

I/1548/2018



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन-I प्रभाग

Power System Planning & Appraisal-I Division

To

1.	Chairperson, Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	2.	Member (Power System), Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.
3.	Member (Economic & Commercial), Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	4.	Director (Trans) Ministry of Power Shram Shakti Bhawan, New Delhi-110001
5.	Chief Operating Officer, Central Transmission Utility. POWERGRID, Saudamini, Plot No. 2, Sector-29, Gurgaon – 122 001.	6.	Sh. Surinder Singh Sur, Joint Adviser (Energy) NITI Aayog, Parliament Street, New Delhi – 110 001.
7.	Shri P. K. Pahwa, Ex. Member (GO&D), CEA 428 C, Pocket -2, Mayur Vihar, Phase -1, Delhi - 110091	8.	Shri Prabhakar Singh, Ex. Director (Projects), POWERGRID D 904, Tulip Ivory, Sector-70, Gurgaon – 122 001.

Subject: 1st meeting of the "National Committee on Transmission" (NCT)- Meeting notice

Sir,

The 1st meeting of the "National Committee on Transmission" (NCT) constituted by MoP vide their office order no. 15/3/2017-Trans dated 13.04.2018 (**copy enclosed at Annexure-I**) is scheduled to be held on **27th July, 2018 (Friday) at 3:30 PM** under the **chairmanship of Shri Pankaj Batra, Chairperson, CEA** in the Manthan Hall of CEA, 2nd Floor, Sewa Bhawan, R.K. Puram, New Delhi.

The Agenda for the meeting would be made available soon at CEA website: <http://www.cea.nic.in>. Kindly make it convenient to attend the meeting.

Encl: As above

Yours faithfully,

(Ravinder Gupta)

Chief Engineer(PSPA-I) & Member Secretary (NCT)

Copy to:

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

Annexure-IDated, 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:

- Formulate the transmission schemes based on transmission projects agreed in the Regional Standing Committees on Transmission (RSCTs).
- Examine the cost of the Schemes.
- 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.
- Form the Bid Evaluation Committee (BEC) for a TBCB Project. #
- 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.



G. S. Prasad
13/4/18
(Bihari Lal)
Under Secretary to the Govt. of India
Telefax: 23325242
Email: transdesk-mop@nic.in

- All members of NCT
- CMDs of all CPSUs under the Ministry of Power, Govt. of India.
- Heads of all autonomous bodies under the Ministry of Power, Govt. of India.
- Finance/ Budget Section, Ministry of Power.
- Power/ Energy Secretaries of all States/UTs.
- 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.

✓(CE (PSPA-I) | CE (PSPA-II)

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Agenda note for the 1st meeting of National Committee on Transmission (NCT)**Date and Time: 27th July 2018, 1530 hrs****Venue: Conference Room of CEA (Manthan), 2nd Floor, Sewa Bhawan, R.K. Puram, New Delhi****1. Confirmation of the minutes of 37th meeting of Empowered Committee (EC) on Transmission**

The minutes of 37th meeting of EC on Transmission held on 20th September, 2017 were issued vide CEA letter No. 100/1/EC (37)/2017–PSP&PA-I/1178-1187 dated 24th October, 2017. No comment / observation has been received on the minutes of the meeting.

1.1. The minutes of the meeting may please be confirmed.

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

2.1 MoP vide their office order no. 15/3/2017–Trans dated 13.04.2018 has constituted the "National Committee on Transmission" (NCT) along with its ToR (Terms of Reference) and frequency of meeting. The composition of the Committee is as given below:

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	Adviser, NITI Aayog #	Member
7	Two experts from Power Sector *	Member
8	Chief Engineer (from Power System Wing), Central Electricity Authority #	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.

2.1 Terms of Reference (ToR) of the Committee are to:

- (i) Formulate the transmission schemes based on transmission projects agreed in the Regional Standing Committee on Transmission (RSCTs).
- (ii) Examine the cost of the schemes.

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- (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.

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

- 2.3 NITI Aayog vide their office order no. 1-22/2/8/2018-P&E dated 08.05.2018 has nominated Sh. Surinder Singh Sur, Joint Adviser (Energy), NITI Aayog as member of NCT.
- 2.4 MoP vide their office order no. 15/3/2017–Trans dated 08.06.2018 has nominated following two experts in Power Sector as members in NCT:
- (I) Shri P. K. Pahwa, Ex. Member (GO&D), CEA; and
 - (II) Shri Prabhakar Singh, Ex. Director (Projects), POWERGRID

This is for kind information of the members.

3. Notification / approval of transmission schemes approved in 37th meeting of Empowered Committee on Transmission by MoP

- 3.1 The following transmission schemes were approved in the 37th meeting of EC on transmission for implementation through Tariff Based Competitive Bidding (TBCB) :

S. No	Name of Scheme	Estimated Cost as per Empowered Committee (in Crore)
1.	System strengthening Scheme in Northern Region*	225.8
2.	Reactive Power Compensation in Northern Region	234.6
3.	Additional 400 kV outlets from Banaskantha 765/400 kV S/S	62.0
4.	Establishment of new substation at Vapi/Ambethi area and its associated transmission lines	198.5
5.	Additional ISTS feed to Navi Mumbai 400/220 kV substation of POWERGRID	255.3
6.	North Eastern Region Strengthening Scheme – IX	70.0
		1046.2

- 3.2 The schemes mentioned at sl. no. 4 & 5 above were agreed to be implemented through TBCB route after ratification in the next meeting of SCPSPWR. It was also mentioned

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that in case there is any modification / change in the scope of works, the same may be intimated to the EC. The above schemes were deliberated in 42nd meeting of SCPSPWR held on 17.11.2017, wherein, the scope as mentioned in the 37th EC was agreed by the constituents. Also, in the 37th meeting of EC on Transmission, it was decided that the small schemes under TBCB may be clubbed together to form a single package and the scheme may be notified accordingly. Therefore, the schemes were clubbed in following two packages and MoP vide Gazette notification dated 04.05.2018 has notified the schemes for implementation through TBCB route

Package-1: Name of Scheme: Northern Region System strengthening Scheme – XL (NRSS-XL) – RECTPCL (BPC)

The scheme includes:

Part-A :System strengthening Scheme in Northern Region

Part-B: Reactive Power Compensation in Northern Region

Part-C: System strengthening Scheme in Northern Region for grant of LTA to M/s Essel Saurya Urja Company of Rajasthan Ltd

* The scheme at sl. no. 1 above has been split into two parts i.e. Part-A and Part-C

Package -2: Name of Scheme: Western Region Strengthening Scheme –XIX (WRSS-XIX) and North Eastern Region Strengthening Scheme – IX (NERSS-IX) – PFCCL (BPC)

The scheme includes:

Part A: Additional 400 kV outlets from Banaskantha 765/400 kV S/S

Part B: Establishment of new substation at Vapi / Ambethi area and its associated transmission lines

Part C: Additional ISTS feed to Navi Mumbai 400/220 kV substation of POWERGRID

Part D: North Eastern Region Strengthening Scheme – IX

- 3.3 It may be noted that “Part-A: System strengthening Scheme in Northern Region” of NRSS-XL scheme notified by MoP did not include implementation of the following elements as UPPTCL had requested MoP to allocate the same to POWERGRID for implementation:

No.	Transmission Scheme	Detailed scope of works
1.	Replacement of 1x315 MVA ICT by 1x500 MVA ICT and implementation of two nos. of 220 kV line bays at Lucknow	<ul style="list-style-type: none"> • 400/220kV ICT 500MVA, • 400kV ICT bay -1 • 220kV ICT bay-1 • 220kV line bay-2
2.	1x315 MVA, 400/220 kV ICT (to be shifted from Lucknow after refurbishment if required) with 2 nos. of 220 kV line bays at Gorakhpur	<ul style="list-style-type: none"> • 400kV ICT bay -1 • 220kV ICT bay-1 • 220kV line bay-2

- 3.4 Further, MoP vide its office order no. 15/3/2017-Trans-Pt(2) dated 26.04.2018 has allocated the following transmission schemes to POWERGRID for implementation through regulated tariff mechanism (RTM) under compressed time schedule. These

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schemes were agreed to be implemented by POWERGRID through RTM in the 37th meeting of EC on Transmission

S. No.	Name of Scheme
(i)	New 400kV feed to Maharani Bagh (PG) 400/220kV S/s
(ii)	TCR of capacity 500 MVA at Kurukshetra 400 kV bus.
(iii)	Converting Fixed Line Reactors into Switchable Line Reactors in Over Compensated lines
(iv)	2 nos. 220 kV feeder bays associated with 1x500 MVA, 400/220 kV 3 rd ICT at Khandwa (PG) substation
(v)	North Eastern Region Strengthening Scheme –VIII

