भारत सरकार
केन्द्रीय विद्युत प्राधिकरण
प्रणाली योजना एवं परियोजना मूल्यांकन प्रभाग
सेवा भवन, रामकृष्णपुरम्, नई दिल्ली 110066

क॰ सं॰ : 26/10/2011–प्र. यो. प. मू./ दिनांक: 23.04.2012

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4 अध्यक्ष एवं प्रबन्ध निदेशक,
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5 प्रबन्ध निदेशक
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6 प्रबन्ध निदेशक,
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8 मुख्य अभियंता (पारेषण),
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9 कार्यपालक निदेशक (अभियांत्रिकी),
नेशनल थर्मल पावर कॉरपोरेशन लि,
इंजीनियरिंग ऑफिस कॉम्पलैक्स, ए–8, सैक्टर–24,
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10 मुख्य अभियंता,
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11 कार्यपालक इंजीनियर (परियोजनाएं),
दादरा एवं नागर हवेली संघ शासित क्षेत्र,,
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12 कार्यपालक इंजीनियर,
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13 कार्यपालक निदेशक, (विशेष आमंत्रित),
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फैक्स संख्या–022–28235434

14 कार्यपालक निदेशक, एनएलडीसी
बी–9, कुतुब इन्स्टीट्यूशनल एरिया,
कटवारिया सराय, नई दिल्ली–110016
फैक्स 011–26852747

विषय :– पश्चिमी क्षेत्र विद्युत प्रणाली योजना की स्थाई समिति की 34वीं बैठक

महोदय,

पश्चिमी क्षेत्र विद्युत प्रणाली योजना की स्थाई समिति की 32वीं बैठक की एक कार्यसूची सूचना केन्द्रीय विद्युत प्राधिकरण की वेबसाइट www.cea.nic.in पर लिंक Home page – Power Systems-Standing Committee on Power System Planning-Western Region) पर उपलब्ध है।

बैठक का समय– 9th May, 2012, 11:00 hrs, बैठक का स्थान – NRPC,18-A, Qutab Institutional Area, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110 016. कृपया बैठक में उपस्थित होकर इसे सफल बनायें।

संलग्न – उपरोक्त

रवीन्द्र गुप्ता

(रवीन्द्र गुप्ता)
निदेशक

Govt. of India
Central Electricity Authority
System Planning & Project Appraisal Division
Sewa Bhawan, R.K. Puram, New Delhi – 110066.

No. 26/10/2011-SP&PA/ **Date: 23rd April, 2012**

To

1 The Member (PS),
Central Electricity Authority,
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New Delhi-110066

2 The Member Secretary,
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3 The Director (Projects),
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4 Chairman and Managing Director,
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5 The Managing Director,
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6 The Managing Director,
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8 Chief Engineer (Trans),
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9 The Executive Director (Engg.),
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10 The Chief Engineer,
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11 Executive Engineer (Projects)
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Sub: 34th meeting of the Standing Committee on Power System Planning of Western Region

Sir,

The 34th meeting of the Standing Committee on Power System Planning of Western Region will be held on 9th May, 2012 at 11:00 hrs. The venue of the meeting is Conference hall of NRPC,18-A, Qutab Institutional Area, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110 016. The agenda note of the meeting is available on CEA website (www.cea.nic.in at the following link: Home page-Power Systems-Standing Committee on Power System Planning-Western Region).

You are requested to kindly make it convenient to attend the meeting and confirm your participation.

Yours faithfully,

रवीन्द्र गुप्ता

(Ravinder Gupta)
Director, SP&PA

Agenda Note for 34th Meeting of Standing Committee on Power System Planning in Western Region

1.0 Confirmation of the minutes of 33rd meeting of the Standing Committee on Power System Planning in Western Region (SCPSPWR) held on 21st October 2011 at NRPC, Katwaria Sarai, New Delhi.

1.1 The minutes of the 33rd SCPSPWR were issued vide CEA letter No.26/10/2011-SP&PA/1669-1682 dated 15th November 2011. No comments have been received from any constituent of WR. The minutes of the 33rd SCPSPWR may be confirmed.

