

Annexure-I

List of the Participants of the 1st meeting of NRPC(TP) held on 24.01.2020

S.No.	Name (S/Shri)	Designation	Contact No.	Email ID
I	CEA			
1.	P.S.Mhaske	Chairperson		
2.	Goutam Roy	Chief Engineer	8376817933	Goutamroy.715@gmail.com
3.	Manjari Chaturvedi	Director	9810502209	manjari.cea@gmail.com
4.	Nitin Deswal	Assistant Director	9717818349	nitindeswal14@gmail.com
5.	Komal Dupare	Assistant Director	9425618454	komal.dupare16@gmail.com
6.	Tejas Patil	Assistant Director	9697973400	tejas114141@gmail.com
II	NRPC			
7.	Naresh Bhandari	MS	9899061449	nbnareshbhandari@gmail.com
III	POWERGRID			
8.	Subir Sen	COO(CTU)		
9.	Mukesh Khanna	Chief GM(CTU-Plg)	9910378098	mkhanna@powergridindia.com
10.	Rajesh Verma	Sr. DGM(CTU-Plg)	9599192370	rverma@powergridindia.com
11.	Roushan Kumar	Engineer(CTU-Plg)	7546075385	roushan.k@powergridindia.com
IV	RVPNL			
12.	Mukesh Kr. Singhal	SE	9414061406	
13.	S.K.Baswal	C.E(PPD)	9413387178	ceppm@rvpn.co.in
14.	Sona Shishodia	Xen(P& P)	9414030303	Xen2.pp@rvpn.co.in
15.	M.P.Sharma	AEN(D)	9413382617	Mahavir.sh@rediffmail.com
V	HVPN			
16.	Rajesh Kumar	CE	9316467253	cetspm@org.in
17.	M.K.Shrivastava	Xen/TS/PKL	9356676677	xentspkl@hvpn.org.in
VI	UPPTCL			
18.	A K Shukla	SE	8005440018	setppssn@gmail.com

19.	Satyendra Kumar	EE	9415902886	cetppss@gmail.com
VII	PSTCL			
20.	Kamal Krishan	Addl-SE	9646118863	kamal.krishan.62@gmail.com
21.	Sonia	SE Planning	9953035874	se-planning@pstcl.org
VIII	DTL			
22.	Briendra Prasad	GM (T)Plg	9999533663	bprasadgm.dtl@gmail.com
IX	Railways			
23.	Vishnu Kant	CEE/PS/CORE	9794865311	ceepscore@gmail.com
24.	Dr. Ashish Aggarwal	Director	9794863121	diti.rdso@gmail.com
25.	Shobharam Verma	DyCEE/RE/JU	9315550196	srvrailway@gmail.com
26.	Pankaj	ADEE/JRD/JU	9001198307	
X	SECI			
27.	R. K.Aggarwal	Consultant	9910346333	pikabaya56@gmail.com
XI	NPCIL			
28.	George Sebastian	CE	9869846168	gsebastian@npcil.co.in
XII	HPPTCL			
29.	K.S. Attri	Director	9418488316	directorpc@hptcl.in
XIII	CVPPPL			
30.	Amrik Singh	GM	9560455326	amrik1474_28@yahoo.co.in
31.	Mohan Lal Thakur	Asst. Mgr	9419792461	mohan32906@gmail.com
32.	Sudhir Kumar	DM(E)	9540948627	sudhir.cot@gmail.com
XIV	PTCUL			
33.	Ravi Shankar	SE(P)	8791060013	se-pi-sri@ptcul.org
XV	POSOCO			
34.	Rajeev Porwal	GM	9871581133	rk.porwal@posoco.in
35.	S.R. Narsimhan	Director System Operation	9971117022	srnrarasimhan@posoco.in
36.	Gaurav Malviya	Dy. Manager	9599441301	guravmalviya@posoco.in
XVI	NTPC			
37.	Subhas Thakur	Add.GM(PEE)	9650991067	subhashthakur@ntpc.co.in

Annexure-II

S.No.	Transmission Element
1.	Creation of 2X160MVA, 220/132KV Grid Station at Rajouri/Siot
2.	220KV D/C line from 400/220KV Grid Station Siot/Rajouri to 220/132KV Grid Station Rajouri (55 Kms)
3.	Creation of 2x160 MVA, 220/132KV and 2X50 MVA 132/33KV Grid Station Katra-II (Preferably GIS)
4.	LILO of one Circuit of 220KV Salal-Kishanpur D/C Transmission line at Katra-II
5.	Laying of 2Km of 4Ckt (80 Ckt Kms) 132KV line on Multi Circuit towers with ACSR Panther for LILO of 132KV Katra-Reasi line D/c line at Katra-II
6.	Creation of 2X50MVA, 132/33KV GIS at Old City (Muthi)
7.	LILO of 132KV Barn –canal section at Muthi of the ring main around Jammu City using 400 Sq. mm Power Cable (2X4 Cables) 8Kms with 2 nos. 132KV line & 8 nos. 33KV line Bays.
8.	Creation of 2X160MVA,220/132KV & 2X50MVA 132/33KV Grid Station at Akhnoor-II at Domana
9.	220KV D/C line from 400/220KV Grid Station Rajouri/ Siot to 220/132/33KV Grid Station Akhnoor-II (60 Kms)
10.	Erection of new 220KV line from 220/132/33KV Grid Station Akhnoor-II to220/132/33KV Grid Station Barn (15 Kms)
11.	LILO of D/c between the Pounichak/ Muthi - Canal Section at Akhnoor-II -of ring main around Jammu City by Laying of 20Km of 4Ckt (80 Ckt Kms) 132KV line on Multi Circuit towers with HTLS Conductor
12.	Creation of 2X50 MVA, 220/33KV Grid Station Gurah Ramgarh
13.	LILO of one circuit of Samba- Bishnah 220kV D/c line at Gurah Ramgarh
14.	Creation of 2X50 MVA, 220/33KV Grid Station Gurah Karyal
15.	LILO of Udampur- Sarna 220kV line at Gurah Karyal
16.	Creation of New 40(2X20) MVA,132/33KV Grid Station Mendhar (50 MVA)
17.	Darba- Mendhar 132 kV S/c line (30 kms) along with 132kV bay at Darba
18.	Thickening of D/C 220KV Barn-Kishenpur Trans. Line from ACSR Zebra to HTLS conductor(37.44 kms)
19.	Augmentation of 220/132KV Transformation capacity at 220/132/66KV Grid Station Hiranagar from 320 to 400MVA by replacement of Existing (120x3+1X40)MVA Bank with 200(3+1X66.67)MVA Bank.

