

Status of margins available at existing ISTS substations for proposed RE integration								All figures are in MW (as on 31-07-2022)
Name of station	Existing / UC/Planned MVA Capacity	LTA Quantum (MW)	Additional Margin on existing / UC system		Additional Margin with ICT Augmentation		400/220kV No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
<b>Gujarat</b>								
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	2916	1084		500		1	Bhuj PS has been planned for evacuation of 4.5GW power from generation projects. Presently, 2916MW LTA has been granted at Bhuj PS. Additional margin of 1084MW 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.
<b>Total</b>		<b>Total GUJ:</b>	<b>3369.1</b>	<b>0</b>	<b>500</b>	<b>0</b>	<b>1</b>	<b>3869.1</b>
<b>Maharashtra</b>								

Name of station	Existing / UC/Planned MVA Capacity	LTA Quantum (MW)	Additional Margin on existing / UC system		Additional Margin with ICT Augmentation		400/220kV 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	1000	0	0	0	<ul style="list-style-type: none"> <li>300MW margin available at 220kV level as space for one 220kV bay is available.</li> <li>Solapur (PG) has been planned for evacuation of 2.5GW power from generation projects.</li> <li>For evacuation of 1500MW power, Solapur PP 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).</li> <li>For evacuation of additional 1000MW power, one 400kV bay is available.</li> </ul>
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.
<b>Total</b>		<b>Total MAH:</b>	<b>600</b>	<b>2000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2600</b>
<b>Madhya Pradesh</b>								
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 (existing) + 1x500MVA	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, 400/220kV	0	150	0	0	0	0	Overloading in 220kV downstream network.
Rajgarh 400/220kV	2x315MVA, 400/220kV	0	194.16	0	0	0	0	St-II Connectivity of 105.84MW has been granted to Sprng Vayu Vidyut Pvt Ltd.at Rajgarh S/s (Existing). Overloading in 220kV downstream network.
Satna 765/400/220kV	2x1000MVA, 765/400kV 2x315+1x500MVA, 400/220kV	0	0	0	0	0	0	Overloading in 220kV downstream network.
<b>Total</b>		<b>Total MP:</b>	<b>494.16</b>	<b>1000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1494.16</b>
<b>Chhattisgarh</b>								
Dharamjaygarh 765/400kV	2x1500MVA 765/400kV	0	0	900	0	0	0	765/400kV ICT overloading.

Name of station	Existing / UC/Planned MVA Capacity	LTA Quantum (MW)	Additional Margin on existing / UC system		Additional Margin with ICT Augmentation		400/220kV No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
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.
<b>Total</b>		<b>Total Chhat:</b>	<b>0</b>	<b>3400</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3400</b>
<b>WR Total</b>		<b>Total WR</b>	<b>4463.26</b>	<b>6400</b>	<b>500</b>	<b>0</b>	<b>1</b>	<b>11363.26</b>
<b>Andhra Pradesh</b>								
NP Kunta 400/220kV	4X500 MVA, 400/220 kV	1500	300	0	0	0	0	
Kurnool (New) 765/400kV	2X1500 MVA, 765/400 kV	NIL	0	0	0	0		Stage-II connectivity of 900 MW granted
<b>Total</b>		<b>Total AP:</b>	<b>300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>300</b>
<b>Karnataka</b>								
Pavagada 400/220kV	5X500 MVA, 400/220 kV + 1x500 MVA, 400/220 kV	2050	0	0	0	0	1	Stage-II connectivity of 1000 MW granted/agreed for grant at Pavagada
Hiriyur 400/220kV	2x315 MVA, 400/220 kV + 1x500 MVA, 400/220 kV	300	300	0	0	0	0	Stage-II connectivity of 300 MW granted against margin of 300 MW
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	
<b>Total</b>		<b>Total Kar:</b>	<b>300</b>	<b>700</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1000</b>
<b>Kerala</b>								
Palakkad (400/220kV)	2x315 MVA, 400/220 kV + 1x500 MVA, 400/220 kV	0	300	0	0	0	0	
<b>Total</b>		<b>Total Ker:</b>	<b>300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>300</b>
<b>Tamil Nadu</b>								
Tuticorin-II GIS (erstwhile Tirunelveli (PG) 400/230kV)	3X500 MVA, 400/230 kV + 2x500 MVA, 400/230 kV	2170.1	204.9	0	0	0	2	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(Kalive ndapattu) 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	

Name of station	Existing / UC/Planned MVA Capacity	LTA Quantum (MW)	Additional Margin on existing / UC system		Additional Margin with ICT Augmentation		400/220kV No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
<b>Total</b>		<b>Total TN:</b>	<b>1004.9</b>	<b>1000</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2004.9</b>
<b>SR Total</b>		<b>Total SR</b>	<b>1904.9</b>	<b>1700</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3604.9</b>
<b>Rajasthan</b>								
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 : 7x500MVA	3530	0	0	0		0	
Bikaner 765/400kV	765/400kV : 2x1500MVA 400/220kV : 2x500MVA	3275	65	0	0	300	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 (220kV/400kV) may require additional transmissison system at Bikaner.
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 : 2x315MVA	NIL	150	0	0	0	0	

