

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 3, 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	186.37	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	186.32	400kV THP - Siliguri Line - II	343.55	
		Unit- III	185.19	400kV THP - Siliguri Line - IV	325.87	
		Unit- IV	184.28	400kV THP - Malbase Line - III	434.86	
		Unit- V	185.32	400kV Malbase - Siliguri Line	301.96	
		Unit- VI	185.16	-	-	
		Total	1,112.64	Auxiliary Consumption & Transformation Losses at Generator end	0.75%	
2	720MW MHP	Unit-I	197.93	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_Yurmo line I & II not in service. 400kV JLG_ALI Line II(Interim) on Standby.
		Unit-II	197.92	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.51	
		Unit-IV	198.09	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)	31.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	137.75	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	206.98	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	206.78	
		-	-	80MVA, 220/132kV ICT - I (HV)	41.99	
		-	-	80MVA, 220/132kV ICT - II (HV)	42.69	
		-	-	220kV Tsirang - Jigmeling Line	-18.96	
-	-	132kV Gelephu - Salakati Line	9.42			
Total	593.94	Auxiliary Consumption & Transformation Losses at Generator end	0.76%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	64.89	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	65.24	
		Unit- III	91.45	220kV CHP - Malbase Line- III	76.60	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	47.48	
		-	-	220kV Malbase - Birpara Line	48.08	
		-	-	66kV CHP - Chumdo Line	14.49	
		-	-	66kV CHP - Gedu Line	4.77	
		-	-	3x3MVA, 66/11kV TFR	0.20	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.27%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	55.48	
		Unit- II	12.20	66kV BHP - Lobeyasa Line	26.47	
		Total	24.60	220kV BHP - Tsirang Line	-16.83	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.56	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	3.63	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.94%	
6	126MW DHP	Unit-I	63.64	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	63.28	220kV DHP - Dagapela Line	126.28	
		-	-	220kV Jigmeling - Dagapela Line	-74.79	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	126.92	Auxiliary Consumption & Transformation Losses at Gen. end	0.35%			
7	60MW KHP	Unit- I	16.56	132kV KHP - Nangkhoh Line	38.19	
		Unit-II	16.57	132kV KHP - Kilikhar Line	26.85	
		Unit- III	16.64	5MVA, 132/11kV TFR	0.34	
		Unit- IV	16.47	132kV Motanga - Rangia Line	37.45	
		Total	66.24	Auxiliary Consumption & Transformation Losses at Generator end	1.29%	

Note: Generation-Load Summary (MW) for August 03, 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	1,580.27	374.85	364.69	1,149.59	10.16
2	Eastern Grid	660.18	117.63	112.27	598.38	5.36
Total		2,240.45	492.48	476.96	1,747.97	15.52

Note: Generation-Load Summary for August 03, 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	1,641.92	280.91	271.33	1,273.51	9.58
2	Eastern Grid	659.88	65.21	61.01	682.17	4.20
Total		2,301.80	346.12	332.34	1,955.68	13.78

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 4, 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	182.54	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	183.32	400kV THP - Siliguri Line - II	352.27	
		Unit- III	186.45	400kV THP - Siliguri Line - IV	336.59	
		Unit- IV	183.99	400kV THP - Malbase Line - III	412.45	
		Unit- V	184.91	400kV Malbase - Siliguri Line	317.31	
		Unit- VI	185.11	-	-	
		Total	1,106.32	Auxiliary Consumption & Transformation Losses at Generator end	0.45%	
2	720MW MHP	Unit-I	197.73	400kV MHP - Jigmeling Line - I	293.91	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	197.76	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.53	
		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)	-0.66	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	145.93	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	218.17	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	219.56	
		-	-	80MVA, 220/132kV ICT - I (HV)	28.06	
		-	-	80MVA, 220/132kV ICT - II (HV)	28.54	
		-	-	220kV Tsirang - Jigmeling Line	-17.64	
-	-	132kV Gelephu - Salakati Line	3.39			
Total	593.38	Auxiliary Consumption & Transformation Losses at Generator end	0.66%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	66.31	Unit IV under breakdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	66.16	
		Unit- III	91.45	220kV CHP - Malbase Line- III	88.90	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	34.74	
		-	-	220kV Malbase - Birpara Line	40.44	
		-	-	66kV CHP - Chumdo Line	11.59	
		-	-	66kV CHP - Gedu Line	4.64	
		-	-	3x3MVA, 66/11kV TFR	0.94	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.41%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	57.30	
		Unit- II	12.20	66kV BHP - Lobeyssa Line	24.67	
		Total	24.60	220kV BHP - Tsirang Line	-16.28	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.33	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	1.11	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.42%	
6	126MW DHP	Unit-I	63.61	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	63.15	220kV DHP - Dagapela Line	126.20	
		-	-	220kV Jigmeling - Dagapela Line	-75.52	
		-	-	5MVA, 220/33kV TFR		
Total	126.76	Auxiliary Consumption & Transformation Losses at Generator end	0.44%			
7	60MW KHP	Unit- I	16.51	132kV KHP - Nangkhoh Line	42.04	
		Unit-II	16.55	132kV KHP - Kilikhar Line	23.00	
		Unit- III	16.45	5MVA, 132/11kV TFR	0.00	
		Unit- IV	16.49	132kV Motanga - Rangia Line	28.72	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	1.45%	

Note: Generation-Load Summary (MW) for August 04, 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	1,573.79	336.83	329.85	1,179.08	6.98
2	Eastern Grid	659.38	101.49	96.59	615.77	4.90
Total		2,233.17	438.32	426.44	1,794.85	11.88

Note: Generation-Load Summary for August 04, 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	1,641.92	270.40	258.17	1,283.60	12.23
2	Eastern Grid	659.74	59.90	55.89	687.76	4.01
Total		2,301.66	330.30	314.06	1,971.36	16.24

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.