20.	Augmentation of 220/132/33kV Transformation capacity at Gladini. Replacement of over lived 220/132kV ,400 MVA single phase auto transformer bank at Gladni. Transformation capacity addition of 50 MVA at 132/33kV level to meet the load demand.
21.	Replacement of one of outdated 3x40MVA (+1 Spare) 1-ph 220/132KV Transformers Bank at 220/132/33KV Grid Station, Udhampur.
22.	Thickening of 132KV Busbar of Hiranagar S/s from Twin Zebra to Twin Moose or HTLS.
23.	Thickening of 132KV Busbars of Grid Station Barn from Twin Moose to Twin HTLS (ACCC Grosbeak)
24.	Thickening of 132KV BusBar of Grid Station Sidhra from Twin Zebra to Twin HTLS equivalent to Twin Moose.
25.	Thickening of 132KV Busbar of Grid Station Katra from Single Moose to Twin Moose
26.	Twinning of 132KV Busbar at Grid Station Rajouri from Single Zebra to Twin Zebra
27.	Twinning of 132KV Busbar at Grid Station Draba from Single Zebra to Twin Zebra
28.	Thickening of D/C 132KV Ring-Main Line of Jammu City by replacement of ACSR Panther by HTLS conductor on Live Line. i) Gladni-Sidhra link ii) Sidhra-Janipur link iii) Barn-Canal link iv) Barn-Janipur link v) Gladni-Bari Brahmana-II link Total= 55Kms (110 Ckt. KMs)
29.	Augmentation of 132/33 KV Grid Station Ramban from 1 X 20 to 2 X 20 MVA
30.	Augmentation of 132/66 KV Transformation capacity at 220/132/66KV Grid Station Hiranagar from 72.5 to 100MVA by replacement of 22.5(3X7.5)MVA Bank with 50MVA.
31.	Augmentation of Grid Station Jourian from 20MVA to 50 MVA
32.	Augmentation of Grid Station at Siot from 50MVA to 100 MVA
33.	Augmentation of 132/33 KV Transformation capacity at 132/33KV Grid Station Akhnoor from 70 to 100MVA by replacing existing 20MVA with 50MVA.
34.	Augmentation of 132/33 KV Grid Station Udhampur from (1 X 50 + 1 X 20) MVA to 2 X 50 MVA

35.	Augmentation of grid Station BB-I from 2X50+31.5 to 3X50MVA by replacement of 132/11KV 31.5 MVA transformer by 132/33kV, 50MVA transformer along with construction of new 132KV and 33KV incomer bays other allied works.
36.	Augmentation of 132/33 KV Grid Station Udampur from (1 X 50 + 1 X 20) MVA to 2 X 50 MVA
37.	LILO of 132kV D/c line between 132/33 kV Rajouri and 132/33kV Draba S/s at 220/132kV Rajouri S/s(12km)
38.	laying of new 132 KV S/C Transmission line from 132/33 KV Grid Station Katra-II to 132/33 KV Grid Station Jhajjar Kotli on ACSR Panther-20 Kms
39.	Thickening of 33KV Busbars at Grid Station Barn from Twin Moose to Twin HTLS
40.	Thickening of 33 KV Busbar at Grid Station Sidhra from Single Zebra to Twin Moose
41.	Twinning of 33KV Busbar at Grid Station Rajouri from Single Zebra to Twin Zebra
42.	Twinning of 33V Busbar at Grid Station Draba from Single Zebra to Twin Zebra
43.	Thickening of 66KV Busbars at Grid Station Kathua from ACSR Zebra to HTLS (equivalent 1.5KM)
44.	Thickening of 33 KV Bus-Bar at Grid Station Udampur with Moose conductor
	Additional works
45.	Capacity addition of 160 MVA, 220/66kV at 220/66MVA, 160 MVA Grid Station at Samba along with associated 220kV transformer bay and 66kV feeder bays
46.	Capacity addition of 160 MVA, 220/66kV at 220/66MVA, 160 MVA Grid Station at Kathua along with associated 220kV transformer bay and 66kV feeder bays
47.	Capacity addition of 160 MVA, 220/66kV at 220/66MVA, 160 MVA Grid Station at Chowadi along with associated 220kV transformer bay and 66kV feeder bays
48.	Augmentation of Grid Station at Barn from 2x160 MVA to 3x160 MVA
49.	Thickening of 33 KV Busbar at Grid Station at BB-1 from twin Zebra to Twin Moose
50.	Thickening of 220KV Busbar of Gladini S/s to HTLS.
51.	Creation of 50 MVA, 132/33KV Grid Station at Bheaderwah along with Khellani(Doda) –Bheaderwah132kV line(18km)
52.	Stabilisation of 132kV S/c Gladini –Kalakote transmission line by inserting tower location no 13 in Tawi River on pile foundation and replacement of S/c ACSR panther conductor of 132kV Gladni –Akhnoor section of transmission line by HTLS equivalent conductor for increasing its capacity

Scope of works of Gorakhpur – New Butwal 400kV D/c (Quad) line

A. Indian Side

Transmission Line

- (a) Gorakhpur – New Butwal 400kV D/c (Quad Moose) line (Indian Portion)