4. Review / Modification of transmission schemes (recommended by Empowered Committee).

4.1. Grant of connectivity and Long Term Open Access to HPPCL-450 MW Shongtong Karcham HEP:

4.1.1. In the 36th meeting of Empowered Committee on Transmission held on 26th July, 2016 the transmission system associated with Shongtong Karcham HEP with following scope of work was agreed to be implemented through Tariff Based Competitive Bidding (TBCB) route:

Scope of the Transmission Scheme
1. Shongtong Karcham – Wangtoo 400 kV D/c Line (Quad HTLS Conductor Equivalent to about 3000MW on each ckt)
2. 2 nos. of bays at Wangtoo

Note: Establishment of 220/400kV GIS Pooling Station at Wangtoo along with LILO of both circuits of 400 kV Karcham Wangtoo-Abdullapur D/c line at Wangtoo S/s -Implementation by STU

Subsequently, MOP vide Gazette notification dated 28th October 2016 has appointed PFCCCL as Bid Process Coordinators (BPCs) for the transmission scheme. Further, a meeting was held on 14.07.2017, wherein, CTU pointed out that as the generator i.e. HPPCL had applied for LTA with target region as beneficiary state, they need to take regulatory approval from CERC, before implementation of the scheme and it was decided that PFCCCL would transfer the SPV to the successful bidder only after consulting CEA and CTU.

4.1.2. CTU had filed a petition in CERC on 11.08.2017, which, interalia, included grant of Regulatory Approval for execution of the Transmission System associated with Shongtong Karcham. CERC admitted the petition on 16.01.2018. CERC issued the order on 19.3.2018 stating:

“the scheme was envisaged in the year 2011 i.e. 7 years back. A considerable time has lapsed since the inception of the complete scheme and there may be changes in the commissioning schedules of projects in the Satluj Basin. Therefore, there is a need to review the scheme in the Standing Committee. In the light of this, we are not inclined to grant regulatory approval at this stage. We direct CTU to discuss the scheme in the Standing Committee Meeting of the Northern Region again in

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consultation with CEA and may approach Commission for regulatory approval, if required.”

In a meeting held in CEA on 19.3.2018, PFCCCL had informed that they had completed the Bidding Process and had issued LoI to the successful bidder i.e M/s Essel Infra Projects Ltd on February 21, 2018. As per the CERC timeline, the COD for completion of project is 44 months. Even if, the SPV is transferred in March 2018 and considering the commissioning schedule of September 2021 for HEP, the time available for implementation of the Transmission Project by the successful bidder would be 42 months, which is less than CERC timeline of 44 months. Therefore, the SPV needs to be transferred at the earliest to avoid any mismatch in the implementation of evacuation system of the Shongtong generation project.

- 4.1.3. A team comprising of officers from CEA, CTU, HPPTCL, HPPCL and Directorate of Energy (GoHP) visited the dam and power house sites of Shongtong Karcham HEP on 13.6.2018. It was learnt that there are some issues related to land acquisition / forest clearance, which was yet to be resolved. Civil works for main dam were expected to start after Monsoon i.e. by Sep. / Oct. 2018. Further, in the meeting held on 15.6.2018 at Shimla, the status of major hydro projects upstream of Shongtong Karcham HEP was furnished by Energy Directorate, Himachal Pradesh. As per the status, no major hydro project is expected by 2029-30.
- 4.1.4. In the 40th meeting of SCSPNR held on 22.06.2017, HPPCL had informed revised commissioning schedule of December, 2023 for Shongtong Karcham HEP (as against original schedule of September 2021). Accordingly, members of the SCSPNR opined that looking at the present status of the projects in the upstream of Shongtong Karcham HEP, the connectivity line from Shongtong Karcham to Wangtoo may be implemented as dedicated line of Shongtong Karcham HEP by HPPCL. In the meeting, following was agreed:
- i) The scheme ‘Connectivity and Long Term Access (LTA) to HPPCL 450 MW from Shongtong Karcham HEP’ may be dropped and the SPV for the scheme may be closed
 - ii) The developer of Shongtong Karcham HEP (HPPCL) may implement the connectivity line from Shongtong Karcham to Wangtoo as dedicated line as per the CERC Regulation in vogue.
 - iii) CTU to revise connectivity / LTA granted to HPPCL

4.1.5. Members may deliberate.

4.2. System strengthening Scheme in Northern Region

4.2.1. The scheme System strengthening Scheme in Northern Region, with the following scope of works, was recommended to be implemented through TBCB in the 37th EC meeting held on 20.09.2017.

Transmission Scheme	Detailed scope of works	Estimated Cost (Rs. Crore)
1x500MVA, 400/220kV ICT along with ICT bays and 1 nos. of 220kV line bays at 400kV Roorkee (PG) S/s	<ul style="list-style-type: none"> • 400/220kV ICT, 500MVA • 400kV ICT bay -1 • 220kV ICT bay-1 • 220kV line bay-1 	36.4
1x500MVA, 400/220kV ICT along with ICT bays and 2 nos. of 220kV line bays at 400kV	<ul style="list-style-type: none"> • 400/220kV ICT, 500MVA 	41.4

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Sonepat (PG) S/s	<ul style="list-style-type: none"> • 400kV ICT bay -1 • 220kV ICT bay-1 • 220kV line bay-2 	
2 nos. of 220kV bays at 400 kV Abdullapur (PG) S/s	220kV line bay-2	10.1
1x500MVA, 400/220kV ICT along with ICT bays at Bhadla pooling station <i>Note: The 1X500MVA, 400/220kV ICT at Bhadla is to be provided for grant of LTA to M/s Essel Saurya Urja Company of Rajasthan Ltd. So, it is proposed to take up the above mentioned ICT at Bhadla Pooling Station separately after fulfilling regulatory requirements by the LTA applicant.</i>	<ul style="list-style-type: none"> • 400/220kV ICT 500MVA, • 400kV ICT bay -1 • 220kV ICT bay-1 	31.3
Replacement of 1x315 MVA ICT by 1x500 MVA along with two nos. of 220 kV line bays at Lucknow	<ul style="list-style-type: none"> • 400/220kV ICT 500MVA, • 400kV ICT bay -1 • 220kV ICT bay-1 • 220kV line bay-2 	41.4
1x315 MVA, 400/220 kV ICT (to be shifted from Lucknow after refurbishment if required) with 2 nos. of 220 kV line bays at Gorakhpur	<ul style="list-style-type: none"> • 400kV ICT bay -1 • 220kV ICT bay-1 • 220kV line bay-2 	23.8
1x500MVA, 400/220kV ICT along with 2 nos of 220kV line bays at 400kV Fatehpur (PG) S/s	<ul style="list-style-type: none"> • 400/220kV ICT 500MVA, • 400kV ICT bay -1 • 220kV ICT bay-1 • 220kV line bay-2 	41.4
Total		225.8

The above scheme along with Reactive Power Compensation in Northern Region and System strengthening Scheme in Northern Region for grant of LTA to M/s Essel Saurya Urja Company of Rajasthan Ltd was included in Package-1: **Northern Region System strengthening Scheme –XL (NRSS-XL)**, which was notified by MoP vide Gazette notification dated 04.05.2018 with RECTPCL as the BPC. MoP has notified “System Strengthening Scheme in Northern Region” scheme excluding ICT augmentation works at Lucknow and Gorakhpur under Package-I to be implemented through TBCB route.

- 4.2.2. POWERGRID vide its DO letter no. C/CMD/CTU dated 12.10.2017 had requested MoP for implementation of augmentation / modification works in existing ISTS substations of POWERGRID through regulated tariff mechanism by POWERGRID. These works has been notified by MoP for implementation through TBCB route based on the recommendation of Empowered Committee in its 37th meeting. MoP vide its OM no. 15/03/2017-Trans-Pt (4) dated 8-02-2018 has sought views of CEA on the DO letter of POWERGRID under section 73 (h) of Electricity Act, 2003.
- 4.2.3. CEA vide its letter dated 25.05.2018 has suggested MoP implementation of the augmentation works at existing sub-station, which are of minimal cost such as addition of transformer, line / transformer bays, addition of reactor, conversion of fixed line

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reactor into switchable reactor, measures needed to control short circuit level such as reconfiguration of lines (which may involve putting up few towers), addition of series reactor, bus splitting etc. may be exempted from TBCB on a case to case basis.

