

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: August 13, 2022
Hours: 19:00 Hours

Date **Time** **Load(MW)**
 8-Aug-22 19:33 hrs 513.31

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	186.13	400kV THP - Siliguri Line - I	262.66	
		Unit- II	184.30	400kV THP - Siliguri Line - II	260.86	
		Unit- III	185.28	400kV THP - Siliguri Line- IV	253.35	
		Unit- IV	185.30	400kV THP - Malbase Line - III	328.40	
		Unit- V	185.11	400kV Malbase - Siliguri Line	234.85	
		Unit- VI	186.29	-	-	
		Total	1,112.41	Auxiliary Consumption & Transformation Losses at Generator end	0.64%	
2	720MW MHP	Unit-I	145.11	400kV MHP - Jigmeling Line - I	192.31	400kV MHP-JLG Line IV under breakdown. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on Standby. 400kV JLG_ALI Line II (Direct) on Standby.
		Unit-II	145.01	400kV MHP - Jigmeling Line - II	192.69	
		Unit-III	135.36	400kV MHP - Jigmeling Line - III	187.94	
		Unit-IV	150.53	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	65.90	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	201.37	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	300.30	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	38.61	
		-	-	80MVA, 220/132kV ICT - II (HV)	39.45	
		-	-	220kV Tsirang - Jigmeling Line	-20.60	
-	-	132kV Gelephu - Salakati Line	14.06			
Total	576.01	Auxiliary Consumption & Transformation Losses at Generator end	0.53%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	62.86	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	62.87	
		Unit- III	91.45	220kV CHP - Malbase Line- III	87.65	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	42.14	
		-	-	220kV Malbase - Birpara Line	36.56	
		-	-	66kV CHP - Chumdo Line	14.19	
		-	-	66kV CHP - Gedu Line	3.67	
		-	-	3x3MVA, 66/11kV TFR	1.35	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	-0.12%			
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	57.90	
		Unit- II	12.10	66kV BHP - Lobeyssa Line	25.98	
		Total	24.40	220kV BHP - Tsirang Line	-19.08	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.60	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	2.81	
		Total	41.60	Auxiliary Consumption & Transformation Losses at Generator end	0.91%	
6	126MW DHP	Unit-I	39.37	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	39.00	220kV DHP - Dagapela Line	77.88	
		-	-	220kV Jigmeling - Dagapela Line	-35.35	
		-	-	5MVA, 220/33kV TFR	0.48	
Total	78.37	Auxiliary Consumption & Transformation Losses at Gen. end	0.01%			
7	60MW KHP	Unit- I	16.55	132kV KHP - Nangkhor Line	38.20	
		Unit-II	16.56	132kV KHP - Kilikhar Line	26.84	
		Unit- III	16.55	5MVA, 132/11kV TFR	0.40	
		Unit- IV	16.42	132kV Motanga - Rangia Line	33.72	
		Total	66.08	Auxiliary Consumption & Transformation Losses at Generator end	0.97%	

Note: Generation-Load Summary (MW) for August 13, 2022 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW)
1	Western Grid	1,531.19	342.43	335.00	1,174.01	7.43
2	Eastern Grid	642.09	107.39	103.68	549.45	3.71
Total		2,173.28	449.82	438.68	1,723.46	11.14

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Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW)
1	Western Grid	1,629.88	285.52	272.82	1,254.52	12.70
2	Eastern Grid	461.85	76.74	73.52	474.95	3.22
Total		2,091.73	362.26	346.34	1,729.47	15.92

NOTE-

- The Instantaneous load balance,calculated as (Total generation - (Total export-Import) - Total domestic load), do not tend towards zero. This could be due to the following reasons:
 - Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 9:00hrs) due to many meter to be read manually.
 - The clocks of all the locations are not synchronized.
- This report is generated to give an idea of the generation & load flow for the system at a particular instant.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 14, 2022
Hours:	09:00 Hours