Substation

- (a) Extension at 400kV Gorakhpur S/s
- 2 nos. 400kV GIS line bays for the termination of Gorakhpur – New Butwal 400 kV D/c (Quad) line

B. Nepalese Side

Transmission Line

- (a) Gorakhpur – New Butwal 400kV D/c (Quad Moose) line (Nepalese Portion)

Substation

- (a) Up-gradation of **New Butwal** S/s to 400kV
- Creation of 400kV level and Installation of 400/220kV, 2x500MVA ICT along with associated bays
 - **400kV Line bays: 2 nos.**
 - 2 nos. 400kV line bays along with 420kV, 50MVAR switchable line reactors in each bay for the termination of Gorakhpur – New Butwal 400 kV D/c (Quad) line
 - **Reactive compensation**
 - 420kV, 2x125 MVAR Bus reactors along with associated bays
 - **Space for future**
 - 400kV line bays (incl. space for sw. line reactor): 8 nos.
 - 400/220kV, 2x500MVA ICT
 - 400kV ICT bays: 2 nos.
 - 220kV ICT bays: 2 nos.
 - 220kV line bays: 8 nos.

Operational Feedback of POSOCO

Sl. No.	Transmission Element	Description of Constraints	Remarks by CTU	Deliberations in the meeting
1	400/220kV Amritsar	Amritsar has 2*315+1*500 MVA ICTs. Since 13th June 2019, when paddy season of Punjab has started, loading of Amritsar ICTs has remained above the N-1 contingency limits for most of the time. Remarks: Since work on more 220kV lines is under progress at Amritsar(PG), it is necessary that capacity of existing ICTs be enhanced or new ICT planned at Amritsar or nearby 400kV station such as Makhu.	4th 500 MVA, 400/220kV ICT at Amritsar is already approved during 4th NRSCT. MOP vide its Om dated 15.1.2020 has assigned the work to Powergrid..	CEA informed that MoP vide its OM dated 15.1.2020 has assigned the work of 4th ICT at Amritsar to POWERGRID
2	400/220kV Sohawal	Sohawal has 2*315MVA ICTs. N-1 non-compliance was observed at the time of high demand in Uttar Pradesh	The matter was already discussed in 3rd NRSCT meeting. UPPTCL may clarify regarding requirement of additional ICT in view of new substations being implemented by UPPTCL in the vicinity of Sohawal.	UPPTCL informed that for meeting the n-1 criteria, additional transformer is required. UPPTCL to provide anticipated Load drawl from Sohawal substation after commissioning of new substations like Basti, Gonda etc.
3	Low voltage at Bhadla S/s	Large amount of solar generation has been/ is being commissioned near Bhadla area in Rajasthan. Evacuation of this solar generation is being facilitated by 400/220kV Bhadla (Rajasthan) and 765/400/220kV Bhadla (POWERGRID) substations. In real time, however, it is being observed that at time of high solar generation in this pocket, voltages at 400/220kV Bhadla (Rajasthan), 400/220kV Bhadla (POWERGRID) , etc. are on lower side (even below 380kV at around 12:00hrs). Solar generators in the area both stated owned and IPPs connected at Bhadla (Raj) and Bhadla (PG) are not absorbing/generating MVAR as per grid voltages	STATCOM are already agreed in 5th NRSCT for implementation at Bhadla-II, Fatehgarh-II & Bikaner along with MSC to improve voltage in Bhada, Fatehgarh & Bikaner complex. MOP yet to assign the work to implementing agency.	CEA informed that MoP vide its OM dated 23.1.2020 has assigned the work of implementation of STATCOM at Fatehgarh-II and Bhadla-II to POWERGRID, STATCOM at Bikaner-II has been proposed under TBCB for implementation.
4	Nodes experiencing high voltage & line tripping.	High voltage is reported at Mahendergarh, Allahabad, Fatehpur, Agra, Jaipur south & Kotuputli ISTS substations.	About 4000 MVAR Reactive compensation at various buses of NR including 500 MVAR at Kurukshetra is already agreed for implementation. Voltages are expected to be within permissible range with commissioning of above reactive compensation. Reactors & TCR which were agreed under ISTS are already taken up for implementation.	UPPTCL stated that for Agra-Sikar D/c line and Jaipur south-Agra D/c line, line reactors with switchable provision are present at both ends. As per the actual scenario, one circuit of Sikar-Agra line is open 50% of the time, due to which line reactors are facing outages. They requested that these line reactors should be allowed to be utilised as bus reactors. Members suggested POSOCO to look into the issue.

