

I/2200/2018



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

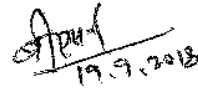
विषय : पारेषण तंत्र पर पूर्वी क्षेत्र स्थायी समिति (ईआरएससीटी) की प्रथम बैठक का कार्यवृत्त ।
Subject: 1st meeting of Eastern Region Standing Committee on Transmission (ERSCT) – Minutes.

महोदय(Sir)/महोदया(Madam),

पारेषण पर पूर्वी क्षेत्र स्थायी समिति (ईआरएससीटी) की पहली बैठक 16 जुलाई, 2018 को कोलकाता में आयोजित की गई थी। बैठक का कार्यवृत्त संलग्न है।

The 1st meeting of Eastern Region Standing Committee on Transmission (ERSCT) was held on 16th July 2018 at Kolkata. Minutes of the meeting is enclosed herewith.

भवदीय/Yours faithfully,


19.9.2018

(बी.एस.बैरवा/ B.S.Bairwa)

निदेशक/ Director

Copy for kind information to:

1) PPS to Member PS, CEA

Minutes of 1st meeting of ERSCT (16.07.2018)**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 Tel. No. 0124-2571816 Fax No.0124-2571932
9. Director (System Operations), POSOCO B-9, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016 Tel. No. 26852843 Fax No. 2626524525, 26536901	

Special Invitee :

1. Chairman-cum-Managing Director,
Damodar Valley Corporation
DVC Towers, VIP Road,
Kolkata-700054.

Minutes of 1st meeting of Eastern Region Standing Committee on Transmission (ERSCT) held on 16th July 2018 at Kolkata

List of the participants is enclosed at **Annexure-I**.

Member (PS), CEA welcomed the participants. He stated that Ministry of Power, Govt. of India vide its order dated 13th April 2018, has constituted Eastern Region Standing Committee on Transmission (ERSCT) for planning of Transmission System in the Eastern Region in place of existing Standing Committee on Power System Planning. Accordingly, this is the first meeting of newly constituted Standing Committee. He thanked POWERGRID for hosting the meeting in the "City of Joy" Kolkata. After brief introduction of the participants, he requested Chief Engineer, CEA to start the proceedings.

Chief Engineer (PSPA-II), CEA stated that agenda points for this meeting inter-alia includes perspective intra-State transmission plan of Jharkhand, system strengthening schemes/ proposals of Orissa, West Bengal and follow up actions of the previous Standing Committee Meeting on Power System Planning. He informed that this is the first meeting of ERSCT. He stated that the MoP vide letter dated 13th April 2018, (copy enclosed at **Annexure-II**) have reconstituted the "Empowered Committee on Transmission" (ECT), "National Committee on Transmission"(NCT) and Regional Standing Committees on Transmission (SCT) for planning of Transmission System.

- The constitution of the "Eastern Region Standing Committee on Transmission" (ERSCT) for planning of Transmission System in the Region has been revised as given below:
 1. Member (Power System), Central Electricity Authority (CEA) as Chairperson
 2. Chief Operating Officer, Central Transmission Utility (POWERGRID) as Member
 3. Director (System Operation), Power System Operation Corporation Ltd. as Member
 4. Heads of State Transmission Utilities (STUs) of Bihar, Jharkhand, West Bengal, Odisha, Sikkim, Andaman Nicobar Islands as Member (STUs to coordinate with their respective Distribution Companies DISCOMs)
 5. Member Secretary of Eastern Region Power Committee as Member
 6. Chief Engineer (from Power System Wing), Central Electricity Authority (CEA) as Member Secretary
- The Terms of Reference (ToR) of ERSCT are as follows:
 - (i) Evolve and finalize system strengthening schemes for removal of operational constraints and transfer of surplus power through inter- regional corridors

- (ii) Examine the proposals for transmission systems for access/ connectivity applications
- (iii) Examine the associated transmission systems with electricity generators
- (iv) Review the up- stream and down -stream network associated with transmission schemes
- (v) Examine and evaluate the intra- state transmission proposals

Further, Chief Engineer (PSPA-2), CEA informed that as per new notification of committee, STU has to coordinate with respective Discoms for development of intra-state as well as inter-state transmission system in the region.

He requested Director (PSPA-II), CEA to take up the agenda.

1. Minutes of 19th Standing Committee Meeting on Power System planning of Eastern Region (SCSPER).

- 1.1 Director, CEA informed that the minutes of the 19th meeting of the Standing Committee on Power System Planning, held on 01st September, 2017 at Kolkata were circulated vide CEA letter no. 66/5/2017/PSPA-2/1430-1444 dated 09th November, 2017. No comments have been received on the minutes of meeting.

Follow up issues of Previous Standing Committee Meetings

2. Installation of 3rd 400/220kV, 500MVA ICT at Patna (POWERGRID) S/s

- 2.1 Director, CEA stated that in the 19th meeting of SCSPER held on 01-09-2017, installation of 400/220kV, 500MVA 3rd ICT at Patna (POWERGRID) S/s was agreed with following scope:
- (a) Shifting of one of the existing 420kV, 125MVA bus reactors at Patna and installation of the same in one of the circuit of Barh-Patna lines as switchable line reactor, which can be used as bus reactor in case of outage of line.
 - (b) Space created by shifting of bus reactor would be utilised for placement of 500MVA ICT.
 - (c) Additional 400/220kV, 500MVA ICT (3rd) along with associated bays at Patna.
- 2.2 He further informed that MoP vide letter no. 15/2/2017 (Part-I)-Trans dated 10-01-2018 has entrusted POWERGRID to implement the above works through Regulated Tariff Mechanism(RTM) as part of ERSS-XII scheme.
- 2.3 POWERGRID informed that the 3rd 400/220kV ICT at Patna (POWERGRID) S/s has already been commissioned.
- 2.4 Members noted the same.

3. Modifications in the scope of works under the on-going ERSS-XVIII scheme

3.1 Director, CEA informed that in the 19th meeting of SCPSPER held on 01-09-2017, it was decided that LILO of Jeerat-Subhasgram 2nd 400kV line at Rajarhat S/s under ERSS-XVIII (being implemented by M/s POWERGRID Medinipur Jeerat Transmission Ltd.) needs to be deleted from the scope of the scheme. It was also decided that final decision with regard to deletion of scope of LILO and associated bay extension works at Rajarhat S/s would be taken up in a separate meeting by CEA with all LTTCs of ERSS-XVIII project. Accordingly, a meeting was held at CEA on 28-12-2017, wherein it was decided to drop the scope of implementation of LILO of Jeerat-Subhasgram 2nd 400kV line at Rajarhat S/s under ERSS-XVIII scheme. As none of the LTTCs were present in the meeting, they were requested to communicate their views on the decision within 30 days from date of issue of minutes. Further a time extension till 15-03-2018 was provided to LTTCs for furnishing comments on the matter. As no comments were received, the decision of deletion of LILO of 2nd circuit of Jeerat – Subhasgram 400kV line at Rajarhat was considered as final. Accordingly, the revised scope of works under ERSS-XVIII would be as follows:

Sl. No.	Transmission Element	Remarks
Under the scope of M/s POWERGRID Medinipur Jeerat Transmission Ltd. (TBCB route)		
1.	<p>Establishment of 765/400kV, 2x1500MVA substation at Medinipur</p> <p><u>765kV</u></p> <ul style="list-style-type: none"> • ICTs: 7×500 MVA, 765/400kV (1-phase unit including 1 spare unit) • ICT bays: 2 no. • Line bays: 4 no. • Bus reactor: 7×110 MVAR single phase units including one (1) spare unit • Bus reactor bay: 2 no. • Space for future line bays (along with space for switchable line reactor): 4 no. • Space for future ICT bays: 2 no. • Space for future 765/400 kV ICT: 6x500MVA single phase units <p><u>400kV</u></p> <ul style="list-style-type: none"> • ICT bays: 2 no. • Line bays: 4 no. • Bus reactor: 2×125 MVAR • Bus reactor bay: 2 no. 	No change

Sl. No.	Transmission Element	Remarks
	<ul style="list-style-type: none"> • Space for future line bays (along with space for switchable line reactor): 6 no. • Space for future ICT bays: 2 no. 	
2.	<p>Establishment of 765/400kV, 2x1500MVA substations at Jeerat (New)</p> <p><u>765kV</u></p> <ul style="list-style-type: none"> • ICTs: 7×500MVA, 765/400kV (1-phase unit including 1 spare unit) • ICT bays: 2 no. • Line bays: 2 no. • Bus reactor: 7×110 MVAR single phase unit including one (1) spare unit • Bus reactor bay: 2 no. • Space for future line bays (along with space for switchable line reactor): 4 no. • Space for future ICT bays: 2 no. • Space for future 765/400 kV ICT: 6x500MVA single phase units <p><u>400kV</u></p> <ul style="list-style-type: none"> • ICT bays: 2 no. • Line bays: 4 no. • Bus reactor: 2×125 MVAR • Bus reactor bay: 2 no. • Space for future line bays (along with space for switchable line reactor): 4 no. • Space for future ICT bays: 2 no. 	No change
3.	Ranchi (New) – Medinipur 765kV D/c line with Hexa ACSR Zebra conductor along with 765kV, 240 MVAR switchable line reactor with 750Ω NGR in each circuit at Medinipur end (total: 765kV, 7x80 MVAR single phase units, 1 unit as spare)	No change
4.	Medinipur - Jeerat (New) 765kV D/c line with Hexa ACSR Zebra conductor along with 765kV, 240 MVAR switchable line reactor with 600 Ω NGR in each circuit at Jeerat (New) end (total: 765kV, 7x80 MVAR single phase units, 1 unit as spare)	No change
5.	LILO of both circuits of Chandithala – Kharagpur 400kV D/c line at Medinipur	No change
6.	Jeerat (New) – Subhasgram 400kV D/c line (ACSR Quad Moose current rating at 85° C)	No change
7.	Jeerat (New) – Jeerat (WBSETCL) 400kV D/c line (ACSR Quad Moose current rating at 85° C)	No change

Sl. No.	Transmission Element	Remarks
8.	LILO of Jeerat (WBSETCL) – Subhasgram (PG) 400kV S/c section at Rajarhat (POWERGRID)	<u>Deleted</u>
9.	2 no. 400kV GIS line bays at Jeerat (WBSETCL)	No change
Under the scope of M/s POWERGRID		
1.	2 no. 400 kV line bays at Subhasgram for termination of Jeerat (New) - Subhasgram 400 kV D/c line [ACSR Quad Moose] line	No change
2.	2 no. 400 kV line bays at Rajarhat for termination of LILO of Jeerat (WB) – Subhasgram (PG) 400 kV S/c section at Rajarhat (POWERGRID)	<u>Deleted</u>
3.	2 no. 765 kV line bays at Ranchi (New) for termination of Ranchi (New)- Medinipur 765 kV D/c line	No change
4.	240MVAR 765kV (765kV, 3x80 MVAR single phase units) switchable line reactor with 750Ω NGR in each circuit at Ranchi (New) end of Ranchi (New) – Medinipur 765kV D/c line.	No change

3.2 Members agreed for above revised scope of works under the ERSS-XVIII scheme. POWERGRID Medinipur Jeerat Transmission Ltd. was advised to approach CERC for change of scope in the scheme.

