Status of margins available at existing ISTS substations for proposed RE integration								*All figures are in MW (as on 31-10-2022)*
Name of station	**Existing / UC/ Planned MVA Capacity**	**LTA Quantum (MW)**	**Aditional Margin on existing / UC system**		**Additional Margin with ICT Augmentation**		**No. of Trfs required for RE integration**	**Remarks**
			220kV level	**400kV level**	**220kV level**	**400kV level**		
Gujarat								
Pirana 400/220kV	**2x315MVA, 400/220kV**	0	300	0	0	0	0	400kV & 220kV overloading.
Bhuj PS 765/400/220kV	**4x1500MVA, 765/400kV 8x500MVA, 400/220kV**	3366	634		500		1	Bhuj PS has been planned for evacuation of 4.5GW power from generation projects. Presently, 3366MW LTA has been granted at Bhuj PS. Additional margin of 634MW is available with Bhuj-II-Lakadia-Vadodara765kV corridor. With additional 9th 400/220kV ICT at Bhuj PS, additional 500MW can be evacuated beyond 4000MW in case of injection at 220kV level. Above margin can also be availed at 400kV level upon requirement.
Radhanesda PS 400/220kV	**2x500MVA, 400/220kV**	700	250					700MW LTA has been granted to GPCL at Radhanesda. With availability of Bhuj-II-Lakadia-Vadodara765kV corridor, 250MW margin is available on existing 2x500MVA, 400/220kV ICTs and Radhanesda-Banaskantha 400kV D/c line (Twin AL-59).
Jam Khambhaliya PS 400/220kV	**4x500MVA, 400/220kV**	416.4	783.6					Presently, 416.4MW LTA has been granted at Jam Khambhaliya PS. 783.6MW margin is available as total 1200MW can be evacuated from Jam Khambhaliya (GIS) PS. Above margin can also be availed at 400kV level upon requirement.
Bhuj-II PS 765/400/220kV	**1x1500MVA, 765/400kV 4x500MVA, 400/220kV**	1048.5	951.5					Bhuj-II PS has been planned for evacuation of 2GW power from generation projects. Presently, 1048.5MW LTA has been granted at Bhuj-II PS. With the availability of 1x1500MVA, 765/400kV ICT at Bhuj-II PS and Bhuj-II-Lakadia-Vadodara765kV corridor, additional margin of 951.5MW is available. Above margin can also be availed at 400kV level upon requirement.
Total		**Total GUJ:**	**2919.1**	**0**	**500**	**0**	**1**	**3419.1**
Maharashtra								

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Solapur 765/400/220kV	**2x1500MVA, 765/400kV 2x315MVA+1x500MVA, 400/220kV**	0	300	2000	0	0	0	• 300MW margin available at 220kV level as space for one 220kV bay is available. •Space for one 400kV bay is available for evacuation of 2000MW power • Further, Solapur PP for 1.5GW potential has been planned alongwith Solapur PP - Solapur (PG) 400 kV D/c line (twin HTLS), for which 2 bays has been reserved at Solapur (PG).
Aurangabad 765/400/220kV	**2x1500MVA, 765/400kV 2x315MVA, 400/220kV**	0	0	1000	0	0	0	Overloading in 220kV downstream network.
Kolhapur 400kV	**400kV Switching Station**	0	0	0	0	0	0	Overloading observed in 400kV Kolhapur (PG)-Kolhapur(MSETCL) D/c line.
Parli (PG) 400/220kV	**2x500MVA, 400/220kV**	0	300	0	0	0	0	Overloading in 220kV downstream & Parli 400kV network.
Total		**Total MAH:**	**600**	**3000**	**0**	**0**	0	**3600**
Madhya Pradesh								
Khandwa 400/220kV	**2x315+1x500MVA, 400/220kV**	300	0	0	0	0	0	300MW Stage-II connectivity & 300MW LTA from Masaya Solar at Khandwa has also been granted. Overloading in 220kV downstream network.
Indore 400/220kV	**2x500MVA, 400/220kV + (1x500MVA with sectionalisation at 220kV for RE injection)**	324.4	150	0	0	0	0	500MVA, 400/220kV ICT has been approved in the 2nd WRPC(TP) meeting and all the works have been completed. 324.4MW LTA has been granted on this ICT and balance 150MW margin is left on the ICT. Overloading in 220kV downstream network.
Jabalpur PS 765/400	**2x1500MVA 765/400kV**	0	0	1000	0	0	0	765/400kV ICT overloading.
Seoni 400/220kV	**2x315MVA + 1x500MVA 400/220kV**	0	150	0	0	0	0	Overloading in 220kV downstream network.
Rajgarh 400/220kV	**2x315MVA, 400/220kV+ (1x500MVA with sectionalisation at 220kV for RE injection)**	0	143.76	0	475	0	1	St-II Connectivity of 156.24MW has been granted to Sprng Vayu Vidyut Pvt Ltd.at Rajgarh S/s (Existing) . Overloading in 220kV downstream network. Further, St-II Connectivity of 190.2MW has been granted to VEH Jayin Renewables Private Limited through 400/220kV, 500MVA ICT sectionalised at 220kV for RE injection as agreed in 10th CMETS WR held on 30.08.2022.

