

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 1, 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	185.32	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	183.35	400kV THP - Siliguri Line - II	343.07	
		Unit- III	185.47	400kV THP - Siliguri Line - IV	327.37	
		Unit- IV	185.13	400kV THP - Malbase Line - III	432.37	
		Unit- V	184.55	400kV Malbase - Siliguri Line	301.64	
		Unit- VI	185.92	-	-	
		Total	1,109.74	Auxiliary Consumption & Transformation Losses at Generator end	0.62%	
2	720MW MHP	Unit-I	197.76	400kV MHP - Jigmeling Line - I	293.80	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	197.90	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.73	
		Unit-IV	197.89	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)	20.23	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	141.55	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	210.15	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	212.05	
		-	-	80MVA, 220/132kV ICT - I (HV)	34.45	
		-	-	80MVA, 220/132kV ICT - II (HV)	36.15	
		-	-	220kV Tsirang - Jigmeling Line	-23.26	
-	-	132kV Gelephu - Salakati Line	9.55			
Total	593.55	Auxiliary Consumption & Transformation Losses at Generator end	0.68%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	65.55	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	65.36	
		Unit- III	91.45	220kV CHP - Malbase Line- III	83.40	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	37.31	
		-	-	220kV Malbase - Birpara Line	42.38	
		-	-	66kV CHP - Chumdo Line	14.00	
		-	-	66kV CHP - Gedu Line	4.96	
		-	-	3x3MVA, 66/11kV TFR	1.42	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.88%			
4	24MW BHP (U/S)	Unit- I	11.91	220kV BHP - Semtokha Line	60.23	
		Unit- II	11.91	66kV BHP - Lobeyasa Line	25.95	
		Total	23.82	220kV BHP - Tsirang Line	-20.90	
5	40MW BHP (L/S)	Unit- I	20.48	5MVA, 66/11kV TFR	0.51	
		Unit- II	21.09	30MVA ICT, 220/66kV (HV)	3.50	
		Total	41.57	Auxiliary Consumption & Transformation Losses at Generator end	-0.61%	
6	126MW DHP	Unit-I	63.67	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	63.20	220kV DHP - Dagapela Line	126.18	
		-	-	220kV Jigmeling - Dagapela Line	-75.01	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	126.87	Auxiliary Consumption & Transformation Losses at Gen. end	0.31%			
7	60MW KHP	Unit- I	16.49	132kV KHP - Nangkhoh Line	56.14	
		Unit-II	16.59	132kV KHP - Kilikhar Line	8.42	
		Unit- III	16.45	5MVA, 132/11kV TFR	0.32	
		Unit- IV	16.43	132kV Motanga - Rangia Line	35.21	
		Total	65.96	Auxiliary Consumption & Transformation Losses at Generator end	1.64%	

Note: Generation-Load Summary (MW) for August 01, 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	1,576.41	379.29	369.96	1,145.37	9.33
2	Eastern Grid	659.51	102.75	97.65	608.51	5.10
Total		2,235.92	482.04	467.61	1,753.88	14.43

Note: Generation-Load Summary for August 01, 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	1,652.53	287.94	278.28	1,272.69	9.66
2	Eastern Grid	659.05	71.95	68.51	679.00	3.44
Total		2,311.58	359.89	346.79	1,951.69	13.10

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 2, 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	185.64	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	184.55	400kV THP - Siliguri Line - II	351.93	
		Unit- III	185.45	400kV THP - Siliguri Line - IV	336.48	
		Unit- IV	186.70	400kV THP - Malbase Line - III	417.78	
		Unit- V	184.91	400kV Malbase - Siliguri Line	314.74	
		Unit- VI	185.24	-	-	
		Total	1,112.49	Auxiliary Consumption & Transformation Losses at Generator end	0.57%	
2	720MW MHP	Unit-I	197.98	400kV MHP - Jigmeling Line - I	294.06	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	197.86	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.80	
		Unit-IV	198.07	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)	-4.96	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	147.01	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	219.17	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	220.11	
		-	-	80MVA, 220/132kV ICT - I (HV)	24.48	
		-	-	80MVA, 220/132kV ICT - II (HV)	24.93	
		-	-	220kV Tsirang - Jigmeling Line	-20.45	
-	-	132kV Gelephu - Salakati Line	6.85			
Total	593.91	Auxiliary Consumption & Transformation Losses at Generator end	0.68%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	67.59	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	67.56	
		Unit- III	91.45	220kV CHP - Malbase Line- III	89.98	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	30.63	
		-	-	220kV Malbase - Birpara Line	40.79	
		-	-	66kV CHP - Chumdo Line	11.53	
		-	-	66kV CHP - Gedu Line	4.83	
		-	-	3x3MVA, 66/11kV TFR	0.95	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.49%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	59.33	
		Unit- II	12.20	66kV BHP - Lobeyasa Line	24.46	
		Total	24.60	220kV BHP - Tsirang Line	-18.50	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.37	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	1.51	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.97%	
6	126MW DHP	Unit-I	63.66	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	63.34	220kV DHP - Dagapela Line	126.21	
		-	-	220kV Jigmeling - Dagapela Line	-75.50	
		-	-	5MVA, 220/33kV TFR	0.76	
Total	127.00	Auxiliary Consumption & Transformation Losses at Generator end	0.02%			
7	60MW KHP	Unit- I	16.47	132kV KHP - Nangkhoh Line	59.96	
		Unit-II	16.51	132kV KHP - Kilikhar Line	5.16	
		Unit- III	16.45	5MVA, 132/11kV TFR	0.31	
		Unit- IV	16.56	132kV Motanga - Rangia Line	31.50	
		Total	65.99	Auxiliary Consumption & Transformation Losses at Generator end	0.85%	

Note: Generation-Load Summary (MW) for August 02, 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	1,580.20	346.06	337.75	1,179.09	8.31
2	Eastern Grid	659.90	90.31	85.70	624.64	4.61
Total		2,240.10	436.37	423.45	1,803.73	12.92

Note: Generation-Load Summary for August 02, 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	1,655.39	270.11	264.35	1,286.48	5.76
2	Eastern Grid	592.96	62.42	59.13	629.34	3.29
Total		2,248.35	332.53	323.48	1,915.82	9.05

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.