4. Termination of 400kV lines at Jeerat (WBSETCL) S/s under the ERSS-XV and ERSS-XVIII schemes

4.1 Director, CEA informed following 400kV lines are existing / under construction at 400/220kV substation of Jeerat (WBSETCL):

Existing:

- (i) Jeerat (WBSETCL) – Baharampur/Farakka 400kV S/c line of POWERGRID
- (ii) Jeerat (WBSETCL) – Rajarhat/Subhashgram 400kV S/c line of POWERGRID
- (iii) Jeerat (WBSETCL) – Barkeshwar (WBSETCL) 400kV S/c line of WBSETCL
- (iv) Jeerat (WBSETCL) – Kolaghat (WBSETCL) 400kV S/c line of WBSETCL

Under Construction:

- (v) LILO of Sagardighi – Subhashgram 400kV S/c line at Jeerat (WBSETCL) as a part of ERSS-XV by POWERGRID
- (vi) Jeerat (New) – Jeerat (WBSETCL) 400kV D/c line (Quad) as a part of ERSS-XVIII being implemented under TBCB by POWERGRID Medinipur-Jeerat Transmission Ltd.

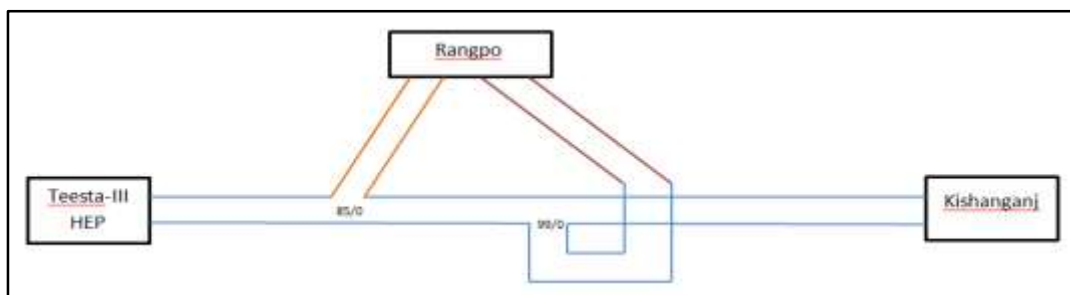
4.2 He stated that there was problem for termination of new 400kV lines being implemented under ERSS-XV and ERSS-XVIII at Jeerat (WBSETCL) S/s. In the 19th meeting of SCSPER, following was decided to resolve the issue:

- (i) Dismantling of dead end towers and termination of existing lines mentioned at 4.1 (i) to (iv) through GIS duct, at the existing 400kV Jeerat AIS S/s (WBSETCL) as ISTS.
 - (ii) Termination of the new lines mentioned at 4.1 (v) and (vi) in GIS extension area of Jeerat (WBSETCL) substation on separate double circuit towers at normal height (around 45 meters).
 - (iii) Further, it was also acknowledged that implementation of LILO of Sagardighi-Subhasgram 400kV S/c line at Jeerat along with associated line bays would get delayed due to addition of above mentioned GIS duct arrangement.
- 4.3 Since the work to be carried out under ISTS may not match the timeline of ERSS-XV & ERSS-XVIII schemes, representative of CTU requested to extend the completion of ERSS-XV & ERSS-XVIII schemes.
- 4.4 After deliberations, it was agreed that, after finalization of implementing agency for the work, a separate meeting would be held in CEA with CTU, POWERGRID, WBSETCL and implementing agency to discuss the extension of completion schedule of ERSS-XV & ERSS-XVIII schemes. Decision of the meeting will be put up before ERSCT for ratification.
- 5. Modifications in the scope of works under the on-going ERSS-XII and ERSS-XVII (Part-B) schemes**
- 5.1 Director, CEA informed that the ERSS-XII and ERSS-XVII (Part-B) schemes inter alia includes following scope of works:
- ERSS-XVII (Part-B):**
- (a) Sasaram ICT-1 (released after replacement) may be diverted to Durgapur instead of Farakka
- ERSS-XII:**
- (a) New Purnea ICT-2 (released after replacement) may be diverted to Farakka instead of Durgapur
 - (b) Patna ICT-1 (released after replacement) may be diverted to Jamshedpur as ICT-3
- 5.2 Representative of CTU stated that Sasaram ICT-1 (released after replacement) has been diverted to Durgapur. However, Patna ICT-1 (released after replacement), which was diverted to Jamshedpur, burnt after installation. Accordingly, New Purnea ICT-2 (released after replacement) has been sent to Jamshedpur instead of Farakka. A new ICT, which was under procurement process to replace the burnt Patna ICT-1, is now proposed to be installed at Farakka as ICT-2. As delivery and installation of new ICT would take about 15-18 months time, CTU requested for extension in completion schedule of ERSS-XII by about 18 months.

- 5.3 Director, CEA enquired about the funding for procurement of the new ICT to replace the burnt ICT. Representative of CTU clarified that the new ICT would be procured through the insurance claim against burnt ICT.
- 5.4 Chief Engineer, CEA stated that there is only one transmission line in Farakka, therefore, the ICT may not be required on urgent basis. He suggested that the new ICT may be utilized at some other location, where immediate requirement can be met. It is opined that the necessity of ICT at Farakka has already been agreed in the previous Standing Committee meeting.
- 5.5 After deliberations, following modifications in ERSS-XII scheme was agreed with extension in completion schedule by 18 months from the scheduled COD:
- (a) New Purnea ICT-2 (released after replacement) to be diverted to Jamshedpur for installation as ICT-3.
 - (b) New ICT, which is being procured to replace the burnt ICT at Patna, to be diverted to Farakka for installation as ICT-2.

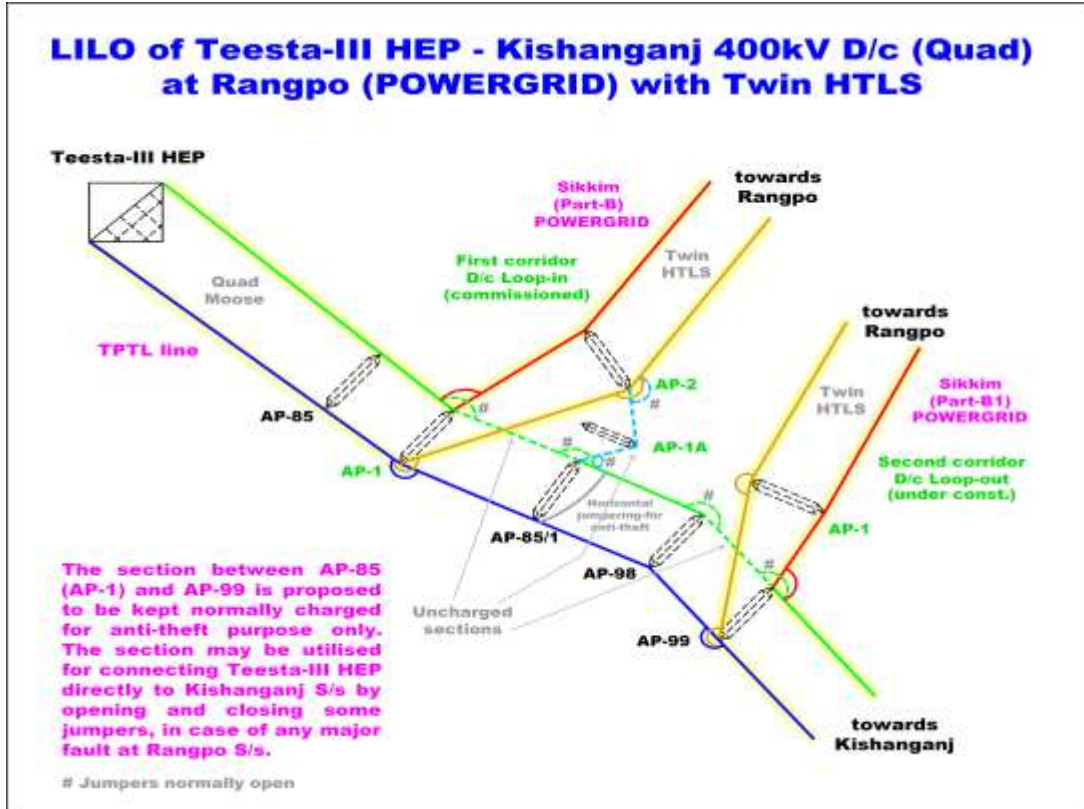
6. LILO of Teesta-III HEP – Kishanganj 400kV D/c (Quad) line at Rangpo

- 6.1 Representative of CTU informed that LILO of one circuit of Teesta-III HEP – Kishanganj line of M/s TPTL at Rangpo(at tower location No. AP-85/0) has been completed by POWERGRID as part of Transmission System for Transfer of power from generation projects in Sikkim to NR/WR (Part-B) scheme. However, since Rangpo – Kishanganj section of Teesta-III HEP – Kishanganj 400 kV line is not ready, the LILO section is being utilised for connecting Teesta-III and Dikchu HEPs to Rangpo S/s. LILO of second circuit of Teesta-III HEP – Kishanganj 400 kV line of M/s TPTL at Rangpo(at tower location No. AP-99/0) is under the scope of POWERGRID and is being implemented as part of Transmission System for Transfer of power from generation projects in Sikkim to NR/WR (Part-B1) scheme.



- 6.2 He further stated that due to difficult terrain involving steep hills and forest area it would be difficult to cross the LILO of 2nd circuit of Teesta-III HEP – Kishanganj 400kV D/c (Quad) line at Rangpo S/s to the other circuit (as shown in above arrangement). Moreover, this would also result in high cost (due to increased line length and usage of heavy towers with uneven leg extensions) and damage to forest area.

- 6.3 In view of above constraints, CTU had proposed D/C Loop-in of Teesta-III HEP – Kishanganj line at Rangpo at location AP-85 (AP-1) and D/c Loop-out of Teesta-III HEP – Kishanganj line from Rangpo at location AP-99 (or any adjacent location) (the proposed arrangement is shown below). It was also proposed to keep the section between AP-85 (AP-1) and AP-99 charged as an anti-theft measure, which may be utilised for connecting Teesta-III HEP directly to Kishanganj S/s bypassing Rangpo S/s by opening and closing some jumpers at tower locations of the line, in case of any major fault at Rangpo S/s.



- 6.4 After deliberations, the proposal of CTU was agreed.

