिए गए विवरण के अनुसार आयोजित होने वाली है:

The 9<sup>th</sup> 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 29<sup>th</sup> July, 2022 (Friday) through video conferencing as per details below:

विषय/Topic	: 9 <sup>th</sup> CMETS-ER
दिनांक/Date & समय/Time	: 29 <sup>th</sup> July 2022 at 10:30 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](http://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](http://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)  
महाप्रबंधक/ General Manager

**A. वितरण सूची के अनुसार/ Distribution List:**

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

**B. विशेष आमंत्रित /Special invitee:**

<b>1.</b>	<b>Director (Projects)</b> Power Grid Corporation of India Ltd. "Saudamini", Plot No. 2, Sec-29, Gurugram Haryana-122001	<b>2.</b>	<b>Managing Director</b> Haldia Energy Limited (HEL) 2A, Lord Sinha Road, First Floor, Kolkata, West Bengal - 700 071, Email: <a href="mailto:haldiaenergy@rpsq.in">haldiaenergy@rpsq.in</a>
<b>3.</b>	<b>Chairman</b> CESC Limited CESC House, Chowringhee Square Kolkata – 700001 Email: <a href="mailto:cesclimited@rpsq.in">cesclimited@rpsq.in</a>		

## Agenda for 9<sup>th</sup> Consultation Meeting for Evolving Transmission Schemes in Eastern Region (CMETS-ER)

### 1. Confirmation of minutes of the previous meeting

The minutes of the 8<sup>th</sup> CMETS-ER held on 30-06-2022 were issued vide letter dated 19-07-2022. As no comments have been received, the minutes may be confirmed.

### 2. Presentation by states on intra-state network for 2026-27 time-frame

As agreed in the previous meeting, E&P Dept., Govt. of Sikkim may give a presentation on intra-state grid of Sikkim for 2062-27 timeframe.

### A. Application related matters in Eastern Region (ER)

### 3. MTOA applications with injection in ER and drawl in other Regions

3.1. Following MTOA applications have been received with injection in ER and drawl in other Regions in the month of June 2022:

Sl. No.	Applic-ation ID	Name of Applicant	Submission Date	Drawl Region	Quantum of MTOA	Start Date of MTOA	End Date of MTOA	Generation/ Injection Point	Drawl Point
1.	0551100004	Tata Power Trading Company Limited	29.06.2022	SR	#51.6	01-12-2022	30-11-2025	Jindal India Thermal Power Limited Odisha, (ER)	South Western Railways, Karnataka (SR)-ISTS Connected
2.	0563500002	North Central Railway	14.06.2022	NR	30	01-12-2022	30-11-2024	Raghunathpur TPS DVC (2x600MW), West Bengal	North Central Railway, Dadri & Phaphund
3.	0563500003	Northern Railway	28.06.2022	NR	47.05	02-12-2022	01-12-2024	Raghunathpur TPS DVC (2x600MW), West Bengal	Northern Railway, UP, NR
4.	0512100002	North Western Railway	30.06.2022	NR	37.66	08-12-2022	07-12-2024	Raghunathpur TPS DVC (2x600MW), West Bengal	North Western Railway, Rajasthan, NR
5.	0530700002	Indian Railway Gujarat (Western Railway)	29.06.2022	WR	30	01-12-2022	30-11-2024	Raghunathpur TPS DVC (2x600MW), West Bengal	Indian Railway Gujarat (Western Railway), Gujarat, WR

**Note:** #Quantum of PPA is 50MW, however, MTOA has been sought for 51.6MW. In this regard, applicant has clarified that they have applied MTOA considering transmission losses of 3.19% to deliver contracted capacity of 50MW at the delivery point.

- 3.2. Presently, 323MW LTA (95MW to KSEB, SR and 228MW to BSPHCL, ER) and 106.88MW MTOA (NR) is already granted and operational from M/s JITPL to beneficiaries in different region. The MTOA application at Sl. No. 1 involves transfer of 51.3MW additional power from M/s JITPL (ER) to beneficiary in SR. The drawl of power under the said MTOA by South West Railway would be through KPTCL STU network. No objection certificate issued by Karnataka SLDC, copy of PPA signed between JITPL & TPTCL and copy of PSA signed between TPTCL & South Western Railway have been submitted along with the application. Present ATC of Southern Region for import of power from NEW grid is 18,900MW and sufficient margins are available for allocation under LTA/MTOA.
- 3.3. Presently, 446.75MW LTA (46.75MW to KSEB, 300MW to Punjab, and 100MW to Haryana) is already granted and operational from Raghunathpur TPS to beneficiaries in different region. The MTOA applications at Sl. No. 2 to 5 involves transfer of 144.71MW additional power from Raghunathpur TPS to beneficiaries in NR and WR.
- Application at Sl. No. 2: North Central Railway is connected with ISTS network in NR at Dadri & Phaphund in Uttar Pradesh from which drawl is envisaged under present MTOA.
  - Application at Sl. No. 3: Northern Railways is connected with STU network in UP and STU network is connected with ISTS network at many locations in Uttar Pradesh. No Objection Certificate (NOC) submitted by the applicant from UP SLDC is for the period of 02-12-2022 to 01-12-2024.
  - Application at Sl. No. 4: North Western Railways is connected with STU network in Rajasthan and STU network is connected with ISTS network at many locations in Rajasthan. No Objection Certificate (NOC) submitted by the applicant from Rajasthan SLDC is for the period of 08-12-2022 to 07-12-2024.
  - Application at Sl. No. 5: Western Railway is connected with STU network in Gujarat and STU network is connected with ISTS network at many locations in Gujarat. SLDC NOC and PPA has been submitted with application.
  - No constraint is envisaged in present Available Transfer Capability (ATC) between ER-NR, ER-WR, and WR-NR corridors for above mentioned power transfer requests from ER to NR & WR.
- 3.4. The start date of all the MTOAs are in Dec 2022. Accordingly, studies have been carried out on All India load flow file for Dec 2022 timeframe for all four regions with injections in ER and drawl in SR, NR and WR. From the system studies, it has been observed that power flows are generally in order, including on the inter-regional lines. Study results are enclosed as detailed below:
- Base Case (without above MTOAs): Exhibit-1A, 1B, 1C, and 1D
  - With above MTOAs: Exhibit-2A, 2B, 2C, and 2D

- 3.5. In view of the above, it is proposed to grant all the MTOAs with existing / under implementation transmission system as per details mentioned above in the table at para 3.1 above.

**B. ISTS expansion schemes in Eastern Region**

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

- 4.1. In the 8<sup>th</sup> CMETS-ER held on 31-05-2022, following was deliberated:

- (a) WBSETCL informed that they have identified land for establishment of New Laxmikantpur 400/132kV S/s which is about 1km from the Haldia – Subhasgram 400kV D/c line and implementation of the same through LILO of the said line may not encounter any RoW constraints, and also this shall be most suited techno -economical solution to serve the increasing load in the South 24 Parganas district. WBSETCL further informed that they had submitted the plan for LILO of Haldia – Subhasgram 400kV D/c line at New Laxmikantpur to CESC & HEL, however, they have not received any confirmation from CESC/HEL in this regard till date. In the meeting, it was decided that matter regarding LILO of Haldia – Subhasgram 400kV D/c line for establishment of New Laxmikantpur S/s would be deliberated (including regulatory & commercial issues) along with CESC and HEL at ERPC level. Subsequently, the matter would be discussed in the CMETS-ER for finalisation of the scheme.
- (b) WBSETCL was also requested to share the bus splitting plan for Laxmikantpur 220/132kV S/s in a way that some portion of load would be fed from existing Laxmikantpur – Subhasgram (POWERGRID) 220kV D/c line and balance from 400/132kV New Laxmikantpur S/s.
- 4.2. CTU vide intimation dated 21-05-2009 had granted LTOA of 400MW to CESC Ltd. for transfer of 400MW power from Haldia TPS to CESC Ltd.
- 4.3. CTU vide intimation dated 11-06-2009 had granted LTOA of 150MW to Noida Power Company Ltd. for transfer of 150MW power from Haldia TPS to Noida Power Company Ltd. However, the same was revoked vide CTU letter dated 23-02-2017 in view of non-signing of BPTA/LTA by M/s NPCL.
- 4.4. In a special meeting at ERPC on 11-08-2014 (copy enclosed at **Annexure-IV**) it was decided that for LTA upto 400MW there will not be ISTS transmission charges and losses for power transaction from Haldia (CESC) to CESC. For remaining 200MW, provisions of WBERC would be applied for STOA from SLDC, WB, and for this transaction also there would be no ISTS transmission charges and losses.
- 4.5. HEL and CESC may make a presentation on the expected commercial and regulatory constraints for LILO of Haldia – Subhasgram 400kV D/c line at New Laxmikantpur S/s by WBSETCL.

4.6. WBSETCL may update on the outcomes of discussion held at ERPC level on the above scheme, and also present the split bus scheme planned at Laxmikantpur S/s as mentioned above.

4.7. Matter may be deliberated.

**5. Augmentation of transformation capacity at Subhasgram and other intra-state substations of WBSETCL**

5.1. In the 8<sup>th</sup> CMETS-ER held on 30-06-2022, it was decided that augmentation of transformation capacity at Subhasgram S/s will be finalized after assessing the power drawl by CESC and WBSETCL in last one year.