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Satna 765/400/220kV	2x1000MVA, 765/400kV 2x315+1x500MVA, 400/220kV	0	0	0	0	0	0	Overloading in 220kV downstream network.
Total		Total MP:	443.76	1000	475	0	1	1918.76
Chhattisgarh								
Dharamjaygarh 765/400kV	2x1500MVA 765/400kV	0	0	900	0	0	0	765/400kV ICT overloading.
Champa 765/400kV	6x1500MVA 765/400kV	0	0	1500	0	0	0	765/400kV ICT overloading.
Bilaspur PS 765/400kV	3x1500MVA 765/400kV	0	0	1000	0	0	0	765/400kV ICT overloading.
Total		Total Chhat:	0	3400	0	0	0	3400
WR Total		Total WR	3962.86	7400	975	0	2	12337.86
Andhra Pradesh								
NP Kunta 400/220kV	4X500 MVA, 400/220 kV	1500	300	0	0	0	0	
Kurnool (New) 765/400kV	2X1500 MVA, 765/400 kV	1465	0	500	0	1000	1	Additional margin is with the availability of Kurnool New - Maheshwaram 765kV D/c corridor.
Total		Total AP:	300	500	0	1000	1	1800
Karnataka								
Pavagada 400/220kV	5X500 MVA, 400/220 kV + 1x500 MVA, 400/220 kV	2050	1000	500	0	0	0	Connectivity of 3050 MW granted at Pavagada PS. Pavagada PS has been closed for all purpose regarding grant of Connectivity at 220kV level.
Hiriyur 400/220kV	2x315 MVA, 400/220 kV + 1x500 MVA, 400/220 kV	300	300	0	0	0	0	Connectivity of 600 MW granted at Hiriyur.
Hassan 400/220kV	2x315 MVA, 400/220 kV	NIL	0	0	0	0	0	Space constraint
Narendra New 765/400kV	Charged at 400 kV	NIL	0	0	0	0	0	
Raichur New 765/400kV	2X1500 MVA, 765/400 kV	NIL	0	700	0	0	0	
Total		Total Kar:	1300	1200	0	0	0	2500
Kerala								
Palakkad (400/220kV)	2x315 MVA, 400/220 kV + 1x500 MVA, 400/220 kV	0	300	0	0	0	0	
Total		Total Ker:	300	0	0	0	0	300
Tamil Nadu								

