

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 6, 2022
Hours:	19:00 Hours

Date	Time	Load(MW)
12-Jan-22	18:00hrs	492.25

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	185.94	400kV THP - Siliguri Line - I	262.01	
		Unit- II	185.78	400kV THP - Siliguri Line - II	260.53	
		Unit- III	185.32	400kV THP - Siliguri Line- IV	253.81	
		Unit- IV	184.63	400kV THP - Malbase Line - III	327.57	
		Unit- V	184.33	400kV Malbase - Siliguri Line	234.74	
		Unit- VI	184.29	-	-	
		Total	1,110.29	Auxiliary Consumption & Transformation Losses at Generator end	0.57%	
2	720MW MHP	Unit-I	197.63	400kV MHP - Jigmeling Line - I	361.04	400kV MHP-JLG line II & 400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I(Interim) on Standby.
		Unit-II	197.74	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	135.42	400kV MHP - Jigmeling Line - III	363.07	
		Unit-IV	197.76	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)	42.30	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	167.26	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	252.43	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	251.33	
		-	-	80MVA, 220/132kV ICT - I (HV)	35.94	
		-	-	80MVA, 220/132kV ICT - II (HV)	36.57	
		-	-	220kV Tsirang - Jigmeling Line	-29.85	
-	-	132kV Gelephu - Salakati Line	12.19			
Total	728.55	Auxiliary Consumption & Transformation Losses at Generator end	0.61%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	62.21	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	62.34	
		Unit- III	91.45	220kV CHP - Malbase Line- III	96.89	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	32.30	
		-	-	220kV Malbase - Birpara Line	27.45	
		-	-	66kV CHP - Chumdo Line	13.01	
		-	-	66kV CHP - Gedu Line	4.57	
		-	-	3x3MVA, 66/11kV TFR	1.39	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.62%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	66.30	
		Unit- II	12.20	66kV BHP - Lobeyasa Line	26.81	
		Total	24.60	220kV BHP - Tsirang Line	-27.92	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.25	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	3.49	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	1.30%	
6	126MW DHP	Unit-I	55.45	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	58.06	220kV DHP - Dagapela Line	112.95	
		-	-	220kV Jigmeling - Dagapela Line	-61.57	
		-	-	5MVA, 220/33kV TFR	0.55	
Total	113.51	Auxiliary Consumption & Transformation Losses at Gen. end	0.01%			
7	60MW KHP	Unit- I	16.49	132kV KHP - Nangkhoh Line	39.03	
		Unit-II	16.63	132kV KHP - Kilikhar Line	26.01	
		Unit- III	16.54	5MVA, 132/11kV TFR	0.57	
		Unit- IV	16.57	132kV Motanga - Rangia Line	30.14	
		Total	66.23	Auxiliary Consumption & Transformation Losses at Generator end	0.94%	

Note: Generation-Load Summary (MW) for August 06, 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	1,564.51	369.70	360.76	1,163.09	8.94
2	Eastern Grid	794.78	113.15	108.09	713.35	5.06
Total		2,359.29	482.85	468.85	1,876.44	14.00

Note: Generation-Load Summary for August 06, 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	1,624.01	280.76	272.59	1,275.21	8.17
2	Eastern Grid	659.24	72.22	70.21	655.06	2.01
Total		2,283.25	352.98	342.80	1,930.27	10.18

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 7, 2022
Hours:	09:00 Hours

Date	Time	Load(MW)
12-Jan-22	18:00hrs	492.25

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	185.55	400kV THP - Siliguri Line - I	266.21	
		Unit- II	186.41	400kV THP - Siliguri Line - II	264.41	
		Unit- III	185.25	400kV THP - Siliguri Line- IV	257.85	
		Unit- IV	184.92	400kV THP - Malbase Line - III	315.59	
		Unit- V	186.21	400kV Malbase - Siliguri Line	241.77	
		Unit- VI	184.53	-	-	
		Total	1,112.87	Auxiliary Consumption & Transformation Losses at Generator end	0.79%	
2	720MW MHP	Unit-I	197.84	400kV MHP - Jigmeling Line - I	361.17	400kV MHP-JLG line II & 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	0.00	
		Unit-III	135.33	400kV MHP - Jigmeling Line - III	363.13	
		Unit-IV	197.14	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)	14.84	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	170.16	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	262.06	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	262.78	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.49	
		-	-	80MVA, 220/132kV ICT - II (HV)	30.93	
		-	-	220kV Tsirang - Jigmeling Line	-29.34	
-	-	132kV Gelephu - Salakati Line	11.49			
Total	728.07	Auxiliary Consumption & Transformation Losses at Generator end	0.52%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	61.55	Unit IV under breakdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	61.76	
		Unit- III	91.45	220kV CHP - Malbase Line- III	105.65	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	26.96	
		-	-	220kV Malbase - Birpara Line	16.80	
		-	-	66kV CHP - Chumdo Line	11.71	
		-	-	66kV CHP - Gedu Line	4.31	
		-	-	3x3MVA, 66/11kV TFR	1.04	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.52%			
4	24MW BHP (U/S)	Unit- I	11.89	220kV BHP - Semtokha Line	67.64	
		Unit- II	11.89	66kV BHP - Lobeyasa Line	25.22	
		Total	23.78	220kV BHP - Tsirang Line	-27.49	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.37	
		Unit- II	21.05	30MVA ICT, 220/66kV (HV)	1.70	
		Total	41.55	Auxiliary Consumption & Transformation Losses at Generator end	-0.63%	
6	126MW DHP	Unit-I	63.67	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	63.17	220kV DHP - Dagapela Line	126.29	
		-	-	220kV Jigmeling - Dagapela Line	-76.78	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	126.84	Auxiliary Consumption & Transformation Losses at Generator end	0.20%			
7	60MW KHP	Unit- I	16.60	132kV KHP - Nangkhoh Line	41.76	
		Unit-II	16.51	132kV KHP - Kilikhar Line	23.79	
		Unit- III	16.58	5MVA, 132/11kV TFR	0.40	
		Unit- IV	16.62	132kV Motanga - Rangia Line	28.70	
		Total	66.31	Auxiliary Consumption & Transformation Losses at Generator end	0.54%	

Note: Generation-Load Summary (MW) for August 07, 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	1,579.45	361.66	351.58	1,170.35	10.08
2	Eastern Grid	794.38	106.63	102.50	735.19	4.13
Total		2,373.83	468.29	454.08	1,905.54	14.21

Note: Generation-Load Summary for August 07, 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	1,619.68	267.77	263.22	1,277.13	4.55
2	Eastern Grid	659.52	63.15	60.65	671.15	2.50
Total		2,279.20	330.92	323.87	1,948.28	7.05

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.