5.2. Presently, there are 4x315MVA + 1x500MVA ICTs at Subhasgram S/s. 2x315MVA + 1x500MVA is under ISTS and 2x315MVA has been installed by CESC.

5.3. ERLDC vide email dated 12-07-2022 has shared the ICTs loading details at Subhasgram S/s (copy enclosed at **Annexure-V**). Major highlights of the details shared by ELRDC is given below:

- In the present summer season (Apr-June 2022), N-1 reliability rating has been violated in 400/220kV Subhasgram (POWERGRID) ICTs on many occasions.
- The highest loading of about 1540MW was observed on 28<sup>th</sup> April 2022 both by CESC and WBSEDCL.
  - CESC maximum drawl was 803.17 MW on 28-04-2022 3:42 PM
  - WBSEDCL maximum drawl was 804.76 MW on 28-04-2022 11:25 PM
- The N-1 of CESC ICTs have been violated for about 74% of the time to meet its load.
- The N-1 of ISTS ICTs have been violated for about 11% of the time to meet WBSEDCL load.

5.4. From the above, it is understood that both CESC and WBSETCL/WBSEDCL are violating N-1 at Subhasgram S/s under peak load condition and it is high time that 6<sup>th</sup> ICT may be installed at Subhasgram S/s to prevent cascaded tripping of ICTs on overloading and major blackout in the capital city of Kolkata. The ICT may be installed in ISTS.

5.5. With commissioning of New Laxmikantpur S/s, drawl on Subhasgram ICTs would reduce to some extent. However, due to rapid growth in demand in Kolkata area in the future timeframe, requirement of ICT augmentation at Subhasgram S/s still emerges even after commissioning of New Laxmikantpur S/s.

5.6. In view of the above, following scope of works is proposed to be implemented under ISTS under the Eastern Region Expansion Scheme-XXXII (ERES-XXXII) within 18 months from date of allocation:

- (a) Installation of 400/220kV, 500MVA ICT (6<sup>th</sup>) along with associated ICT bays at both levels at Subhasgram (POWERGRID) S/s.

5.7. Matter may be deliberated.

## **6. Reconductoring of Rangpo – Gangtok 132kV D/c line**

6.1. In the 8<sup>th</sup> CMETS-ER held on 30-06-2022, it was decided that Rangpo – Gangtok 132kV D/c line can be reconducted with HTLS of 800A rating so as to meet the power drawl requirement of Sikkim and also there would be minimal requirement of only change of CTs at Gangtok end. In the meeting, POWERGRID informed that that CERC has asked for consent of the beneficiaries to bear the tariff corresponding to the residual value of the transmission line in case of reconductoring of the same before completion of its useful life. Accordingly, in the meeting all the STUs requested POWERGRID to share the residual cost of the transmission line to be recovered as tariff, so that view on reconductoring proposal can be taken.

6.2. Now, POWERGRID vide email dated 12-07-2022 has informed that “*The current book value of conductor and accessories along with 6 nos. 132 kV CTs at Gangtok end to be dismantled for reconductoring of 132 kV D/C Rangpo-Gangtok transmission line as on 30.06.2022 is Rs. 65,73,438.*”

6.3. Based on the consent of the beneficiaries, following scope of works is proposed to be implemented under ISTS under the Eastern Region Expansion Scheme-XXXIII (ERES-XXXIII) within 24 months from date of allocation:

- (a) Reconductoring of Rangpo – Gangtok 132kV D/c line with HTLS conductor of 800A (at nominal voltage level).
- (b) Upgradation of CTs at Gangtok end in both circuits of Rangpo – Gangtok 132kV D/c line from 600A to rating commensurate with rating of 800A HTLS conductor.

6.4. Matter may be deliberated.

## **7. NGR in the 63MVAr line reactor at Kahalgaon end of Kahalgaon – Durgapur 400kV D/c line**

7.1. In 5<sup>th</sup> CMETS-ER held on 25-02-2022, installation of 420kV, 63MVAr switchable line reactor at Kahalgaon (NTPC) end, one each in both circuits of Kahalgaon (NTPC) – Durgapur (POWERGRID) 400kV D/c line was agreed to be implemented under ERES-XXVII scheme.

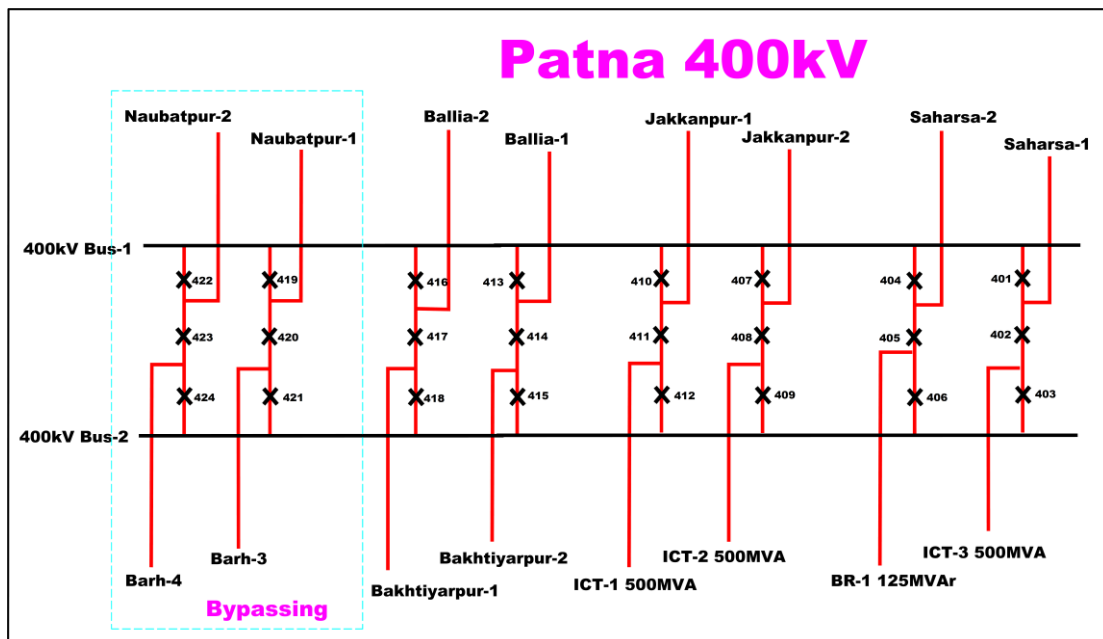
7.2. CTU vide OM dated 26-04-2022, has approved implementation of the above scheme by POWERGRID under Regulated Tariff Mechanism (RTM) route.

Subsequently, POWERGRID vide email dated 11-05-2022 requested to confirm the requirement of NGR, if any with said line reactors.

- 7.3. Studies were carried out for the requirement of NGR in the 63MVAR switchable line reactor at Kahalgaon end of the Kahalgaon – Durgapur 400kV D/c line and it was observed that 500 Ohm NGR is technically suitable.
- 7.4. Accordingly, CTU vide OM dated CC/CTU/AI/00/5<sup>th</sup>/CCTP dated 24-06-2022 has approved additional provision of 500 Ohm NGR along with suitable NGR bypass arrangement in the already approved 63MVAR switchable line reactor at Kahalgaon end of Kahalgaon – Durgapur 400kV D/c line under ERES-XXVII (to be implemented by POWERGRID).
- 7.5. Matter may be noted.

## 8. Fault level control at Patna (POWERGRID) S/s at 400kV level

- 8.1. In the present timeframe, the fault level at Patna (POWERGRID) S/s has been observed to be about 49kA, which is exceeding the design rating of 40kA. The schematic/SLD of Patna S/s is shown below:



- 8.2. In order to limit fault current at Patna S/s, it is proposed to bypass Patna – Barh 400kV D/c (Quad) line (ckt-3 & 4) (68.9km) and Patna – Naubatpur 400kV D/c (Quad) line (25.45km) at Patna S/s so as to form Barh – Naubatpur 400kV D/c (Quad) line. The bypassing is proposed through switching arrangement at substation itself i.e. by opening the main CBs (419, 421, 422, and 424) and keeping the tie CBs closed (420 and 423) under normal operating condition.
- 8.3. With the proposed arrangement, fault level at Patna S/s reduces to 37kA and line length of Barh – Naubatpur section would become about 95km. No operational constraints are envisaged with proposed bypassing arrangement.

8.4. Matter may be deliberated.

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

9.1. 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**.

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

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

10.1. 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**.

10.2. 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.

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

11.1. 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**.

11.2. 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 <sup>st</sup> circuit of 220kV Dumka – Govindpur D/c line at Dhanbad (23km)	Bid evaluation is in progress. Price bid opened	Expected by Dec 2023.
							LILO of 2 <sup>nd</sup> circuit of 220kV Dumka – Govindpur D/c line at Dhanbad	Survey and estimation are being taken up. Thereafter, funding will be tied up.	
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 Baruiপুর substation charged. 132kV downstream delayed due to RoW.
6.	Rajarhat	West Bengal	400/220kV, 2x500MVA	220	2	Existing bay	Rajarhat (POWERGRID) – New Town AA2C 220kV D/c		Severe RoW (2.5km) in cable laying. Expected by Oct 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 due to flooding
8.	Saharsa (New)	Bihar	400/220/132kV, 2x500MVA + 2x200MVA	220	2	Existing bay	Saharsa (New) - Begusarai 220kV D/c line		Line ready for commissioning. Expected by July 2022 end.

