

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 2, 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	186.19	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	183.20	400kV THP - Siliguri Line - II	343.66	
		Unit- III	185.34	400kV THP - Siliguri Line- IV	327.44	
		Unit- IV	187.23	400kV THP - Malbase Line - III	431.83	
		Unit- V	184.87	400kV Malbase - Siliguri Line	302.24	
		Unit- VI	185.77	-	-	
		Total	1,112.60	Auxiliary Consumption & Transformation Losses at Generator end	0.87%	
2	720MW MHP	Unit-I	197.98	400kV MHP - Jigmeling Line - I	293.76	Unit III under shutdown. 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 II(Interim) on Standby.
		Unit-II	197.89	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.55	
		Unit-IV	197.97	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)	23.95	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	139.72	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	208.97	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	209.57	
		-	-	80MVA, 220/132kV ICT - I (HV)	40.18	
		-	-	80MVA, 220/132kV ICT - II (HV)	40.91	
		-	-	220kV Tsirang - Jigmeling Line	-15.69	
-	-	132kV Gelephu - Salakati Line	12.73			
Total	593.84	Auxiliary Consumption & Transformation Losses at Generator end	0.76%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	67.42	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	67.21	
		Unit- III	91.45	220kV CHP - Malbase Line- III	71.39	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	46.53	
		-	-	220kV Malbase - Birpara Line	52.98	
		-	-	66kV CHP - Chumdo Line	14.26	
		-	-	66kV CHP - Gedu Line	4.39	
		-	-	3x3MVA, 66/11kV TFR	1.53	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.61%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	53.70	
		Unit- II	12.20	66kV BHP - Lobeyasa Line	26.04	
		Total	24.60	220kV BHP - Tsirang Line	-14.66	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.56	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	2.69	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	1.00%	
6	126MW DHP	Unit-I	63.64	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	63.15	220kV DHP - Dagapela Line	126.26	
		-	-	220kV Jigmeling - Dagapela Line	-74.79	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	126.79	Auxiliary Consumption & Transformation Losses at Gen. end	0.26%			
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkhoh Line	38.01	
		Unit-II	16.58	132kV KHP - Kilikhar Line	27.14	
		Unit- III	16.46	5MVA, 132/11kV TFR	0.30	
		Unit- IV	16.47	132kV Motanga - Rangia Line	46.46	
		Total	66.05	Auxiliary Consumption & Transformation Losses at Generator end	0.91%	

Note: Generation-Load Summary (MW) for August 02, 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	1,580.10	360.05	347.71	1,160.95	12.34
2	Eastern Grid	659.89	101.54	96.41	617.45	5.13
Total		2,239.99	461.59	444.12	1,778.40	17.47

Note: Generation-Load Summary for August 02, 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	1,669.31	258.66	254.67	1,305.85	3.99
2	Eastern Grid	658.97	74.29	70.02	689.48	4.27
Total		2,328.28	332.95	324.69	1,995.33	8.26

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 3, 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	185.96	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	185.37	400kV THP - Siliguri Line - II	349.90	
		Unit- III	185.33	400kV THP - Siliguri Line- IV	333.98	
		Unit- IV	185.40	400kV THP - Malbase Line - III	420.62	
		Unit- V	185.14	400kV Malbase - Siliguri Line	313.10	
		Unit- VI	185.06	-	-	
		Total	1,112.26	Auxiliary Consumption & Transformation Losses at Generator end	0.70%	
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Line - I	293.84	Unit III under shutdown. 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 II(Interim) on Standby.
		Unit-II	197.89	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.72	
		Unit-IV	197.88	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)	6.74	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	143.85	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	215.80	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	216.87	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.57	
		-	-	80MVA, 220/132kV ICT - II (HV)	31.10	
		-	-	220kV Tsirang - Jigmeling Line	-19.75	
-	-	132kV Gelephu - Salakati Line	4.20			
Total	593.62	Auxiliary Consumption & Transformation Losses at Generator end	0.68%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	66.12	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	65.85	
		Unit- III	91.45	220kV CHP - Malbase Line- III	91.65	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	31.91	
		-	-	220kV Malbase - Birpara Line	37.12	
		-	-	66kV CHP - Chumdo Line	11.64	
		-	-	66kV CHP - Gedu Line	4.67	
		-	-	3x3MVA, 66/11kV TFR	0.71	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.68%			
4	24MW BHP (U/S)	Unit- I	20.50	220kV BHP - Semtokha Line	59.11	
		Unit- II	21.20	66kV BHP - Lobeyasa Line	24.65	
		Total	41.70	220kV BHP - Tsirang Line	-18.34	
5	40MW BHP (L/S)	Unit- I	12.40	5MVA, 66/11kV TFR	0.38	
		Unit- II	12.20	30MVA ICT, 220/66kV (HV)	1.18	
		Total	24.60	Auxiliary Consumption & Transformation Losses at Generator end	0.75%	
6	126MW DHP	Unit-I	63.65	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	63.18	220kV DHP - Dagapela Line	126.26	
		-	-	220kV Jigmeling - Dagapela Line	-75.60	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	126.83	Auxiliary Consumption & Transformation Losses at Generator end	0.29%			
7	60MW KHP	Unit- I	16.47	132kV KHP - Nangkhoh Line	42.08	
		Unit-II	16.54	132kV KHP - Kilikhar Line	23.23	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.35	
		Unit- IV	16.64	132kV Motanga - Rangia Line	31.04	
		Total	66.15	Auxiliary Consumption & Transformation Losses at Generator end	0.74%	

Note: Generation-Load Summary (MW) for August 03, 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	1,579.80	357.88	347.39	1,166.07	10.49
2	Eastern Grid	659.77	103.86	99.31	611.76	4.55
Total		2,239.57	461.74	446.70	1,777.83	15.04

Note: Generation-Load Summary for August 03, 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	1,648.14	260.32	256.00	1,295.22	4.32
2	Eastern Grid	659.43	58.45	55.29	693.58	3.16
Total		2,307.57	318.77	311.29	1,988.80	7.48

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.