For effecting the above following has been suggested by CEA:

1. Ministry of Power may consider to make appropriate amendments under para 7.1 (7) of the Tariff Policy, 2016 by inserting the phrase “modifications, augmentation in the existing sub-stations” before the phrase “technical upgradation”. The same is proposed to bring more clarity under the provision of Tariff Policy. In view of above the para 7.1 (7) may be modified as below:

“While all the future inter-state transmission projects shall, ordinarily, be developed through competitive bidding process, the Central Government may give exemption from competitive bidding for (a) specific category of projects of strategic importance, modifications / augmentation in the existing sub-stations, technical upgradation etc. or (b) works required to be done to cater to an urgent situation on case to case basis.”

2. The empowered Committee / National Committee on Transmission may look into the provisions of exemption from competitive bidding route for transmission works related to “modifications / augmentation in the existing sub-stations”, on case to case basis.
- 4.2.4. This issue of implementation of augmentation works in existing ISTS sub-stations through RTM was deliberated in the 1st meeting of newly constituted Empowered Committee on Transmission (ECT) held on 20.07.2018. The ECT referred the matter for deliberations in NCT.
- 4.2.5. POWERGRID has requested to exempt the implementation of augmentation works at their substation i.e. Package-1 and some works in Package-2 through TBCB route and recommend their implementation through RTM.
- 4.2.6. Members may deliberate.

5. Status of transmission schemes under bidding process - briefing by BPCs

- 5.1 Details of transmission projects awarded through TBCB route by PFCL and RECTPCL is given at **Annexure-I (A) and I (B)** respectively.
- 5.2 Members may like to note.

6. New Inter-State Transmission Schemes

6.1. Name of the Scheme: Scheme to control Fault Level in Northern Region (Phase-II)

- 6.1.1. The “Scheme to control Fault Level in Northern Region (Phase-II)” involves realignment of some 400kV lines at POWERGRID substations and installation of 12 ohm Series reactors at various lines and buses. The above scheme was earlier deliberated in 37th meeting of Empowered committee held on 20.9.2017, wherein, CTU stated that implementation of these works through TBCB would be very difficult as this involves detailed studies including TRV studies. Some existing equipment may also have to be replaced. Therefore, it was decided that POWERGRID may make a presentation in the next meeting of EC on Transmission, clearly indicating the complexities involved in the execution of the works through TBCB. The brief of the scheme is as given below:

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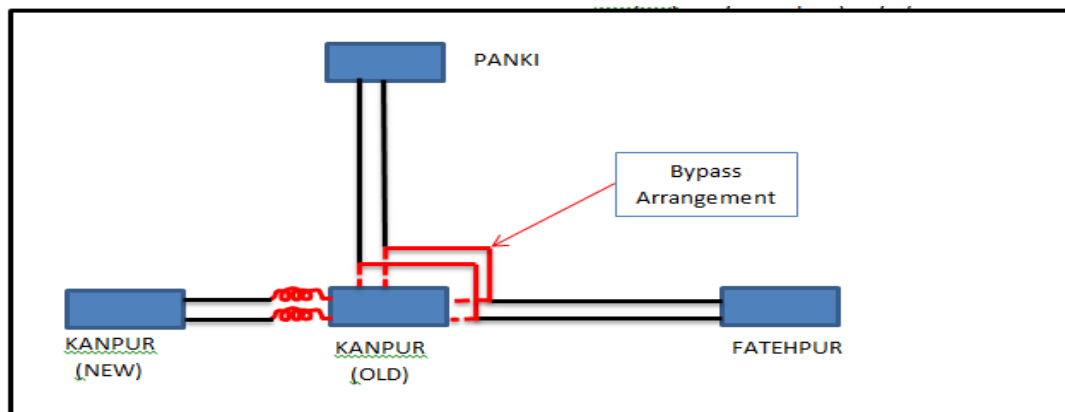
6.1.2. The problem of high short circuit level in Northern Region was deliberated in 39th meeting of SCPCPNR held on 29-30th May, 2017 and seven numbers of pockets (where each pocket consists of a group of substations) having high fault level were identified. In the meeting, it was decided that initially measures to control high short circuit level in two pockets i.e. i) Kanpur, Panki and Fatehpur ii) Bhiwani, Hissar, Mohindergarh and Moga, which involve re-alignment of some lines and installation of 12ohm bus/line reactors would be taken. The scope of the transmission scheme is as under:

Scope of Transmission Scheme	Estimated Cost (Rs. Crore)
Part-A: At Kanpur	65
i) 12ohm Series Line reactor in Kanpur (old)–Kanpur (New), 400kV D/c line at Kanpur (old) end	
ii) Fatehpur–Kanpur (old) 400kV D/c and Kanpur (old)-Panki 400kV D/c lines to be disconnected at Kanpur (old) end and connecting them directly to form Fatehpur-Panki 400 kV D/c line.	
Part-B: At Bhiwani, Hissar and Mohindergarh	110
i) 12ohm Series Bus reactor at Bhiwani (PG) substation.	
ii) 12ohm Series Line reactors in Mohindergarh–Dhanonda 400kV D/c line Ckt I & II at Mohindergarh end	
iii) Mohindergarh–Bhiwani (PG) 400kV D/c line (One of the two D/c lines) and Bhiwani (PG)- Hissar (PG) 400kV D/c line (D/c line which is Direct)) to be disconnected from Bhiwani (PG) end and directly connected to form Mohindergarh–Hissar 400kV D/c line.	
iv) The remaining Bhiwani (PG)–Hissar (PG) 400kV D/c line (one circuit via Bhiwani (BBMB) and Hissar (PG)–Moga (One circuit via Fatehbad) 400kV line to be disconnected at Hissar end and directly connected to form Bhiwani (PG)–Moga 400kV line (One circuit via Fatehbad and other circuit via Bhiwani (BBMB))	
Total Estimated Cost (Rs. Crore)	175

Note: For both Part-A & Part-B, Shifting/reorientation works inside substations may be required to accommodate the splitting/bypass arrangements

6.1.3. The details about the scheme is as under:

Pocket I: Kanpur, Panki and Fatehpur



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After considering the above reconfiguration and series reactors at Kanpur (old), the short circuit level of Kanpur (old), Panki and Kanpur (new) is as follows:

Substation	3phase fault current
Base Case	
Kanpur (new)	53kAmp
Kanpur (old)	58kAmp
Panki	52kAmp
With proposed re-arrangement	
Kanpur(new)	33kAmp
Kanpur (old)	36kAmp
Panki	26kAmp

Pocket II: Bhiwani, Hissar, Mohindergarh and Moga

Short circuit levels at Bhiwani (PG), Hissar, Mohindergarh and Dhanonda before and after above re-arrangement are given in table below:

Substation	3phase fault current	
Base Case		
6.1.4. Bhiwani(PG)	62kAmp	CTU may
Hissar	50kAmp	
Mohindergarh	53kAmp	
Dhanonda	54kAmp	
After proposed re- arrangement		
Bhiwani(PG) Section A	39kAmp	
Bhiwani(PG) Section B	38kAmp	
Hissar	33kAmp	
Mohindergarh	36kAmp	
Dhanonda	46kAmp	

present.

- 6.1.5. Members may like to deliberate on the mode of implementation of the above transmission schemes either through TBCB or exempt from TBCB on ground of technical upgradation to be implemented under RTM.