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
				132	2-ISTS (addln.4 by state)		Saharsa (New) - Saharsa 132kV D/c line formed by LILO of Saharsa - Banmankhi and Saharsa - Uda Kishanganj 132kV S/c line		04 nos. of bays are under construction by BSPTCL at Saharsa (New). Two bays are expected in Sep 2022, and balance two in Nov 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 documents ready	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
<b>A Bihar (to be implemented by BSPTCL/BGCL)</b>				
<b>I</b>	<b>Bakhtiyarpur GIS</b>	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.
<b>ii</b>	<b>Chappra (New)</b>	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>B Odisha (to be implemented by OPTCL)</b>				
<b>I</b>	<b>Digapahandi</b>	400/220kV, 2x500MVA	Survey in progress	2025-26
a)	Digapahandi – Therubali – Jeypore 400kV D/c line	400kV D/c	Survey in progress	2025-26
<b>II</b>	<b>Therubali</b>	400kV switching station along with 420kV, 1x125MVAr bus reactor	Survey in progress	2025-26
<b>III</b>	<b>Bhadrak</b>	400/220kV, 2x500MVA	Tendering in progress	2024-25
a)	LILO of Baripada – Duburi and Baripada – Pandiabili 400kV line sections at Bhadrak	400kV D/c	Tendering in progress	2024-25
<b>IV</b>	<b>Paradeep*</b>	400/220kV, 2x500MVA		24 months
a)	Paradeep – Duburi 400kV D/c line	400kV D/c	Line package awarded and substation awarded in May'22	24 months
<b>V</b>	<b>Paradeep*</b>	765/400kV, 2x1500MVA	Survey in progress	2025-26
a)	Angul (POWERGRID) – Paradeep (OPTCL) 765kV D/c line	765kV D/c	Survey in progress	2025-26
<b>VI</b>	<b>Begunia</b>	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

Sl. No.	Substation/Location	Transformation Capacity/ Element	Date of Award	Completion Schedule	
<b>C Jharkhand (to be implemented by JUSNL)</b>					
<b>I</b>	<b>Chandil (New)</b>	400/220kV, 2x500MVA	NIT has been floated on 05-03-2022. Bid opening expected on 11-07-2022.	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)			
<b>II</b>	<b>Koderma</b>	400/220/132/33kV, 2x500MVA + 2x200MVA + 2x80MVA			
a)	PVUNL – Koderma 400kV D/c (Quad) line	400kV D/c (Quad)			
<b>III Latehar</b>					
a)	Patratu – Latehar 400kV D/c line	400kV D/c		Nov 2022	
b)	Latehar – Chandwa (POWERGRID) 400kV D/c line	400kV D/c			
<b>IV Jasidih</b>					
a)	Koderma (JUSNL) – Jasidih 400kV D/c (Quad) line	400kV D/c (Quad)	-	No firm plan now. To be taken up in future.	
b)	Jasidih – Dumka 400kV D/c (Quad) line	400kV D/c (Quad)	-		
<b>V Mander</b>					
a)	LILO of Patratu – Ranchi (New) 400kV D/c line at Mander	400kV 2xD/c	-		
<b>VI Dumka (New)</b>					
a)	Dumka (New) – Dhanbad (ISTS) 400kV D/c (Quad) line	400kV D/c (Quad)	-		
<b>D West Bengal (to be implemented by WBSETCL)</b>					
<b>I</b>	<b>Laxmikantpur GIS<sup>#</sup></b>	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	
<b>II Falakata</b>					
a)	LILO of Birpara – Alipurduar 220kV D/c line	220kV 2xD/c		Mar 2024	

## 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	CME TS
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 <sup>st</sup>
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 <sup>st</sup> D/c line	1 <sup>st</sup> & 7 <sup>th</sup>
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 <sup>st</sup>
4.	Maithon (POWERGRID)	2 No. 220kV lines bays for implementation of Maithon (POWERGRID) – Asansol 220kV D/c line		Survey to start shortly	7 <sup>th</sup>



भारत सरकार  
Government of India  
विद्युत मंत्रालय  
Ministry of Power  
पूर्वी क्षेत्रीय विद्युत समिति

**Eastern Regional Power Committee**  
14, गोल्फ क्लब रोड, टॉलवुन, कोलकाता-700033  
14 Golf Club Road, Tollygunj, Kolkata-700033



Annexure-IV

Tel No.:033-24235199, 24235005 FAX No.:033-24221802, 24221358 Web: [www.erpc.gov.in](http://www.erpc.gov.in)

NO. ERPC/SE (OPRN)/OPERATION/2014-15/

DATE: 12.08.2014

**FAX MESSAGE NO. M- 922**

To,

1. Chief Engineer (I/C), SP&PA, CEA, Sewa Bhawan, R.K.Puram, New Delhi- 110066. *DLI- 2610-2045*
2. Executive Director, NLDC, POSOCO, B-9, Qutab Institutional Area, Katwaria Sarai, N. Delhi- 110016 (Fax No.- 011-26524525, 26536901)
3. COO (CTU-Planning), PGCIL, Saudamini, Plot No-2, Sector-29, Gurgaon- 122001
4. Vice President (SO), CESC, Chowringhee Square, Kolkata (FAX NO.033-22129871)
5. General Manager, ERLDC, Kolkata, (FAX NO. 033-2423-5809)
6. General Manager (OS), POWERGRID, ER-II, Kolkata( Fax no: 033-23572827)
7. General Manager (Projects), CESC, Chowringhee Square, Kolkata
8. General Manager (SO), CESC, Chowringhee Square, Kolkata
9. CHIEF ENGINEER, CENTRAL PLANNING WING, WBSETCL, SALT LAKE (FAX NO.: 033-23591955)
10. CHIEF ENGINEER, CLD, WBSETCL, HOWRAH, (FAX NO. 033-26886232)

**Sub: Corrigendum for minutes of Special meeting for resolving issue of CTU transmission charges and losses applicable to CESC for Haldia Power Station held on 11.08.2014 - reg**

Please refer to the minutes of the above meeting held on 11.08.2014 (jointly signed by all). AGM (CTU-Planning) vide mail dated 12.08.14 has confirmed that the LTA was given for 400 MW (not 450 MW) to CESC from the Haldia project. Therefore, in view of above information a corrigendum is hereby issued for the minutes of the above meeting for agreed points Sl. No. 1, 2 & 4 which will be read as:

1. Upto LTA quantum of **400 MW**, there would be no CTU transmission charges and losses for power transaction from Haldia Power Station (CESC) to CESC.
2. For remaining **200 MW** of Haldia Power Station, provisions of WBERC would be applied for Short Term Open Access (STOA) from SLDC, WB. For this transaction also there would be no CTU transmission charges and losses. However, if Haldia Power Station decides to sell power to other entities the CTU transmission charges and losses would be applicable for the quantum such contracted.
4. In the meanwhile, CESC was advised to take initiative and coordinate with CTU for getting **200 MW** LTA for their remaining quantum of generation.

Other points of the MOM dated 11.8.14. remain same.

Thanking you.

*A. K. Bandyopadhyaya*  
(A. K. Bandyopadhyaya)  
Member Secretary I/C

*A. K. Bandyopadhyaya*

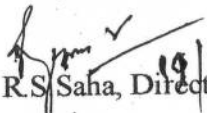
*Per 2014  
I think this  
will be as  
per CESC  
representative  
JOT*

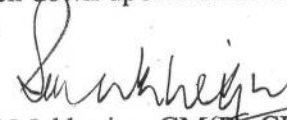
## ERPC:: Kolkata

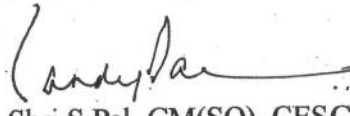
A special meeting was held on 11.08.2014 for discussion on the issue of applicability of CTU Transmission Charges and Losses along with other relevant issues in respect of injection of power from Haldia Power Station of CESC:


After detailed deliberation the following were agreed:

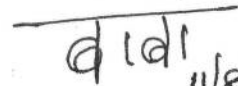
1. Upto LTA quantum of 450 MW, there would be no CTU transmission charges and losses for power transaction from Haldia Power Station (CESC) to CESC.
2. For remaining 150 MW of Haldia Power Station, provisions of WBERC would be applied for Short Term Open Access (STOA) from SLDC, WB. For this transaction also there would be no CTU transmission charges and losses. However, if Haldia Power Station decides to sell power to other entities then CTU transmission charges and losses would be applicable for the quantum such contracted.
3. STU transmission charges and losses as applicable for STU would be mutually discussed and settled among CESC and STU.
4. In the meanwhile, CESC was advised to take initiative and coordinate with CTU for getting 150 MW LTA for their remaining quantum of generation.
5. After CESC gets LTA for 600 MW for Haldia Power Station (CESC) to CESC there would be no CTU transmission charges and losses for the full quantum.
6. Haldia Power Station would back down upon instructions of ERLDC/SLDC, WB in case of system constraints/contingency.