2.0 Review of Progress on Earlier Agreed Transmission Schemes

2.1 PGCIL may furnish the status of implementation of earlier agreed schemes under construction / approved.

2.2 In the 33rd SCPSPWR held on 21st October 2011, to contain high voltage in off-peak conditions in Western Region implementation of 10 (Ten) no. of 125 MVAR fixed reactors were agreed, out of which four no. were to be implemented by GETCO and six no. were to be implemented by POWERGRID. GETCO and POWERGRID may furnish the status and implementation schedule of the reactors.

2.3 In the 33rd SCPSPWR held on 21st October 2011, MSETCL had informed that three number of 220kV substations have been planned for drawing power from 500MVA transformer at Boisar. PGCIL and MSETCL may furnish the status of implementation of transformer and 220 kV lines at Boisar.

3.0 Overloading of Kawas – Icchhapore 220 kV D/C line. Agenda item proposed by WRPC.

3.1 The power evacuation of KAWAS CGPP of NTPC having installed capacity of 650 MW (4X106 +2X116) is through the following six numbers of 220 kV D/C lines from KAWAS generation 220 kV switchyard:

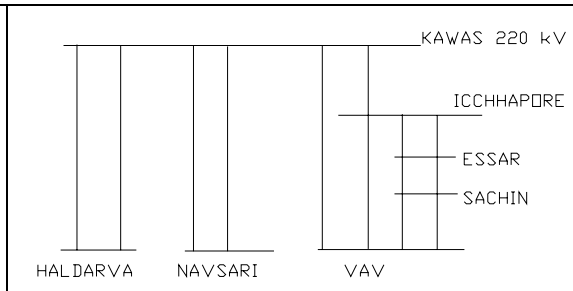
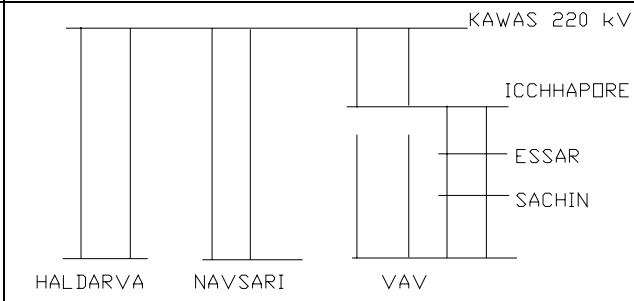
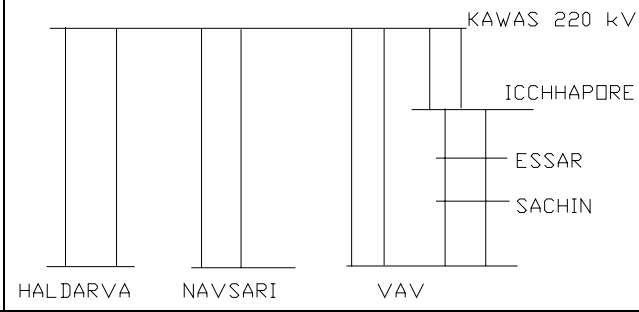
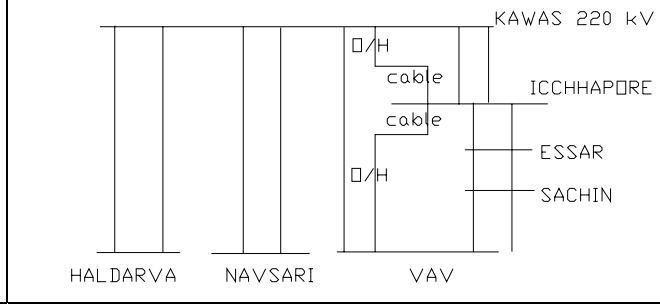
(i) Kawas – Navsari 220 kV D/C line.
(ii) Kawas – Haldarva 220 kV D/C line.
(iii) Kawas – Vav 220 kV D/C line.