7. Connectivity and LTA application of Odisha Integrated Power Ltd. (Odisha UMPP) and transmission system for power evacuation

- 7.1 Director, CEA stated that in the 19th meeting of SCSPER held on 01-09-2017, the following transmission system was finalized for Odisha-UMPP (6x660MW) of Odisha Integrated Power Limited (OIPL):

- Split bus arrangement at Odisha UMPP (3x660MW in Section-A and 3x660MW in Section-B)
- LILO of Sundargarh-A – Dharamjaygarh 765kV D/c line at Odisha UMPP-A
- Odisha UMPP-B – Sundargarh-B 765kV D/c line
- Ranchi (New) – Gaya 765kV D/c line

- 7.2 Representative of CTU stated that connectivity and LTA applications for 4000MW Odisha UMPP was submitted by Odisha Integrated Power Ltd.

(OIPL), wholly owned subsidiary of PFCCL in June, 2014. OIPL in their Connectivity and LTA applications, had not clarified the unit size of the generation project and the decision of choosing unit size was left to the successful bidder. OIPL vide email dated 13-03-2018 has informed the unit size as 5x800MW. Further, OIPL has provided a letter of MoP in which the tentative allocation agreed in the meetings held on 10-07-2006 and 19-09-2006 is mentioned. As the evacuation system was planned considering 6x660MW units with split bus arrangement at the UMPP bus (3x660MW in Section-A and 3x660MW in Section-B), revised studies for 2023-24 timeframe has been carried out with 5x800MW capacity (3x800MW in Section-A and 2x800MW in Section-B and vice-versa) for Odisha UMPP.

- 7.3 Considering the developments, the issue was discussed in a meeting held on 03-07-2018 at CEA, wherein, the revised studies for evacuation of Odisha UMPP was deliberated. Based on load flow analysis, following revised transmission system for evacuation of power from Odisha UMPP was proposed:
- (a) Generation voltage to be stepped-up to 765kV
 - (b) Switchgears should be designed for short time current rating of 50kA (or higher) (for 1sec)
 - (c) Split bus at Odisha UMPP (3x800MW in Section-A and 2x800MW in Section-B)
 - (d) LILO of both circuits of Sundargarh-A – Dharamjaygarh 765kV D/c line at Odisha UMPP-A
 - (e) Odisha UMPP-B - Sundargarh-B 765kV D/c line
 - (f) Ranchi (New) – Gaya 765kV D/c line
- 7.4 Director, CEA stated that power from the UMPP can be evacuated, without Ranchi – Gaya 765 kV D/c line, accordingly, the line may not be required as a part of the evacuation system of project. Representative of CTU stated that with construction of Ranchi – Gaya 765 kV D/c line, the 765kV ER-WR and ER-NR corridors would be connected and it would reduce the power losses also. Director, CEA stated that for above of 765kV connectivity with NR & WR, the line can be proposed as system strengthening scheme.
- 7.5 Member (Power System), CEA enquired about the commissioning schedule of Odisha UMPP. Representative of CTU replied that as per information available with them, the first unit would be commissioned in April, 2024 and each subsequent unit at an interval of 6 months thereafter. He also informed that Standard Bidding Documents (SBD) is under modification by Ministry of Power. After finalization of the SBD, bidding for the UMPP would take place.
- 7.6 Representative of BSPTCL stated that TBCB projects are normally implemented in 2-3 years, therefore the evacuation system may be planned before 2-3 years of commercial operation of the project. Representative of CTU stated that the system may be finalised now, however, the system would be implemented in matching time frame of the UMPP.

- 7.7 Chief Engineer, CEA suggested that the transmission system of the UMPP can be optimised by placing sectionaliser between two split buses proposed at UMPP switchyard. He added that in case of fault in any of the transmission lines, the power could be evacuated by closing the sectionaliser. He also opined that LILO of one circuit of the Sundargarh-A – Dharamjaygarh 765kV D/c line at Odisha UMPP-A would be sufficient to evacuate the power at UMPP-A.
- 7.8 Member Secretary, ERPC stated that any new proposal /system strengthening should include implication of POC charges on each state. Representative of CTU replied that it is difficult to get an accurate estimation of the PoC charges on each state for the future proposals of system strengthening likely to come in next 4 to 5 years.
- 7.9 Member Secretary, ERPC stated that tentative allocation could also change as the states can change their opinion depending on time frame of implementation of the project. States agreed with the views of MS, ERPC.
- 7.10 Representative of CTU stated that CERC vide Amendment dated 17-02-2016, has directed CTU not to hold any connectivity/Access application in abeyance and process them within the timeline prescribed in Regulation 7 of the Connectivity Regulations.
- 7.11 Keeping in view the schedule commissioning of Odisha UMPP in 2024 and the issues raised on proposed transmission elements, it was decided that CEA, CTU, OPTCL and OIPL may jointly study the evacuation system of Odisha UMPP. The recommendations would be put up before the ERSCT in its next meeting for discussion.

8. Perspective transmission plan of JUSNL up to 2021-22

- 8.1 Director, CEA informed that perspective transmission plan of JUSNL was discussed in the 19th meeting of SCSPER, wherein it was decided that a separate meeting would be held at CEA to discuss the perspective intra-state transmission plan of JUSNL along with DVC. Accordingly, various rounds of discussions were held with stakeholders at CEA on 23-10-2017, 15-11-2017, 04-12-2017 and 13-12-2017, wherein the perspective intra-state transmission plan of JUSNL was finalised. On the basis of studies, following five (5) new 400/220 kV SS were agreed in-principle in intra-state system of JUSNL:

- (a) Jarsidih Substation, (400/220 kV, 2x500 MVA)
- (b) Chandil Substation (New) (400/220 kV, 2x500 MVA)
- (c) Koderma Substation (400/220 kV, 2x500 MVA)
- (d) Mander Substation (400/220 kV, 2x500 MVA)
- (e) Dumka Substation (New) (400/220 kV, 2x500 MVA)

Creation of above substation and interconnections between them would complete the 400kV high-capacity ring viz. Patratu TPS – Koderma – Jasidih-Dumka– Dhanbad (ISTS) – New Chandil – Patratu TPS in Jharkhand, which shall improve reliability of power transfer within the state.

- 8.2 Representative of JUSNL stated that detailed scope of works (enclosed as **Annex-III**) included in their perspective transmission plan for 2021-22 is proposed to be implemented through PPP mode, World Bank funding, and State funding.
- 8.3 Representative of CTU enquired about the commissioning schedule of Patratu (3x800MW) TPS. Representative of JUSNL replied that Patratu Vidyut Urja Nigam Ltd (PVUNL), Unit-1, Unit-2 and Unit-3 are scheduled for commissioning in March 2022, September 2022 and March 2023 respectively.
- 8.4 On query about the progress of Tariff Base Competitive Bidding (TBCB) schemes, representative of JUSNL stated that total work which is to be carried out through TBCB mode is divided into 4 packages, 2 of the packages are under RfP stage and remaining 2 packages are under RfQ stage.
- 8.5 Representative of JUSNL stated that following additional projected loads of Jharkhand, which were not envisaged in 19th EPS, have been taken into consideration for arriving at the total load projection (4561 MW) in JUSNL's jurisdiction by 2021-22:
- The additional bulk industrial load of 950 MW across JBVNL supply area as per the assessment of Industries Department based on the MOUs signed with Govt. of Jharkhand and JBVNL's plan for electrification of 30, 29,567 number of house hold during 2017-2022.
 - Bulk load of 70 MW for supply to NTPC and SAIL.
 - A load of 20 MW considered for proposed Airport at Deogarh.
- 8.6 The representative of CTU stated that there were proposal of new 220kV substation at Patratu, Jasidih and Tamar, whereas these were not discussed in the meetings at CEA.
- 8.7 Representative of JUSNL stated the following, in support of additional transmission elements :
- (i) 220/132/33 kV system extension of under construction 400/220 kV Patratu S/s so as to form 400/220/132/33kV Patratu substation: Due to space constraint, 400/220 kV Patratu_New S/s(under construction) would be linked to 220/132/33 kV Patratu New S/s (proposed in nearby location) through 1.5km 220kV D/c line (with twin moose ACSR conductor).
 - (ii) Upgradation of under constructing 220/132 kV Jasidih S/s to 400/220/132 kV substation: Due to constraint of space in the Jasidih 220/132 kV S/s(under construction), JUSNL have identified land in nearby location(about 2km away) for 400/220 kV Jasidih_New S/s(proposed), which would be linked to Jasidih 220/132 kV S/s through 220kV D/c line(with twin moose ACSR conductor).
 - (iii) Upgradation of existing 132/33 kV Tamar S/s to 220/132/33 kV substation: Due to constraint of space in the existing Tamar substation, JUSNL have identified land in nearby location (about 2km away) for 220/132 kV

Tamar_New S/s(proposed), which would be linked to existing Tamar 132/33kV S/s through 132kV D/c line(with single moose conductor).

- 8.8 Chief Engineer, CEA opined that creation of new substation would definitely be more costly than augmentation of the existing substation because of establishment of complete infrastructure and various auxiliary facilities.
- 8.9 Member (Power System), CEA opined that planned intra-state transmission system for Jharkhand in the time frame of 2021-22 seems to be excess considering projected demand of Jharkhand for 2021-22. This would result higher tariff burden on consumers of Jharkhand. Therefore, optimum system may be planned commensurate with the projected demand.
- 8.10 Representative of POSOCO stated that entire power of Patratu Vidyut Utpadan Nigam Limited (PVUNL) (3x800 MW) could not be absorbed in Jharkhand system. Therefore, there is need for strong inter-connectivity with ISTS. Representative of CTU replied that 85% power of the project is allocated to Jharkhand. He also stated that Patratu generating station has strong ISTS connectivity of PVUNL with ISTS through Ranchi and Chandwa Pool (ISTS) substations. Moreover, the 400kV ring is proposed to be connected to ISTS substations at Dhanbad and Chaibasa.
- 8.11 On the query of Member Secretary, ERPC about consideration of Tenughat power generating station in the studies, PRDC/JUSNL replied that existing station and extension project of Tenughat has also been considered.
- 8.12 After deliberations, members were of the view that Jharkhand may not be able to attain the demand projected by them for 2021-22 time-frame, considering present trend in demand and also projections in 19th EPS. However, the system proposed by JUSNL at 8.2 was agreed with suggestion that the implementation of system may be done in phased manner matching with the growth of the electricity demand in the state.

