

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 7, 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	185.04	400kV THP - Siliguri Line - I	261.69	
		Unit- II	183.31	400kV THP - Siliguri Line - II	261.15	
		Unit- III	185.61	400kV THP - Siliguri Line- IV	253.40	
		Unit- IV	185.00	400kV THP - Malbase Line - III	325.23	
		Unit- V	185.79	400kV Malbase - Siliguri Line	235.91	
		Unit- VI	185.50	-	-	
		Total	1,110.25	Auxiliary Consumption & Transformation Losses at Generator end	0.79%	
2	720MW MHP	Unit-I	197.82	400kV MHP - Jigmeling Line - I	360.68	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	197.72	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	135.41	400kV MHP - Jigmeling Line - III	363.00	
		Unit-IV	197.28	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)	38.59	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	165.07	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	253.61	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	254.18	
		-	-	80MVA, 220/132kV ICT - I (HV)	38.20	
		-	-	80MVA, 220/132kV ICT - II (HV)	39.05	
		-	-	220kV Tsirang - Jigmeling Line	-28.56	
-	-	132kV Gelephu - Salakati Line	14.17			
Total	728.23	Auxiliary Consumption & Transformation Losses at Generator end	0.62%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	62.18	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	62.08	
		Unit- III	91.45	220kV CHP - Malbase Line- III	93.26	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	36.13	
		-	-	220kV Malbase - Birpara Line	30.67	
		-	-	66kV CHP - Chumdo Line	13.70	
		-	-	66kV CHP - Gedu Line	4.31	
		-	-	3x3MVA, 66/11kV TFR	1.48	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.46%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	65.30	
		Unit- II	12.20	66kV BHP - Lobeyasa Line	26.64	
		Total	24.60	220kV BHP - Tsirang Line	-25.82	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.15	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	3.46	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.05%	
6	126MW DHP	Unit-I	60.38	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	60.07	220kV DHP - Dagapela Line	119.96	
		-	-	220kV Jigmeling - Dagapela Line	-68.63	
		-	-	5MVA, 220/33kV TFR	0.50	
Total	120.45	Auxiliary Consumption & Transformation Losses at Gen. end	-0.01%			
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkhor Line	38.58	
		Unit-II	16.56	132kV KHP - Kilikhar Line	26.54	
		Unit- III	16.61	5MVA, 132/11kV TFR	0.50	
		Unit- IV	16.63	132kV Motanga - Rangia Line	31.58	
		Total	66.34	Auxiliary Consumption & Transformation Losses at Generator end	1.09%	

Note: Generation-Load Summary (MW) for August 07, 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	1,571.41	364.26	354.19	1,167.08	10.07
2	Eastern Grid	794.57	116.03	110.76	718.61	5.27
Total		2,365.98	480.29	464.95	1,885.69	15.34

Note: Generation-Load Summary for August 07, 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	1,622.09	285.76	274.23	1,266.58	11.53
2	Eastern Grid	659.65	71.91	69.23	657.49	2.68
Total		2,281.74	357.67	343.46	1,924.07	14.21

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 8, 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	185.73	400kV THP - Siliguri Line - I	265.73	
		Unit- II	185.45	400kV THP - Siliguri Line - II	265.41	
		Unit- III	185.73	400kV THP - Siliguri Line- IV	257.58	
		Unit- IV	184.78	400kV THP - Malbase Line - III	315.82	
		Unit- V	185.59	400kV Malbase - Siliguri Line	242.44	
		Unit- VI	185.50	-	-	
		Total	1,112.78	Auxiliary Consumption & Transformation Losses at Generator end	0.74%	
2	720MW MHP	Unit-I	197.98	400kV MHP - Jigmeling Line - I	360.84	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	197.89	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	135.61	400kV MHP - Jigmeling Line - III	362.80	
		Unit-IV	197.44	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)	23.13	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	170.89	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	258.91	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	259.61	
		-	-	80MVA, 220/132kV ICT - I (HV)	28.04	
		-	-	80MVA, 220/132kV ICT - II (HV)	28.54	
		-	-	220kV Tsirang - Jigmeling Line	-24.87	
-	-	132kV Gelephu - Salakati Line	4.05			
Total	728.92	Auxiliary Consumption & Transformation Losses at Generator end	0.72%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	59.71	Unit IV under breakdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	59.83	
		Unit- III	91.45	220kV CHP - Malbase Line- III	106.84	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	29.41	
		-	-	220kV Malbase - Birpara Line	15.59	
		-	-	66kV CHP - Chumdo Line	11.03	
		-	-	66kV CHP - Gedu Line	5.71	
		-	-	3x3MVA, 66/11kV TFR	0.79	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.40%			
4	24MW BHP (U/S)	Unit- I	11.89	220kV BHP - Semtokha Line	63.75	
		Unit- II	11.89	66kV BHP - Lobeyasa Line	25.21	
		Total	23.78	220kV BHP - Tsirang Line	-23.72	
5	40MW BHP (L/S)	Unit- I	20.44	5MVA, 66/11kV TFR	0.40	
		Unit- II	21.06	30MVA ICT, 220/66kV (HV)	1.70	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Generator end	-0.55%	
6	126MW DHP	Unit-I	55.44	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	54.03	220kV DHP - Dagapela Line	108.96	
		-	-	220kV Jigmeling - Dagapela Line	-59.27	
		-	-	5MVA, 220/33kV TFR	0.40	
Total	109.47	Auxiliary Consumption & Transformation Losses at Generator end	0.10%			
7	60MW KHP	Unit- I	16.47	132kV KHP - Nangkhor Line	42.48	
		Unit-II	16.57	132kV KHP - Kilikhar Line	22.66	
		Unit- III	16.57	5MVA, 132/11kV TFR	0.35	
		Unit- IV	16.50	132kV Motanga - Rangia Line	24.38	
		Total	66.11	Auxiliary Consumption & Transformation Losses at Generator end	0.94%	

Note: Generation-Load Summary (MW) for August 08, 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	1,561.94	361.25	352.17	1,166.29	9.08
2	Eastern Grid	795.03	111.59	105.69	717.84	5.90
Total		2,356.97	472.84	457.86	1,884.13	14.98

Note: Generation-Load Summary for August 08, 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	1,624.53	278.73	270.04	1,263.10	8.69
2	Eastern Grid	659.18	60.28	58.36	681.60	1.92
Total		2,283.71	339.01	328.40	1,944.70	10.61

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.