Subsequently, LILO of one circuit of Kawas - Vav 220 kV D/C line was done at Icchhapore 220 kV substation of GETCO as an interim arrangement till the establishment of direct interconnection between Kawas and Icchapore (GETCO). NTPC has intimated that two no. spare bays for Ichhapore -1 & 2 at NTPC Kawas end have been erected in 1999 as per requirement of GEB(GETCO) and the same has not been taken in service so far.

3.2 With load growth in and around Icchapore area the power flow on Kawas- Ichhapore line have at various occasions reached to 300-350 MW , irrespective of the generation level at Kawas. There is flow of power to Kawas bus through Haldarva – Kawas 220 kV D/C line which under certain conditions had to be kept out to control the loading on Kawas – Icchapore 220 kV S/C line. The loading of Kawas- Ichhapore line to the tune of 300-350 MW has resulted in tripping of whole Kawas station

tripped on bus bar protection on few occasions due to damage of isolators caused by continuous overloading & overstressing of Ichhapore bay equipment.

3.3 The issue of overloading of Kawas – Icchapore 220 kV S/C line has been deliberated in the 426th and 427th Operation Coordination Committee (OCC) of WRPC and to mitigate the problem following option has been suggested:

OPTION I	Replacement of the 220 kV Kawas-Ichhapore portion of conductor with high ampacity conductor	
OPTION II	LILO of the second Kawas-Vav line at Ichhapore and keeping the Vav-Ichhapure portion open at Icchhapore end and charged from Vav end	
OPTION III	Restore the Kawas-Vav 220 kV D/C line, as per original scheme and add a new 220 kV D/C line between Kawas - Ichhapore	
OPTION III-A	Option III + LILO of one circuit of Kawas – Vav at Icchhapore. The LILO to be established through 220 kV cable.	

3.4 WRPC has forwarded the above proposal to overcome the issue of overloading of Kawas – Icchhapore 220 kV line and tripping of generation units at Kawas for approval of the Standing Committee. WRPC has recommended OPTION III / OPTION III-A. OPTION III can be taken up for immediate implementation and depending on the space availability at Icchapore OPTION IIIA could be taken up in future.

3.5 GETCO may confirm the availability of additional space for two no. bays at Icchapore 220 kV substation for deciding the possibility of implementation of OPTION IIIA. Members may deliberate.

4.0 MSETCL proposal of connectivity of Ghodbunder with Boisar.

4.1 In the 33rd Standing Committee on Power System Planning in WR, regarding the availability of space at Boisar for termination of 400 kV D/C line from Ghodbunder, it was decided that POWERGRID and MSETCL would carry out a joint survey to assess the availability of space at 400 kV Boisar.

4.2 MSETCL vide their letter dated 23rd November 2011 has intimated that joint survey was carried out by PGCIL, MSETCL and R-Infra officials on 28th October 2011 and has observed that in the space available only four nos. of AIS bays could be accommodated, which has been reserved by POWERGRID for termination of 400 kV D/C line from Aurangabad and Navsari. MSETCL has suggested that to create space for terminating Ghodbunder – Boisar 400 kV D/C line, POWERGRID may implement GIS bays in the space reserved for two no. of AIS bays.

4.3 POWERGRID may intimate the possibility of converting the space reserved for two no. of AIS bays to GIS bays for accommodating the termination of Ghodbunder – Boisar 400 kV D/C line.

5.0 High Voltage Studies in Western Region.

5.1 In the 33rd Standing Committee on Power System Planning in WR, for containing high voltages during off-peak conditions in Western Region, POWERGRID has proposed installation of 125 MVAR bus reactors at ten locations, 150 MVAR variable reactors at two locations and SVC at one location in Western Region. Out of the above, provision of 125 MVAR bus reactors at ten locations was agreed. The reactive compensation provision in STU sub-stations was to be implemented by respective STUs and in ISTS sub-stations was to be implemented by POWEGRID. In the meeting it was decided that WRPC along with WR constituents would carry out study to assess the additional reactive compensation requirement including sizing of dynamic compensation in Western Region network.