9. System strengthening in southern Odisha

- 9.1 Director, CEA informed that in the 19th meeting of Standing Committee on Power System Planning for Eastern Region (SCPSPER) held on 01.09.2017, it was decided that a separate meeting would be held at CEA to discuss the intra-state system strengthening issue of Odisha. Subsequently, a meeting was held on 03.07.2018 to discuss above issues and following transmission system for additional feed to Southern Odisha was finalised.
- a) Narendrapur – Therubali – Jeypore 400kV D/c line along with 400kV switching station at Therubali and suitable reactive compensation.
 - b) 765/400kV, 2x1500MVA new substation at Begunia.
 - c) Switchgears at Begunia should be designed for 50kA or higher(for 1 sec) and 63kA (for 1 sec) at 765kV and 400kV levels respectively.
 - d) Angul – Begunia 765kV D/c line

e) LILO of Pandiabil – Narendrapur 400kV D/c line at Begunia

- 9.2 Representative of POSOCO stated that instead of proposing Therubali as a switching station, it can be connected to Bolangir. Representative of OPTCL stated that Narendrapur-Jeypore 400 kV D/c line is around 340 km, therefore, switching stations is proposed at Therubali. He also stated that a pumped storage hydro power plant is also under planning stage near Therubali.
- 9.3 Representative of the POWERGRID stated that space availability for 2 no. 400kV bays at 400 kV Jeypore substation would be checked and it would be intimated.
- 9.4 Representative of the CTU enquired about the reactive compensation at various substations of Orissa. Representative of the OPTCL stated that 1x125 MVAR(400 kV) bus Reactor each at Mendhasal, Meramundli and New Dubri are planned. The funding for the above reactors is proposed from Power System Development Fund (PSDF). After the grant of fund, these reactors would be implemented in 15 months. OPTCL also stated that bus reactors of 1x125 MVAR (400 kV), 2x240 MVAR (765 kV) reactor are also planned at Narendrapur and Begunia substations respectively.
- 9.5 Representative of the CTU stated that 2x125 MVAR (400 kV) bus reactors may be planned at Therubali. Representative of the OPTCL agreed for the same.
- 9.6 On query regarding the status of substations, approved in previous standing committee meetings, representative of OPTCL stated that Meramundli-B substation has already been awarded and the same would be completed by June, 2019. Tendering is in process for Khuntuni substation, this would be implemented by 2020-21. The survey has been completed for Narendrapur substation, this would also be implemented by 2021-22.
- 9.7 After deliberations, the system-strengthening proposal in Odisha as mentioned at para 9.1 above alongwith 2x125 MVAR (400 kV) bus reactors at Therubali, 1x125MVAR (400 kV) bus reactor at Narendrapur and 2x240MVAR (765 kV) bus reactors at Begunia were agreed and the system would be implemented by OPTCL as an intra-state system.

10. Evacuation system for Kamakhyanagar (4x800MW) generation project

- 10.1 Director, CEA stated that in the 19th meeting of Standing Committee on Power System Planning for Eastern Region (SCPSPER) held on 01.09.2017, evacuation plan of Kamakhyanagar TPS (3200MW - 3x800MW in phase-1 and 1x800MW in phase-II) of Odisha was discussed. Wherein, it was decided that a separate meeting would be held at CEA to finalize the evacuation system of Kamakhyanagar generation project. Subsequently, a meeting was held on 03.07.2018 at CEA wherein the issue was deliberated alongwith system study results. In the meeting, following evacuation system for Kamakhyanagar TPS (2400MW) was finalized.

a) Generation step-up to 765kV

- b) Switchgears should be designed for 50kA (or higher) for 1 sec
- c) LILO of Angul – Begunia 765kV D/c line at Kamakhyanagar
- 10.2 Representative of CTU stated that, as per study Odisha could be surplus of about 4000MW in 2023-24 [considering allocations from various newly proposed generation projects like Talcher-III (1320MW), Kamakhyanagar (3200MW), Talabira (3200MW), and Odisha UMPP (4000MW)].
- 10.3 On the query of commissioning schedule of Kamakhyanagar generation project, GRIDCO stated that scheduled COD of unit-1, unit-2 and unit-3 is June 2022, December 2022 and June 2023 respectively.
- 10.4 Member (Power System), CEA expressed that Odisha is planning many intra-state generation projects. They are also having share in ISGS, therefore, Odisha may not be able to absorb the total generation in their system.
- 10.5 Member Secretary, EPRC stated that existing thermal power plants are underutilized, therefore planning of new power plant needs to be done with proper analysis.
- 10.6 Representative of GRIDCO, Odisha stated that Orissa Government is planning to implement this project, as the cost of the generation is less being a pithead power plant. He mentioned that some of the old thermal generating stations in Odisha might be decommissioned. He also stated that some of the planned generation projects may not be commissioned due to various reasons.
- 10.7 After deliberations, the evacuation system for Kamakhyanagar TPS (2400MW) as mentioned at para 10.1 above was agreed which would be implemented by OPTCL as an intra-state scheme. Further, Odisha was advised to prepare load - generation plans such that there should not be any stranded/under-utilized assets in the timeframe 2022-23.

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

- 11.1 Director, CEA informed that many 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 status of implementation of planned/under-construction downstream transmission system is as follows:

A. Existing substations

(a) Chaibasa 400/220kV S/s

- i. Chaibasa (POWERGRID) – Jadugoda (JUSNL) 220kV D/c – Nov, 21.

(b) Daltonganj 400/220/132kV S/s

- i. Daltonganj (POWERGRID) – Latehar 220kV D/c – Apr'19
- ii. Daltonganj (POWERGRID) – Garhwa 220kV D/c – Dec'18
- iii. Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c – Oct'20

(c) Bolangir 400/220kV S/s

- i. LILO of one ckt of Sadeipalli – Kesinga 220kV D/c at Bolangir – Dec '18

(d) Keonjhar 400/220kV S/s

- i. Keonjhar (POWERGRID) – Keonjhar (OPTCL) 220kV D/c – July '18
- ii. Keonjhar (POWERGRID) – Turumunga (OPTCL) 220kV D/c – Dec '19

(e) Pandiabil 400/220kV S/s

- i. Pratapsasan (OPTCL) – Pandiabil (POWERGRID) 220kV D/c – Dec'18

(f) Subashgram 400/220kV S/s

- i. Subashgram (POWERGRID) – Baraipur 220kV D/c line – Dec'19

B. Under Construction substations

(a) Rajarhat 400/220kV S/s: Expected by Dec'19

- i. Rajarhat (POWERGRID) – New Town AA3 220kV D/c – Dec '19
- ii. Rajarhat (POWERGRID) – New Town AA2 220kV D/c – Dec '19
- iii. Rajarhat (POWERGRID) – Barasat 220kV D/c – Dec '19

(b) Dhanbad 400/220kV S/s:

Director, CEA stated that Dhanbad substation was awarded to North Karanpura Transmission Ltd. (NKTL) under TBCB. Since, NKTL has served TSA termination notice to LTTCs and the issue of cancellation of transmission license is pending in CERC. Therefore, time line of Dhanbad substation could not be ascertained.

Representative of JUSNL stated that Tenughat – Govinpur 220kV D/c line would be built and LILO of this line would be done at Jainamore (Bokaro) and Dhanbad in future.

12. Interim connectivity to generation projects through LILO arrangement

- 12.1 Representative of CTU stated that numbers of generation projects were granted Connectivity / Long Term Access (LTA) with strengthening of transmission system. In few cases generation projects were to be commissioned ahead of the anticipated commissioning of the associated transmission system. In such cases, generation projects were given temporary connectivity through loop-in & loopout (LILO) of nearby transmission lines so as to enable them to get connected with the grid and commission their generation projects. 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 are still connected through LILO arrangement.

- 12.2 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.
- 12.3 The progress of dedicated transmission lines of IPPs in Eastern Region, which were connected through interim arrangement, was reviewed and updated status is summarized 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	Ind Barath Energy (Utkal) Ltd.	2x350	LILO removed. Presently disconnected from Grid.	Ind Barath - Jharsuguda 400kV D/c	The project is currently disconnected from the Grid. IBEUL has placed order to increase the tower heights at 4 locations. CTU vide letter dated 18-06-2018, has served notice to IBEUL for termination of TSA in view of not opening/renewing LC as per CERC order dated 08-03-2018 in petition no. 229/RC/2015.
2	Gati Infrastructure Ltd. (Chuzachen)	2x55	LILO of Rangpo - Gangtok 132kV S/c line <i>(granted in Nov'07)</i>	Chuzachen - Rangpo 132kV D/c (with Zebra conductor)	Line completed. Project commissioned on interim arrangement. Line bays at Rangpo end are being implemented by E&PD, Govt. of Sikkim is expected by September'18.
3	Sneha Kinetic Power Projects Pvt. Ltd. (Dikchu)	2x48	LILO of one circuit of Teesta-III – Rangpo 400kV D/c line at Dikchu <i>(granted in Dec'14 by CERC)</i>	Dikchu – Dikchu Pool 132kV D/c	Separate meeting will be held with Sikkim Government at CEA.
4	Shiga Energy Pvt. Ltd. (Tashiding)	2x48.5	LILO of one circuit of RangpoNew Melli 220kV D/c line at Tashiding through Tashiding-New Melli 220kV D/c	Tashiding – Legship Pool 220kV D/c line	Legship Pool S/s is expected by Dec, 19. Representative of E&PD, Govt. of Sikkim stated that status of 2 no. 220kV line bays at New Melli would be intimated later.

New Transmission system proposals

13. **Proposal for installation of 125 MVAR, 420 kV Bus Reactors each at Gokarna, Kharagpur, New Chanditala, New PPSP and Durgapur 400 kV sub-stations of WBSETCL for proper reactive power management of the grid**
- 13.1 Representative of WBSETCL stated that, in view of high ratio of peak vs off-peak demand of West Bengal, they were experiencing very high leading VAR

dominating in the state grid. During winter off-peak hours, very high MVAR is generated from the lightly loaded EHT lines resulting in very high system voltage (beyond IEGC specified limit) at different buses of important 400 kV substations of WBSETCL. This scenario of the EHV grid of West Bengal is well supported by the fact that the state has paid Rs.23.76 Cr as VAR charge during the year 2016-17, in which the maximum charge is paid for leading VAR or for injecting VAR to the grid during off-peak hours.

- 13.2 In view of the above, WBSETCL had proposed 420kV Bus Reactors (BRs) at following locations.

Sl. No.	Name of 400 kV sub-station	Existing Capacity (MVAR)	Proposed Capacity (MVAR)	Max. Bus Volt. in Dec'17 (kV)
1	Durgapur	1x50 (BR)	1x125 (BR)	422
2	Kharagpur	1x80 (BR)	1x125 (BR)	429
3	New Chanditala	1x80 (BR)	1x125 (BR)	430
4	Gokarna	1x80 (BR)	1x125 (BR)	425
5	New PPSP (GIS)	1x80 (BR)	1x125 (BR)	428

- 13.3 After deliberations, the proposal of WBSETCL at para 13.2 for installation of bus reactors was agreed.

14. Establishment of one 220/132/33kV sub-station near Falakata in Jalpaiguri/Coochbehar by LILO of Birpara - Alipurduar 220kV D/C line of POWERGRID

- 14.1 Representative of WBSETCL stated that the load growth at Coochbehar, Dinhata, Falakata & Mathabanga area in Jalpaiguri & Coochbehar district is taking place rapidly. Presently, power supply in these areas is met from Coochbehar 132 kV & Mathabanga 132 kV sub-stations. One 132 kV sub-station is under construction at Dinhata which is expected to be commissioned by 2018-19. Main source of supply to this area is from Alipurduar 220 kV sub-station. There is another 132 kV connectivity with Mathabanga from Moinaguri 132 kV sub-station. Again, Moinguri 132 kV sub-station get power supply from Birpara 220 kV & NJP 220 kV sub-station via Mohitnagar 132 kV sub-station.

