

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 4, 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	183.62	400kV THP - Siliguri Line - I	260.09	
		Unit- II	183.27	400kV THP - Siliguri Line - II	258.51	
		Unit- III	185.79	400kV THP - Siliguri Line- IV	252.00	
		Unit- IV	185.03	400kV THP - Malbase Line - III	333.71	
		Unit- V	184.83	400kV Malbase - Siliguri Line	231.49	
		Unit- VI	185.00	-	-	
		Total	1,107.54	Auxiliary Consumption & Transformation Losses at Generator end	0.29%	
2	720MW MHP	Unit-I	197.88	400kV MHP - Jigmeling Line - I	294.00	Unit III under shutdown. 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 II(Interim) on Standby.
		Unit-II	197.79	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.73	
		Unit-IV	197.95	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)	21.75	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	140.70	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	211.38	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	210.02	
		-	-	80MVA, 220/132kV ICT - I (HV)	37.50	
		-	-	80MVA, 220/132kV ICT - II (HV)	38.17	
		-	-	220kV Tsirang - Jigmeling Line	-16.70	
-	-	132kV Gelephu - Salakati Line	12.52			
Total	593.62	Auxiliary Consumption & Transformation Losses at Generator end	0.66%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	60.14	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	60.18	
		Unit- III	91.45	220kV CHP - Malbase Line- III	85.58	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	39.47	
		-	-	220kV Malbase - Birpara Line	32.08	
		-	-	66kV CHP - Chumdo Line	14.28	
		-	-	66kV CHP - Gedu Line	4.57	
		-	-	3x3MVA, 66/11kV TFR	1.40	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	3.20%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	53.40	
		Unit- II	12.20	66kV BHP - Lobeyssa Line	26.71	
		Total	24.60	220kV BHP - Tsirang Line	-15.03	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.60	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	3.39	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.94%	
6	126MW DHP	Unit-I	61.47	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	62.05	220kV DHP - Dagapela Line	122.91	
		-	-	220kV Jigmeling - Dagapela Line	-71.51	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	123.52	Auxiliary Consumption & Transformation Losses at Gen. end	0.33%			
7	60MW KHP	Unit- I	16.51	132kV KHP - Nangkhoh Line	38.31	
		Unit-II	16.55	132kV KHP - Kilikhar Line	26.68	
		Unit- III	16.55	5MVA, 132/11kV TFR	0.40	
		Unit- IV	16.45	132kV Motanga - Rangia Line	31.08	
		Total	66.06	Auxiliary Consumption & Transformation Losses at Generator end	1.01%	

Note: Generation-Load Summary (MW) for August 04, 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	1,571.77	362.47	349.42	1,154.49	13.05
2	Eastern Grid	659.68	108.79	104.23	605.70	4.56
Total		2,231.45	471.26	453.65	1,760.19	17.61

Note: Generation-Load Summary for August 04, 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	1,632.29	280.53	274.12	1,270.39	6.41
2	Eastern Grid	658.97	76.72	73.32	663.62	3.40
Total		2,291.26	357.25	347.44	1,934.01	9.81

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 5, 2022
Hours: 09:00 Hours

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

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	185.77	400kV THP - Siliguri Line - I	265.71	
		Unit- II	186.54	400kV THP - Siliguri Line - II	263.04	
		Unit- III	185.69	400kV THP - Siliguri Line - IV	256.03	
		Unit- IV	184.95	400kV THP - Malbase Line - III	320.57	
		Unit- V	184.56	400kV Malbase - Siliguri Line	240.76	
		Unit- VI	185.57	-	-	
		Total	1,113.08	Auxiliary Consumption & Transformation Losses at Generator end	0.69%	
2	720MW MHP	Unit-I	197.72	400kV MHP - Jigmeling Line - I	293.93	Unit III under shutdown. 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 II(Interim) on Standby.
		Unit-II	197.69	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.71	
		Unit-IV	197.79	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)	11.91	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	142.98	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	213.99	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	214.97	
		-	-	80MVA, 220/132kV ICT - I (HV)	27.61	
		-	-	80MVA, 220/132kV ICT - II (HV)	28.09	
		-	-	220kV Tsirang - Jigmeling Line	-16.60	
-	-	132kV Gelephu - Salakati Line	4.40			
Total	593.20	Auxiliary Consumption & Transformation Losses at Generator end	0.60%			
3	336MW CHP	Unit- I	92.00	220kV CHP - Birpara Line- I	59.10	Unit IV under breakdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	59.50	
		Unit- III	91.45	220kV CHP - Malbase Line- III	99.70	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	39.47	
		-	-	220kV Malbase - Birpara Line	20.84	
		-	-	66kV CHP - Chumdo Line	11.45	
		-	-	66kV CHP - Gedu Line	5.36	
		-	-	3x3MVA, 66/11kV TFR	0.91	
Total	274.67	Auxiliary Consumption & Transformation Losses at Generator end	-0.30%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	55.69	
		Unit- II	12.20	66kV BHP - Lobeysa Line	24.66	
		Total	24.60	220kV BHP - Tsirang Line	-15.10	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.48	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	0.39	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.86%	
6	126MW DHP	Unit-I	56.45	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	55.05	220kV DHP - Dagapela Line	110.93	
		-	-	220kV Jigmeling - Dagapela Line	-61.12	
		-	-	5MVA, 220/33kV TFR	0.56	
Total	111.50	Auxiliary Consumption & Transformation Losses at Generator end	0.01%			
7	60MW KHP	Unit- I	16.55	132kV KHP - Nangkhoh Line	42.77	
		Unit-II	16.60	132kV KHP - Kilikhar Line	22.56	
		Unit- III	16.57	5MVA, 132/11kV TFR	0.00	
		Unit- IV	16.66	132kV Motanga - Rangia Line	27.07	
		Total	66.38	Auxiliary Consumption & Transformation Losses at Generator end	1.58%	

Note: Generation-Load Summary (MW) for August 05, 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	1,565.55	356.05	348.56	1,164.98	7.49
2	Eastern Grid	659.58	100.69	96.08	603.41	4.61
Total		2,225.13	456.74	444.64	1,768.39	12.10

Note: Generation-Load Summary for August 05, 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	1,635.78	280.84	272.22	1,269.12	8.62
2	Eastern Grid	659.37	56.13	52.27	689.06	3.86
Total		2,295.15	336.97	324.49	1,958.18	12.48

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.