  
Dr. R.S. Saha, Director, CEA


  
Shri. S. Mukherjee, GM(PT), CESC


  
Shri S. Pal, GM(SO), CESC 11/8/14

  
Shri U.K. Verma, GM, ERLDC 11/8/2014

  
Shri K.V.S. Baba, GM, NLDC 11/8/14

  
Shri A. Biswas, CE, WBSETCL 11/14

  
Shri A. Pal, AGM, PGCIL

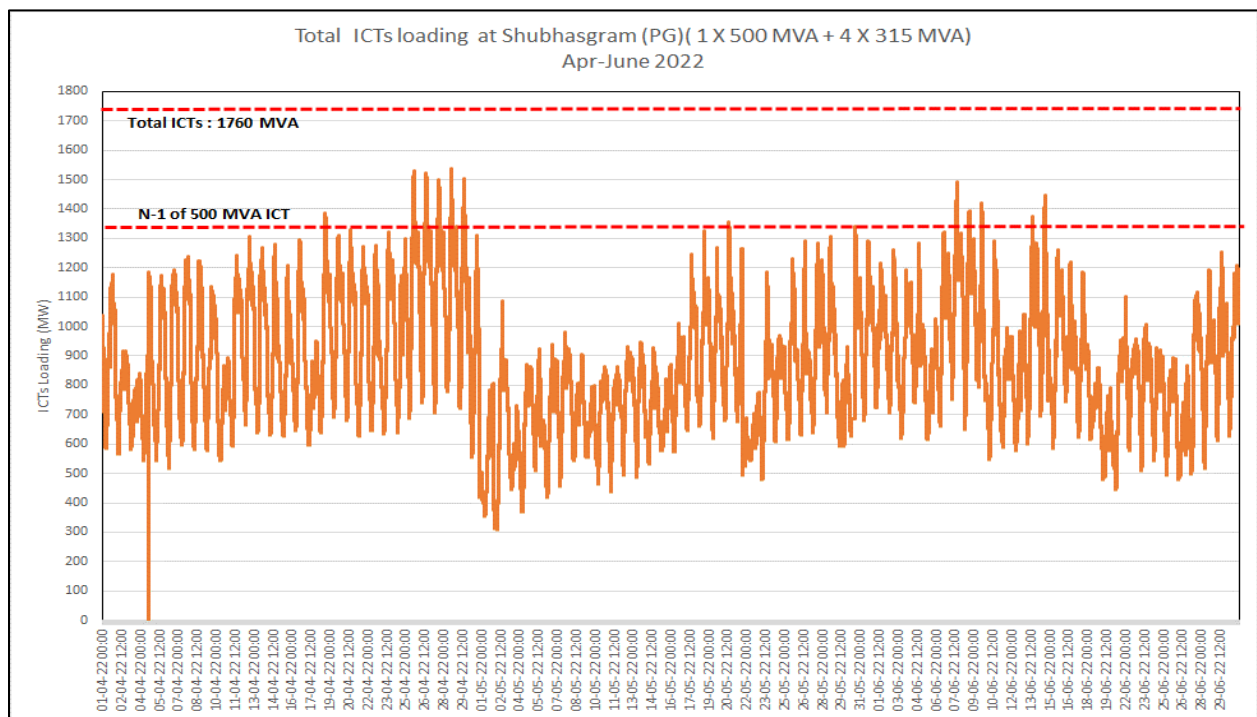
  
Shri A.K. Bandyopadhyaya, MSI/C, ERPC SLDC, West Bengal

### Utilization of allotted transformation capacity in 400/220 KV Shubhasgram s/s by WBSEB and CESC

In the 8<sup>th</sup> CMETS, during the discussion of need for additional transformation capacity, the question of recent utilization of Shubhasgram ICTs by CESC and WBSEDCL vis a vis their allotted transformation capacity and N-1 violation was raised. Based on which SCADA data was analysed for Apr-June 2022 and its outcome are shared below.

In the present summer season (Apr-June 2022), N-1 reliability rating has been violated in 400/220 KV Shubhasgram (PG) ICTs on many occasions.

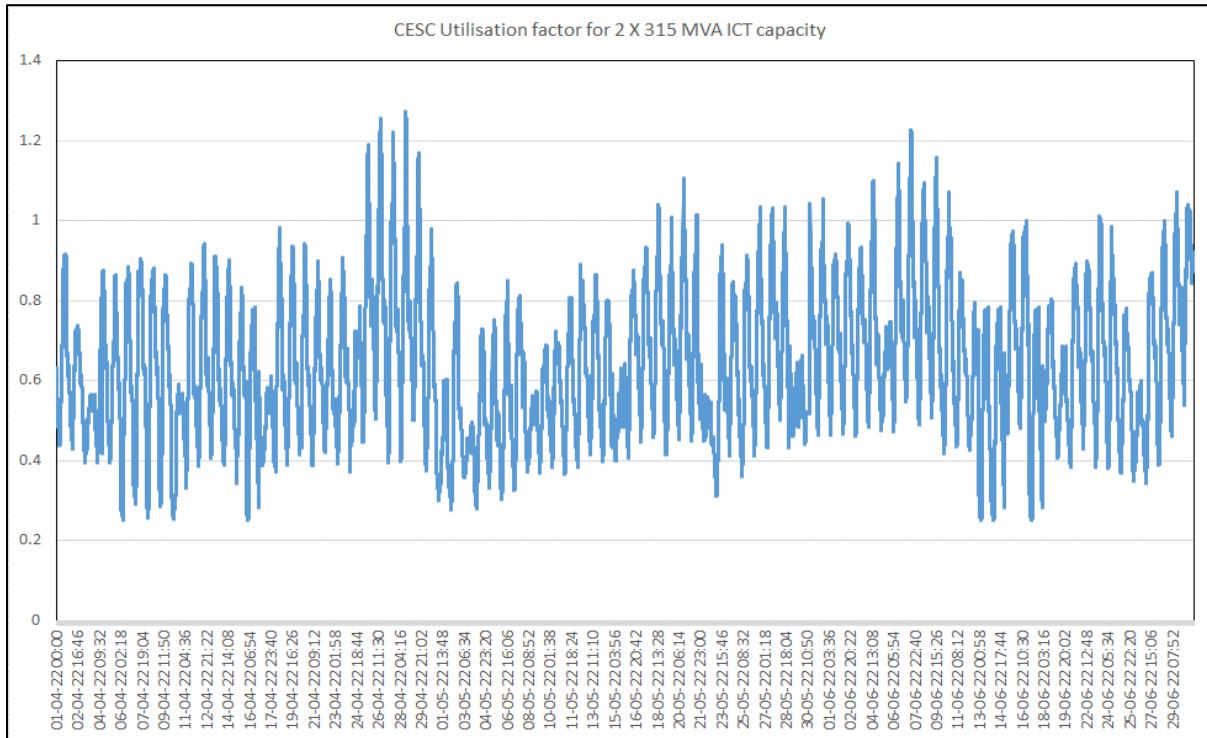
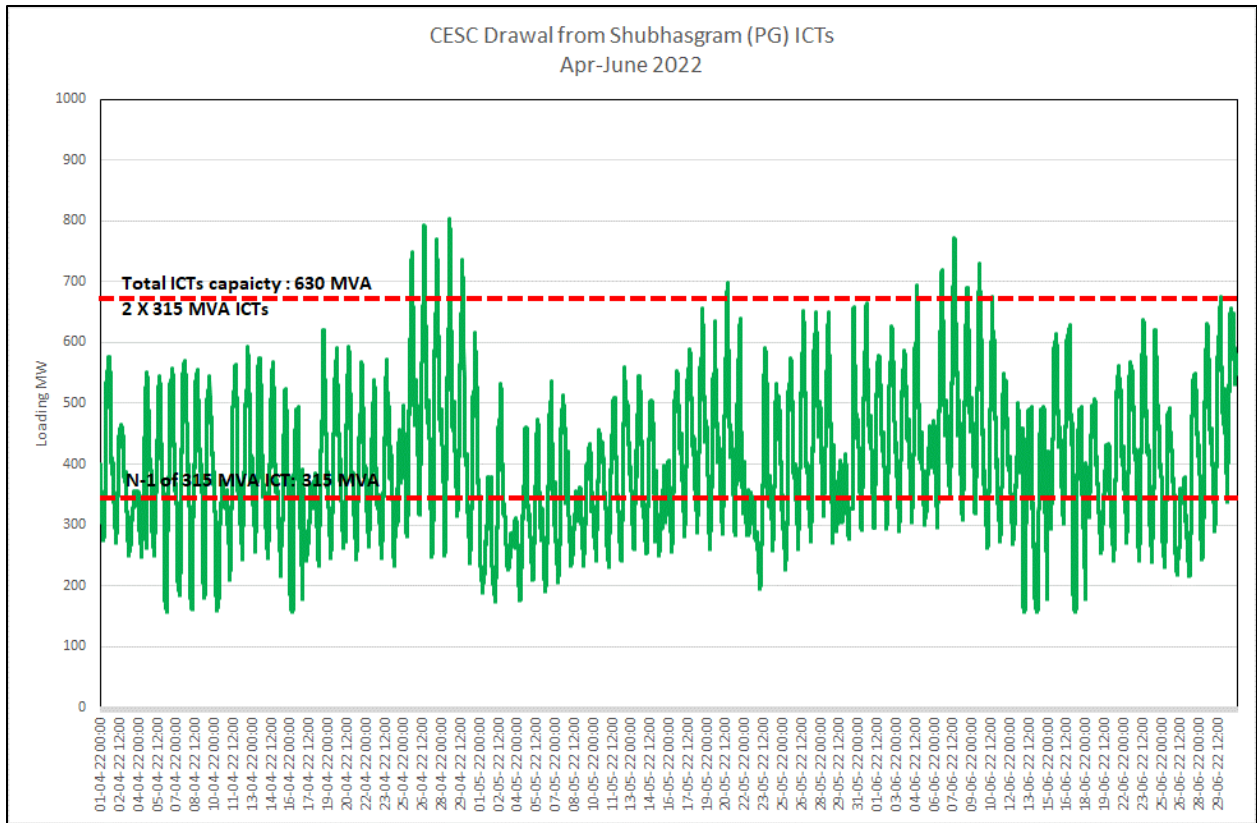
- The highest loading was observed on 28<sup>th</sup> April, 2022 both by CESC and WBSEDCL.
- CESC maximum drawl was 803.17 MW on 4/28/22 3:42 PM
- WBSEDCL maximum drawl was 804.76 MW on 4/28/22 11:25 PM