- 14.2 For reliable power supply in the area, WBSETCL has proposed to establish 220/132/33 kV sub-station with 2x160 MVA, 220/132 kV Transformers near Falakata with LILO of existing Birpara (PG) – Alipurduar (PG) 220 kV D/C line and 132 kV D/C interconnections to the nearby Mathabanga, Dinhata & Coochbehar 132 kV sub-stations.

- 14.3 After deliberations, following proposals of WBSETCL was agreed for implementation as an intra state scheme/system.

- (a) Establishment of one 220/132/33kV sub-station (with 2x160 MVA, 200/132 kV transformer) near Falakata in Jalpaiguri/Coochbehar
- (b) LILO of Birpara (PG)- Alipurduar(PG) 220kV D/C line at Falakata.

(c) Falakata-Mathabanga 132 kV D/c line

(d) Falakata- Dinhata 132 kV D/c line

(e) Falakata- Coochbehar 132 kV D/c line

15. Construction of 2 nos. 132 kV feeder bays at Malda 400 kV substation of POWERGRID for evacuation of power

15.1 Representative of WBSETCL stated that the main source of power/supply in Malda district is from 400/220/132 kV sub-station of POWERGRID at Malda. The transformation capacity at 220/132 kV level of Malda 400 kV sub-station is 3x160 MVA, 220/132 kV. But for evacuation of power, there exists only one Malda (POWERGRID)-Malda (WBSETCL) 132kV D/c HTLS line. Due to increase in load in this area, desired voltage could not be maintained properly at the consumer premises due to long 33 kV incoming line from Malda 132kV sub-station of WBSETCL.

15.2 To overcome this problem, WBSETCL had proposed establishment of one 132kV sub-station at Manikchak/Paranpur in Malda district with 132kV D/C connectivity from Malda (POWERGRID) sub-station, for which 2 nos. 132kV bays at Malda (POWERGRID) sub-station would be required.

15.3 Regarding space availability for bays at Malda (POWERGRID) S/s, representative of POWERGRID stated that space for two 132kV bays is not available in AIS. However, GIS bays can be accommodated by extending the bus using GIS technology.

15.4 Representative of POWERGRID also stated that at present there is Single Main & Transfer (SMT) scheme at 132 kV level in Malda (POWERGRID) S/s. Since, WBSETCL needs two more 132 kV bays, the bus bar/switching scheme at 132kV level may be replaced with Double Main (DM) scheme for reliability. The scheme needs to be implemented with GIS due to space constraint. Representative of ERLDC and WBSETCL supported the views of POWERGRID.

15.5 After deliberations, replacement of existing Single Main & Transfer (SMT) scheme with Double Main (DM) scheme at 132kV level at Malda (POWERGRID) substation using GIS technology was agreed. It was also agreed to provide 2 no. of 132kV GIS line bays for Manikchak/Paranpur – Malda (POWERGRID) 132kV D/c line. These works would be implemented as ISTS.

16. Evacuation of 280MW Solar Power in Odisha

16.1 Representative of OPTCL stated that they had proposed following transmission system for evacuation of 280 MW (out of 1000 MW) Ultra Mega Solar Park Project of MNRE in the district of Sambalpur & Boudh in Odisha under Green Energy Corridor Phase-II. The 280 MW Solar Park Project, will be implemented at two locations i.e at Jujumara cluster and Manmunda cluster.

Sl. No.	District	Tehasil	Village	Area (in ACS.)	Capacity (MW)	Power Evacuation proposal.
---------	----------	---------	---------	----------------	---------------	----------------------------

Minutes of 1st meeting of ERSCT (16.07.2018)

1	Sambalpur	Jujumora	Niladungri	287.0	55	Pooling substation 400/220/132kV at Nildungri/Jujumara with 400kV LILO of 400kV Meramundali-Lapanga and connectivity to 220kV Kiakata GSS & 132kV Maneswar GSS
			Kuturajori	274.2	55	
			Beldungri	582.1	115	
2	Boudh	Kantamal	Junani	87.5	30	Will be connected to 132/33 kV Sonepur & Boudh GSS through 132/33 kV pooling station at Manmunda
			Ghugulapadar	64.5		
			Kadampal	272	25	
Total				1415.3	280	

- 16.2 Member (PS), CEA stated that for evacuation of 280MW of power, 220kV lines with HTLS conductor would be sufficient. Two levels of transformation (400/220kV and 220/132kV) as proposed by OPTCL will not be required.
- 16.3 Representative of OPTCL stated that they have to build the transmission system in matching time frame with Green Energy Development Corporation Of Odisha Ltd. (GEDCOL) solar projects. It was also informed that the existing 220kV level substation is about 70 km from the solar park location and the 220kV line would have to pass through forest area that would require more time. Therefore, LILO of Meramundli- Lapanga 400kV D/c line at Jujumara (about 9-10km) has been planned.
- 16.4 Director, CEA stated that a meeting was held at 03-07-2018 at CEA, the issue was discussed, wherein it was agreed that the 132kV level would be dropped and 220kV level would be planned at 400/220 kV Jujumera pooling station for interconnecting solar parks. It was also agreed that LILO of one circuit of Meramudli-Lapanga 400kV D/c line at Jujumera would be sufficient for evacuation of around 400MW. It was also mentioned that as per point 16(2) of the Manual on Transmission Planning Criteria of CEA, the 'N-1' criteria may not be applied to the immediate connectivity of wind/solar farms with the ISTS/Intra-STS grid. The following revised proposal was finalised for Jujumera and Manmunda substations :

Scope of Works	
1.	2x315MVA 400/220 Jujumara Pooling Station & Associated Lines
	LILO of one circuit of Lapanga- Meramundali 400kV D/c line at Jujumara
	220kV lines from solar generating stations to Jujumara Pooling station
2.	2x40 MVA 132/33 kV Manmunda Pooling Station & Associated Line

	2 nd Ckt Stringing from Manmunda to Boudh & 132kV LILO of Sonepur-Boudh line at 132 kV Manmunda
	33kV line from literconnecting point to Manmunda Pooling Station

- 16.5 Representative of OPTCL stated that the proposed location of solar power plant has huge solar power potential and the LILO length is only about less 9kms, therefore LILO of both circuit of 400kV Meramundali- Lapanga D/C line would be beneficial, keeping in view future 400 kV connectivity with proposed substation.
- 16.6 Chief Engineer, CEA suggested that to take care of future growth, transformers of 500MVA (400/220 kV) capacity may be considered in place of 315MVA (400/220 kV).
- 16.7 After detail deliberations, following evacuation system for Jujumara and Manmunda substations was agreed for implementation by Odisha as intra-state scheme:

Scope of Works	
1.	2x500MVA, 400/220 Jujumara Pooling Station & Associated Lines
	LILO of both circuits of Lapanga- Meramundali 400kV D/c line at Jujumara
	220kV lines from solar park generating stations to Jujumara Pooling station
2.	2x40MVA, 132/33 kV Manmunda Pooling Station & Associated Line
	2 nd Ckt Stringing from Manmunda to Boudh & LILO of Sonepur-Boudh 132 kV line at 132 kV Manmunda
	33kV line from solar park to Manmunda Pooling Station

- 16.8 Further, Odisha was suggested to plan suitable 420kV bus reactor(s) at the proposed Jujumara 400/220kV S/s for voltage control.

17. Grant of 200MW Connectivity to India Power Corporation Limited (IPCL)

- 17.1 Representative of CTU stated that M/s India Power Corporation Ltd. (IPCL - erstwhile DPSC) had earlier been granted Connectivity of 500MW (based on CERC order in petition no. 158/MP/2012 dated 21-09-2012) through establishment of Chalbalpur S/s along with LILO of one circuit of Mejia –

Maithon 400kV D/c line at Chalbalpur (to be implemented by M/s IPCL) vide intimation dated 12-10-2012.

- 17.2 Subsequently, vide letter dated 28-09-2016, M/s IPCL stated that in view of lower load growth, M/s IPCL has revised its transmission plan and now proposes to establish a 220kV substation at Debipur with 220kV line from Maithon (POWERGRID) S/s instead of its earlier proposed 400kV S/s at Chalbalpur.
- 17.3 Pursuant to above, M/s IPCL vide application dated 30-01-2017 had applied for Connectivity of 200MW to ISTS as Bulk Consumer. Further, M/s IPCL vide its letter dated 03-04-2017 informed that it is a Distribution Licensee and not a Bulk Consumer. Accordingly, CTU vide letter dated 12-04-2017 closed the Connectivity application of M/s IPCL citing that a Distribution Licensee doesn't qualify for grant of Connectivity to ISTS as per the prevailing Connectivity Regulations/Detailed Procedure, 2009.
- 17.4 The matter regarding change in location and system was also discussed in the 12th Connectivity and LTA meeting of ER held on 01-09-2017. After detailed deliberations, M/s IPCL was requested to approach CERC in this regard.
- 17.5 Subsequently, against Petition No. 168/MP/2017 filed by M/s IPCL, CERC has passed an order on 29-01-2018 (order available at CERC website), main extract of order is as follows:
- (a) *"If the CTU network is located near to the load centre and connectivity to the ISTS would result in development of efficient, coordinated and economical transmission system, then connectivity to ISTS cannot be denied to a distribution licensee."*
[Para-18]
- (b) *"The Petitioner is already connected to the ISTS as the transmission of DVC has been declared as ISTS. There is no reason, why the Petitioner should be disallowed to be connected to the ISTS of PGCIL."* [Para-21]
- Further, CERC had directed CTU to grant ISTS Connectivity to M/s IPCL. [Para-22]

- 17.6 Accordingly, as per system studies it was proposed to grant ISTS Connectivity for 200MW to M/s IPCL (for its application dated 30-01-2017) through Debipur (IPCL) – Maithon (POWERGRID) 220kV D/c line along with associated line bays at both ends w.e.f 30-06-2018 (as per application). Agenda note in this regard was circulated through letter dated 05-02-2018, which inter alia also proposed revocation of earlier granted connectivity of 500MW to M/s IPCL (erstwhile M/s DPSC Ltd.) at Chalbalpur substation. Comments on the proposal were received from WBSETCL vide letter dated 12-02-2018, which was replied by CTU on 16-02-2018. CTU vide letter dated 16-02-2018 granted connectivity for 200MW to M/s IPCL in line with CERC order dated 29-01-2018 against petition no. 168/MP/2017 w.e.f 30-09-2019 through Debipur (IPCL) – Maithon (POWERGRID) 220kV D/c line along with associated line bays (2 no. each) at both ends. At the same time, CTU vide letter dated 16-02-2018 revoked the

earlier granted connectivity of 500MW to M/s IPCL (erstwhile M/s DPSC Ltd.) at Chalbapur substation.