5.2 Accordingly, the studies were carried out by WRPC Study Group and a meeting of the Study Group of WRPC along with CEA and POWERGRID representatives was held on 16.04.2012 at WRPC Mumbai.

5.3 The off-peak data for 2013-14 conditions which also included the ten nos. of reactors approved in the previous meeting of the Standing Committee was used as the Base Case. In the Base Case it was observed that generators were absorbing MVAR but in actual practice generators do not absorb MVAR and as such the field voltages observed are very high. To contain the high voltages to some extent, additional 17 (seventeen) nos. of 125 MVAR, 400 kV bus reactors were identified at the following locations using the principle of voltage sensitivity and judgment based on study results. These reactors are in addition to the 10 nos. of bus reactors (4 nos. by GETCO and 6 nos. by PGCIL) already agreed in the 33rd SCM. The list is given below:

S.NO.	Location of the Bus Reactor	UTILITY	Rating
1	Nanded	MSETCL	125 MVAR
2	Sholapur	MSETCL	125 MVAR
3	Kolhapur	MSETCL	125 MVAR

4	Jetpur	GETCO	125 MVAR
5	Damoh	PGCIL	125 MVAR
6	Zerda	GETCO	125 MVAR
7	Nagda	MPPTCL	125 MVAR
8	Bhopal	MPPTCL	125 MVAR
9	Bachau	PGCIL	125 MVAR
10	Pirana	PGCIL	125 MVAR
11	Itarsi	PGCIL	125 MVAR
12	Seoni	PGCIL	125 MVAR
13	Limdi	GETCO	125 MVAR
14	Aurangabad	MSETCL	125 MVAR
15	Parli	PGCIL	125 MVAR
16	Raipur	PGCIL	125 MVAR
17	Akola	MSETCL	125 MVAR

5.4 Instead of variable reactors at Parli and Pirana, fixed reactors are recommended. For steady state voltage stability, provision of SVC at Indore could not be established for 2013-14 conditions.

5.5 WRPC may present the details of the High voltages studies highlighting the assumptions made, methodology adopted and recommendations in arriving at the additional shunt compensation requirement.

5.6 Constituents may confirm the availability of space in their respective S/s for implementing the recommended reactors to mitigate the over voltage problem. Generators should also absorb the MVAR to their capability to mitigate the high voltage problem in WR Grid.

6.0 CSPTCL proposal of LILO of 400kV S/c line between Raipur (PG) and Khedamera (Bhilai) S/c at proposed Raipur (Raita) 400kV substation.

6.1 In the 33rd SCPSPWR, the CSPTCL proposal of LILO of 400kV S/c line between Raipur (PG) and Khedamera (Bhilai) S/c at their proposed Raipur (Raita) 400kV substation was agreed along provision of 125 MVAR bus reactor at Raita and switchable line reactors in both circuits of Raita – Jagdalpur 400 kV D/C line at Jagdalpur end. Subsequently , CSPTCL vide their letter dated 2.02.2012 has intimated that they have planned 50 MVAR line reactor and 80 MVAR switchable line reactor at Raipur (Raita) end and Jagdalpur end of the Raipur(Raita) – Jagdalpur 400 kV D/C line respectively. In view of the planned line reactors, CSPTCL were not providing any bus reactor at Raipur (Raita) 400 kV Substation. Accordingly CSPTCL has requested to review the decision of provision of 125 MVAR bus reactor at Raipur (Raita) 400 kV substation taken in the last standing committee meeting.

6.2 In view of high voltage prevailing around Raipur area during off-peak conditions, CSPTCL is advised to implement the 125 MVAR bus reactor at Raita instead of the 2 nos. 50 MVAR line reactors planned with the Raita – Jagdalpur 400 kV D/C line at Raita end.

Member may deliberate.