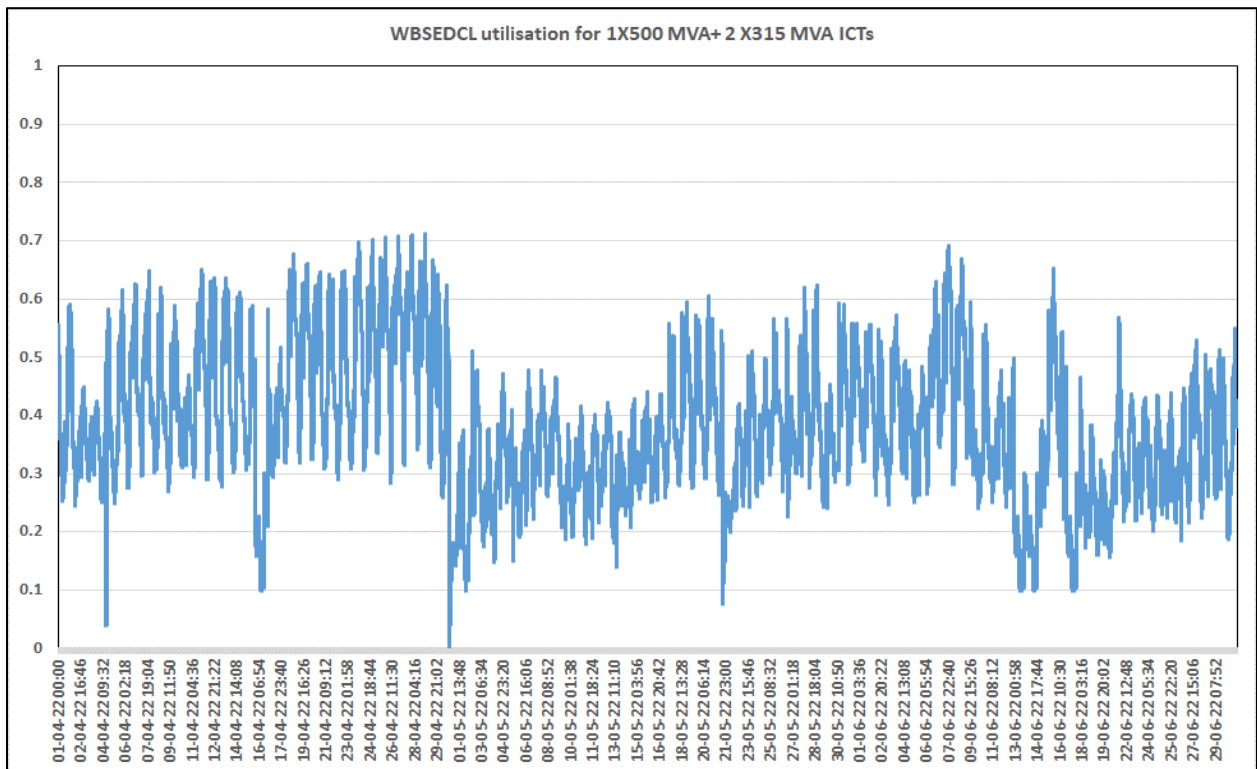
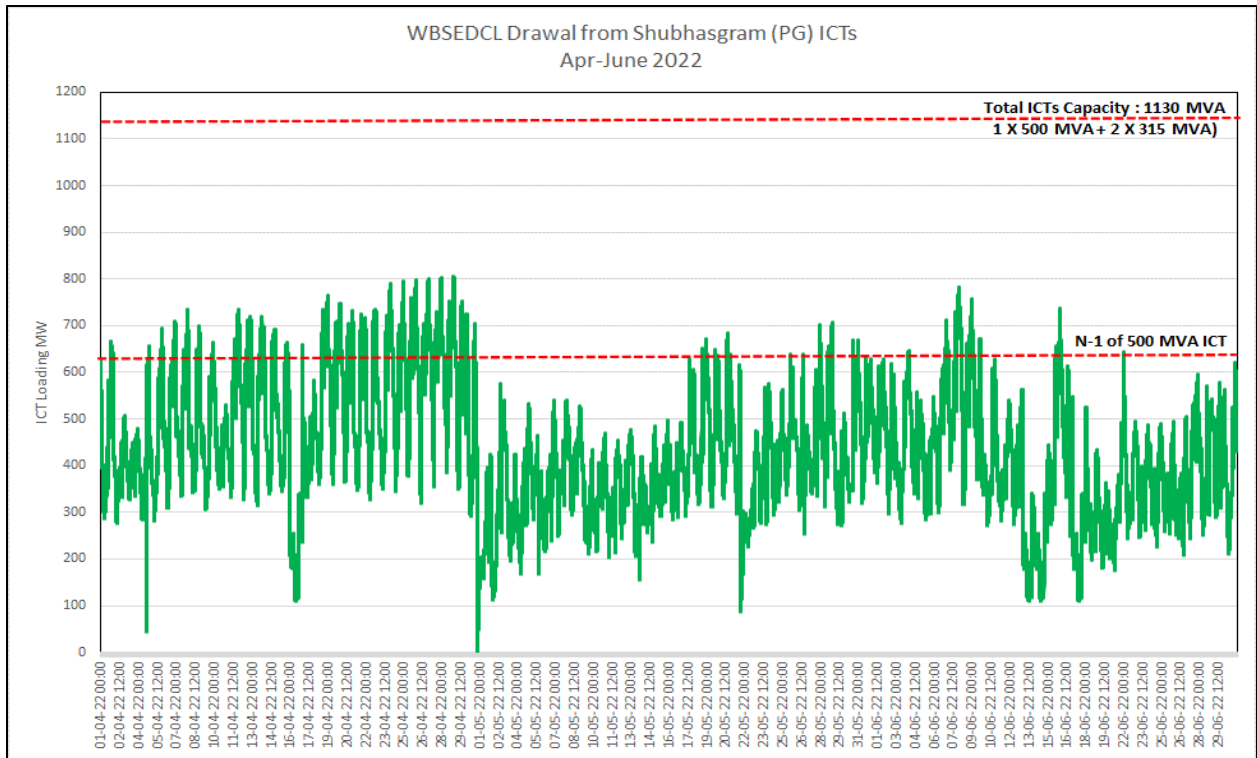
N-1 compliance limit from Shubhasgram ICTs (1 X 500 MVA + 4 X 315 MVA) is 1300 MW considering outage of 500 MVA ICT in Shubhasgram. However, here two ICTs (ICT 3 & 4 of 315 MVA each) are installed by CESC and 3 ICTs (1 X 500 + 2 X 315 MVA) are for drawl of WBSEDCL from ISTS system. Thus, finding N-1 and proportioning who is responsible for N-1 violation for ICTs loading becomes difficult. To find the N-1 violation limit individually for CESC and Shubhasgram, a simplified method is assumed:

- For CESC: 2 X 315 MVA ICT 3 and 4 are of CESC to meet CESC radial load and thus its N-1 limit is half that is 315 MVA.
- For West Bengal: 2 X 315 MVA + 500 MVA ICT are for drawl by WBSEDCL. Thus N-1 is basically outage of 500 MVA ICT and thus it's N-1 limit is 630 MVA.

So, as per this philosophy, CESC violated N-1 limit for 74.22 % and WBSEDCL violated N-1 limit for 10.71 % of time from April 2022 to June 2022.