Date	Time	Load(MW)
8-Aug-22	19:33 hrs	513.31

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	185.09	400kV THP - Siliguri Line - I	265.89	
		Unit- II	185.84	400kV THP - Siliguri Line - II	263.23	
		Unit- III	185.52	400kV THP - Siliguri Line - IV	254.61	
		Unit- IV	185.41	400kV THP - Malbase Line - III	325.37	
		Unit- V	185.44	400kV Malbase - Siliguri Line	236.15	
		Unit- VI	185.43	-	-	
		Total	1,112.73	Auxiliary Consumption & Transformation Losses at Generator end	0.33%	
2	720MW MHP	Unit-I	197.68	400kV MHP - Jigmeling Line - I	242.81	400kV MHP-JLG Line IV under breakdown. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) on Standby. 400kV JLG_ALI Line II(Direct) on Standby
		Unit-II	197.79	400kV MHP - Jigmeling Line - II	243.56	
		Unit-III	135.41	400kV MHP - Jigmeling Line - III	237.21	
		Unit-IV	197.41	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	48.41	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	267.61	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	402.04	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	39.89	
		-	-	80MVA, 220/132kV ICT - II (HV)	40.62	
		-	-	220kV Tsirang - Jigmeling Line	-37.82	
-	-	132kV Gelephu - Salakati Line	21.42			
Total	728.29	Auxiliary Consumption & Transformation Losses at Generator end	0.65%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	67.54	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	67.67	
		Unit- III	91.45	220kV CHP - Malbase Line- III	101.47	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	18.78	
		-	-	220kV Malbase - Birpara Line	33.34	
		-	-	66kV CHP - Chumdo Line	11.23	
		-	-	66kV CHP - Gedu Line	4.73	
		-	-	3x3MVA, 66/11kV TFR	1.27	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.63%			
4	24MW BHP (U/S)	Unit- I	11.87	220kV BHP - Semtokha Line	76.30	
		Unit- II	11.87	66kV BHP - Lobeyasa Line	25.14	
		Total	23.74	220kV BHP - Tsirang Line	-36.19	
5	40MW BHP (L/S)	Unit- I	20.45	5MVA, 66/11kV TFR	0.41	
		Unit- II	21.07	30MVA ICT, 220/66kV (HV)	1.70	
		Total	41.52	Auxiliary Consumption & Transformation Losses at Generator end	-0.61%	
6	126MW DHP	Unit-I	63.70	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	63.13	220kV DHP - Dagapela Line	126.29	
		-	-	220kV Jigmeling - Dagapela Line	-71.28	
		-	-	5MVA, 220/33kV TFR	0.50	
Total	126.83	Auxiliary Consumption & Transformation Losses at Generator end	0.03%			
7	60MW KHP	Unit- I	16.47	132kV KHP - Nangkhoh Line	41.55	
		Unit-II	16.61	132kV KHP - Kilikhar Line	23.49	
		Unit- III	16.51	5MVA, 132/11kV TFR	1.20	
		Unit- IV	16.52	132kV Motanga - Rangia Line	30.98	
		Total	66.11	Auxiliary Consumption & Transformation Losses at Generator end	-0.20%	

Note: Generation-Load Summary (MW) for August 14, 2022 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW)
1	Western Grid	1,579.23	357.34	352.35	1,188.43	4.99
2	Eastern Grid	794.40	105.81	101.23	722.05	4.58
Total		2,373.63	463.15	453.58	1,910.48	9.57

Note: Generation-Load Summary for August 14, 2021 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW)
1	Western Grid	1,663.43	274.37	255.08	1,289.63	19.29
2	Eastern Grid	659.40	65.98	62.60	692.85	3.38
Total		2,322.83	340.35	317.68	1,982.48	22.68

NOTE:

- The Instantaneous load balance,calculated as (Total generation - (Total export-Import) - Total domestic load), do not tend towards zero. This could be due to the following reasons:
 - Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 9:00hrs) due to many meter to be read manually.
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