7.0 Scheme for establishment of 1X100 MVA 220/66 kV substation at Ringanwada in UT of Daman & Diu.

7.1 The scheme for establishment of 220/66 kV Ringanwada substation by LILO of one circuit of Vapi-Magarwada 220kV D/C line at Ringanwada was agreed in the special meeting of Standing Committee on Power System Planning in WR held on 18th April 2009.

7.2 Subsequently, to meet the growing demand of Daman & Diu, establishment of 2X315 MVA, 400/220 kV Magarwada GIS substation by LILO of both circuits both ckts of Navsari – Boisar 400 kV D/C line (to be implemented by PGCIL) was agreed in the 29th and 32nd SCM of WR. Further for drawal of power from Magarwada (PG) substation, the following two no. of 220 kV D/C lines from Magarwada (PG) substation has been agreed in 30th SCM of WR to be implemented by Electricity Department Daman & Diu:

(i) Magarwada (PG)- Magarwada (existing) 220 kV D/C line.
(ii) Magarwada (PG)- Ringanwada 220 kV D/C line.

7.3 Electricity Department, Daman & Diu vide their letter dated 19th April 2012 has intimated that they would not implement the LILO of one circuit of Vapi-Magarwada 220kV D/C line at the proposed Ringanwada 220/66 kV substation.

7.4 In view of the direct connectivity of the proposed 220/66 kV Ringanwada substation with the Magarwada (PG) through Magarwada (PG)- Ringanwada 220 kV D/C line, the proposal of Daman & Diu may be accepted.

7.5 Members may agree.

8.0 GETCO proposal for LILO of one circuit of 400 kV D/C Mundra UMPP – Chorania line at Halvad (GETCO) substation, as an interim arrangement.

8.1 The proposal of LILO of one circuit of 400kV D/C Mundra UMPP –Chorania line at 400kV Halvad substation was deliberated in the 33rd SCM of WR and it was decided that a joint study would be carried out by GETCO, CEA and PGCIL to study the proposal. As per the information provided by GETCO, the following 400 kV lines are planned with Halvad 400 kV substation:

(i) Varsana – Halvad 400 kV D/C (quad) line.
(ii) Halvad – Vadavi 400 kV D/C line.
(iii) LILO of Adani – Hadala 400 kV line at Halvad.

In addition to above lines, LILO of one circuit of 400 kV D/C Mundra UMPP – Chorania line at Halvad (GETCO) substation has been proposed by GETCO.

8.2 The preliminary study carried out in CEA, shows no change in the power flow pattern on the lines connected with Halvad 400 kV substation after considering the LILO of one circuit of 400 kV D/C Mundra UMPP – Chorania line at Halvad and the same was also discussed with GETCO.

8.3 Subsequently, GETCO vide their letter no ACE (STU)/System/510-511/129 has intimated that Mundra UMPP – Chorania 400 kV D/C line was in close proximity requested to make LILO of one circuit of 400kV D/C Mundra UMPP –Chorania line at 400kV Halvad substation as an interim arrangement for operation flexibility, till the

availability of planned network i.e. 400kV D/C Varsana-Halvad and 400kV D/C Halvad-Vadavi line.

8.4 GETCO may furnish the commissioning schedule of Halvad 400 kV substation and planned lines. After the commissioning of the planned network GETCO is requested to restore line in its original configuration.

8.5 Members may agree

9.0 Conversion of fixed line reactors to switchable line reactors associated with Aurangabad-Pune and Pune-Parli 400 kV D/C lines at Pune 400 kV substation.

9.1 In 32nd Standing Committee Meeting on Power System Planning in Western Region held on 13 May 2011, revised interconnection between Pune(765/400kV) GIS and Pune (existing) 400kV substation was agreed.

Earlier interconnection between Pune (PG), Pune 765/400 kV (GIS), Aurangabad (MSETCL), Parli(PG):

(i). Pune (PG) – Pune 765/400 kV (GIS) 400 kV D/C (quad) line.
(ii). Aurangabad (MSETCL) – Pune(PG) 400 kV D/C line.
(iii). Pune(PG)-Parli(PG) 400 kV D/C line.