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Tuticorin-II GIS (erstwhile Tirunelvelli (PG) 400/230kV)	3X500 MVA, 400/230 kV + 2x500 MVA, 400/230 kV	2170.1	204.9	0	0	0	0	Connectivity of 2220.1 MW granted at Tuticorin-II PS. No 230kV line bay is available for allocation for grant of Connectivity. However, margins available in the already allocated line bays may be utilized for grant of Connectivity
Pugalur(Existing) 400/230kV	2X315 MVA + 1X500 MVA, 400/230 kV	300	300	0	0	0	0	
Malekottaiyur(Kalivendapattu) 400/230kV	2X315 MVA + 1X500 MVA, 400/230 kV	NIL	500	0	0	0	0	
Nagapattinam PS 765/400kV	Charged at 400 kV	NIL	0	1000	0	0	0	
Total		Total TN:	1004.9	1000	0	0	0	2004.9
SR Total		Total SR	2904.9	2700	0	1000	1	6604.9
Rajasthan								
Chittorgarh 765/400kV	765/400kV : 2x1500MVA	NIL	0	0	0	0	0	
Ajmer 765/400kV	765/400kV : 2x1500MVA	NIL	0	0	0	0	0	
Bhadla 765/400/220kV	765/400kV : 3x1500MVA 400/220kV : 8x500MVA	3530	0	0	0		0	

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Bikaner 765/400kV	**765/400kV : 3x1500MVA +1X1500MVA 400/220kV : 3x500MVA**	3275	300	300	0	0	0	3875MW Stage-II Connectivity (1235@220kV & 2640@400kV) has been received/granted at Bikaner S/s. Against this, 3275MW LTA (935MW@220kV & 2340@400kV) has been received/granted. Power flow is being influenced by LTA at Bikaner-II also. 600MW margin available with planned **1x1500MVA, 765/400kV ICT (3rd)** at Bikaner PS along with part of Phase-II system (Bikaner-II & onwards). Enhancement margins of 950MW (400kV) may require additonal corridors beyond Bikaner-II PS/Bikaner-III PS along with 4th 765/400kV Bikaner ICT (1x1500MVA) which is approved in NCT recently. Timeline for 4th 765/400kV Bikaner ICT (1x1500MVA) is 18 months from allocoation whereas balance scheme is 24 months from SPV transfer
Fatehgarh Pool (TBCB)	**400kV S/s (TBCB)**	2200	0	0	0		0	No margin is available.
Bassi	**400/220 kV : 2x315MVA +1x500MVA**	NIL	0	0	0		0	220kV overloading
Bhiwadi	**400/220 kV : 3x315MVA**	NIL	0	0	0		0	220kV overloading
Kankroli	**400/220 kV : 3x315MVA**	NIL	0	0	0		0	220kV overloading
Kota	**400/220 kV : 2x315MVA**	NIL	0	0	0		0	220kV overloading
Bhinmal	**400/220 kV : 2x315MVA+1x315 MVA planned**	NIL	0	0	0	0	0	
Neemarana	**400/220 kV : 1x315MVA +1x500MVA**	NIL	300	0	0	0	0	
Sikar	**400/220 kV : 2x315MVA +1x500MVA**	NIL	0	0	0		0	220kV overloading
Jaipur (South)	**400/220 kV : 2x500MVA**	NIL	400	0	0	0	0	
Kotputli	**400/220 kV : 3x315MVA**	NIL	150	0	0	0	0	

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Bhadla-II	**765/400kV: 5x1500 MVA** **400/220kV : 8x500MVA**	4195	0	0	1400	350	1 (765/400kV)	5945 MW Connectivity (220kV-3895MW, 400kV-2050MW)has been granted at Bhadla-II. Against which LTA of 4195MW (220kV-2495MW, 400kV-1700MW) is granted.Margin available for 1750MW (350MW at 400kV and 1400MW at 220kV) may be evacuated with under implementation Phase-II system and part of Phase-III scheme incl. **1x1500MVA, 765/400kV ICT (5th)** at Bhadla-II which may be envisaged by Dec'24 (tentative). No further margin is available for power evacuation.
Fatehgarh-II	**765/400kV: 6x1500 MVA** **400/220kV : 11x500MVA**	5110	350	0	0	0	0	5460 MW Connectivity (220kV-4960MW, 400kV-500MW) has been granted at Fatehgarh-II. Against which LTA of 5110MW (220kV-4610MW, 400kV-500MW) is granted. Margin available for 350MW LTA (at 220kV level) is with **1x500MVA, 400/220kV ICT (10th)** at Fatehgarh-II i.e. part of Phase-III system which may be envisaged by Dec'24 (tentative). No further margin is available for power evacuation. Recently 1x500MVA ICT approved to meet 'N-1' Criteria in Section-1
Bikaner-II	**400/220kV, 7x500MVA**	1862	38	0	0	0	0	After revocation of 1800MW St-II Connectivity, 5460 MW Connectivity (220kV-4460MW, 400kV-1000MW) has been received/granted at Bikaner-II. Power flow is being influenced by LTA at Bikaner also. For using available margins, Bikaner-II ICTs /Bikaner 765/400kV ICT shall be required. For LTA quantum >1900 MW at Bikaner-II PS , additonal corridors beyond Bikaner-II PS/Bikaner-III PS along with 400/220kv Bikaner-II ICTs (5x500MVA) which is approved in NCT recently with timeline of 24 months from SPV transfer (except 400/220kV Bikaner-II ICTs)