6.2. Name of the Scheme: Measures to control fault level at Wardha Substation

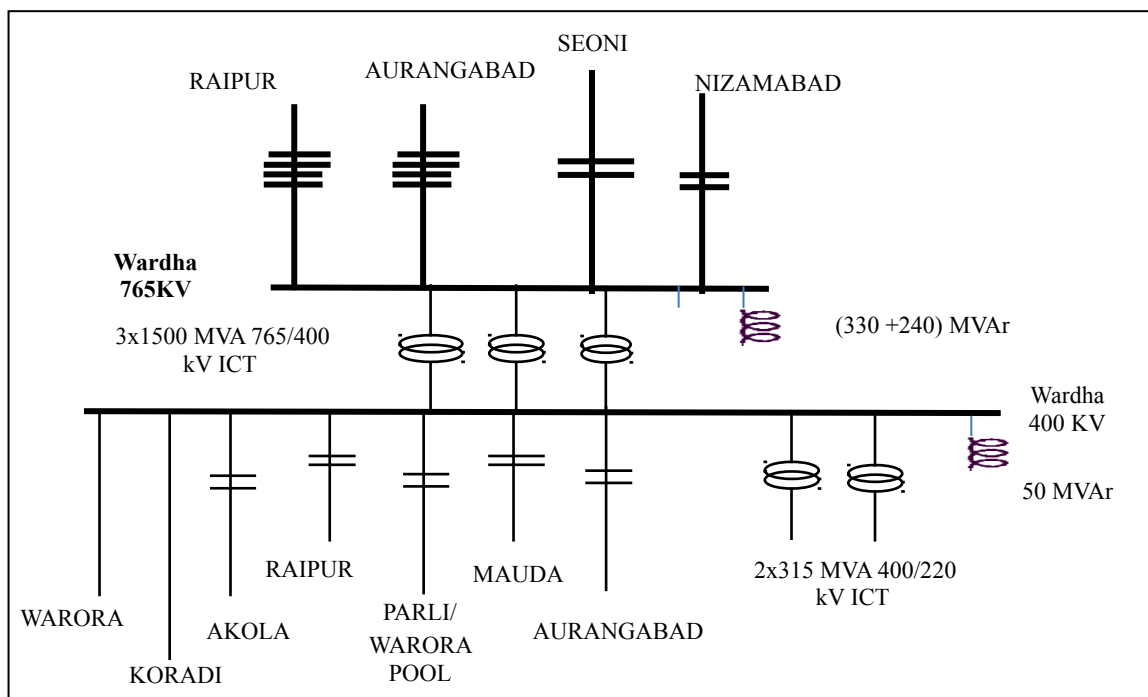
- 6.2.1. The Scheme "Measures to control fault level at Wardha Substation" splitting of 400kV bus & insertion of series reactor between the split bus sections of the existing substation of POWERGRID. The above scheme was earlier deliberated in 37th meeting of Empowered committee held on 20.9.2017 wherein CTU stated that the scheme would involve shifting of lines from one split section to other as well as change of some existing equipment including CTs if they are not designed for 50kA. Therefore, it was decided that POWERGRID may make the presentation in the next meeting of EC on Transmission, so as to take the decision regarding implementation of the scheme through TBCB or RTM by POWERGRID. The brief on the scheme is given as under:

- 6.2.2. The scheme has been discussed in the 37th, 39th, 40th & 41st meeting of SCPSPWR and the following scheme involving bus splitting at Wardha with 12 Ohm fault limiting reactor to connect 400kV BUS Section A and BUS Section B of Wardha 400 kV BUS has been agreed to control the high fault level at Wardha 400 kV S/s.

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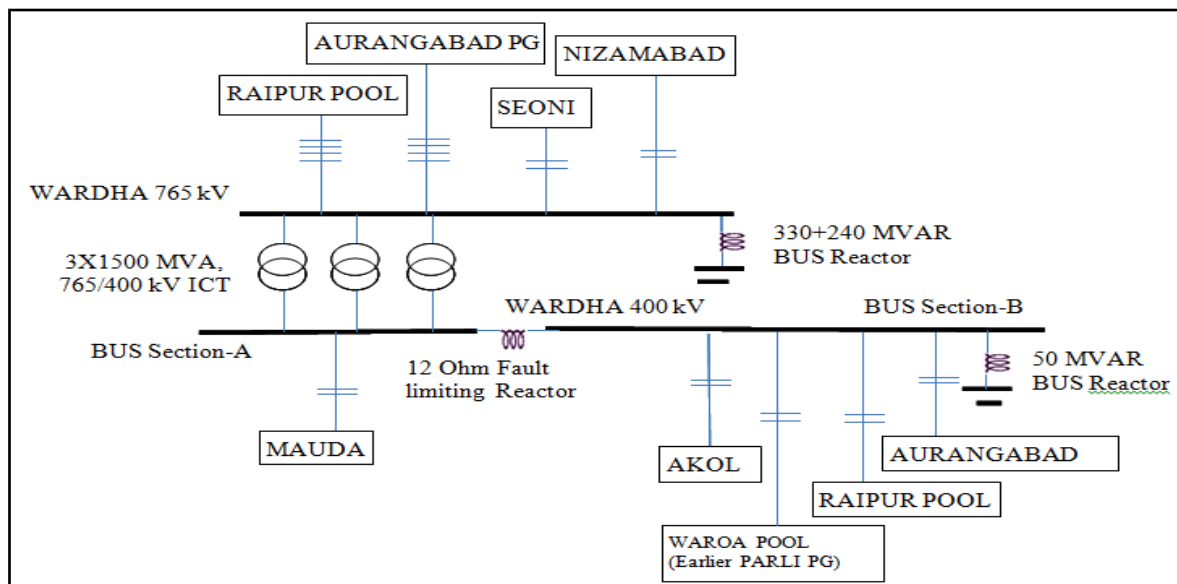
The scope of the transmission scheme is as under:

Sl. No.	Scope of the Transmission Scheme	Estimated Cost (Rs. Crore)
i)	Split of 400 kV Wardha substation into two sections, Section –A and Section-B as per diagram, with necessary switching arrangement	75
ii)	Interconnecting Wardha - Koradi II 400 kV quad with Warora – Wardha 400 kV (Quad) line at outskirts of Wardha substation so as to form Warora – Koradi II 400 kV (Quad) line	
iii)	All necessary arrangement for Change in termination of Warora Pool -Wardha 400 kV D/C (Quad) line by disconnecting it from Wardha 400kV BUS Section A and terminating in vacant 400 kV bays of Warora and Koradi II 400 kV (Quad) lines at Wardha 400kV BUS Section B.	
iv)	12 Ohm fault limiting reactor to connect 400kV BUS Section A and BUS Section B of Wardha 400 kV BUS.	
v)	2x63MVA line reactors at Wardha end of Wardha – Warora Pool 400 kV D/C (quad) line to be used as bus reactors at Wardha S/s - section A (by using the two nos. of 400 kV bays which shall be vacant in Wardha Bus Section-A after shifting of Warora pool - Wardha 400 kV D/C line from Section - A to Section-B)	
vi)	Necessary modification at Wardha sub-station like change of some elements including CTs if those are not designated for 50 kA fault level	
	Total (in Crore)	75



Existing 765/400 kV Wardha substation

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765/400 kV Wardha substation after bus splitting and line reconfiguration

6.2.3. CTU may present.

6.2.4. Members may like to deliberate on the mode of implementation of the above transmission schemes either through TBCB or exempt from TBCB on ground of technical upgradation to be implemented under RTM.

6.3. System strengthening Scheme in Southern Region:

6.3.1. The above scheme was agreed in the 41st meeting of the Standing Committee on Power System Planning of Southern Region (SCPSPSR) held on 22nd September, 2017. The scheme involves construction of 2 no. of 220kV bays at 400/220kV substation at Cochin East (Pallikkara) of POWERGRID for connecting Cochin East (Pallikkara)-Aluva 220kV D/C line to be implemented by KSEBL and additional 400/220kV, 1x500 MVA ICT at Gazuwaka due to overloading of existing 400/220kV, 2x315 MVA ICTs at Gazuwaka.

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA)	Estimated Cost (Rs.) Cr.
1	2 no. of 220kV bays at 400/220kV substation at Cochin East (Pallikkara) of POWERGRID	-	10.1
2	Additional 400/220kV, 1x500 MVA ICT at Gazuwaka substation with associated bays 400/220kV ICT -1 no. 400kV ICT bay -1 no. 220kV ICT bay -1 no.	500MVA	31.3
Total Rs (in Crore)			41.4

Note:

- a. POWERGRID to provide space for 2 nos. 220kV line bays at Cochin East (Pallikkara)
- b. POWERGRID to provide space for ICT at Gazuwaka substation with associated bays

6.3.2. Members may deliberate

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6.4. Name of the scheme: 400kV Udupi (UPCL)-Kasargode D/C line