Down Stream network by State utilities from ISTS Station

S. No.	Substation	Downstream network bays	Commissioning status of S/s / Transformer	Planned 220kV system and Implementation Status	Status
1	400/220kV, 3x315 MVA Samba	2 nos. bays utilized under ISTS. Balance 4 nos to be utilized	Commissioned (1 st & 2 nd – Mar'13 3 rd – Oct'16) Bays – Mar'13	<ul style="list-style-type: none"> LILO of 220 kV Bishnha – Hiranagar D/c line. Target completion - Nov, 2019. <ul style="list-style-type: none"> 220kV D/c Samba (PG) – Samba (JKPDD) approved in 1st NRSCT. PDD, J&K to update.	<ul style="list-style-type: none"> No update received
2	400/220kV, 2x315 MVA New Wanpoh	6 Nos. of 220 kV bays to be utilized	Commissioned in Jul'14. Bays – Jul'14	<ul style="list-style-type: none"> 220 kV New Wanpoh - Mirbazar D/c line. Target completion – March, 2019. <ul style="list-style-type: none"> 220 kV Alusteng - New Wanpoh Line. Target completion -. PDD, J&K to update.	<ul style="list-style-type: none"> No update received
3	400/220kV, 2x500 MVA Kurukshetra (GIS)	4 nos. of 220 kV bays to be utilized	Commissioned in Mar'17	<ul style="list-style-type: none"> 220kV D/c Bhadson (Kurukshetra) – Salempur with HTLS conductor equivalent to twin moose. P.O. issued on 15.10.18. Contract agreement signed on 30.11.18. Target completion - 30.04.2020. HVPNL to update.	<ul style="list-style-type: none"> 220 kV Bhadson (Kurukshetra) – Salempur D/c line with HTLS conductor equivalent to twin moose. P.O. issued on 15.10.18. Target completion - 30.04.2020
4	400/220kV, 2x315 MVA Dehradun	Out of 6 bays, only two bays used. Balance 4 bays to be utilised.	Commissioned in Jan'17	<ul style="list-style-type: none"> 220 kV Dehradun-Jhajra line. Target completion: Nov, 2021 PTCUL to update.	<ul style="list-style-type: none"> No update received
5	Shahjahanpur, 2x315 MVA 400/220 kV	Partially utilized. Balance 4 Nos. of 220 kV bays to be utilized.	Commissioned in Jun/Sep'14	<ul style="list-style-type: none"> 220 kV D/C Shahjahanpur (PG) - Azimpur D/C line. Target completion - Dec, 2020. <ul style="list-style-type: none"> 220 kV D/C Shahjahanpur (PG) - Gola line. 	<ul style="list-style-type: none"> No update received

S. No.	Substation	Downstream network bays	Commissioning status of S/s / Transformer	Planned 220kV system and Implementation Status	Status
				Target completion - Dec, 2020. UPPTCL to update.	
6	Hamirpur 400/220 kV 2x 315 MVA Sub-station (Augmentation by 3x105 MVA ICT)	2 nos. bays utilized under ISTS. Balance 6 nos. to be utilized.	1 st – Dec'13, 2 nd – Mar'14 & 3 rd – Mar'19. 4 bays – Dec'13, 2 bays – Mar'14, 2 bays – Mar'19	<ul style="list-style-type: none"> 220 kV D/C Hamirpur-Dehan line. Target completion - Dec, 2020. HPSEBL to update.	<ul style="list-style-type: none"> No update received
7	Kaithal 400/220 kV 1x 315 MVA Sub-station	July 2017 (Shifting of transformer from Ballabgarh)	Commissioned	<ul style="list-style-type: none"> 220 kV Kaithal(PG)-Neemwala D/c line. Target completion - 30.04.2020. HVPNL to update.	<ul style="list-style-type: none"> 220 kV Kaithal(PG)- Neemwala D/c line. Target completion - 25.02.2020
8	Sikar 400/220kV, 1x 315 MVA S/s	2 Nos. of 220 kV bays	Commissioned	Retendering to be done in Dec'19 RRVNL to update.	<ul style="list-style-type: none"> No update received
9	Bhiwani 400/220kV S/s	6 nos. of 220kV bays	Commissioned	<ul style="list-style-type: none"> 220kV Bhiwani (PG) - Isherwal (HVPNL) D/c line. Target completion – Nov., 2020. HVPNL to update.	<ul style="list-style-type: none"> 220 kV D/C line from 765 kV S/stn. PGCIL Bhiwani to 220 kV S/stn. HVPNL Bhiwani 220 kV Bhiwani (PG) - Isherwal (HVPNL) D/c line. PO issued on 09.07.2019. Contractual completion is on 08.11.2020.
10	Jind 400/220kV S/s	6 nos. of 220kV bays	Commissioned	<ul style="list-style-type: none"> LILO of both circuits of 220kV D/c Narwana – Mund line at Jind (PG). Target completion - Nov., 2020. HVPNL to update.	<ul style="list-style-type: none"> LILO of both circuits of 220kV Narwana – Mund D/c line at Jind (PG). PO issued on 09.07.2019. Contractual completion is on 08.11.2020.
11	400/220kV Tughlakabad GIS(4x 500)	10 no of 220kV bays	Commissioned	<ul style="list-style-type: none"> RK Puram – Tughlakabad (UG Cable) 220kV D/c line. Scheme will be revised Target completion – March 2023.	<ul style="list-style-type: none"> No update received

S. No.	Substation	Downstream network bays	Commissioning status of S/s / Transformer	Planned 220kV system and Implementation Status	Status
				<ul style="list-style-type: none"> • Okhla – Tughlakabad 220kV D/c line. • Mehrauli – Tughlakabad 220kV D/c line. • BTPS – Tughlakabad 220kV D/c line. Commissioned. <ul style="list-style-type: none"> • Masjid Mor – Tughlakabad 220kV D/c line. Target completion – Dec., 2021 DTL to update.	
12	400/220kV Kala Amb GIS (TBCB) (7x105)	6 nos. of 220kV bays	Commissioned (Jul'17)	HPSEBL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Kala Amb S/s. Details for remaining 4 nos. of line bays may be provided. Target completion – Dec 2021 <ul style="list-style-type: none"> • HPSEBL to update. 	<ul style="list-style-type: none"> • No update received
13	400/220kV Kadarpur Sub-station (TBCB) (2x500)	8 nos. of 220kV bays	Commissioned on 11.12.19, as informed by TBCB licensee	NIT floated on 05.03.2019 with due date of submission on 22.04.2019 (opened on 23.04.2019 and under evaluation). Target completion - 31.06.2021 HVPNL to update.	<ul style="list-style-type: none"> • LILO of both circuits of 220 KV Pali - Sector 56 D/C line at Kadarpur along with augmentation of existing conductor from 220 KV Sector-56 to LILO point with 0.4 sq inch AL-59 conductor. • NIT re-floated on 03.09.2019. • Likely date of award- 15.02.2020. • LILO of both circuits of 220KV Sector 65 - Pali D/C line at Kadarpur along with augmentation of balance 0.4 sq. inch ACSR conductor of 220 kV Kadarpur - Sector 65 D/C line with 0.4sq inch AL-59 conductor.

