

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: November 22, 2022
Hours: 18:00 Hours

Date: 17-Nov-22 **Time:** 18:39:09hrs **Load(MW):** 616.55

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	Unit-I & II under Shutdown. Unit-IV on Standby. 400kV Tala-Malbase line under Shutdown. 400kV THP - Siliguri Line- I on Standby.
		Unit- II	0.00	400kV THP - Siliguri Line - II	165.89	
		Unit- III	79.73	400kV THP - Siliguri Line- IV	158.70	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	107.46	400kV Malbase - Siliguri Line	-77.32	
		Unit- VI	138.13	-	-	
		Total	325.32	Auxiliary Consumption & Transformation Losses at Generator end	0.22%	
2	720MW MHP	Unit-I	95.15	400kV MHP - Jigmeling Line - I	0.00	Unit-III & IV under shutdown. 400kV MHP-JLG Line I, II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line I (Interim) on Standby.
		Unit-II	95.15	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	102.28	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	86.83	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	110.84	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-3.64	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-6.54	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	9.75	
		-	-	80MVA, 220/132kV ICT - II (HV)	10.01	
		-	-	220kV Tsirang - Jigmeling Line	-28.47	
-	-	132kV Gelephu - Salakati Line	-3.06			
Total	190.30	Auxiliary Consumption & Transformation Losses at Generator end	0.63%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-1.50	Unit-I under Shutdown. Unit II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-1.61	
		Unit- III	87.31	220kV CHP - Malbase Line- III	50.51	
		Unit- IV	75.05	220kV CHP - Semtokha Line- IV	83.89	
		-	-	220kV Malbase - Birpara Line	-40.80	
		-	-	66kV CHP - Chumdo Line	24.06	
		-	-	66kV CHP - Gedu Line	4.96	
		-	-	3x3MVA, 66/11kV TFR	2.14	
Total	162.36	Auxiliary Consumption & Transformation Losses at Generator end	-0.06%			
4	24MW BHP (U/S)	Unit- I	5.70	220kV BHP - Semtokha Line	64.60	
		Unit- II	5.50	66kV BHP - Lobeyasa Line	29.12	
		Total	11.20	220kV BHP - Tsirang Line	-60.20	
5	40MW BHP (L/S)	Unit- I	11.50	5MVA, 66/11kV TFR	0.76	
		Unit- II	11.50	30MVA ICT, 220/66kV (HV)	19.05	
		Total	23.00	Auxiliary Consumption & Transformation Losses at Generator end	-0.23%	
6	126MW DHP	Unit-I	38.29	220kV DHP - Tsirang Line	38.06	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.71	
		-	-	5MVA, 220/33kV TFR	0.15	
Total	38.29	Auxiliary Consumption & Transformation Losses at Gen. end	0.21%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	13.93	Unit I on Standby.
		Unit-II	11.04	132kV KHP - Kilikhar Line	20.30	
		Unit- III	11.99	5MVA, 132/11kV TFR	0.51	
		Unit- IV	12.12	132kV Motanga - Rangia Line	5.80	
		Total	35.15	Auxiliary Consumption & Transformation Losses at Generator end	1.17%	

Note: Generation-Load Summary (MW) for November 22, 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	560.17	385.28	384.64	203.36	0.64
2	Eastern Grid	225.45	204.42	202.82	-7.44	1.60
Total		785.62	589.70	587.46	195.92	2.24

Note: Generation-Load Summary for November 22, 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	694.72	346.25	341.58	367.89	4.67
2	Eastern Grid	241.29	77.76	76.63	144.11	1.13
Total		936.01	424.01	418.21	512.00	5.80

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 23, 2022
Hours: 09:00 Hours

Date: 17-Nov-22 **Time:** 18:39:09hrs **Load(MW):** 616.55

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	Unit-I & II under Shutdown. Unit-IV on Standby. 400kV Tala-Malbase line under Shutdown. 400kV THP - Siliguri Line- I on Standby.
		Unit- II	0.00	400kV THP - Siliguri Line - II	154.62	
		Unit- III	78.55	400kV THP - Siliguri Line- IV	149.33	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	87.97	400kV Malbase - Siliguri Line	-62.78	
		Unit- VI	139.11	-	-	
		Total	305.63	Auxiliary Consumption & Transformation Losses at Generator end	0.55%	
2	720MW MHP	Unit-I	95.10	400kV MHP - Jigmeling Line - I	0.00	Unit-III & IV under shutdown. 400kV MHP-JLG Line I, 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	95.11	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	111.59	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	77.69	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	92.66	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	5.82	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	11.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	7.48	
		-	-	80MVA, 220/132kV ICT - II (HV)	7.84	
		-	-	220kV Tsirang - Jigmeling Line	22.43	
-	-	132kV Gelephu - Salakati Line	-2.11			
Total	190.21	Auxiliary Consumption & Transformation Losses at Generator end	0.49%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	1.35	Unit-I under shutdown. Unit II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	1.40	
		Unit- III	85.35	220kV CHP - Malbase Line- III	53.97	
		Unit- IV	70.82	220kV CHP - Semtokha Line- IV	72.05	
		-	-	220kV Malbase - Birpara Line	-39.48	
		-	-	66kV CHP - Chumdo Line	19.60	
		-	-	66kV CHP - Gedu Line	6.05	
		-	-	3x3MVA, 66/11kV TFR	1.24	
Total	156.17	Auxiliary Consumption & Transformation Losses at Generator end	0.33%			
4	24MW BHP (U/S)	Unit- I	5.43	220kV BHP - Semtokha Line	60.04	
		Unit- II	5.43	66kV BHP - Lobeyssa Line	25.49	
		Total	10.86	220kV BHP - Tsirang Line	-51.72	
5	40MW BHP (L/S)	Unit- I	11.47	5MVA, 66/11kV TFR	0.40	
		Unit- II	11.47	30MVA ICT, 220/66kV (HV)	14.90	
		Total	22.94	Auxiliary Consumption & Transformation Losses at Generator end	-1.21%	
6	126MW DHP	Unit-I	38.29	220kV DHP - Tsirang Line	38.06	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.46	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	38.29	Auxiliary Consumption & Transformation Losses at Generator end	0.08%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	18.57	Unit-I on standby.
		Unit-II	11.49	132kV KHP - Kilikhar Line	15.17	
		Unit- III	11.43	5MVA, 132/11kV TFR	0.40	
		Unit- IV	11.53	132kV Motanga - Rangia Line	3.08	
		Total	34.45	Auxiliary Consumption & Transformation Losses at Generator end	0.90%	

Note: Generation-Load Summary (MW) for November 23, 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	533.89	307.02	305.21	204.44	1.81
2	Eastern Grid	224.66	229.30	228.06	17.79	1.24
Total		758.55	536.32	533.27	222.23	3.05

Note: Generation-Load Summary for November 23, 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	725.54	356.32	352.76	373.14	3.56
2	Eastern Grid	257.50	69.53	68.11	184.05	1.42
Total		983.04	425.85	420.87	557.19	4.98

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.