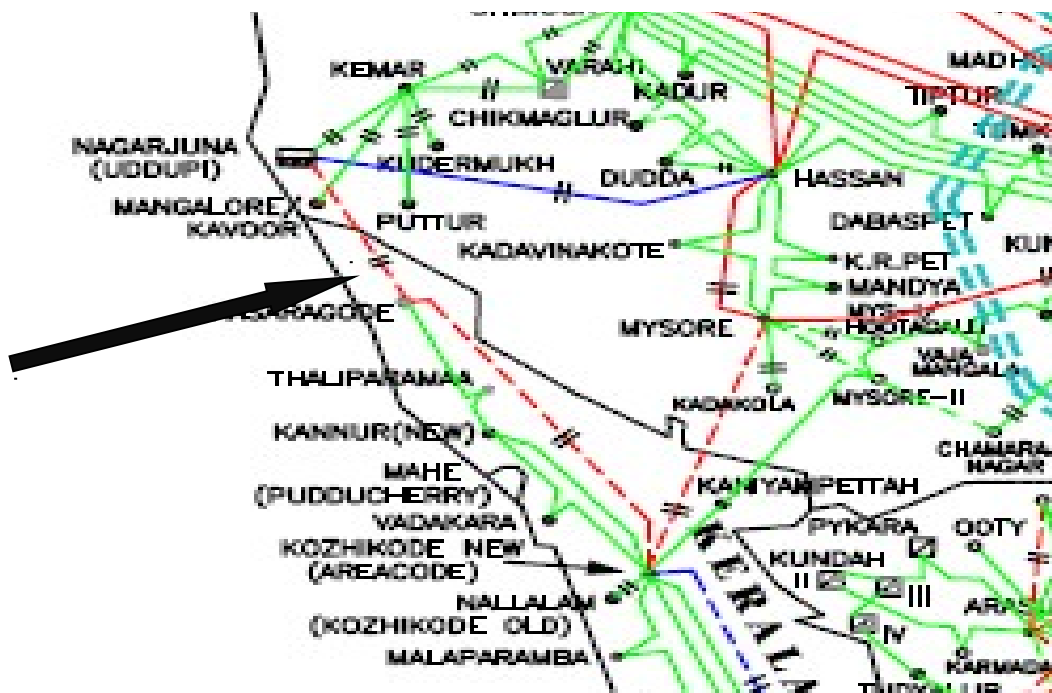
6.4.1. Implementation of the scheme 'Mangalore / Udupi (UPCL)–Kasargode-Kozhikode 400 kV link' through TBCB was recommended in 31st meeting of the Empowered Committee on Transmission held on 18.02.2013 subject to commitment from the Kerala Government for payment of compensation only for the tower footing as is practice in other parts of the country. Therefore, the notification of the scheme was not published in the Gazette of India.

Further, for implementation of the scheme, CTU had to provide 2 no. of 400 kV line bays at Kozhikode S/S and UPCL had to provide 2 no. of 400 kV bays at Mangalore (UPCL) switchyard. EC suggested that firm commitment from UPCL for providing 400 kV bays at Mangalore (UPCL) switchyard may be obtained, otherwise the bays may be included in the scope of the bidder.

6.4.2. During the 36th meeting of SCSPSR held on 4.9.2013, it was informed that Government of Kerala had given the commitment for compensation of RoW as suggested in EC meeting. However, UPCL informed about the non-availability of space to erect two additional bays and also informed that as per their PPA, any additional expenditure on account of maintenance of the above bays needs to be approved by their buyers.

6.4.3. In the 39th meeting of SCSPSR held on 28th & 29th December, 2015, it was agreed that only Udupi–Kasargode 400kV D/C line will be implemented as per tariff policy of Government of India as ISTS project. Further, it was also agreed that Kasargode–Kozhikode (Areekode) 400kV D/c line would be implemented as intra-state transmission project to be implemented by Kerala state.

6.4.4. In the 41st meeting of SCSPSR held on 22.09.2017, after getting confirmation of availability of space for 2 no. 400 kV bays at Udupi, members agreed for construction of already approved Udupi (UPCL) (Manglore)–Kasargode 400 kV D/C Line (with Quad Moose ACSR conductor) along with Kasargode 400/220kV, 2x500MVA substation under ISTS and drop Kasargode–Kozhikode (Areekode) 400kV D/c line.



Accordingly, revised scope of the scheme will be as follows:

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Sl. No.	Scope of the Transmission Scheme	Route length (km) / Capacity (MVA)	Estimated Cost (Rs.) Cr.
1.	Mangalore (Udupi PCL)–Kasargode 400kV Quad D/C line	110 km	421*
2.	Establishment of 2x500 MVA, 400/220 kV GIS substation at Kasargode <u>400kV</u> 400/220 kV 500 MVA ICTs: 2 no – Bus Reactor (63 MVAR): 2 no. – Line Bays: 4 – ICT bays : 2 – Space for line bays : 4 – Space for ICT bays : 2 <u>220 kV</u> – Line Bays : 6 – ICT bays : 2 – Space for line bays : 6	1000 MVA	181
3.	2 nos. of 400kV line bays at UPCL switchyard		18
Total Cost Rs (Crore)			620

* *As line route would be through forest, 1 cr. per km has been included as forest compensation in the cost.*

Note:

Udupi PCL to provide space for 2 nos. 400kV line bays at UPCL switchyard

6.4.5. Members may deliberate.

6.5. Name of the scheme: Construction of 2 no. 400 kV GIS bays at 400/220 kV Chamera Pooling Station of PGCIL under Northern Region System Strengthening scheme

6.5.1. The transmission scheme “Construction of 2 no. 400 kV GIS bays at 400/220 kV Chamera Pooling Station of PGCIL under Northern Region System Strengthening scheme” was agreed in the 40th meeting of Standing Committee on Power System Planning of Northern Region held on 22.06.2018. Chamera Pooling Station has double main bus switching arrangement.

Transmission Scheme	Estimated Cost (Rs. Crore)
Construction of 2 no. 400 kV GIS bays at 400/220 kV Chamera Pooling Station of PGCIL	21

6.5.2. Members may deliberate.

6.6. Additional 1x500 MVA, 400/220kV ICT at Saharanpur (PG) 400/220kV substation:

6.6.1. UPPTCL’s proposal of augmentation of transformation capacity at 400/220kV Saharanpur (PG) substation by 1x500 MVA ICT under Northern Region system strengthening scheme was agreed in the 40th meeting of Standing Committee on Power

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System Planning of Northern Region held on 22.06.2018 to meet n-1 contingency criteria with following scope of works:

Transmission Scheme	Detailed scope of works	Estimated Cost (Rs. Crore)
Additional 1x500 MVA, 400/220kV ICT at Saharanpur (PG) 400/220kV substation	<ul style="list-style-type: none"> • 400/220kV ICT 500MVA, • 400kV ICT bay -1 • 220kV ICT bay-1 	34

6.6.2. Members may deliberate.

6.7. Name of the scheme: Provision of Bus Reactors at High Voltage Nodes in Western Region

6.7.1. Reactive power compensation through provision of bus reactors at the following 400 kV/ 765 kV ISTS substation has been agreed in 42nd meeting of Standing Committee on Power System Planning of Western Region, to control high voltages in the time frame of 2021 – 22:

Sl. No.	Scope of the Transmission Scheme	Proposed Bus Reactor Capacity (MVA)	Estimated Cost (Rs.) Cr.
1	Khandwa 400kV	1x125	16
2	Solapur 765kV	1x240	35
3	Rajgarh 400kV	1x125	16
4	Wardha 765kV	1x330	41
5	Aurangabad 765kV	1x240	35
Total Rs (in Crore)			143

6.7.2. Members may deliberate.

6.8. Name of the scheme: Augmentation of transformation capacity in Western Region

6.8.1. Transformation capacity augmentation at following 400 kV S/s in Western Region was agreed in the 42nd & 43rd meeting of SCPSPWR to fulfill (n-1) contingency criteria in 2021 – 22 timeframe:

Sl. No.	Scope of the Transmission Scheme	Existing / Already planned MVA	Proposed ICT (MVA)
1	Jabalpur 400/220kV S/S	2x315	1x500
2	Itarsi 400/220kV	1x315+1x500	1x500

6.8.2. The proposed scheme is as given below:

Transmission Scheme	Detailed scope of works	Estimated Cost (Rs. Crore)
Augmentation of transformation capacity in Western Region	Jabalpur 400/220 kV S/S <ul style="list-style-type: none"> • 400/220kV ICT 500MVA • 400kV ICT bay – 1 no. • 220kV ICT bay- 1 no. 	34
	Itarsi 400/220 kV S/S <ul style="list-style-type: none"> • 400/220kV 500MVA ICT - 1 no., • 400kV ICT bay -1 no. 	34