Establishment of new 400/220kV substations in Northern Region:

Sl. No.	Name of Substation	MVA Capacity	Expected Schedule	Downstream connectivity furnished by States in 40 th SCSPNR	Status
1	400/220kV Dwarka-I GIS (8 nos. of 220kV bays)	4x 500	Mar'20	There are forest related issues that is expected to be resolved by March 2020. DTL to update.	No update received
2	220/66kV Chandigarh GIS (8 nos. of 66kV bays)	2x 160	Mar'20	Chandigarh to update.	No update received
3	400/220kV Jauljivi GIS Out of these 8 nos. 220kV Line Bays, 4 nos. (Pithoragath-2, & Dhauliganga-2) would be used by the lines being constructed by POWERGRID and balance 4 nos. (Almora-2, Jauljivi-2) bays would be used by the lines being constructed by PTCUL.	2x315	Mar'20	<ul style="list-style-type: none"> • 220kV Almora-Jauljibi line. • 220kV Brammah-Jauljibi line Target completion – May 2020 PTCUL to update.	No update received
4	400/220kV Sohna Road Sub-station (TBCB) (8 nos. of 220kV bays)	2x500	Jan'20	<ul style="list-style-type: none"> • LILO of both circuits of 220kV D/c Sector-69 - Roj Ka Meo line at 400kV Sohna Road. • LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road. To be awarded by Dec, 2019. Expected by May 2021. HVPNL to update.	<ul style="list-style-type: none"> • LILO of both circuits of 220 kV Sector-69 - Roj Ka Meo D/c line at Sohna Road. • To augment the balance conductor of 220 kV D/C Badshahpur - Sohna Road line after the LILO of both circuits of 220 kV Badshahpur-Sector-77 D/c line at Sohna Road, from 0.4 Sq. inch ACSR Conductor to 0.4 Sq. inch AL-59 conductor. • Work awarded on 23.12.2019. • Contractual completion date is 22.07.2020 • LILO of both circuits of 220 kV Badshahpur-Sector-77 D/c line at Sohna Road. • Likely date of completion is 30.04.2020.

Sl. No.	Name of Substation	MVA Capacity	Expected Schedule	Downstream connectivity furnished by States in 40 th SCPSNR	Status
5	400/220kV Prithla Sub-station (TBCB) (8 nos. of 220kV bays)	2x500	Deemed commissioned w.e.f. 06/08/19	<ul style="list-style-type: none"> • LILO of both circuits of 220kV D/c Sector-69 - Roj Ka Meo line at 400kV Sohna Road. • LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road. <p>Target completion – Feb 2020. HVPNL to update.</p>	<ul style="list-style-type: none"> • LILO of both circuits of 220 kV Ranga Rajpur-Palwal D/C line at Prithala. • Work awarded on 22.10.2018. • Contractual completion date 08.02.2020. • Line commissioned on 05.02.2020 • 220 kV Prithala - Sector-78, Faridabad D/C line. • NIT re- floated on 03.09.2019. • Likely date of award- 15.02.2020

Annexure-VI

Applications granted as per previous Connectivity and LTA meetings of NR

The details of Connectivity/LTA applications granted/agreed for grant in 25th – 30th Connectivity and LTA meetings of NR is given below:

Stage-I Connectivity

Sl. No.	Application No.	Applicant	Location	Date of Application	Connectivity Sought (MW)	Nature of Applicant	Proposed location for Connectivity	Dedicated Tr. System
1	1200002149	ReNew Solar energy (Jharkhand Three) Pvt. Ltd.	Jaisalmer, Rajasthan	18/06/2019	300	Solar	Fatehgarh-II	ReNew Solar Power Project – Fatehgarh-II 220kV S/C line
2	1200002233	Mahindra Susten Private Limited	Jodhpur, Rajasthan	30/07/2019	250	Solar	Bhadla-II	Mahindra Susten Solar Power Project – Bhadla-II 220kV S/c line
3	1200002179	Ayana Renewable Power One Private Limited	Bikaner, Rajasthan	04/07/2019	600	Solar	Bikaner	Ayana Power One Pvt. Ltd. Project – Bikaner 220 kV D/c line
4	1200002223	Adani Green Energy Seven Limited	Jaisalmer, Rajasthan	30/07/2019	300* (Earlier 400 MW)	Hybrid (Solar-400 MW, Wind-100 MW)	Fatehgarh-II	Adani Green Energy Seven Ltd. Solar Power Project – Fatehgarh-II 220kV D/c line
5	1200002224	Adani Green Energy Nine Limited	Jaisalmer, Rajasthan	01/08/2019	400	Hybrid (Solar-400MW, Wind-100MW)	Fatehgarh-II	Adani Green Energy Nine Solar Power Project – Fatehgarh-II 220kV D/c line
6	1200002308	NTPC LTD.	Jaisalmer, Rajasthan	29/10/2019	150	Solar	Fatehgarh-II	150 MW Solar Project at Devikoot – Fatehgarh-II 220 kV S/c line
7	1200002304	SBE Renewables Ten	Jaisalmer,	31/10/2019	450	Hybrid	Fatehgarh-II	SBE Renewables Ten

		Private Limited	Rajasthan		(Solar-420 MW Wind-105.3 MW)			Private Limited Power Project – Fatehgarh-II P.S 220 kV D/c line
8	1200002322	SBE Renewables Sixteen Private Limited	Jaisalmer, Rajasthan	31/10/2019	330	Solar	Fatehgarh-II	SBE Renewables Sixteen Private Limited Power Project – Fatehgarh-II P.S 220 kV S/c line (suitable to carry 330 MW at nominal voltage)
9	1200002337	NTPC Ltd.	Bikaner, Rajasthan	07/11/19	250	Solar	Bhadla-II PS	NTPC 250 MW solar Project at Kolayat – Bhadla-II PS 220 kV S/c line (suitable to carry 300 MW at nominal voltage)
10	1200002357	TBEA Solar India Pvt Ltd	Jodhpur, Rajasthan	16/11/2019	300	Solar	Bhadla-II PS	TBEA Bhadla Solar Power Plant – Bhadla-II 220 kV S/c line (suitable to carry 300 MW at nominal voltage)
11	1200002366	Renew Solar Urja Pvt. Ltd.	Jaisalmer, Rajasthan	27/11/2019	300	Solar	Fatehgarh-II PS	Renew Jaisalmer-4 power Project – Fatehgarh-II P.S 220 kV S/c line (suitable to carry 300 MW at nominal voltage)

*Applicant vide letter dated 18/09/2019 requested to change Connectivity quantum from 400 MW to 300 MW.

