

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 9, 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	185.64	400kV THP - Siliguri Line - I	259.36	
		Unit- II	185.55	400kV THP - Siliguri Line - II	258.75	
		Unit- III	185.39	400kV THP - Siliguri Line- IV	251.03	
		Unit- IV	185.13	400kV THP - Malbase Line - III	333.05	
		Unit- V	185.46	400kV Malbase - Siliguri Line	232.07	
		Unit- VI	185.12	-	-	
		Total	1,112.29	Auxiliary Consumption & Transformation Losses at Generator end	0.91%	
2	720MW MHP	Unit-I	197.71	400kV MHP - Jigmeling Line - I	242.89	400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I(Interim) on Standby.
		Unit-II	197.76	400kV MHP - Jigmeling Line - II	243.68	
		Unit-III	135.51	400kV MHP - Jigmeling Line - III	237.36	
		Unit-IV	197.70	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)	47.55	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	164.35	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	251.38	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	250.87	
		-	-	80MVA, 220/132kV ICT - I (HV)	38.87	
		-	-	80MVA, 220/132kV ICT - II (HV)	39.43	
		-	-	220kV Tsirang - Jigmeling Line	-13.71	
-	-	132kV Gelephu - Salakati Line	13.73			
Total	728.68	Auxiliary Consumption & Transformation Losses at Generator end	0.65%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	62.76	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	62.75	
		Unit- III	91.45	220kV CHP - Malbase Line- III	76.72	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	48.81	
		-	-	220kV Malbase - Birpara Line	44.33	
		-	-	66kV CHP - Chumdo Line	13.71	
		-	-	66kV CHP - Gedu Line	5.06	
		-	-	3x3MVA, 66/11kV TFR	1.33	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	1.19%			
4	24MW BHP (U/S)	Unit- I	11.89	220kV BHP - Semtokha Line	50.65	
		Unit- II	11.89	66kV BHP - Lobeyasa Line	25.81	
		Total	23.78	220kV BHP - Tsirang Line	-11.54	
5	40MW BHP (L/S)	Unit- I	20.42	5MVA, 66/11kV TFR	0.66	
		Unit- II	21.05	30MVA ICT, 220/66kV (HV)	3.20	
		Total	41.47	Auxiliary Consumption & Transformation Losses at Generator end	-0.51%	
6	126MW DHP	Unit-I	50.43	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	50.06	220kV DHP - Dagapela Line	99.94	
		-	-	220kV Jigmeling - Dagapela Line	-47.41	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	100.49	Auxiliary Consumption & Transformation Losses at Gen. end	0.25%			
7	60MW KHP	Unit- I	16.51	132kV KHP - Nangkhoh Line	39.31	
		Unit-II	16.44	132kV KHP - Kilikhar Line	25.65	
		Unit- III	16.61	5MVA, 132/11kV TFR	0.35	
		Unit- IV	16.56	132kV Motanga - Rangia Line	28.32	
		Total	66.12	Auxiliary Consumption & Transformation Losses at Generator end	1.23%	

Note: Generation-Load Summary (MW) for August 09, 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	1,552.44	347.69	334.40	1,171.05	13.29
2	Eastern Grid	794.80	119.85	114.29	708.65	5.56
Total		2,347.24	467.54	448.69	1,879.70	18.85

Note: Generation-Load Summary for August 09, 2021 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	512.30	284.22	279.71	167.14	4.51
2	Eastern Grid	658.03	72.82	69.88	646.15	2.94
Total		1,170.33	357.04	349.59	813.29	7.45

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 10, 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	185.61	400kV THP - Siliguri Line - I	262.63	
		Unit- II	185.80	400kV THP - Siliguri Line - II	261.11	
		Unit- III	186.01	400kV THP - Siliguri Line- IV	253.80	
		Unit- IV	183.63	400kV THP - Malbase Line - III	325.84	
		Unit- V	185.18	400kV Malbase - Siliguri Line	236.37	
		Unit- VI	185.61	-	-	
		Total	1,111.84	Auxiliary Consumption & Transformation Losses at Generator end	0.76%	
2	720MW MHP	Unit-I	197.96	400kV MHP - Jigmeling Line - I	243.15	400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I(Interim) on Standby.
		Unit-II	198.00	400kV MHP - Jigmeling Line - II	243.58	
		Unit-III	135.54	400kV MHP - Jigmeling Line - III	237.22	
		Unit-IV	197.75	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)	21.90	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	170.89	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	260.78	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	259.51	
		-	-	80MVA, 220/132kV ICT - I (HV)	22.84	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.21	
		-	-	220kV Tsirang - Jigmeling Line	-16.74	
-	-	132kV Gelephu - Salakati Line	12.69			
Total	729.25	Auxiliary Consumption & Transformation Losses at Generator end	0.73%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	59.04	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	58.87	
		Unit- III	91.45	220kV CHP - Malbase Line- III	99.62	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	37.79	
		-	-	220kV Malbase - Birpara Line	19.99	
		-	-	66kV CHP - Chumdo Line	10.96	
		-	-	66kV CHP - Gedu Line	5.77	
		-	-	3x3MVA, 66/11kV TFR	0.96	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.51%			
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	55.14	
		Unit- II	12.10	66kV BHP - Lobeysa Line	24.94	
		Total	24.40	220kV BHP - Tsirang Line	-15.02	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.39	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	1.50	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.98%	
6	126MW DHP	Unit-I	46.42	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	47.05	220kV DHP - Dagapela Line	92.98	
		-	-	220kV Jigmeling - Dagapela Line	-40.82	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	93.47	Auxiliary Consumption & Transformation Losses at Generator end	0.31%			
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkhoh Line	43.16	
		Unit-II	16.57	132kV KHP - Kilikhar Line	22.22	
		Unit- III	16.57	5MVA, 132/11kV TFR	0.40	
		Unit- IV	16.59	132kV Motanga - Rangia Line	22.19	
		Total	66.27	Auxiliary Consumption & Transformation Losses at Generator end	0.74%	

Note: Generation-Load Summary (MW) for August 10, 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	1,545.82	369.93	359.13	1,151.81	10.80
2	Eastern Grid	795.52	93.54	87.75	726.06	5.79
Total		2,341.34	463.47	446.88	1,877.87	16.59

Note: Generation-Load Summary for August 10, 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	517.52	275.29	270.58	171.72	4.71
2	Eastern Grid	658.67	66.02	63.89	663.16	2.13
Total		1,176.19	341.31	334.47	834.88	6.84

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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