17.7 Member noted the information.

Operational feedback report of POSOCO

18. Patna (POWERGRID) – Sipara (BSPTCL) 220kV lines

18.1 Representative of POSOCO stated that there are three 220kV lines between Patna (POWERGRID) and Sipara (BSPTCL) S/s. The third line (200m) has been commissioned recently and length of the same is 50% of that of first two lines (400m). This results in uneven loading on the circuits. Major loads of Patna are fed from 220kV Sipara substation. Further, Sipara is connected with Khagaul as well as Fatuah at 220kV level. These are also major load centres normally fed in radial mode from Patna (except Fatuah, which is usually supplied radially from Biharshariff). Whenever 220kV Sipara-Khagaul is kept in service, it leads to very high loading of 220kV Patna-Sipara D/c and it does not satisfy N-1 security criteria for most of the time. The third 220kV circuit between Patna-Sipara has been commissioned recently. However at present this line could not be operated in parallel with the other two circuits as impedance of the third circuit is 50% of that of other two circuits. So, it is being operated as Patna-Sipara-Khagaul line with no off-take at Sipara (implemented by split-bus operation at Sipara).

18.2 Representative of BSPTCL stated that to increase the impedance of the third line, wave traps have been installed in all the three phases of the 3rd line to balance the loading on the three circuits.

18.3 Members noted.

19. Overvoltage at 400/220kV Arambagh (WBSETCL) S/s

19.1 Representative of POSOCO stated that Arambagh is a major load centre of West Bengal. It is connected to the grid via 5 nos. of 400kV lines. Depending upon mode of operation of pump storage plant at Purulia and load requirements, it is observed that many a times these lines become lightly loaded. Further, after commissioning 400/220kV Chanditala S/s (with LILO of Kolaghat – Jeerat 400 kV D/c line) loading of Arambagh ICTs have reduced. With no shunt reactive compensation at Arambagh, VAR injection from lightly loaded lines along with reduced drawl from 400/220kV ICTs, bus voltage goes very high during night time, particularly in lean hours during winter. Further, he informed that maximum bus voltage has gone up to 438 kV.

19.2 Representative of WBSETCL stated that 420kV, 125MVA bus reactor is being installed at Arambagh S/s, which is expected by Apr 2019.

19.3 WBSETCL was requested to expedite installation of bus reactor at Arambagh.

Other items

20. Evacuation system for Talcher-III (2x660MW) generation project

20.1 Representative of NTPC stated that they were planning to establish a 2x660MW generating plant within the existing Talcher Thermal Power Station Complex in Odisha. He further informed that 50% (622.05MW) of the power is allocated to home state viz. Odisha, 35% to various ER beneficiaries (435.41MW), and 15% is unallocated (186.64MW). Further, PPA has been signed with ER beneficiaries (35%). Accordingly, NTPC requested for finalisation of evacuation voltage level and evacuation system for the Talcher-III generation project.

20.2 Director, CEA stated that the evacuation system for Talcher-III was discussed in 19th meeting of SCSPER held on 01.09.2017 wherein following tentative evacuation system was discussed:

- (a) Talcher-III – Meramundali / Meramundali-B 400kV D/c line (with Quad Moose ACSR conductor) such that one circuit is terminated at Meramundali and other at Meramundali-B

However, Members opined that as the implementation of Talcher-III has been deferred in a high level meeting of Odisha Government, therefore the evacuation system for Talcher-III may be planned and finalized in Standing Committee Meeting after finalization of its implementation schedule.

20.3 Representative of GRIDO, Odisha stated that the project has not been cleared by the Odisha Government so far.

20.4 Representative of NTPC stated that Odisha government has given various clearances like pollution clearance and other clearances. Coal linkages was also finalised for the project. Odisha Government is yet to give single window clearance for the project. He further stated that various packages of the project are under tendering stage. NTPC requires information regarding step up voltage/voltage for evacuation of power from generating station and number of bays at NTPC's switchyard for finalization of the switchyard package.

20.5 Representative of Bihar stated that there should not be any STU connectivity to the project as other states has to pay STU charges for their share of power in addition to ISTS charges.

20.6 Director, CEA stated that evacuation system of Talcher-III would be discussed in detail after finalization of implementation schedule as per decision in 19th meeting of SCSPER. However, the present request of NTPC regarding evacuation voltage and number of bays may be discussed.

20.7 Representative of CTU stated that Odisha wants to draw their share from Talcher-III thermal generating project of NTPC through their own transmission system. However, segregation of units is not possible as Odisha has 50% share from each unit of Talcher-III. However, as discussed in the 19th meeting of SCSPER, the evacuation voltage level of Talcher-III may be kept as 400kV.

- 20.8 After deliberations, NTPC was advised to consider 400 kV as the step-up voltage/voltage for evacuation of power from Talcher-III generation project. Further, 2 no. of 400kV line bays [with switchgears suitable for short time current rating of 63 kA (for 1 sec)] may be considered at generating station for evacuation of power and space may be kept for additional 2 no. of 400kV line bays.

List of the participants of 1st Meeting of ER Standing Committee on Transmission held on 16.07.2018 at Kolkata

Sl. No.	Name	Designation
Central Electricity Authority (CEA)		
1.	P.S.Mhaske	Member (Power System)-In chair
2.	S.K. Ray Mohapatra	Chief Engineer (PSPA-II)
3.	B.S. Bairwa	Director(PSPA-II)
4.	U.M.Rao.Bhogi	Deputy Director(PSPA-II)
5.	S.A.Verma	Asst. Director(PSPA-II)
Eastern Regional Power Commission (ERPC)		
1.	J.Bandopadhyay	Member Secretary
2.	D.K.Bauri	Executive Engineer
3.	J.G.Rao	Executive Engineer
4.	B.Sarkhel	Consultant
Central Transmission Utility (CTU) - POWERGRID		
1.	S Gupta	Executive Director (Odisha Projects)
2.	N K Ohdar	GM I/c (ER-II)
3.	R P Rath	GM, Odisha Projects
4.	Ashok Pal	GM (CTU-Plg.)
5.	SVS Sattyanarayan	Asst GM (AM)
6.	Jyoti Prasad	DGM (CTU-Plg)
7.	Laxmi Kant	Ch. Mgr (CTU-Plg)
8.	Manish Ranjan Keshari	Sr. Engr.(CTU-Plg)
9.	Anupam Kumar	Engr (CTU-Plg)
POSOCO		
1.	P Mukhopadhyay	ED
2.	G Chakraborty	DGM, NLDC
3.	Surjit Banerjee	DGM, ERLDC
4.	Saurav K Sahay	Dy. Mgr(ERLDC)
BSPTCL		

Minutes of 1st meeting of ERSCT (16.07.2018)

Sl. No.	Name	Designation
1.	Bhaskar Sharma	Advisor
2.	Ravi S Prasad	ESE(DCE)
3.	Rajdeep Bhattacharjee	RE,BSPHCL
JUSNL		
1.	C M Mishra	CE(SLDC/ULDC)
2.	Aditya Kumar	ESE, JUSNL
3.	P K Singh	ESE(Trans)
4.	Debarati Basu	PRDC- Head(ER)
5.	Anirban Banerjee	PRDC-Sr Engr(ER)
OPTCL		
1.	L Nayak	Sr GM
2.	N C Swain	CGM -Const.
3.	A K Banerjee	AGM
4.	C R Mishra	DGM
5.	S S Nayak	Sr. GM, PP(GRIDCO)
Sikkim (E&PD)		
1.	Dinesh Kharel	Addl. CE SLDC/Tr.
WBSETCL		
1.	Sabyasachi Roy	Director
2.	Shri A. Karmakar	CE(CPD)
3.	Pralur Kr. kundu	CE,SLDC
4.	Shouvik Banerjee	SE/CPD
NTPC		
1.	Subhash Thakur	Addl. GM(PE-E)
DVC		
1	S K Bose	Chief Engineer(SPE)
2	Jayanta Dutta	DCE(E)
3	Subir Bhadra	DCE(E)
4	Arun Patra	DCE (E)
5	Subrata Ghosal	DCE(E)

No.15/3/2017-Trans
Government of India
Ministry of Power
Shram Shakti Bhawan, Rafi Marg, New Delhi

Dated, the 13th April, 2018

OFFICE ORDER

Subject: - Constitution of a new "Empowered Committee on Transmission" (ECT) in accordance with the Guidelines for Encouraging Competition in Development of Transmission Projects: regarding.

In supersession of this Ministry's Office Order No. 15/3/2010-Trans dated 4.3.2015, the undersigned is directed to state that the existing Empowered Committee headed by Member(PS), CEA shall cease to exist with immediate effect and a new Empowered Committee on Transmission (ECT) has been constituted having following composition:

1	Secretary(Power), Govt. of India	Chairman
2	Chairperson, Central Electricity Authority (CEA)	Member
3	Member(Power System), CEA	Member
4	CTU/ Chairman & Managing Director, POWERGRID	Member
5	Joint Secretary(Trans), M/o Power, Govt. of India	Member Secretary

2. Terms of Reference (ToR) of the Committee are to:

- (i) Consider the recommendations of National Committee on Transmission (NCT).
- (ii) Allot the projects under Tariff Based Competitive Bidding (TBCB) to the Bid Process Coordinators (BPCs).

3. The ECT shall meet as and when required but at least once in every six months.

4. Accordingly, the Guidelines for Encouraging Competition in Development of Transmission Projects shall be amended through Gazette Notification and shall be communicated separately.

5. This issues with the approval of the Minister of State (Independent Charge) for Power and New & Renewable Energy.

Bihari Lal
13/4/18

(Bihari Lal)

Under Secretary to the Govt. of India

Telefax: 23325242

Email: transdesk-mop@nic.in

To

1. All members of the ECT.
2. CMDs of all CPSUs under the Ministry of Power, Govt. of India.
3. Heads of all autonomous bodies under the Ministry of Power, Govt. of India.
4. Finance/ Budget Section, Ministry of Power.
5. Power/ Energy Secretaries of all States/UTs.
6. Chief Executives of all State Power Transmission Utilities.

Copy to: PS to MoSP(IC)/ PPS to Secretary(Power)/ all Joint Secretaries/ Directors/ Dy. Secretaries, Ministry of Power.

Dated, the 13th April, 2018

OFFICE ORDER

Subject: - Constitution of the "National Committee on Transmission" (NCT) in accordance with the Guidelines for Encouraging Competition in Development of Transmission Projects: regarding.

The undersigned is directed to state that a "National Committee on Transmission" (NCT) has been constituted having following composition:

1	Chairperson, Central Electricity Authority (CEA)	Chairman
2	Member(Power System), CEA	Member
3	Member(Economic & Commercial), CEA	Member
4	Director(Trans), M/o Power, Govt. of India	Member
5	Chief Operating Officer, Central Transmission Utility (POWERGRID)	Member
6	Advisor, NITI Aayog #	Member
7	Two experts from Power Sector *	Members
8	Chief Engineer(from Power System Wing), CEA #	Member Secretary

To be nominated by NITI Aayog/ CEA.