**\*CESC drawal was calculated from 220 kV Shubhasgram (PG)-EMSS D/C (CESC also has 132 kV connectivity from Shubhasgram (WB) which is not considered here)**

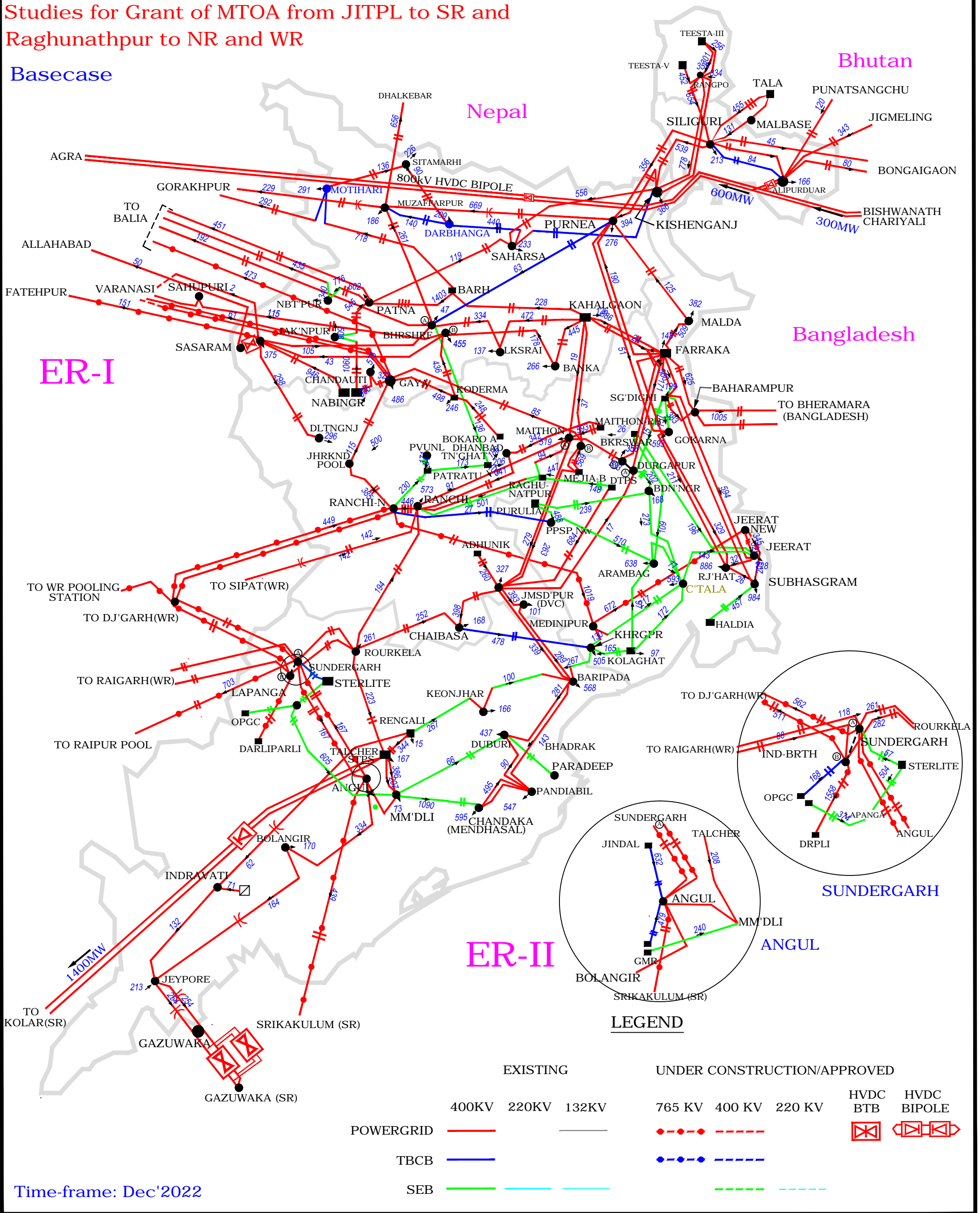


**\*WBSEDCL drawl was calculated from 220 kV Shubhasgram (PG)-Shubhasgram (WB) D/C +220 kV Shubhasgram (PG)-Newtown AA3 S/C + Shubhasgram (PG)-Bantala S/C ( some portion of 132 kV radial drawl of CESC from 132 kV network is also here)**

# POWER MAP OF EASTERN REGION

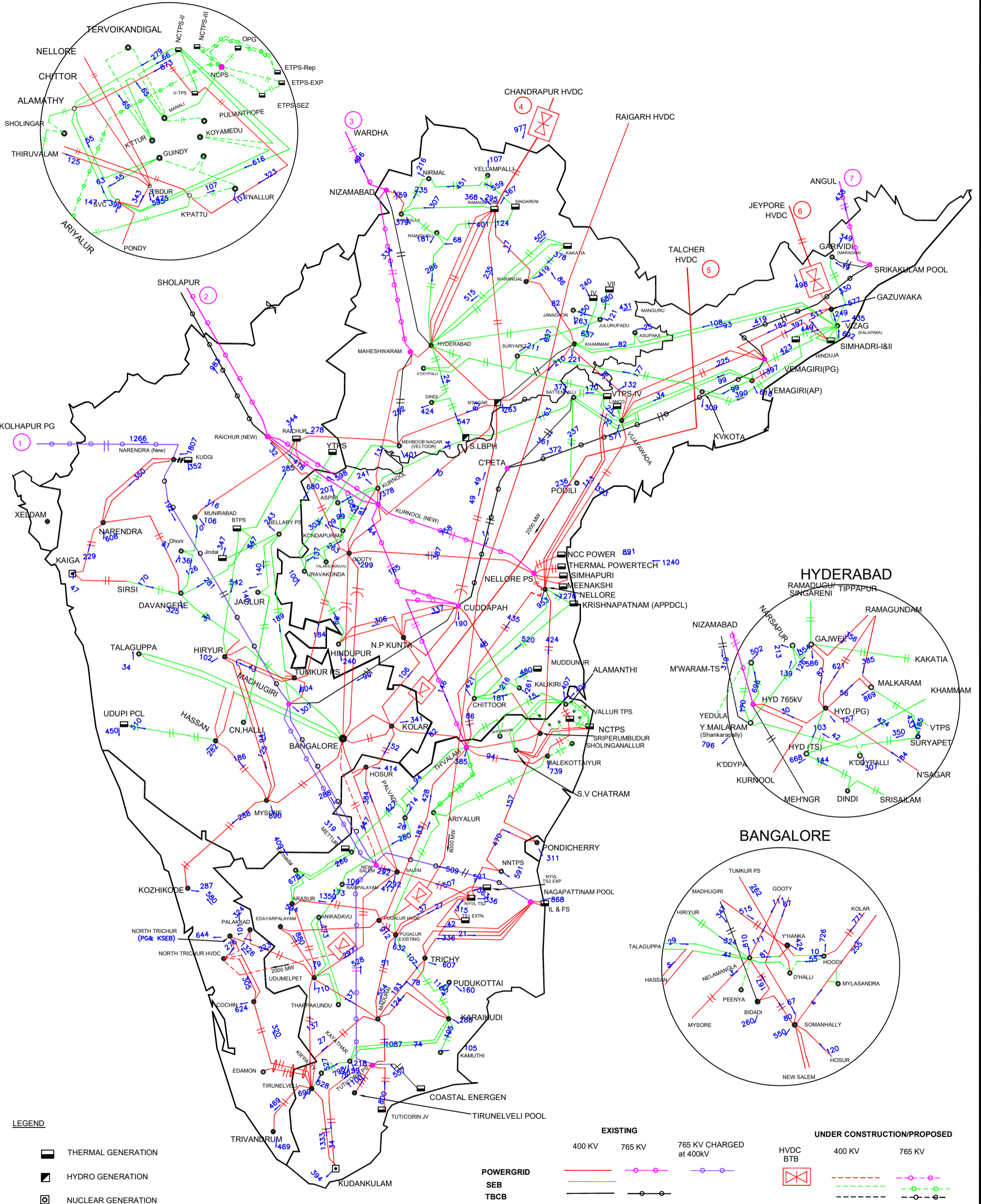
Studies for Grant of MTOA from JITPL to SR and Raghunathpur to NR and WR