Stage-II Connectivity

Sl. No.	Application No.	Applicant	Location	Date of Application	Quantum of Stage-I Sought/	Stage-II Connectivity Sought (MW)/date	Quantum won / Land & Auditor Basis	Proposed location for Grant of Stage-II Connectivity	Dedicated Tr. System
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					Granted (MW)				
1	1200001797	Adani Renewable Energy Park Rajasthan Ltd. (AREPRL)	Jaisalmer, Rajasthan	30/11/2018	500 (1200001123)	500/ 31/08/21	Land & Auditor Certificate	Fatehgarh-II (New) PS	Adani Solar Park – Fatehgarh-II 220kV D/c line along with bays at generation end – to be implemented by applicant. 220kV bays at Fatehgarh-II PS shall be under the scope of ISTS.
2	1200002151	Rajasthan Solarpark Development Company Ltd. (RSDCL)	Jodhpur, Rajasthan	20/06/19	980 (1200000910)	980/ 01/08/21	Land & Auditor Certificate	Bhadla-II (New) PS	Nokh Solar Park - Bhadla-II Pooling Station 220 kV 2xD/c line along with bays at both ends – to be implemented by applicant.
3	1200002228	Ayana Renewable Power One Private Limited	Bikaner, Rajasthan	26/07/2019	600 (1200002179)	300/ 01.02.2021	SECI (ISTS-IV)	Bikaner P.S	Ayana Renewable Power One Pvt. Ltd. Plant - Bikaner Pooling Station 400 kV S/c line along with 400 kV bay. Generator Pooling Station – to be implemented by applicant

									400 kV bay at Bikaner PS shall also be implemented by the applicant
4	1200002229	ReNew Solar Energy (Jharkhand Three) Private Limited	Jaisalmer, Rajasthan	26/07/2019	300 (1200002149)	300/ 23.04.2021	SECI (ISTS-IV)	Fatehgarh-II (New) PS	Jaisalmer 3 Plant – Fatehgarh-II 220 kV S/c line along with 220 kV bay at Generator Pooling Station – to be implemented by applicant 220 kV bay at Fatehgarh-II PS shall be under the scope of ISTS
5	1200002225	Adani Green Energy Seven Limited	Jaisalmer, Rajasthan	30/07/2019	300 (1200002223)	300 / 01.02.2021 (300 MW-Solar, 75 MW-Wind)	SECI (ISTS Hybrid Tranche-II)	Fatehgarh-II (New) PS	Adani Green energy Seven Ltd. Plant - Fatehgarh-II PS 220kV S/c line along with 220 kV bay – to be implemented by applicant along with 220kV bay at Fatehgarh-II PS 220 kV bay at Fatehgarh-II PS shall be in the scope of ISTS.

6	1200002226	Adani Green Energy Nine Limited	Jaisalmer, Rajasthan	01/08/2019	400 (1200002224)	300/ 01.02.2021 300MW & Wind- 75MW)	SECI (Hybrid Tranche-II)	Fatehgarh-II (New) PS	Adani Green Energy Nine Solar Power Project – Fatehgarh-II 220 kV S/c line– to be implemented by applicant alongwith bays at generation switchyard (suitable to carry 300 MW at nominal voltage) Bays at Fatehgarh-II S/s shall be under the scope of ISTS.
7	1200002244	Mahindra Susten Private Limited	Jodhpur, Rajasthan	07/08/2019	250 (1200002233)	250/ 31.03.2021	SECI (ISTS-IV)	Bhadla-II (New) PS	Mahindra Susten Solar Power Project – Bhadla-II 220 kV S/c line – to be implemented by applicant alongwith bays at generation switchyard (suitable to carry 300 MW at nominal voltage). Bays at Bhadla-II S/s shall be under the scope of ISTS.
8	1200002291	ACME Solar Holdings Limited	Jodhpur, Rajasthan	11/10/2019	300 (1200001926)	300/ 21/06/2021 Solar	MSEDCL	Bhadla-II P.S (Connectivity sought at 220 kV)	ACME Bhadla-I Solar Power Plant- Bhadla-II P.S 220 kV S/c line – to be implemented by applicant along

									with bay at generation switchyard (suitable to carry 300 MW at nominal voltage) 220 kV Bay at Bhadla-II S/s shall be under the scope of ISTS.
9	1200002321	SBE Renewables Ten Private Limited	Jaisalmer, Rajasthan	31/10/2019	450 (1200002304)	450/04/05/2021 Hybrid	SECI (Hybrid Tr-I)	Fatehgarh-II P.S (Connectivity sought at 220 kV)	SBE Renewables Ten Private Limited Power Project - Fatehgarh-II P.S 220 kV D/c line – to be implemented by applicant along with bays at generation switchyard (suitable to carry 300 MW at nominal voltage on each circuit) 220 kV Bays at Fatehgarh-II S/s shall be under the scope of applicant.
10	1200002326	SBE Renewables Sixteen Private Limited	Jaisalmer, Rajasthan	31/10/2019	330 (1200002322)	330/27/06/2021 Solar	SECI (ISTS-V)	Fatehgarh-II P.S (Connectivity sought at 220 kV)	SBE Renewables Sixteen Private Limited Power Project - Fatehgarh-II P.S 220 kV S/c high capacity line

