

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: February 15, 2022
Hours: 18:00 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	0.00	400kV THP - Siliguri Line - I	0.00	THP under total Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	0.00	400kV Malbase - Siliguri Line	-50.86	
		Unit- VI	0.00	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.00%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	234.71	Unit-II on Standby. Unit-I under Annual Maintenance. 400kV MHP-JLG Line II, III & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on Standby. 400kV JLG_ALI Line I (Direct) under Breakdown.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	125.45	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	110.38	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)	98.87	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	53.99	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	81.37	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.98	
		-	-	80MVA, 220/132kV ICT - II (HV)	15.25	
		-	-	220kV Tsirang - Jigmeling Line	-75.95	
-	-	132kV Gelephu - Salakati Line	-10.99			
Total	235.83	Auxiliary Consumption & Transformation Losses at Generator end	0.47%			
3	336MW CHP	Unit- I	83.35	220kV CHP - Birpara Line- I	2.36	Unit-II on Standby. Unit-III under Annual Maintenance.
		Unit- II	0.00	220kV CHP - Birpara Line- II	2.40	
		Unit- III	0.00	220kV CHP - Malbase Line- III	71.38	
		Unit- IV	83.99	220kV CHP - Semtokha Line- IV	64.37	
		-	-	220kV Malbase - Birpara Line	-51.07	
		-	-	66kV CHP - Chumdo Line	20.16	
		-	-	66kV CHP - Gedu Line	2.40	
		-	-	3x3MVA, 66/11kV TFR	1.74	
Total	167.34	Auxiliary Consumption & Transformation Losses at Generator end	1.51%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	91.00	U/S Unit-I under maintenance. L/S Unit-II on Standby. 66kV BHP_Lobeyasa Line opened at 7:13hrs due to forest fire at Gewathang .
		Unit- II	7.40	66kV BHP - Lobeyasa Line	0.00	
		Total	7.40	220kV BHP - Tsirang Line	-72.51	
5	40MW BHP (L/S)	Unit- I	11.60	5MVA, 66/11kV TFR	0.97	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	-6.28	
		Total	11.60	Auxiliary Consumption & Transformation Losses at Generator end	-2.42%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	0.00	Unit-I under Annual Maintenance. 220kV DHP_Tsirang Line on Standby.
		Unit-II	25.96	220kV DHP - Dagapela Line	25.72	
		-	-	220kV Jigmeling - Dagapela Line	-9.93	
		-	-	5MVA, 220/33kV TFR	0.23	
Total	25.96	Auxiliary Consumption & Transformation Losses at Gen. end	0.04%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	6.06	Unit-I under AMP. Unit-II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	14.09	
		Unit- III	10.55	5MVA, 132/11kV TFR	0.78	
		Unit- IV	10.57	132kV Motanga - Rangia Line	3.57	
		Total	21.12	Auxiliary Consumption & Transformation Losses at Generator end	0.90%	

Note: Generation-Load Summary (MW) for February 15, 2022 at 18:00hrs.

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	212.30	385.42	383.34	-97.17	2.08
2	Eastern Grid	256.95	53.06	51.75	127.94	1.31
Total		469.25	438.48	435.09	30.77	3.39

Note: Generation-Load Summary for February 15, 2021 at 18:00hrs.

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	272.00	240.08	235.36	36.45	4.72
2	Eastern Grid	100.07	52.91	52.03	42.66	0.88
Total		372.07	292.99	287.39	79.11	5.60

NOTE- BHP data collected from site.

- 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: February 16, 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	0.00	400kV THP - Siliguri Line - I	0.00	THP under total shutdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	0.00	400kV Malbase - Siliguri Line	-53.99	
		Unit- VI	0.00	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.00%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	210.52	Unit-I & II under Annual Maintenance. 400kV MHP-JLG Line II, III & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on Standby. 400kV JLG_ALI Line I (Direct) under Breakdown.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	110.39	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	101.01	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)	84.24	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	49.27	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	74.67	
		-	-	80MVA, 220/132kV ICT - I (HV)	13.11	
		-	-	80MVA, 220/132kV ICT - II (HV)	13.31	
		-	-	220kV Tsirang - Jigmeling Line	-72.31	
-	-	132kV Gelephu - Salakati Line	-7.51			
Total	211.40	Auxiliary Consumption & Transformation Losses at Generator end	0.42%			
3	336MW CHP	Unit- I	83.08	220kV CHP - Birpara Line- I	7.56	Unit-II on Standby. Unit-III under Annual Maintenance.
		Unit- II	0.00	220kV CHP - Birpara Line- II	7.63	
		Unit- III	0.00	220kV CHP - Malbase Line- III	74.29	
		Unit- IV	83.36	220kV CHP - Semtokha Line- IV	53.01	
		-	-	220kV Malbase - Birpara Line	-44.97	
		-	-	66kV CHP - Chumdo Line	17.05	
		-	-	66kV CHP - Gedu Line	2.70	
		-	-	3x3MVA, 66/11kV TFR	1.52	
Total	166.44	Auxiliary Consumption & Transformation Losses at Generator end	1.61%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	79.90	U/S Unit-I under maintenance. L/S Unit-II on Standby.
		Unit- II	7.50	66kV BHP - Lobeysa Line	10.64	
		Total	7.50	220kV BHP - Tsirang Line	-69.09	
5	40MW BHP (L/S)	Unit- I	14.10	5MVA, 66/11kV TFR	0.55	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	-3.82	
		Total	14.10	Auxiliary Consumption & Transformation Losses at Generator end	-1.85%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	0.00	Unit-I under Annual Maintenance. 220kV DHP_Tsirang Line on Standby.
		Unit-II	31.14	220kV DHP - Dagapela Line	30.91	
		-	-	220kV Jigmeling - Dagapela Line	-15.49	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	31.14	Auxiliary Consumption & Transformation Losses at Generator end	0.10%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	14.76	Unit-I under AMP. Unit-II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	14.35	
		Unit- III	15.12	5MVA, 132/11kV TFR	0.76	
		Unit- IV	15.06	132kV Motanga - Rangia Line	4.63	
		Total	30.18	Auxiliary Consumption & Transformation Losses at Generator end	1.03%	

Note: Generation-Load Summary (MW) for February 16, 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	219.18	375.26	372.95	-83.77	2.31
2	Eastern Grid	241.58	48.21	47.02	121.06	1.19
Total		460.76	423.47	419.97	37.29	3.50

Note: Generation-Load Summary for February 16, 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	272.11	239.82	235.55	37.98	4.27
2	Eastern Grid	121.32	39.25	38.88	76.38	0.37
Total		393.43	279.07	274.43	114.36	4.64

NOTE-BHP data collected from Site.

- 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.