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Fatehgarh-III Section-I (erstwhile Ramgarh-II)	**400/220kV, 5x500MVA**	2280	0	0	0	0	1 (400/220kV)	F-III PS bus (220 kV, 400kV) has been sectionalized into two sections. 2280 MW Connectivity has already been granted at 220kV level at Fatehgarh-III one section. 1980MW LTA may be evacuated is with Phase-II system . Additional 300MW LTA (beyond 1980 MW) can be evacuated based on transformer augmentation in Ph-III subject to approval. No further margin is available.
Fatehgarh-III (erstwhile Ramgarh-II) Section-II	**765/400kV: 6x1500 MVA 400/220kV : 5x500MVA**	3833	0	0	1120	967	0	F-III PS bus (220 kV, 400kV) has been sectionalized into two sections. 5525MW Connectivity (2025 MW@ 220kV & 3500MW @ 400kV) is already granted at Fatehgarh-III section-II. Against this, 3833MW LTA (1000 @ 220kV & 2833MW @ 400kV) has been received/granted. Margin available for LTA is with Phase-III scheme. Margin is subject to **6x1500MVA, 765/400kV ICTs** at Fatehgarh-III (part of Phase-III System). Phase-III system is under bidding & envisaged by Dec'24 (tentative).
Bhadla-III	**765/400kV: 2x1500 MVA 400/220kV : 10x500MVA**	0	0	0	4500	2000	0	1740MW Connectivity has already been received /granted at 400kV(1000MW) and 220kV(740MW) level at Bhadla-III. Margins available for 6.5GW potential with Ph-III scheme. Phase-III system is under bidding & envisaged progressivley from Dec'24 (tentative).
Fatehgarh-IV	**400/220kV : 5x500MVA**	610	0	0	1390	0	0	2800MW Stage-II Connectivity has been received/ granted at Fatehgarh-IV PS. Against this, 610MW LTA has been received/granted at 220kV level for evacuation with Ph-III (Potential 2100MW). Margin available for additional 1390MW with Phase-III scheme. Phase-III system is under bidding & envisaged by Dec'24 (tentative). For evacuation of power beyond 1390MW additional system is under planning (beyond Ph-III).

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Ramgarh	765/400kV: 3x1500 MVA 400/220kV : 2x500MVA	2600	0	0	300	400	1 (400/220kV), 1 (765/400KV)	2600MW Stage-II Connectivity & LTA [1200 MW- 220kV; 1400 MW- 400kV] has been granted at Ramgarh PS. Margin available for 700MW (220kV & 400KV), out of which 300MW may be evacuated through Ph-III system (Ph-III Potential : 2900MW). Phase-III system is under bidding & envisaged by Dec'24 (tentative). For evacuation of additional (beyond 2900MW) about 4-5 GW power, system is under planning (beyond Ph-III)
Total		**Total RAJ**	**1538**	**350**	**8710**	**3717**	**4**	**14315**
Haryana								
Kaithal	400/220 kV : 3X315MVA	NIL	150	0	0	0	0	
Panchkula	400/220 kV : 2X315MVA+500MVA	NIL	0	0	500	0	1	
Bahadurgarh	400/220 kV : 315MVA +500MVA	NIL	150	0	0	0	0	
Sonepat	400/220 kV : 2x315MVA	NIL	0	0	500	0	1	
Manesar	400/220 kV : 2X500MVA	NIL	250	0	0	0	0	
Total		**Total HARY**	**550**	**0**	**1000**	**0**	**2**	**1550**
UTTAR PRADESH								
Kanpur(New)	765/400 kV : 2x1500MVA	NIL	0	1250	0	0	0	220kV Not available
Fatehpur	765/400kV : 2x1500MVA; 400/220 kV : 2X315MVA	NIL	0	0	500	0	1	
Mainpuri	400/220 kV : 2x315MVA +500MVA	NIL	150	0	0	0	0	
Sohawal	400/220 kV : 2x315MVA	NIL	100	0	0	0	0	
Lucknow (new)	765/400 kV : 2x1500MVA	NIL	0	500	0	0	0	
Balia	765/400 kV : 2x1500MVA	NIL	0	850	0	0	0	220kV Not available.
Bareilly(New)	765/400 kV : 2x1500MVA	NIL	0	500	0	0	0	
Varanasi	765/400 kV : 2x1500MVA	NIL	0	500	0	0	0	
Total		**Total UP**	**250**	**3600**	**500**	**0**	1	**4350**
NR Total		**Total NR**	**2338**	**3950**	**10210**	**3717**	**7**	**20215**
Odisha								