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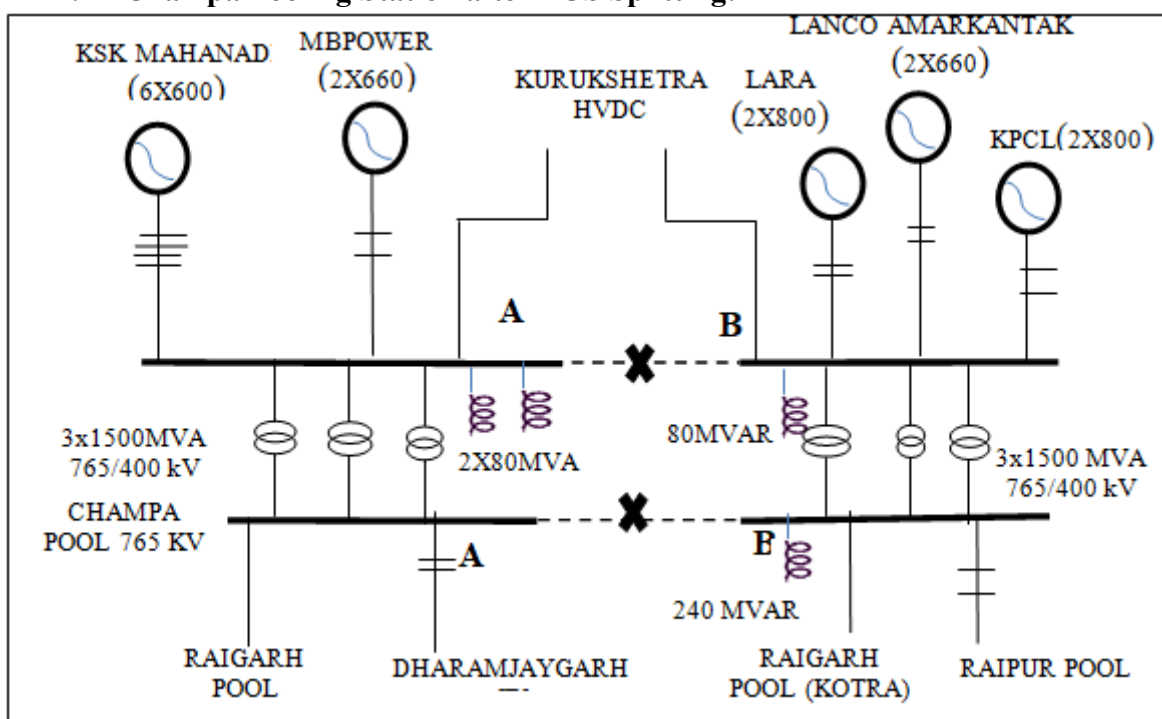
	• 220kV ICT bay-1 no.	
Total Rs (in Crore)		68

6.8.3. Members may deliberate.

6.9. Name of the scheme: Provision of Bus Reactor at Champa Pool Split Section –A Part

6.9.1. In the 39th meeting of SCSPWR held on 30.11.2015, the following split bus arrangement was agreed at Champa Pooling Station 1x125 MVAR bus reactor at 400 kV bus section A of Champa PS was agreed in 42nd meeting of SCSPWR

i. Champa Pooling Station after BUS Splitting:



Champa Pool Voltage (kV)	Description	Reactor	BUS Section A	BUS Section B
400	Generation (in MW)	Available	4920	4520
	Bus Reactor (in MVAR)	Available	2x80	1x80
	765/400 kV ICT (in MVA)	Available	3x1500	3x1500
765	Bus Reactor (in MVAR)	Available	-	1x240
		Proposed	1x240	-

Transmission Scheme	Detailed scope of works	Estimated Cost (Rs. Crore)
Provision of Bus Reactor at Champa Pool Split Bus Section –A 400 kV, 1x240 MVAR	<ul style="list-style-type: none"> 400 kV , 1x240 MVAR 400kV bay -1 	36

6.9.2. Members may deliberate

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6.10. Name of the scheme: Conversion of Fixed line reactors in Switchable reactors in Kankroli – Zerda line at Kankroli end:

6.10.1. During the 39th meeting of SCPSPNR the proposal of converting the following fixed Line reactors to switchable line reactors was agreed:

Sl. No.	Name of the Line	Substation (sending end)	Reactor (MVar)	Substation (receiving end)	Reactor (MVar)
1	Sohawal - Ballia I	Sohawal	50	Balia	63
2	Sohawal - Ballia II	Sohawal	50	Balia	63
3	Kankroli - Zerda	Kankroli	50	Zerda	50
4	Abdullapur-Panchkula I	Abdullapur	50	Panchkula I	--
5	Abdullapur-Panchkula II	Abdullapur	50	Panchkula II	--
6	Bassi – Kotputli	Bassi	50	Kotputli	--

6.10.2. Subsequently, POWERGRID informed that there are space constraints at Bassi and Zerda substation for conversion of fixed line reactors to switchable line reactors at these sub-stations. Therefore, POWERGRID has proposed to drop the proposal of conversion of Fixed line reactors in Switchable line reactors at Bassi and Zerda S/s.

6.10.3. In the 37th meeting of Empowered Committee on Transmission held on 20.9.2017, following scheme was agreed to be implemented through RTM.

Sl. No.	Name of the Line	Substation (sending end)	Reactor (MVar)	Substation (receiving end)	Reactor (MVar)
i)	Sohawal - Ballia I	Sohawal	50	Balia	63
ii)	Sohawal - Ballia II	Sohawal	50	Balia	63
iii)	Abdullapur-Panchkula I	Abdullapur	50	Panchkula I	--
iv)	Abdullapur-Panchkula II	Abdullapur	50	Panchkula II	--
Note: Provision should be kept to use these line reactors as bus reactors in case the line is not in operation					

6.10.4. In the 42nd Meeting of Standing Committee on Power System Planning in Western Region (SCPSPWR) held on 17-11-2017, the scheme of conversion of fixed line reactor (420 kV, 50MVar) at Kankroli end of Zerda–Kankroli 400kV line into switchable line reactor was agreed.

6.10.5. The scope of the transmission scheme is as under:

Sl. No.	Name of the Line	S/S (sending end)	Reactor (MVar)	S/S (receiving end)	Line Reactor (MVar)	Estimated Cost (Rs. Crore)
1.	Zerda – Kankroli 400kV line	Zerda	-	Kankroli	50	9
Total Estimated Cost (Rs Crore)						9

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6.10.6. Members may deliberate.

6.11. Name of the scheme: Installation of 400/220 kV ICT along with associated bays at M/s CGPL Switchyard

6.11.1. In the 43rd meeting of SCPSPWR held on 11.05.2018, , members agreed to install 1x500 MVA 400/220 kV ICT at M/s CGPL Switchyard to provide the startup power during the black start. The startup power would be provided through Nanikhakhar-CGPL 220 kV S/C line. The line would remain open from CGPL end. The scope of work to be implemented under ISTS is:

- 1x500 MVA, 400/220 kV ICT at CGPL Mundra to be installed at CGPL Switchyard along with one no. of 400 kV bay and one no. of 220 kV bay at CGPL Mundra.

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA)	Estimated Cost (Rs.) Cr.
1	400/220kV, 1x500 MVA ICT at CGPL Mundra substation with associated bays: 400/220kV ICT -1 no. 400kV ICT bay -1 no. 220kV ICT bay -1 no. 220 kV line bay- 1 no.	500MVA	39
Total Rs (in Crore)			39

6.11.2. Members may deliberate.

6.12. Name of the scheme: Transmission system plan for evacuation of 4000 MW of RE power in the Bhuj area under SECI bids (Tranche I to IV) at Bhuj PS:

6.12.1. Transmission system for evacuation of power from 4000 MW of RE projects under SECI bids was discussed in 43rd meeting of Standing Committee on Power System Planning of WR. In the 43rd SCMPSPWR, it was agreed to hold a joint study meeting amongst CEA, CTU, POSOCO & GETCO for further deliberations and finalization of the transmission system taking into consideration the suggestions made by the members during the meeting.

6.12.2. Accordingly, a joint study meeting has been convened on 05.06.2018 & 06.06.2018 and the following transmission system was agreed:

A. Transmission system for injection of power from 4000MW RE projects under SECI bids (Tranche I to IV) at Bhuj PS (by Apr'2020)

- In addition to existing 2x500MVA & 2x1500MVA ICTs at Bhuj, the following augmentation in transformation capacity would be required for evacuation of power from about 4000MW of RE projects under SECI bids (Tr-I to IV)
 - 6x500MVA 400/220kV ICTs (addl)*
 - 2x1500MVA 765/400kV (addl)
- For injection of any addl RE projects (other than the above 4000MW) in existing Bhuj PS, 1x500MVA 400/220kV (9th) ICT would be required.
- Bhachau–Varsana 400kV D/c line remains critically loaded. It was observed that the line remains loaded even without the RE injection at Bhuj PS. Further, the

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SC levels at Bhachau and Varsana exceed 40kA design rating as they contribute heavily to each other.