Basecase

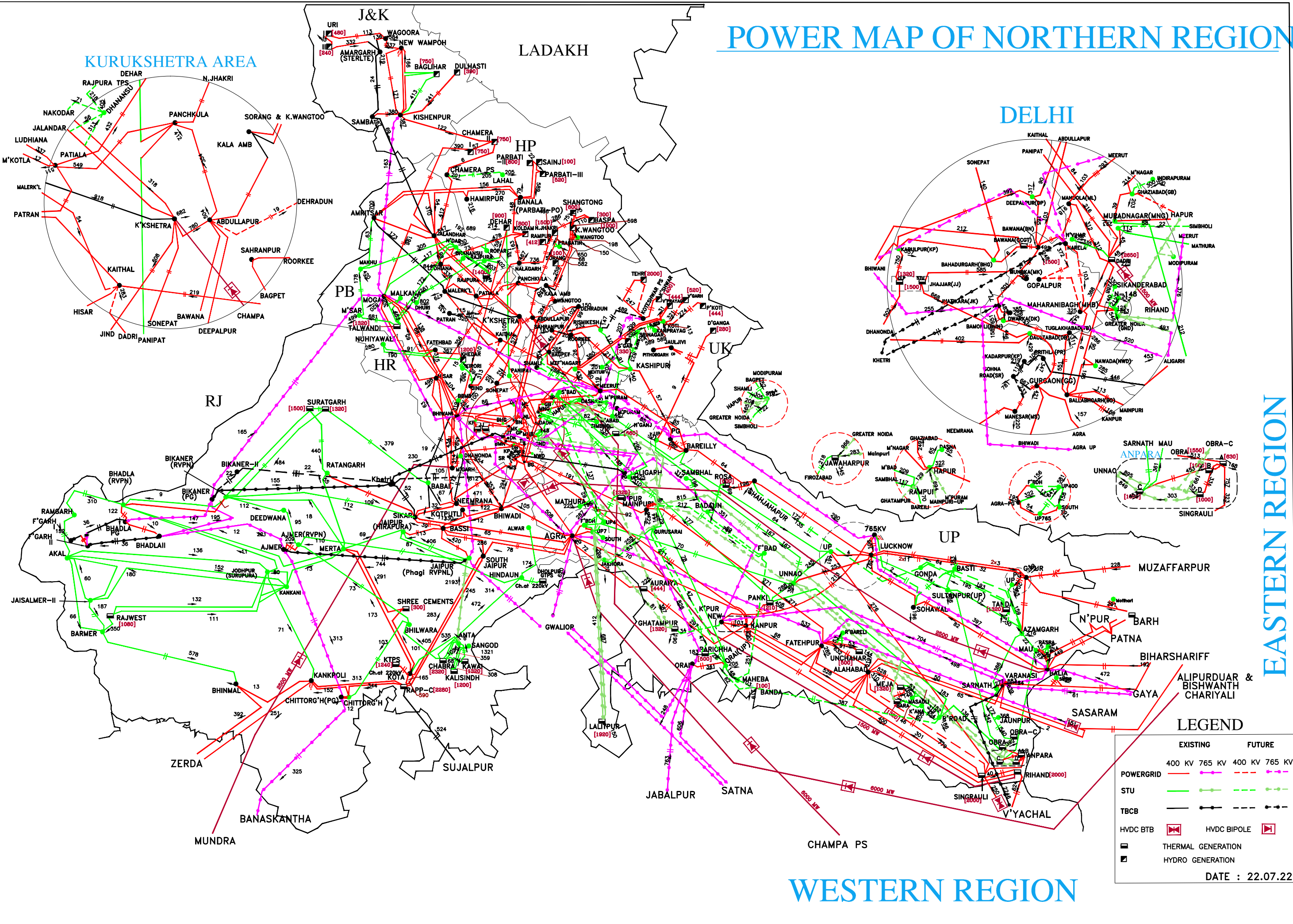


# POWER MAP OF SOUTHERN REGION (765/400 KV LINES)

## CHENNAI - INSET



# POWER MAP OF NORTHERN REGION



**LEGEND**

	EXISTING	FUTURE
POWERGRID	400 KV 765 KV	400 KV 765 KV
STU		
TBCB		
HVDC BTB		HVDC BIPOLE
	THERMAL GENERATION	
	HYDRO GENERATION	