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Baripada	400/220kV: 2x315MVA + 1x500MVA	0	600	0	0	0	0	
Indravati	400/220kV: 2x315MVA	0	0	500	0	0	0	
Keonjhar	400/220kV: 2x315MVA	0	300	0	0	0	0	
Pandiabil	400/220kV: 2x500MVA	0	900	0	0	0	0	
Rengali	400/220kV: 2x315MVA	0	200	0	0	0	0	
Rourkela	400/220kV: 2x630MVA	0	300	0	0	0	0	
Angul	765/400: 4x1500MVA	0	0	1500	0	0	0	
Total		Total Odisha:	2300	2000	0	0	0	4300
Jharkhand								
Chaibasa	400/220kV: 2x315MVA	0	600	0	0	0	0	
Daltonganj	400/220kV: 2x315MVA	0	200	0	0	0	0	
Ranchi (New)	765/400: 2x1500MVA	0	0	500	0	0	0	
Chandwa	400kV switching		0	0	0	0	0	
Total		Total Jhark:	800	500	0	0	0	1300
Bihar								
Banka	400/132kV: 2x200MVA + 1x315MVA	0	300	0	0	0	0	132kV level
Lakhisarai	400/132kV: 2x200MVA + 1x315MVA	0	200	0	0	0	0	132kV level
Motihari	400/132kV: 2x200MVA + 1x315MVA	0	150	0	0	0	0	132kV level
Biharsharif-A	400/220kV: 2x315MVA	0	600	0	0	0	0	
Biharsharif-B	400/220kV: 1x315MVA + 1x500MVA	0	600	0	0	0	0	
Chandauti	400/220kV: 3x500MVA	0	600	0	0	0	0	
Muzaffarpur	400/220kV: 2x315MVA + 1x500MVA	0	600	0	0	0	0	line corridor available for 2 lines; no space for ICT
Saharsa	400/220kV: 2x500MVA	0	600	0	0	0	0	
Sasaram	400/220kV: 2x500MVA	0	600	0	0	0	0	Line bays in GIS only.
Sitamarhi	400/220kV: 2x500MVA	0	600	0	0	0	0	
Total		Total Bihar:	4850	0	0	0	0	4850
West Bengal								
Subhasgram	400/220kV: 2x315MVA + 1x500MVA	0	300	0	0	0	0	
Jeerat-New	765/400: 2x1500MVA	0	0	1500	0	0	0	
Medinipur	765/400: 2x1500MVA	0	0	900	0	0	0	

Name of station	Existing / UC/ Planned MVA Capacity	LTA Quantum (MW)	Aditional Margin on existing / UC system		Additional Margin with ICT Augmentation		No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
Total		Total WB:	300	2400	0	0	0	2700
ER Total		ER-Total	8250	4900	0	0	0	13150
Summary	All India	All India Total	17455.76	18950	11185	4717	10	52307.76

Disclaimer :-
The margins indicated at the exisiting ISTS substation may vary depending on network topology, Load-Generation balance, etc.