

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: November 1, 2022
Hours: 18:00 Hours

Date: 24-Oct-22
Time: 18:10hrs
Load(MW): 578.88

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	121.23	Unit-I under Shutdown. Unit-IV on Standby. 400kV THP- Siliguri Line- II on Standby.
		Unit- II	117.30	400kV THP - Siliguri Line - II	0.00	
		Unit- III	88.35	400kV THP - Siliguri Line- IV	116.50	
		Unit- IV	0.00	400kV THP - Malbase Line - III	218.80	
		Unit- V	128.45	400kV Malbase - Siliguri Line	94.26	
		Unit- VI	129.33	-	-	
		Total	463.43	Auxiliary Consumption & Transformation Losses at Generator end	1.49%	
2	720MW MHP	Unit-I	135.23	400kV MHP - Jigmeling Line - I	91.15	Unit-II on standby. Unit-III under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	91.68	
		Unit-IV	135.42	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	85.33	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	70.87	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	44.68	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	66.91	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.73	
		-	-	80MVA, 220/132kV ICT - II (HV)	16.07	
		-	-	220kV Tsirang - Jigmeling Line	21.96	
-	-	132kV Gelephu - Salakati Line	6.71			
Total	270.65	Auxiliary Consumption & Transformation Losses at Generator end	0.92%			
3	336MW CHP	Unit- I	79.45	220kV CHP - Birpara Line- I	28.85	Unit-II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	28.82	
		Unit- III	76.56	220kV CHP - Malbase Line- III	51.87	
		Unit- IV	73.11	220kV CHP - Semtokha Line- IV	91.72	
		-	-	220kV Malbase - Birpara Line	7.18	
		-	-	66kV CHP - Chumdo Line	20.87	
		-	-	66kV CHP - Gedu Line	5.45	
		-	-	3x3MVA, 66/11kV TFR	1.41	
Total	229.12	Auxiliary Consumption & Transformation Losses at Generator end	0.06%			
4	24MW BHP (U/S)	Unit- I	7.80	220kV BHP - Semtokha Line	40.30	
		Unit- II	7.40	66kV BHP - Lobeyasa Line	26.35	
		Total	15.20	220kV BHP - Tsirang Line	-24.57	
5	40MW BHP (L/S)	Unit- I	14.00	5MVA, 66/11kV TFR	0.42	
		Unit- II	14.00	30MVA ICT, 220/66kV (HV)	12.23	
		Total	28.00	Auxiliary Consumption & Transformation Losses at Generator end	1.62%	
6	126MW DHP	Unit-I	51.37	220kV DHP - Tsirang Line	51.09	Unit-II on Standby 220kV DHP-Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.23	
		-	-	5MVA, 220/33kV TFR	0.27	
Total	51.37	Auxiliary Consumption & Transformation Losses at Gen. end	0.02%			
7	60MW KHP	Unit- I	12.53	132kV KHP - Nangkhoh Line	26.23	
		Unit-II	12.50	132kV KHP - Kilikhar Line	24.37	
		Unit- III	13.22	5MVA, 132/11kV TFR	0.70	
		Unit- IV	13.55	132kV Motanga - Rangia Line	23.30	
		Total	51.80	Auxiliary Consumption & Transformation Losses at Generator end	0.97%	

Note: Generation-Load Summary (MW) for November 01, 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	787.12	368.32	360.58	396.84	7.74
2	Eastern Grid	322.45	202.81	199.82	141.60	2.99
Total		1,109.57	571.13	560.40	538.44	10.73

Note: Generation-Load Summary for November 01, 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	1,137.56	344.38	343.12	751.39	1.26
2	Eastern Grid	333.17	88.84	86.30	286.12	2.54
Total		1,470.73	433.22	429.42	1,037.51	3.80

NOTE- Motanga data collected from site.

1. 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:

- i) 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.
- ii) The clocks of all the locations are not synchronized.

2. 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: November 2, 2022
Hours: 09:00 Hours

Date: 24-Oct-22 **Time:** 18:10hrs **Load(MW):** 578.88

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	132.44	Unit-I under Shutdown. Unit-IV on Standby. 400kV THP- Siliguri Line- II on Standby.
		Unit- II	119.11	400kV THP - Siliguri Line - II	0.00	
		Unit- III	89.65	400kV THP - Siliguri Line- IV	127.90	
		Unit- IV	0.00	400kV THP - Malbase Line - III	201.40	
		Unit- V	128.90	400kV Malbase - Siliguri Line	112.72	
		Unit- VI	129.21	-	-	
		Total	466.87	Auxiliary Consumption & Transformation Losses at Generator end	1.10%	
2	720MW MHP	Unit-I	133.33	400kV MHP - Jigmeling Line - I	81.92	Unit-III under shutdown. Unit-II, 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	82.40	
		Unit-IV	100.64	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	67.66	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	52.12	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	43.78	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	66.76	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	7.99	
		-	-	80MVA, 220/132kV ICT - II (HV)	8.20	
		-	-	220kV Tsirang - Jigmeling Line	24.81	
-	-	132kV Gelephu - Salakati Line	1.12			
Total	233.97	Auxiliary Consumption & Transformation Losses at Generator end	0.85%			
3	336MW CHP	Unit- I	75.30	220kV CHP - Birpara Line- I	27.48	Unit-II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	27.48	
		Unit- III	77.93	220kV CHP - Malbase Line- III	71.31	
		Unit- IV	75.23	220kV CHP - Semtokha Line- IV	78.18	
		-	-	220kV Malbase - Birpara Line	-9.62	
		-	-	66kV CHP - Chumdo Line	17.26	
		-	-	66kV CHP - Gedu Line	5.27	
		-	-	3x3MVA, 66/11kV TFR	1.03	
Total	228.46	Auxiliary Consumption & Transformation Losses at Generator end	0.20%			
4	24MW BHP (U/S)	Unit- I	7.31	220kV BHP - Semtokha Line	42.87	
		Unit- II	7.31	66kV BHP - Lobeyssa Line	24.08	
		Total	14.62	220kV BHP - Tsirang Line	-24.12	
5	40MW BHP (L/S)	Unit- I	13.81	5MVA, 66/11kV TFR	0.42	
		Unit- II	13.98	30MVA ICT, 220/66kV (HV)	9.70	
		Total	27.79	Auxiliary Consumption & Transformation Losses at Generator end	-1.98%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	51.73	Unit-I on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	52.02	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.44	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	52.02	Auxiliary Consumption & Transformation Losses at Generator end	0.17%			
7	60MW KHP	Unit- I	12.03	132kV KHP - Nangkhoh Line	29.67	
		Unit-II	12.04	132kV KHP - Kilikhar Line	18.61	
		Unit- III	11.96	5MVA, 132/11kV TFR	0.49	
		Unit- IV	13.07	132kV Motanga - Rangia Line	15.74	
		Total	49.10	Auxiliary Consumption & Transformation Losses at Generator end	0.67%	

Note: Generation-Load Summary (MW) for November 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	789.76	346.55	341.72	418.40	4.83
2	Eastern Grid	283.07	180.48	178.16	127.40	2.32
Total		1,072.83	527.03	519.88	545.80	7.15

Note: Generation-Load Summary for November 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	1,146.46	313.15	312.40	771.91	0.75
2	Eastern Grid	326.55	68.55	66.37	319.40	2.18
Total		1,473.01	381.70	378.77	1,091.31	2.93

NOTE-Motanga 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.