									(suitable to carry 330 MW at nominal voltage) – to be implemented by applicant along with bay at generation switchyard 220 kV Bay at Fatehgarh-II S/s shall be under the scope of ISTS.
11	1200002359	TBEA Solar (India) Pvt. Ltd	Jodhpur, Rajasthan	23/11/19	300 (1200002357)	300/ 01/07/2021 Solar	LOA/NTPC	Bhadla-II P.S (Connectivity sought at 220 kV)	TBEA Bhadla Solar Power Plant- Bhadla-II P.S 220 kV S/c line – to be implemented by applicant along with bay at generation switchyard (suitable to carry 300 MW at nominal voltage) 220 kV Bay at Bhadla-II S/s shall be under the scope of ISTS.
12	1200002370	Renew Solar Urja Private Limited	Jaisalmer, Rajasthan	27/11/19	300 (1200002366)	300/ 23/08/2021 Solar	SECI (ISTS-VI)	Fatehgarh-P.S (Connectivity sought at 220 kV)	Jaisalmer 4 project- Fatehgarh-II P.S* 220 kV S/c line – to be implemented by applicant along with bay at generation switchyard (suitable to carry

									300 MW at nominal voltage) 220 kV Bay at Fatehgarh-II S/s shall be under the scope of ISTS.
13	1200002339	NTPC Ltd.	Jaisalmer, Rajasthan	08/11/19	150 (1200002308)	150 (29/07/2021) Solar	SECI (Tranche-I under CPSU phase-II scheme)	Fatehgarh-P.S (Connectivity sought at 220 kV)	150 MW solar Project at Devikoot-Fatehgharh-II P.S* 220 kV S/c line – to be implemented by applicant along with bay at generation switchyard (suitable to carry 300 MW at nominal voltage) 220 kV Bay at Fatehgarh-II S/s shall be under the scope of applicant.
14	1200002340	NTPC Ltd.	Bikaner, Rajasthan	08/11/19	250 (1200002337)	250 (29/07/2021) Solar	SECI (Tranche-I under CPSU phase-II scheme)	Bhadla-II P.S (Connectivity sought at 400 kV)	250 MW solar Project at Kolayat - Bhadla-II P.S* 220 kV S/c line – to be implemented by applicant along with bay at generation switchyard (suitable to carry

									300 MW at nominal voltage) 220 kV Bay at Bhadla-II S/s shall be under the scope of applicant.
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Conventional Connectivity:

Sl. No.	Application ID	Name of the Applicant	Submission Date	Project Location	Connectivity location (requested)	Quantum (MW)	Proposal/Remarks
1	1200002318	Greenko Energies Private Ltd.	11/11/19	Neemuch, M.P.	765/400kV Chittorgarh Substation (PG)	1200	Geenko Energies Pvt. Ltd. generating plant- 765/400 kV Chittorgarh (PG) substation 400 kV (High capacity) D/c line from Mar'24.
2	1200002143	NPCIL	19/06/2019	Fatehabad, Haryana	1. Fatehabad (PG) 400/220 kV S/s. 2. Patran (TBCB) 400/220 kV S/s	2800/ 30.06.2024	1) GHAVP - Fatehabad (PG) 400 kV (Quad) D/c line – to be implemented by applicant. 2) GHAVP – Patran (TBCB) 400 kV (Quad) D/c line – to be implemented by applicant.

LTA Applications:

Sl. No	Application No./Date (Online)	Applicant	Connectivity/ Injection Point	Drawl Point	LTA (MW)/ Start & End Date (Sought)	Transmission system for LTA
1	1200002161 (22/06/2019)	Mahoba Solar (UP) Pvt. Ltd.	Fatehgarh-II P.S	NR(Target)	390 (Start : 03/12/2020 End : 02/12/2045)	As per Appendix-I.
2	1200002168 (28/06/2019)	Nanti Hydro Power Pvt. Ltd.	66kV Ghanvi-II S/s of HPSEB	DTL, Delhi	11.45 (Start : 01/09/2019 End : 31/10/2037)	Existing ISTS System
3	1200002185 (09/07/2019)	Avaada Energy Private Limited	Bikaner P.S	WR (Target)	350 (Start : 25/06/2021 End : 25/06/2046)	As per Appendix-II.
4	1200002232 (29/07/2019)	ReNew Solar Energy (Jharkhand Three) Private Limited	Fatehgarh-II (new) PS	WR (Target)	300 (Start : 23/04/2021 End : 22/04/2046)	As per Appendix-I.
5	1200000913 (01.12.2017)	Rajasthan Solarpark Development Company Ltd. (RSDCL)-SPPD	Bhadla-II (new) PS	NR (Target)	925 (Start : 01/12/2021 End : 30/11/2046)	As per Appendix-III.

					Revised Connectivity Time frame: 01.10.2021	
6	1200002239 (02/08/2019)	Mahindra Susten Private Limited	Bhadla-II (New) P.S	NR (Target)	250 (Start : 31/03/2021 End : 31/03/2046)	As per Appendix-III.
7	1200002238 (14/08/2019)	SBSR Power Cleantech Eleven Private Limited	Bikaner	NR (Target)	300 (Start : 03/01/2021 End : 02/01/2046)	As per Appendix-II.
8	1200002274 (30/09/2019)	Ayana Renewable Power One Private Limited	Bikaner P.S	WR (Target)	300 (Start : 23/04/2021 End : 23/04/2046)	As per Appendix-II.