Name of station	Existing / UC/Planned MVA Capacity	LTA Quantum (MW)	Additional Margin on existing / UC system		Additional Margin with ICT Augmentation		400/220kV 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	1400	350	0	0	0	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. The evacuation system may also require <b>1x1500MVA, 765/400kV ICT (5th)</b> at Bhadla-II i.e. part of Phase-III system which may be envisaged by Dec'23 (tentative). No further margin is available for power evacuation.
Fatehgarh-II	765/400kV: 6x1500 MVA 400/220kV : 10x500MVA	5110	0	0	350	0	1	5460 MW Connectivity (220kV-4960MW, 400kV-500MW)has been granted at Fatehgarh-II.Against which LTA of 4810MW (220kV-4310MW, 400kV-500MW) is granted. Margin available for 180MW LTA.s with Phase-II system which is expected progressive from Dec'22. Further, margin available for 470MW LTA (at 220kV level) is with <b>1x500MVA, 400/220kV ICT (10th)</b> at Fatehgarh-II i.e. part of Phase-III system which may be envisaged by Dec'23 (tentative). No further margin is available for power evacuation.
Bikaner-II	400/220kV, 2x500MVA	1500	400		0	0	0	** Updated as on 31.08.22  After revocation of St-II connectivity of 1800 MW, balance quantum of granted St-II connectivity is 3775MW (2775 @ 220kV & 1000MW @ 400kV) at Bikaner-II PS. 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, additional corridors beyond Bikaner-II PS has been planned for which NCT approval is awaited.

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			220kV level	400kV level	220kV level	400kV level		
<b>Fatehgarh-III Section-I (erstwhile Ramgarh-II)</b>	<b>400/220kV, 4x500MVA</b>	2280	0	0	0	0	1	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. Margin available for LTA (1980MW) is with Phase-II system (GIB issue may delay Ph-II transmission system). Margin for additional 300MW LTA (beyond 1980 MW) is available for power evacuation based on transformer augmentation in Ph-III subject to approval. No further margin is available.
<b>Fatehgarh-III (erstwhile Ramgarh-II) Section-II</b>	<b>765/400kV: 6x1500 MVA 400/220kV : 5x500MVA</b>	3733	0	0	1120	1067	5	F-III PS bus (220 kV, 400kV) has been sectionalized into two sections. 5525MW Connectivity (2025 MW@ 220kV & 3500MW @ 400kV) has already been granted at Fatehgarh-III section two. Against this, 3433MW LTA (700 @ 220kV & 2733MW @ 400kV) has been received/granted. Margin available for 2487MW LTA is with Phase-III scheme. Margin is subject to <b>6x1500MVA, 765/400kV ICTs</b> at Fatehgarh-III (part of Phase-III System). Phase-III system is under bidding & envisaged progressively from Jun'24 (tentative).
<b>Bhadla-III</b>	<b>765/400kV: 2x1500 MVA 400/220kV : 10x500MVA</b>	0	0	0	4500	1500	10	550MW Connectivity has already been received /granted at 400kV level at Bhadla-III. Margins available for 6GW potential with Ph-III scheme. Phase-III system is under bidding & envisaged progressively from Jun'24 (tentative).
<b>Fatehgarh-IV</b>	<b>400/220kV : 5x500MVA</b>	610	0	0	1390		5	2550MW 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. Margin available for additional 1390MW with Phase-III scheme. Phase-III system is under bidding & envisaged progressively from Jun'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)	Additional Margin on existing / UC system		Additional Margin with ICT Augmentation		400/220kV 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	
<b>Total</b>		<b>Total Odisha:</b>	<b>2300</b>	<b>2000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4300</b>
<b>Jharkhand</b>								
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	
<b>Total</b>		<b>Total Jhark:</b>	<b>800</b>	<b>500</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1300</b>
<b>Bihar</b>								
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	
<b>Total</b>		<b>Total Bihar:</b>	<b>4850</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4850</b>
<b>West Bengal</b>								
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	
<b>Total</b>		<b>Total WB:</b>	<b>300</b>	<b>2400</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2700</b>



Name of station	Existing / UC/Planned MVA Capacity	LTA Quantum (MW)	Additional Margin on existing / UC system		Additional Margin with ICT Augmentation		400/220kV No. of Trfs required for RE integration	Remarks
			220kV level	400kV level	220kV level	400kV level		
			8250	4900	0	0	0	13150
<b>ER Total</b>		<b>ER-Total</b>	<b>8250</b>	<b>4900</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13150</b>
<b>Summary</b>	<b>All India</b>	<b>All India Total</b>	<b>18133.16</b>	<b>16950</b>	<b>9660</b>	<b>3267</b>	<b>30</b>	<b>48010.16</b>

**Disclaimer :-**

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