*On account of space constraints at Bhuj PS, all future 220kV as well as 400kV line / ICT bays at Bhuj PS need to be implemented as GIS

6.12.3. In view of space constraints at Bhuj Pool , the following scheme is proposed :

Transmission system for injection of power from 4000MW RE projects under SECI bids (Tranche I to IV) at Bhuj PS

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA)	Estimated Cost (Rs.) Cr.
1	Installation of additional 3x500MVA, 400/220kV ICTs along with 400kV AIS & 220kV AIS bays in addition to existing 2x500MVA, 400/220kV ICTs	3x500MVA 400/220kV	102
2	Installation of additional 3x500MVA, 400/220kV ICTs along with 400kV GIS & 220kV AIS bays in addition to existing 2x500MVA, 400/220kV ICTs	3x500MVA 400/220kV	107
3	Installation of additional 2x1500MVA, 765/400kV ICTs along with 765kV AIS & 400kV GIS bays in addition to existing 2x1500MVA, 765/400kV ICTs	2x1500MVA, 765/400kV	147
Total Rs (in Crore)			356

6.12.4. Members may deliberate.

6.13. Name of the scheme: Transmission system plan for evacuation of 950 MW of RE power under SECI bids (Tranche I to IV) at Tuticorin PS

6.13.1. Out of 6050 MW of wind power bid by SECI (Bid-I to IV), 950 MW is at Tuticorin- II GIS pooling station. For evacuation of power the following scheme has already been agreed the in 42nd meeting of SCPSR held on 27.04.2018.

Transmission system plan for evacuation of 950 MW of RE power under SECI bids (Tranche I to IV) at Tuticorin PS:

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA)	Estd. Cost (Rs.) Cr.
1	Installation of 1x500 MVA, 3 rd 400/230 kV ICT along with 400kV GIS & 230kV GIS bays	<ul style="list-style-type: none"> • 400/230kV 500MVA ICT – 1no. • 400kV ICT bay -1 no. • 230kV ICT bay-1 no. 	37
Total Rs (in Crore)			37

6.14. Name of the scheme: 2 nos. of 400kV bays at Kozhikode in SR

6.14.1. North Trissur (Madakkathara)-Kozhikode (Areakode) 400kV D/C line (with Quad Moose ACSR conductor) was approved in the 30th meeting of Standing Committee on

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Power System Planning of Southern Region as ISTS. In the 39th meeting of SCPSPSR, it was decided that the line will be implemented by KSEBL.

- 6.14.2. In 42nd Standing Committee meeting of SR, it was decided that for termination of North Trissur (Madakkathara)-Kozhikode (Areakode) 400kV D/C line, 2 nos. of 400kV bays at Kozhikode (Areakode) substation will be implemented under ISTS.

Transmission Scheme	Estimated Cost (Rs. Crore)
Construction of 2 No. 400 kV bays at 400/220 kV Kozhikode (Areakode) substation of PGCIL	18

Members may deliberate

6.15. Name of the scheme: Implementation of 400kV reactor for reactive power compensation in SR

- 6.15.1. NLDC operational feedback on Transmission constraints for Quarter 1, 2 & 3 of 2017-18 has mentioned that persistent high voltage situation is being experienced 20-70% of time in the off-peak period at number of 765/400 kV substations in the Southern Regional grid and to control voltages within acceptable limits, tripping of parallel circuits of high voltage 765kV & 400kV lines were resorted to. Further despite opening of the lightly loaded lines, high voltage is observed at nos. of substations for substantial period of time.

- 6.15.2. In the 42nd standing committee meeting on Power System Planning in SR, the following reactors at 6 nos. at ISTS sub-station to control high voltage were agreed, based reactive compensation studies were carried out for 2021-22 time frame.

Transmission Scheme	Estimated Cost (Rs. Crore)
400kV reactor at the following substations: (i) Hosur 400Kv- 1x125 Mvar (ii) Madhugiri 400Kv- 1x125 Mvar (iii) Dharampuri 400Kv- 1x125 Mvar (iv) Hiriyur 400Kv - 1x125 Mvar (v) Pugalur 400Kv- 1x125 Mvar (vi) Pugalur HVDC Stn 400 - 2x125 Mvar (vii) 7 nos of 400 kv reactor bays	112 crores

Members may deliberate

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

- 6.16.1. ERSS-XV and ERSS-XVIII are under implementation, which inter-alia includes the following works at Jeerat (WBSETCL) S/s:

- (i) *LILO of Sagardighi – Subhashgram 400kV S/c line at Jeerat (WBSETCL): as a part of ERSS-XV by POWERGRID under RTM*
- (ii) *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.*

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6.16.2. To address space constraints, it was decided to dismantle the dead end towers and terminate existing 400kV lines of POWERGRID and WBSETCL at Jeerat (WBSETCL) through GIS duct by **POWERGRID as an additional scope under already approved ERSS-XV** in a meeting held on 14.12.2016 between CEA, CTU & WBSETCL. However, in the 19th SCM of ER held on 01-09-2017, it was decided that the additional scope of works may be implemented under ISTS.

6.16.3. Keeping in view the time schedule of ERSS-XVIII by POWERGRID under TBCB and already delayed ERSS-XV by POWERGRID under RTM, the following may be included as **additional scope in already approved ERSS-XV scheme being implemented by POWERGRID under RTM.**

(i) Dismantling of dead end towers and termination of following existing lines at Jeerat (WBSETCL) through GIS duct to the existing 400kV Jeerat AIS S/s (WBSETCL).

a. Jeerat (WBSETCL) – Baharampur/Farakka 400kV S/c line of POWERGRID

b. Jeerat (WBSETCL) – Rajarhat/Subhashgram 400kV S/c line of POWERGRID

c. Jeerat (WBSETCL) – Bakeshwar (WBSETCL) 400kV S/c line of WBSETCL

d. Jeerat (WBSETCL) – Kolaghat (WBSETCL) 400kV S/c line of WBSETCL

(ii) Termination of the existing WBSETCL lines to the existing 400kV Jeerat AIS S/s (WBSETCL) through GIS duct as ISTS and inclusion of the same in the approved scope of ERSS-XV being implemented by POWERGRID.

6.16.4. The estimated cost of the scheme Rs 26.3 crores.

6.16.5. Members may deliberate.

6.17. 500MW HVDC back to back station at North Comilla (Bangladesh) for transfer of power through Surjamaninagar (India)–North Comilla (Bangladesh) : Indian Portion

6.17.1. In the 13th Joint Working Group (JWG) and Joint Steering Committee (JSC) meetings on Indo-Bangladesh Cooperation in Power Sector held on 27th-28th Sept 2017, it was decided to undertake implementation of 500MW HVDC back to back station at North Comilla (Bangladesh) for transfer of 500MW power through Surjamaninagar (India) – North Comilla (Bangladesh). It was also decided that POWERGRID and Power Grid Company of Bangladesh (PGCB) shall implement the Indian and Bangladesh portion respectively. In the 14th JWG/JSC meetings held on 30th-31st Jan 2018, Bangladesh informed that the expected commissioning schedule of the project is Dec 2020. Further, with regard to sharing of transmission charges for Indian portion by Bangladesh, it was agreed in the 14th JWG/JSC meetings that the existing Bulk Power Transmission Agreement (BPTA) for this interconnection may be amended / supplemented for the additional scope of works, if required.

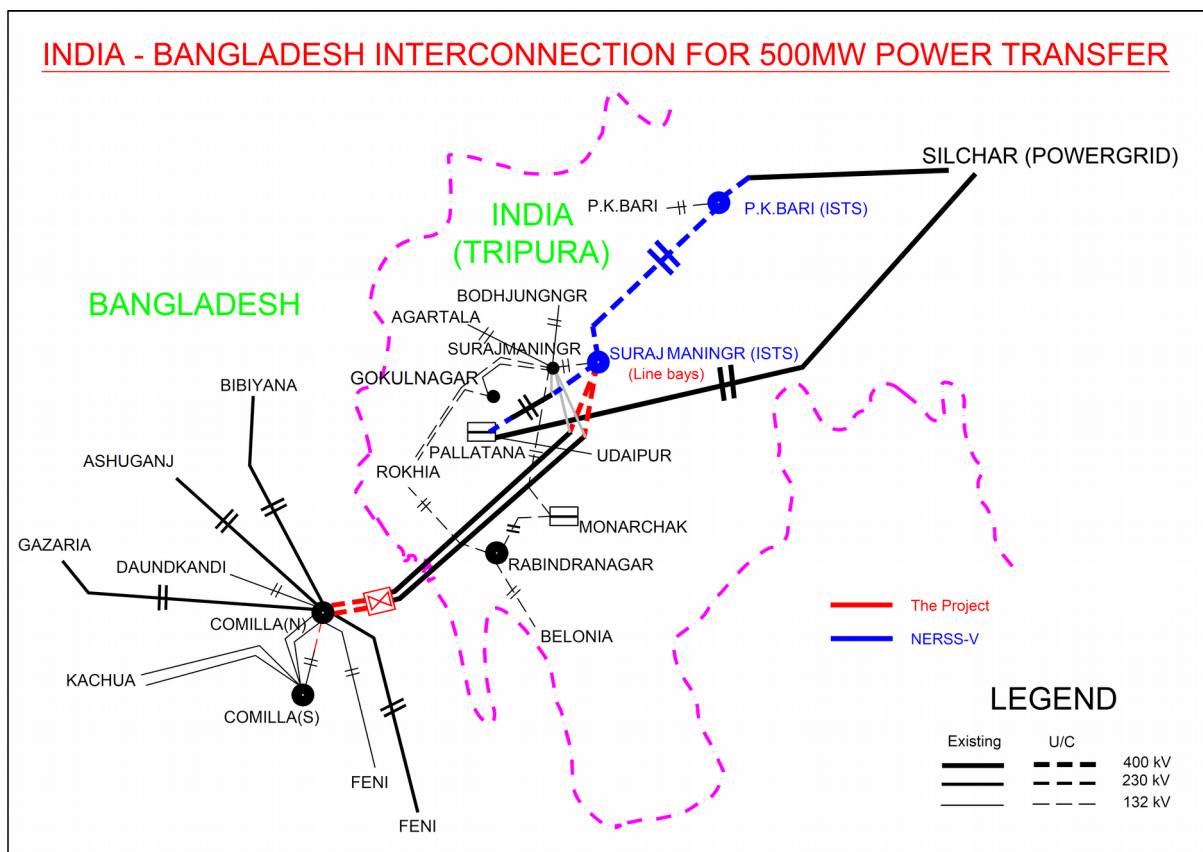
6.17.2. In order to facilitate 500MW power transfer, following upgradation in the Indian Grid is required to be implemented by POWERGRID:

(i) Operation of Surajmaninagar (TSECL) – North Comilla 400kV D/c line (presently operated at 132kV) at 400kV through termination at 400kV bus of *Surajmaninagar S/s.

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- (ii) 2 nos. 400kV line bays at *Surajmaninagar S/s for termination of Surajmaninagar (TSECL) – North Comilla 400kV D/c line

*Note: * Surajmaninagar 400/132kV ISTS S/s is being implemented under NERSS-V scheme through TBCB route: expected commissioning schedule as per RfP is July 2020.*



6.17.3. The estimated cost of the scheme is Rs. 18 crores.

6.17.4. Members may approve implementation of above mentioned scope of works under RTM by POWERGRID as decided in the 13th India-Bangladesh JWG/JSC meetings.

6.18. 2 no. 400kV line bays at Muzaffarpur (POWERGRID) S/s operation of Muzaffarpur - Dhalkebar 400kV D/c line (presently operated at 132kV) at rated voltage level of 400kV

6.18.1. In the 5th meeting of the Joint Steering Committee (JSC) on India-Nepal Cooperation in Power Sector held on 17th April 2018, it has been decided that 2 no. of 400kV line bays at Muzaffarpur (POWERGRID) substation for 400kV operation of Muzaffarpur - Dhalkebar line are to be implemented by the Cross Border Power Transmission Company Ltd. (CPTC) as per the existing Implementation & Transmission Service Agreement (ITSA) between CPTC and Nepal Electricity Authority (NEA). CPTC had implemented the Muzaffarpur-Dhalkebar 400kV line (presently operating at 132kV level).

6.18.2. The estimated cost of the scheme is Rs. 18 crores .Members may deliberate.

6.19. Indian portion of Dhalkebar (Nepal) – Muzaffarpur (India) 400kV D/c (Quad Moose) line associated with 900MW Arun-3 HEP in Nepal

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6.19.1. In the meeting held at Ministry of Power under the chairpersonship of JS (Transmission), MoP on 27-03-2018 to discuss the issues related to Associated Transmission System (ATS) of 900MW Aurn-3 HEP in Nepal following was decided:

“(i) The cross border nature of the Indian portion of the transmission line may be considered to be of strategic importance and is required to be constructed in a synergistic manner so as to match with the commissioning of the generation as well as the Nepal portion of the transmission line.

(ii) In order to achieve the above objective, this line may be constructed by POWERGRID under the Regulated Tariff Mechanism (RTM) on cost plus basis.

(iii) As already recorded in the 4th JWG/JSC meeting, SJVN will be bearing the wheeling charges of the Indian portion of the transmission line till the other project users seek the utilization of the line. All the due modalities in this regard will be followed by SJVN and POWERGRID.”

6.19.2. In view of the above, member may approve implementation of the Indian portion of Dhalkebar (Nepal)–Muzaffarpur (India) 400kV D/c (Quad Moose) line associated with Arun-3 HEP in Nepal by POWERGRID through Regulated Tariff Mechanism (RTM) on cost plus basis. SJVN will be bearing the wheeling charges of the Indian portion of the transmission line till the other project users seek the utilization of the line. All the due modalities in this regard will be followed by SJVN and POWERGRID.

Sl. No.	Scope of the Transmission Scheme	Details	Estd. Cost (Rs.) Cr.
1	Dhalkebar- Muzaffarpur 400 kV D/C quad line (about 100 km line in Indian territory)	<ul style="list-style-type: none"> • 100 km – 400 kV D/C quad line • 2 nos. of 400 kV bays 	306 18
Total Rs (in Crore)			324

7. Any other item.

Any other item with the permission of Chair.

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Annexure-I (A)

Progress of Transmission Projects Awarded Through Tariff Based Competitive Bidding Route to PFC Consulting Limited

Projects for which bidding has been completed till date are as under:

Sl.No	Name of Transmission Project	Name of Selected Bidder	Date of Transfer of SPV
1	Additional 400kV feed to Goa and Additional System for Power Evacuation from Generation Projects pooled at Raigarh (Tamnar) Pool	M/s Sterlite Grid 5 Limited	March 14, 2018
2	Transmission system for Ultra Mega Solar Park in Fatehgarh, distt. Jaisalmer Rajasthan	M/s Adani Transmission Limited	March 14, 2018

Projects for which bidding process is on-going are as under:

Sl.No	Name of Transmission Project	Present Status
1	Connectivity and Long Term Access (LTA) to HPPCL 450 MW from Shongtong Karcham HEP	<ul style="list-style-type: none"> LoI issued to Essel Infraprojects Limited on 21.02.2018. MoP vide letter dated 09.03.2018 accorded approval for transfer of SPV. The SPV could not be transferred to the successful bidder as the regulatory approval from CERC was not available Further, CERC vide its order dated 19.03.2018 with respect to regulatory approval for execution of the transmission system associated with Shongtong Karcham HEP has directed CTU to discuss the scheme in the Standing Committee Meeting of Northern Region again in consultation with CEA and to approach Commission for regulatory approval. Subsequently, a meeting was held at HPPTCL office in Shimla on 15.6.2018 wherein it was decided that final decision with regard to review of the transmission scheme would be taken in next meeting of SCSPNR.
2.	Connectivity System for Lanco Vidarbha Thermal Power Pvt. Ltd. (LVTPPL) and Inter State Transmission system strengthening in	<ul style="list-style-type: none"> RfQ Inputs awaited from CTU. Empowered Committee in its 37th Meeting held on 20.09.2017 decided

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	Chhatarpur area in Madhya Pradesh	that the bidding process for the scheme may be taken up after resolution of financial issue and after ascertaining the progress of the project.
3.	Western Region Strengthening Scheme- XIX (WRSS-XIX) and North Eastern Region Strengthening Scheme- IX (NERSS-IX)	<ul style="list-style-type: none"> • MoP vide gazette Notification dated 04.05.2018 appointed PFCCL as the Bid Process Coordinator. • PFCCL vide letter May 10, 2018 and June 07, 2018 requesting CTU to provide the RfQ inputs. • CTU vide letter dated June 20, 2018 has informed that implementation modality of augmentation/bay extension works in existing Powergrid substations including de-notification of LILO of 2nd circuit of Zerda - Ranchodpura 400 kV D/C line at Banaskantha (PG) is already taken up with MoP. Based on the outcome, RfQ inputs shall be forwarded. • PFCCL vide letter dated June 27, 2018 requested that MoP may advice CTU to provide the RfQ inputs at the earliest so that RfQ document can be finalized and the RfQ bid process can be initiated.

Annexure 1(B)

Progress of Transmission Projects Awarded Through Tariff Based Competitive Bidding Route to REC Transmission Projects Company Limited

1. Projects for which bidding has been completed from 1st April, 2017 to till date are as under:

Sl. No	Name of Transmission Project	Name of Selected Bidder	Date of Transfer of project specific SPV
	Transmission System For New WR- NR 765 kv Inter Regional	M/s Power Grid Corporation of India Limited	27.03.2018
	Transmission System For Eastern Region Strengthening Scheme - XXI (ERSS-XXI)	M/S Power Grid Corporation of India Limited	12.01.2018

2. Projects for which bidding process is on-going are as under:

Sr. No.	Name of Transmission Project	Present Status
-NIL-		