* To be nominated by the Ministry of Power, Govt. of India from time to time, for a maximum period of two years from the date of their nomination.

2. Terms of Reference (ToR) of the Committee are to:

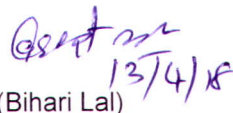
- (i) Formulate the transmission schemes based on transmission projects agreed in the Regional Standing Committees on Transmission (RSCTs).
- (ii) Examine the cost of the Schemes.
- (iii) Recommend the mode of implementation of transmission schemes i.e. Tariff Based Competitive Bidding (TBCB)/ Regulated Tariff Mechanism (RTM), as per the existing Tariff Policy.
- (iv) Form the Bid Evaluation Committee (BEC) for a TBCB Project. #
- (v) Recommend the urgency of projects for RTM.

The Formation of BEC will be done as per the Guidelines prepared by the Ministry of Power.

3. The NCT shall meet as and when required but at least once in every six months.

4. Accordingly, the Guidelines for Encouraging Competition in Development of Transmission Projects shall be amended through Gazette Notification and shall be communicated separately.

5. This issues with the approval of the Minister of State (Independent Charge) for Power and New & Renewable Energy.


(Bihari Lal)

Under Secretary to the Govt. of India
Telefax: 23325242
Email: transdesk-mop@nic.in

To

1. All members of NCT.
2. CMDs of all CPSUs under the Ministry of Power, Govt. of India.
3. Heads of all autonomous bodies under the Ministry of Power, Govt. of India.
4. Finance/ Budget Section, Ministry of Power.
5. Power/ Energy Secretaries of all States/UTs.
6. Chief Executives of all State Power Transmission Utilities.

Copy to: PS to MoSP(IC)/ PPS to Secretary(Power)/ all Joint Secretaries/ Directors/ Dy. Secretaries, Ministry of Power.

Dated, the 13th April, 2018

OFFICE ORDER

Subject: - Constitution of the "Eastern Region Standing Committee on Transmission" (ERSCT) for planning of Transmission System in the Region: regarding.


The undersigned is directed to state that "Eastern Region Standing Committee on Transmission" (ERSCT) has been constituted having following composition:

1	Member(Power System), Central Electricity Authority (CEA)	Chairperson
2	Chief Operating Officer, Central Transmission Utility (POWERGRID)	Member
3	Director(System Operation), Power System Operation Corporation Ltd.	Member
4	Heads of State Transmission Utilities (STUs) of Bihar, Jharkhand, West Bengal, Odisha, Sikkim, Andaman Nicobar Islands #	Member
5	Member Secretary of Eastern Region Power Committee	Member
6	Chief Engineer(from Power System Wing), Central Electricity Authority *	Member Secretary

STUs to coordinate with their respective Distribution Companies (DISCOMs).

* To be nominated by the Central Electricity Authority.

2. Terms of Reference (ToR) of the Committee are to:
 - (i) Evolve and finalize System Strengthening Schemes for removal of operational constraints and transfer of surplus power through inter-Regional corridors.
 - (ii) Examine the proposals for transmission System for Access/ Connectivity Applications.
 - (iii) Examine the Associated Transmission System with Electricity Generators.
 - (iv) Review the up-stream and down-stream network associated with Transmission schemes.
 - (v) Examine and evaluate the intra-State transmission proposals.
3. The ERSCT shall meet at least once in three months.
4. Accordingly, the Guidelines for Encouraging Competition in Development of Transmission Projects shall be amended through Gazette Notification and shall be communicated separately.
5. This issues with the approval of the Minister of State (Independent Charge) for Power and New & Renewable Energy.


13/4/18
(Bihar Lal)

Under Secretary to the Govt. of India
Telefax: 23325242
Email: transdesk-mop@nic.in

To

1. All members of the ERSCT.
2. Chairperson, CEA, New Delhi.
3. CMDs of all CPSUs under the Ministry of Power, Govt. of India.
4. Heads of all autonomous bodies under the Ministry of Power, Govt. of India.
5. Finance/ Budget Section, Ministry of Power.
6. Power/ Energy Secretaries of all States/UTs.
7. Chief Executives of all State Transmission Utilities (STUs).

Copy to: PS to MoSP(IC)/ PPS to Secretary(Power)/ all Joint Secretaries/ Directors/ Dy. Secretaries, Ministry of Power.



Jharkhand Urja Sancharan Nigam Limited

ANNEXURE-I

PERSPECTIVE TRANSMISSION PROJECTS 2021-22 OF JUSNL (PPP Mode)

S.N.	Name of GSS / Trans. Line	Capacity / length	
		Capacity in MVA	Line Length in KM
A			
1	Establishment of new 400/220kV, 2x500MVA S/s at Chandil (New)	1000	
2	Patratu_New (PVUNL) – Chandil (New) 400kV D/c line with Quad Moose conductor		135
3	Dhanbad(NKTL) – Chandil (New) 400kV D/c line with Quad Moose conductor		125
4	Chaibasa(PGCIL) – Chandil (New) 400kV D/c line with Quad Moose conductor		100
5	LILO of Ranchi(PG) – Chandil_Old (JUSNL) 220kV D/C at Chandil (New). Ranchi(PG) – Chandil_Old (JUSNL) shall be LILOed at Sawal (JUSNL) and Tamar(JUSNL) also, so as to form Ranchi(PG) – Sarwal (JUSNL) – Tamar (JUSNL) - Chandil(New) – Chandil (old)		20
Sub -Total (A)		1000	380
B			
1	Establishment of new 220/132kV 2x200MVA and 132/33 kV 2x80MVA S/s at 220/132/33kV Bero	560	
2	Mander (New) – Bero 220kV D/c line with Zebra conductor		21
3	Kamdara – Bero 132 kV D/c line with Panther conductor		50
Sub-Total (B)		560	71
C			
1	Establishment of new 220/132kV 2x200MVA S/s at Noamundi (New)	400	
2	Chaibasa(PG) – Noamundi (New) 220kV D/c line with Zebra conductor		69
3	Noamundi (Old) – Noamundi(New) 132kV D/c line with Panther Conductor		7

4	Manoharpur – Noamundi(New) 132kV D/c line with Panther Conductor		40
Sub -Total (C)		400	116
D			
1	Establishment of new 220/132 kV, 2x200MVA S/s at Khunti (New)	400	
2	Mander (New) – Khunti (New) 220kV D/c line with Zebra conductor		57
3	Simdega (New) – Khunti (New) 220kV D/c line with Zebra conductor		87
4	Khunti (New) – Khunti (Old) 132 kV D/c line with Panther conductor		14
5	LILO of Hatia (Old) – Kamdara 132 kV S/c line with HTLS (minimum 1050A) conductor at Khunti (New)		8
Sub -Total (D)		400	166
E			
1	Establishment of new 400/220kV, 2x500MVA S/s at Dumka(New)	1000	
2	Jasidih – Dumka 400kV D/c line with Quad Moose conductor		131
3	Dhanbad – Dumka 400kV D/c line with Quad Moose conductor		122
4	LILO of Dumka – Godda 220kV D/c line at Dumka (New) with Zebra conductor		5
Sub-Total (E)		1000	258
F			
1	Establishment of new 400/220kV 2x500MVA, 220/132 kV 2x200MVA and 132/33 kV 2x80MVA S/s at 400/220/132/33kV Koderma	1560	
2	Patratu(PUVNL) - Koderma 400kV D/c Quad Moose line along with 2x63MVAR switchable line reactor in both the circuits at Koderma end		150
4	Jasidih – Koderma 400 kV D/c line with Quad Moose conductor		135
5	Koderma – Giridih 220kV D/c line with Zebra conductor		80
Sub-Total (F)		1560	365
G			

1	Establishment of new 220/132kV 2x200MVA and 132/33kV 2x80MVA S/s at 220/132/33kV Sarwal	560	
2	LILO of both circuits of Ranchi (PGCIL) – Tamar at Sarwal on Multi ckt. Tower..so as to form Ranchi(PG) – Sarwal (JUSNL) – Tamar (JUSNL) - Chandil(New) – Chandil (old).		10
Sub-Total (G)		560	10

H

1	Establishment of new 220/132kV, 2x200MVA S/s at Jadugoda(New)	400	
2	Chandil (New) – Jadugoda (New) 220kV D/c line with Zebra conductor		80
3	Chaibasa(PGCIL) – Jadugoda (New) 220kV D/c line with Zebra conductor		60
4	Jadugoda (New) – Dhalbhumgarh 132kV D/c line with HTLS(1000A) conductor (1000A)		10
Sub-Total (H)		400	150

I

1	Up-gradation of existing 132/33 kV Tamar S/s with 220/132 kV 2x200MVA ICT to form 220/132/33kV S/s	400	
2	Operation of Chandil(Old) – Ranchi 220 kV line (presently operated at 132 kV) at rated voltage. Dismantling of existing 132 kV LILO section at Tamar. LILO of both circuits of Chandil (JUSNL) – Ranchi (PGCIL) 220 kV D/C line at Tamar on Multi ckt. Tower.		10
Sub-Total (I)		400	10

J

1	Establishment of new 400/220kV, 2x500MVA S/s at Mander	1000	
2	LILO of both the circuits of Ranchi(PG) – Patratu (New) 400 kV D/C Quad Moose line at Mander		10
3	220 kV D/C line : Mandar - Ratu (JUSNL)		15
4	LILO of Hatia - Lohardaga 220 kV D/C line at Mandar		10
Sub-Total (J)		1000	35

K

1	Establishment of new 220/132kV 2x200MVA and 132/33 kV 2x50MVA S/s at 220/132/33 kV Palojori	500	
---	--	-----	--

2	LILO of 220 kV D/C Dumka –Govindpur Line at Palojori GSS		10
Sub-Total (K)		500	10
L			
1	Establishment of new 220/132kV, 2x200MVA S/s at Simdega(New)	400	
2	Simdega(New) – Simdega(Old) 132 kV D/c line with Panther conductor .		10
Sub-Total (L)		400	10
M			
1	Up-gradation of 220/132kV Jasidih S/S with 400/220kV, 2x500MVA ICT to form Jasidih 400/220/132 S/s	1000	
Sub -Total (M)		1000	0
N			
1	Extension at 400/220kV Patratu(New) JUSNL S/S with 220/132kV 2x200MVA and 132/33kV 2x50MVA ICT to form Patratu 400/220/132/33kV S/s	500	
2	220 kV D/C line for termination of existing PTPS (Old) – Hatia(New) 220 kV D/c line at Patratu (New) so as to form Patratu(New) – Hatia (New) 220 kV D/c line.		2
3	132kV D/c line for termination of existing PTPS(Old) – Hatia(Old) D/C (with one circuit LILO at Kanke) from PTPS(Old) to Patratu (New) so as to form Patratu(New) – Hatia (Old) D/c line (with one circuit LILO at Kanke)		2
Sub-Total (N)		500	4
O			
1	Establishment of new 220/132kV, 2x200MVA and 132/33 kV 2x50MVA S/s at 220/132/33kV Hazaribagh	500	
	Tenughat TPS – Hazaribagh 220kV D/c line with Zebra conductor		58
Sub-Total (O)		500	58
P			
1	Establishment of new 220/132kV 2x200MVA and 132/33kV 2x80MVA S/s at 220/132/33kV Gomia	560	
2	Topchachi – Gomia 220 kV D/c line with Zebra conductor		50