In addition to above, LTA to NPCIL for 2800MW was also agreed for grant from 31.10.2024 to 31.10.2049 with following ISTS system:

1x500 MVA ICT at Patran 400/220 kV (TBCB) substation – to be implemented under ISTS

Transmission system required for LTA at Fatehgarh-II PS

- 1) Establishment of 765/400kV, 3X1500MVA ICT (2nd, 3rd & 4th) pooling station at suitable location near Fatehgarh in Jaisalmer Dist(Fatehgarh-II PS)
- 2) Establishment of 400/220kV, 1X500MVA, ICT (2nd) at Fatehgarh-II Pooling station
- 3) Establishment of 765/400kV, 2x1500MVA pooling station at suitable location near Phalodi/ Bhadla in Jodhpur (Bhadla-II PS)
- 4) Establishment of 765/400kV, 2x1500 MVA S/s at suitable location near Khetri
- 5) Charging of Fatehgarh-II PS–Bhadla section at 765kV level
- 6) LILO of both ckts of 765kV Ajmer – Bikaner D/c line at Bhadla-II PS
- 7) Fatehgarh-II PS – Bhadla -II PS 765kV D/c line
- 8) Bhadla-II PS – Bhadla (PG) 400kV D/c Line (Twin HTLS)
- 9) Bikaner(PG) – Khetri S/s 765kV D/c line
- 10) Khetri – Jhatikara 765kV D/c line
- 11) Khetri – Sikar (PG) 400kV D/c line (Twin AL59)
- 12) Augmentation with 1x1000MVA,765/400kV transformer (3rd) at Bhiwani (PG)
- 13) Ajmer (PG)– Phagi 765kV D/c line
- 14) Suitable scheme to limit fault current at Moga (PG) S/s.
- 15) Required Reactive Compensation

In addition, following ISTS for Connectivity, shall also be required for effecting LTA:

- 1) Establishment of 1x1500MVA, 765/400kV, Fatehgarh-II Pooling station at suitable location near Fatehgarh.
 - 2) Establishment of 1x500 MVA, 400/220kV ICT at Fatehgarh-II Pooling station
- LILO of Fatehgarh (TBCB) – Bhadla (PG) 765kV D/c line (to be operated at 400kV) at Fatehgarh-II so as to establish Fatehgarh (TBCB) – Fatehgarh-II 400kV D/c line (765kV line operated at 400 kV) and Fatehgarh-II - Bhadla 765kV D/c line or Fatehgarh-II – Bhadla-II 765 kV D/c line

Tr. System for LTA applications at Bikaner (PG)

- 1) Establishment of 765/400kV, 2x1500 MVA S/s at suitable location near Khetri
- 2) Bikaner(PG) – Khetri 765kV D/c line
- 3) Khetri – Jhatikara 765kV D/c line
- 4) Khetri – Sikar (PG) 400kV D/c line (Twin AL59)
- 5) Ajmer (PG) – Phagi 765kV D/c line
- 6) Augmentation with 765/400kV, 1x1000MVA transformer (3rd) at Bhiwani (PG)
- 7) Suitable bus splitting arrangement at 765/400/220 kV Moga S/s
- 8) Associated suitable Reactive Compensation

In addition, following Transmission System for Connectivity shall also be required:

- 1) Establishment of 400/220kV, 1x500 MVA ICT at Bikaner

Transmission system for LTA applications at Bhadla-II PS

- 1) Establishment of 1x1500MVA, 765/400kV, Bhadla-II (New) Pooling station
- 2) Establishment of 2x500 MVA, 400/220kV ICT (2nd & 3rd) at Bhadla-II (New) Pooling station
- 3) Bhadla-II PS – Bhadla (PG) 400kV D/c Line (Twin HTLS)
- 4) Bikaner(PG) – Khetri S/s 765kV D/c line
- 5) Khetri – Jhatikara 765kV D/c line
- 6) Khetri – Sikar (PG) 400kV D/c line (Twin AL59)
- 7) Augmentation with 1x1000MVA,765/400kV transformer (3rd) at Bhiwani (PG)
- 8) Ajmer (PG)– Phagi 765kV D/c line
- 9) Suitable bus splitting arrangement at 765/400/220 kV Moga S/s
- 10) Associated suitable Reactive Compensation

In addition, following Transmission System for Connectivity shall also be required:

1. Establishment of 1x500 MVA, 400/220kV ICT at Bhadla-II Pooling station
and

Bhadla PS – Bhadla-II (New) 400kV D/c line

or

2. Establishment of 1x1500 MVA, 765/400kV ICT & 1x500 MVA, 400/220kV ICT at Bhadla-II Pooling station
and

LILO of Ajmer – Bikaner 765 kV D/c at Bhadla-II S/s(New)

or

Bhadla-II – Fatehgarh-II 765kV D/c line & LILO of Fatehgarh (TBCB) – Bhadla (PG) 765kV D/c line (to be operated at 400kV) at Fatehgarh-II so as to establish Fatehgarh (TBCB) – Fatehgarh-II 400kV D/c line (765kV line operated at 400 kV) and Fatehgarh-II - Bhadla 765kV D/c line.

Annexure-VII**List of MTOAs received during July'19 to Dec'19 & granted**

Sl. No.	Application number	Date of grant	Name of Organization	Quantum	Injection point	Drawl Point	Period	
				(MW)			From	To
1	1200002361	08/01/20	Haryana Power Purchase Corporation	175	MB Power, Jabalpur PS, WR	Haryana, NR	01/05/19	31/08/19
2	1200002362	08/01/20	Haryana Power Purchase Corporation	97	MB Power, Jabalpur PS, WR	Haryana, NR	01/09/20	30/11/20
3	1200002372	08/01/20	Haryana Power Purchase Corporation	225	SKS, Chhattisgarh, WR	Haryana, NR	01/05/20	31/08/20
4	1200002373	08/01/20	Haryana Power Purchase Corporation	125	SKS, Chhattisgarh, WR	Haryana, NR	01/09/20	30/11/20