DATE : 22.07.22

## WESTERN REGION

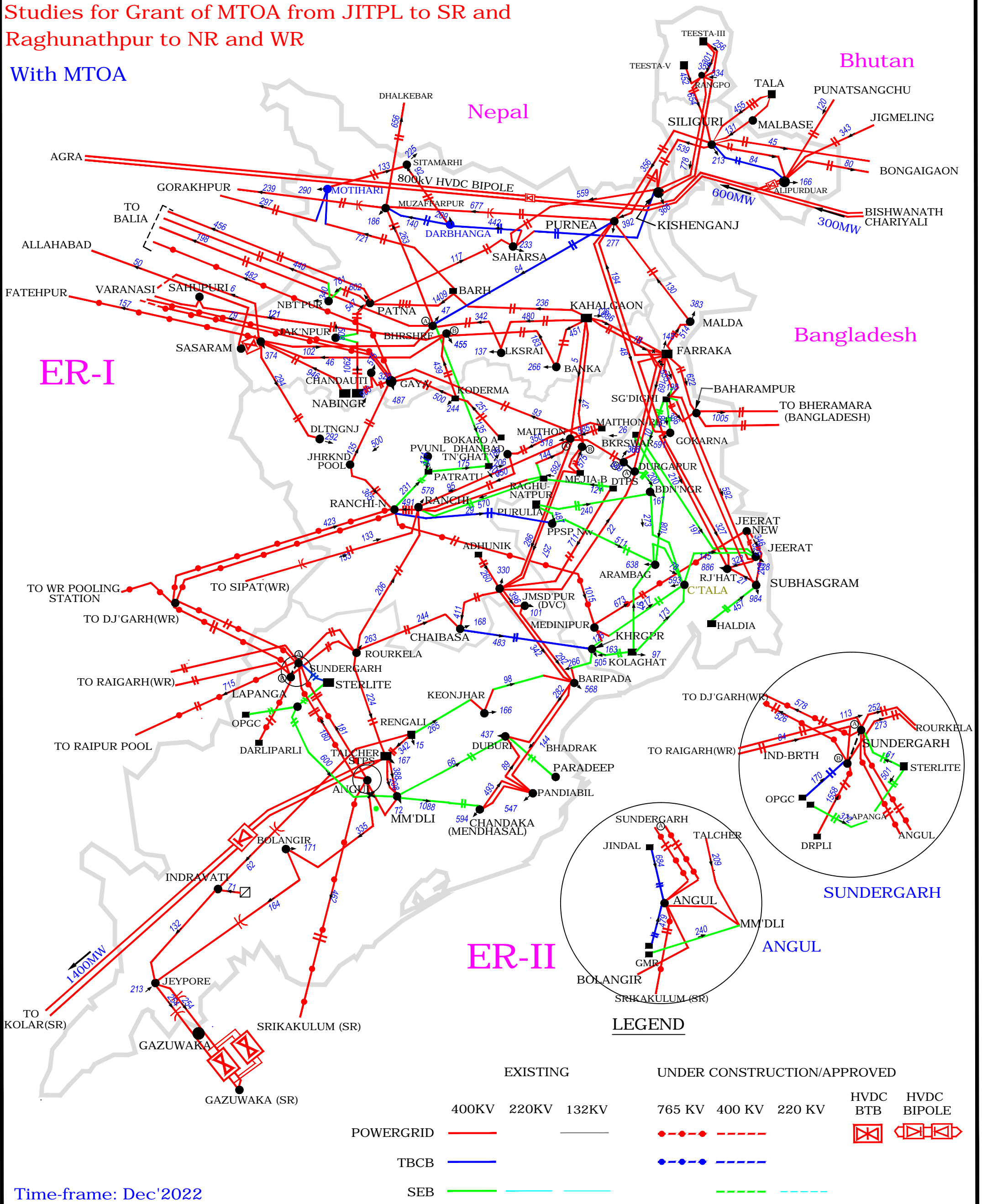
## EASTERN REGION



# POWER MAP OF EASTERN REGION

Studies for Grant of MTOA from JITPL to SR and Raghunathpur to NR and WR

With MTOA



ER-I

ER-II

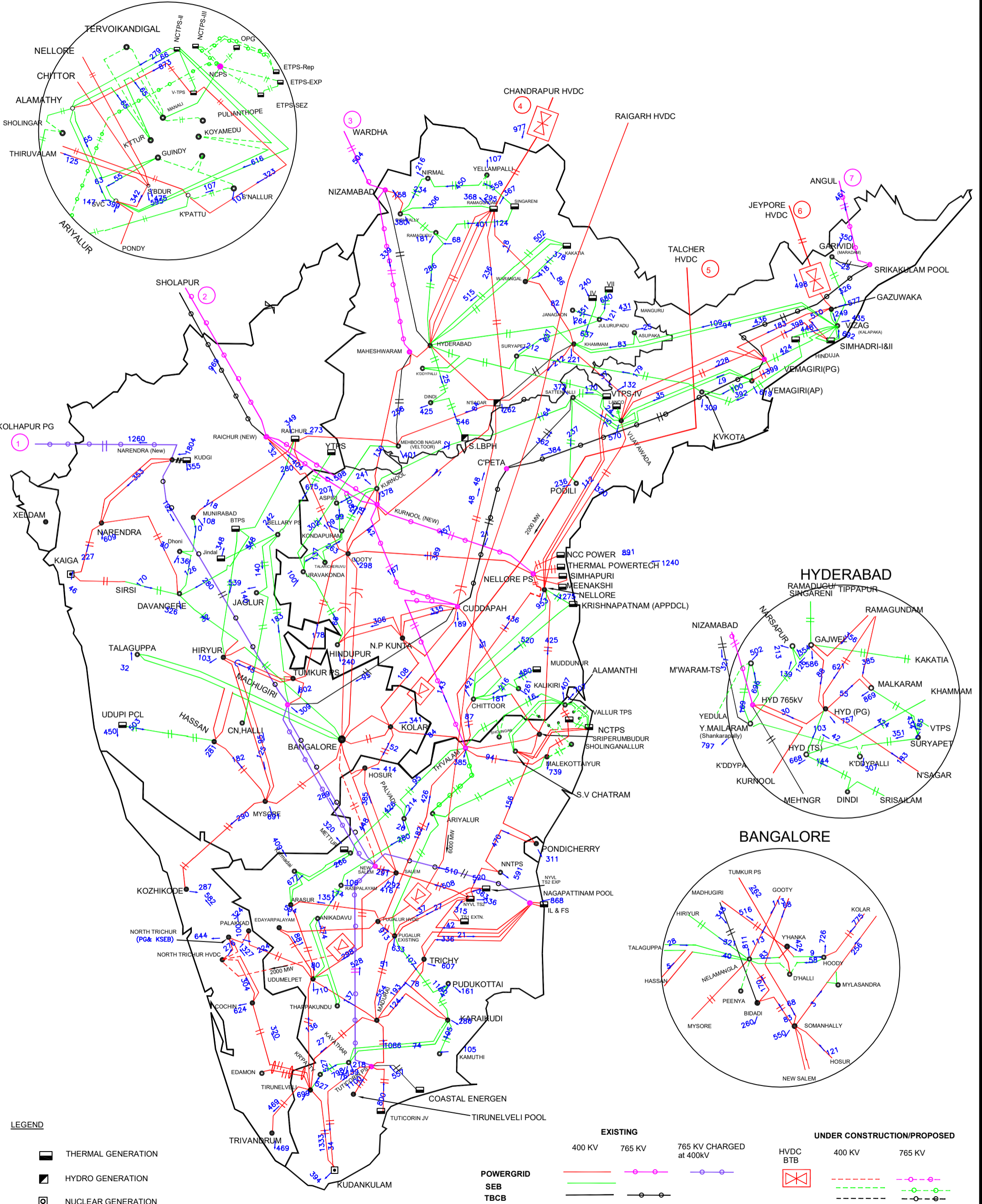
### LEGEND

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

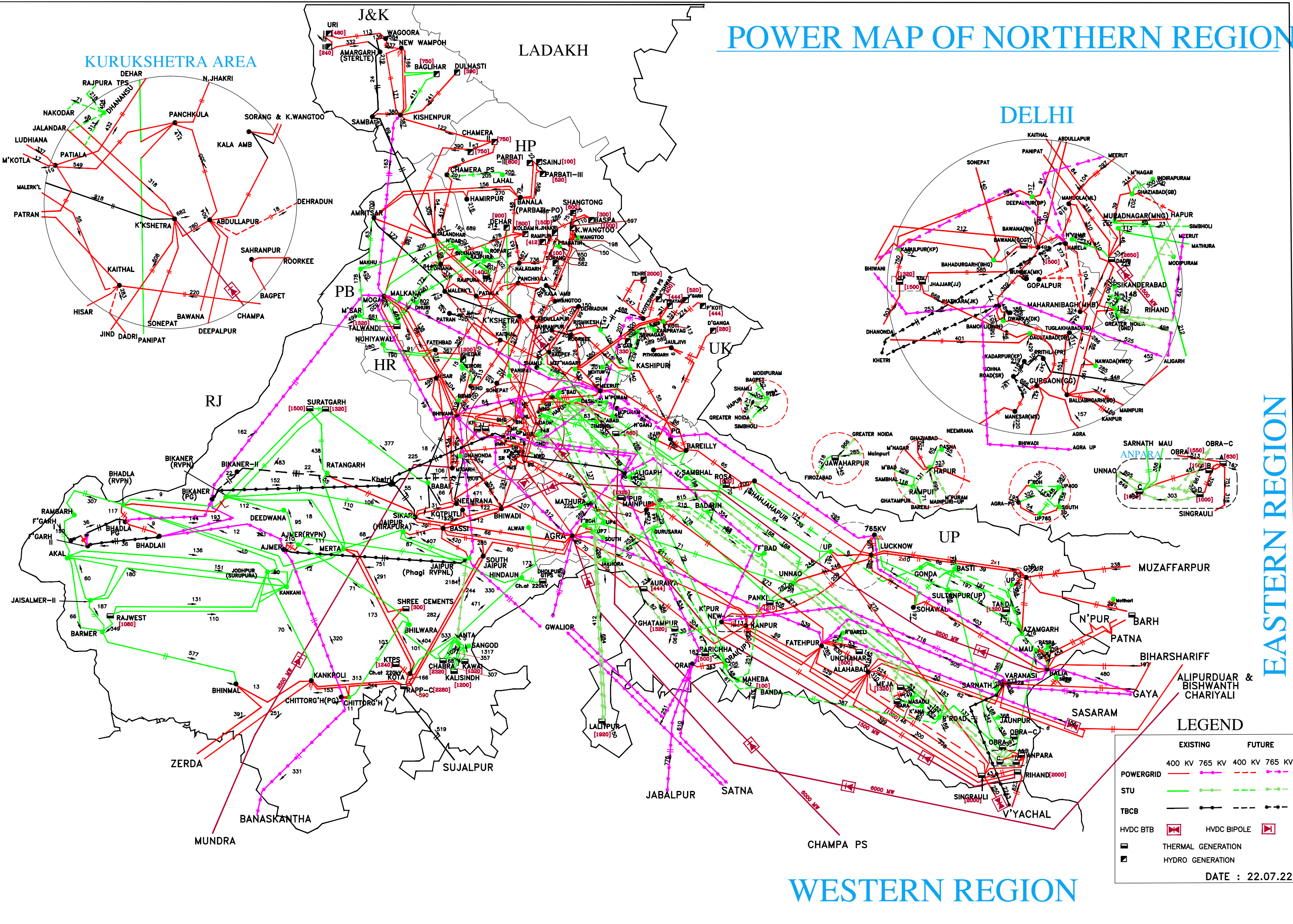
Time-frame: Dec'2022

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

## CHENNAI - INSET



# POWER MAP OF NORTHERN REGION



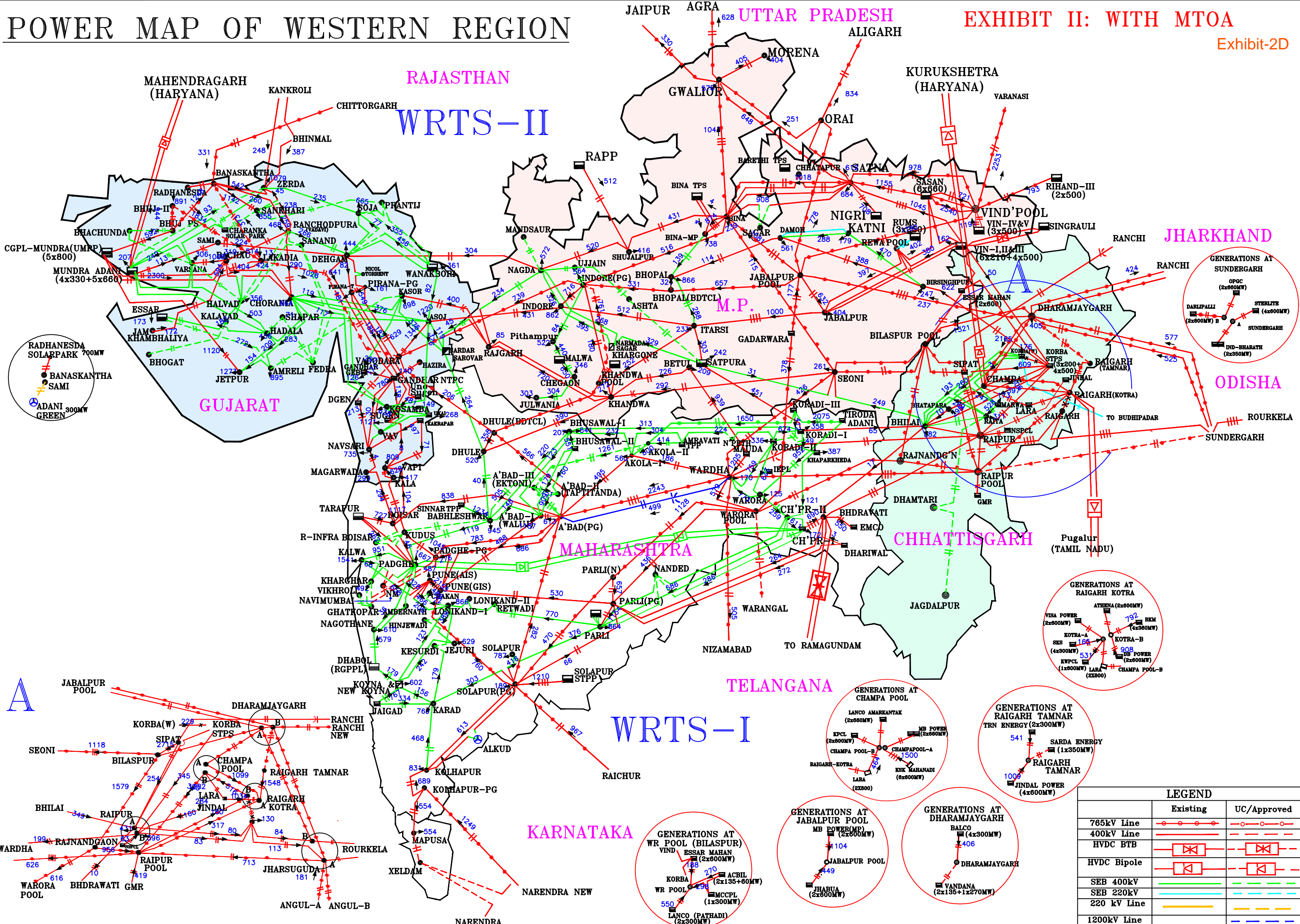
EASTERN REGION

WESTERN REGION

# POWER MAP OF WESTERN REGION

EXHIBIT II: WITH MTOA

Exhibit-2D



LEGEND		
	Existing	UC/Approved
765kV Line		
400kV Line		
HVDC BTB		
HVDC Bipole		
SEB 400kV		
SEB 220kV		
220 kV Line		
1200kV Line		