3	Tenughat (TPS) – Gomia 220 kV D/C line with HTLS(1600A) conductor		10
Sub-Total (P)		560	60
Q			
1	Establishment of new 220/33kV, 2x100MVA S/s at Barkatha	200	
2	Barkatha – Hazaribagh 220kV D/c line with Zebra conductor		18
Sub-Total (Q)		200	18
R			
1	Establishment of new 220/132kV 2x200MVA and 132/33kV 2x50MVA S/s at 220/132/33kV Topchanchi	500	
2	Baliyapur – Topchanchi 220kV D/C line with Zebra Conductor		50
3	Putki – Topchanchi 132kV D/C line with Panther Conductor		27
Sub-Total (R)		500	77
S			
1	Establishment of new 220/132kV 2x200MVA and 132/33kV 2x50MVA S/s at 220/132/33kV Baliyapur	500	
	LILO of 220 kV D/C Dumka –Govindpur Line at Baliyapur GSS		7
Sub-Total (S)		500	7

Jharkhand Uria Sancharan Nigam Limited

ANNEXURE-II

PERSPECTIVE TRANSMISSION PROJECTS 2021-22 OF JUSNL (WORLD BANK FUNDED)

S.N.	Name of GSS / Trans. Line	Capacity (MVA)	Length of Transmission Lines (KM)
A			
1	132/33 kV GSS at Silli (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Silli - Chouka(132/33 kV) Trans line		70
B			
1	132/33 kV GSS at Irba (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Irba - Kanke(132/33 kV) Trans line		13
3	132 kV D/C 3 Ph. Irba - Ratu(220/132/33 kV) Trans line		21
C			
1	132/33KV GSS Chainpur (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Chainpur-Mahuadanr(132/33 kV) Trans line		42
3	LILO of 132 kV Gumla(132/33 kV) - Simdega(132/33 kV) Trans Line at GSS Chainpur		20
D			
1	132/33 kV GSS at Shikaripara (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Dumka(132/33 kV) - Shikaripara Trans line		40
E			
1	132/33 kV GSS at Sundarnagar (2x50 MVA)	100	
2	LILO of 132 kV Ramchandrapur(220/132 kV) - Jadugoda(132/33 kV) Trans Line at GSS Sundarnagar		20

S.N.	Name of GSS / Trans. Line	Capacity (MVA)	Length of Transmission Lines (KM)
F			
1	132/33 kV GSS at Chhatarpur (2 x 50 MVA)	100	
2	132 kV D/C 3 Ph. Chhatarpur - Daltonganj(400/220/132 kV GSS) Trans line		50
3	132 kV D/C 3 Ph. Chhatarpur - Japla(132/33 kV) Trans line		40
G			
1	132/33KV GSS Meral (At 220/132 kV Garhwa GSS Down Stream) (2x50 MVA)	100	
H			
1	132/33KV GSS Mahuadanr (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Latehar(400/220/132 kV) - Mahuadanr Trans line		45
I			
1	132/33 kV GSS at Angada (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Silli(132/33 kV) - Angada Trans line		43
3	132 kV D/C 3 Ph. Angada - Sikidiri (Irba)(132/33 kV) Trans line		50
J			
1	132/33 kV GSS at Amarpara (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Amrapara - Godda(220/132/33 kV) Trans line		80
3	132 kV D/C 3 Ph. Amrapara - Pakur(132/33 kV) Trans line		45
K			
1	LILO of one Ckt Of 132 KV D/C 3 ph Chaibasa(220/132 kV) - Manoharpur(132/33 kV)		14
L			

S.N.	Name of GSS / Trans. Line	Capacity (MVA)	Length of Transmission Lines (KM)
1	132/33KV GSS Ramkanda (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Ramkanda - Garhwa(220/132 kV) Trans line		60
M			
1	132/33KV GSS Panki (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Chhatarpur(132/33 kV) - Panki Trans line		50
N			
1	132/33KV GSS NagarUntari (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Nagar Utari - Garhwa(220/132 kV) Trans line		40
O			
1	132/33 kV GSS at Chouka (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Chouka - Tamar(220/132/33 kV) Trans line		75
P			
1	132 kV GSS at Chandawa (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Chandawa - Latehar(400/220/132 kV) Trans line		70
Q			
1	132/33 kV GSS at Chakuliya (2x50 MVA)	100	
2	LILO of both 132 kV Bahragora(132/33 kV)- Dhalbhumgarh(132/33 kV) Trans Line at GSS Chakuliya		30
R			
1	132/33 kV GSS at Hansdiha (2x50 MVA)	100	
2	LILO of 132 kV Lalmatia(220/132 kV)- Dumka(132/33 kV) Trans Line at GSS Hansdiha		35
3	132 kV D/C 3 Ph. Hansdiha-Jasidih(400/220/132/33 kV) Trans Line		50

S.N.	Name of GSS / Trans. Line	Capacity (MVA)	Length of Transmission Lines (KM)
S			
1	132/33 kV GSS at Jarmundi (2x50 MVA)	100	
2	LILO of 132 kV D/C 3 Ph. Dumka(132/33 kV) – Deoghar(132/33 kV) Trans line at GSS Jarmundi		6
T			
1	132/33 kV GSS at Kandra (2x50 MVA)	100	
2	LILO of 132 kV D/C 3 Ph. Chandil(220/132 kV) – Rajkharsawan(132/33 kV) Trans line at Kandra		35
U			
1	132/33 kV GSS at Kalebira (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Kalebira – Kamdara(132/33 kV) Trans line		40
3	132 kV D/C 3 Ph. Kalebira – Simdega(220/132 kV) Trans line		70
V			
1	132/33 kV GSS at Kurdeg (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Kurdeg – Simdega(220/132) Trans line		45
W			
1	132/33 kV GSS at Sarath (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Sarath - Palojori(220/132 kV) Trans Line		24
3	132 kV D/C 3 Ph. Sarath - Chitra(132/33 kV) Trans Line		20
X			
1	132/33 kV GSS at Surda (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Surda-Jadugoda(220/132 kV) Trans Line		20

S.N.	Name of GSS / Trans. Line	Capacity (MVA)	Length of Transmission Lines (KM)
3	132 kV D/C 3 Ph. Surda-Bahragora(132/33 kV) Trans Line		29
4	132 kV D/C 3 Ph. Surda-Musabani(DVC)(132/33 kV) Trans Line		10
Y			
1	132/33 kV GSS at Naudiha (Palamu) (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Naudiha-Chhatrapur(132/33 kV) Trans Line		19
Z			
1	132/33 kV GSS at Narayanpur (Devipur) (2x50 MVA)	100	
2	LILO of 132 kV D/C 3 ph. Jamtara(132/33 kV) - Madhupur(132/33 kV) Trans Line at Narayanpur (Devipur)		12



Jharkhand Urja Sancharan Nigam Limited

ANNEXURE-III

PERSPECTIVE TRANSMISSION PROJECTS 2021-22 OF JUSNL (State Plan funded)

S.N.	Name of GSS / Trans. Line	Capacity / length	
		Capacity in MVA	Line Length in KM
A			
1	132/33 kV GSS at Ramgarh(2x50 MVA)	100	
2	132 kV D/C 3 Ph. Ramgarh - PTPS Transmission line		40
3	132 kV D/C 3 Ph. Ramgarh - Hazaribagh Transmission line		65
Sub-Total (A)			
B			
1	132/33 kV GSS at Barkagaon (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Barkagaon - PTPS (220 kV) Transmission line		32
Sub-Total (B)			
C			
1	132/33 kV GSS at Gola (2x50 MVA)	100	
2	132 kV D/C Ramgarh - Gola trans. line		37
3	132 kV D/C 3 Ph. Silli - Gola Transmission line		26
Sub-Total (C)			
D			
1	132/33 kV GSS at Barhi (2 x 50 MVA)	100	
2	132 kV D/C 3 Ph. Barhi - Chatra (Itkhor) Transmission line		24
3	132 kV D/C 3 Ph. Barhi - Hazaribagh (220 kV) Transmission line		42
Sub-Total (D)			
E			
1	132/33 kV GSS at Bishnugarh/ Banaso (2 x 50 MVA)	100	
2	132 kV D/C 3 Ph. Saria - Bishnugarh Transmission line		26
3	132 kV D/C 3 Ph. Gomia - Bishnugarh Transmission line		21
4	132 kV D/C 3 Ph. Bishnugarh - Hazaribagh Transmission line		47
Sub-Total (E)			
F			
1	132/33 kV GSS at Dugda (2 x 50 MVA)	100	
2	132 kV D/C 3 Ph. Dugda - Jainamore (Bokaro) Transmission line		22
3	132 kV D/C 3 Ph. Gomia - Dugda Transmission line		50
Sub-Total (F)			
G			
1	132/33 kV GSS at Putki (2 x 50 MVA)	100	
2	132 kV D/C 3 Ph. Putki - Govindpur Transmission line		33
Sub-Total (G)			

H			
1	132/33 kV GSS at Mahuda (2 x 50 MVA)	100	
2	132 kV D/C 3 Ph. Mahuda - Putki Transmission line		9
Sub-Total (H)			
I			
1	132/33 kV GSS at Petarwar(2x50 MVA)	100	
2	132 kV D/C 3 Ph. Peterwar - Jaina More (Bokaro) Transmission line		23
3	132 kV D/C 3 Ph. Gola - Peterwar Transmission line		16
Sub-Total (I)			
J			
1	132/33 kV GSS at Hunterganj (2x50 MVA)	100	
2	132 kV D/C Hunterganj-Itkhorri Trans Line		54
3	132 kV D/C Hunterganj-Chatra Trans Line		30
Sub-Total (J)			
K			
1	132/33 kV Grid Sub-Station (2x50 MVA) Gawan	100	
2	132 kV D/C 3 Ph. Jamua - Gawan Transmission line (45 KM)		58
3	132 kV D/C 3 Ph. Koderma - Gawan Transmission line (60 KM)		54
Sub-Total (K)			
L			
1	132/33 kV GSS at Nirsa (2x50 MVA)	100	
2	132 kV D/C 3 Ph. Nirsa - Baliyapur Transmission line		24
Sub-Total (L)			
M			
1	132/33 KV GSS Simaria	100	
2	132 kV D/C 3 Ph. Chatra-Simaria		28
Sub-Total (M)			
Total (A - M)		1300	761