Revised interconnection between Pune (PG) ,Pune 765/400 kV (GIS), Aurangabad (MSETCL), Parli(PG):

(i). Pune(PG) – Pune 765/400 kV (GIS) 400 kV 2XD/C line.
(ii). Aurangabad (MSETCL) – Pune 765/400 kV (GIS) 400 kV D/C line.
(iii). Pune 765/400 kV (GIS) - Parli(PG) 400 kV D/C line.

Considering the length of 400 kV line sections of Aurangabad - Pune (GIS) and Parli-Pune (GIS), reactive compensation of 50 MVAR line reactors on each ckt. at Pune (GIS) S/s has been provided by PGCIL and the same has been agreed by CEA.

9.2 The Aurangabad-Pune D/C 400kV line and 400kV Pune-Parli D/C line is being implemented through IPTC. The 400 kV substation at Pune along with the four nos. of 50 MVAR line reactors at Pune end is under the scope of PGCIL. With revised interconnection, there would be four nos. of 50 MVAR line reactors at Pune end on the Pune(PG) – Pune 765/400 kV (GIS) 400 kV 2XD/C line. This is short line and PGCIL has now proposed to convert the 50 MVAR line reactors at Pune end of above lines into switchable line reactors.

9.3 Members may concur with the above proposal.

10.0 Interconnection of Navsari 400 kV (GIS) and Vapi 400 kV substation as an interim arrangement.

10.1 The Gandhar – Navsari – Boisar 400 kV D/C line along with establishment of 400/220, 2X 315 MVA substation at Navsari is being implemented by POWERGRID as a part transmission system associated with Mundra UMPP. The Vapi – Navi Mumbai 400 kV D/c line is also being implemented by POWERGRID under Western Region System Strengthening Scheme- V. Due to ROW constraints, Navsari –Boisar 400 kV D/c line along with Vapi – Navi Mumbai 400 kV D/c line are being strung on

multi circuit towers in certain stretches. In the multi circuit tower stretches, LILO of Navsari –Boisar 400 kV D/c line at Magarwada S/s in UT DD and LILO of Vapi – Navi Mumbai 400 kV D/c line at Kala S/s in UT DNH has also been agreed.

10.2 POWERGRID has informed that Navsari 400/220 kV S/s along with Gandhar – Navsari 400kV D/c line is in advanced stage of completion. However, the multi circuit portion of Vapi – Navi Mumbai and Navsari – Boisar D/c line is scheduled for commissioning at a later date. In order to transfer power from Mundra UMPP till completion of these lines, POWERGRID has proposed that completed portion of 400 kV D/c Navsari – Boisar line and 400 kV Vapi – Navi Mumbai line may be Inter connected with each other at the point where multi circuit portion is starting. This would result in interconnection of Navsari and Vapi through Navsari – Vapi 400 kV D/c line. This would enable power transfer from Navsari to Vapi and would provide 2nd interconnection to 400/220 kV Vapi S/s which is supplying power to load centers in Gujarat, UT DNH, UT DD and Maharashtra.

Members may agree the interim arrangement proposed by PGCIL.

11.0 Laying of 765kV D/C towers instead of S/c towers in RoW constraints stretches of 765kV 2xS/C Vindhyachal pooling station –Satna – Gwalior line.

11.1 The following transmission lines have been agreed as part of common system for WR and NR associated with evacuation system of power from Rihand - III and Vindhyachal- IV generation projects of NTPC.

(i) Vindhayachal pooling station – Satna 765 kV 2XS/c line- 265 km
(ii) Satna – Gwalior 765 kV 2X S/c line- 392 km.

11.2 POWERGRID has informed that ROW constraints are being faced on these lines (for about total 115 km route length) due to involvement of forest stretches and development of coal block mines which are recently identified and allocated to coal mining companies. Therefore, POWERGRID has proposed to implement these lines as D/c lines in the portions where ROW constraints are being faced.

11.3 POWERGRID may furnish the details of the stretches where 1XD/C instead of 2XS/C tower configuration is proposed.

Members may agree.