

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: November 20, 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	165.13	
		Unit- III	79.09	400kV THP - Siliguri Line- IV	159.60	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	108.05	400kV Malbase - Siliguri Line	-74.83	
		Unit- VI	138.56	-	-	
		Total	325.70	Auxiliary Consumption & Transformation Losses at Generator end	0.30%	
2	720MW MHP	Unit-I	100.19	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.132kV Gel-Sal under shutdown by NLDC India.
		Unit-II	100.25	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	113.40	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	83.60	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	104.30	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	3.67	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	6.02	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	9.40	
		-	-	80MVA, 220/132kV ICT - II (HV)	9.60	
		-	-	220kV Tsirang - Jigmeling Line	23.55	
-	-	132kV Gelephu - Salakati Line	-3.61			
Total	200.44	Auxiliary Consumption & Transformation Losses at Generator end	1.72%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-1.90	Unit-I under Shutdown.
		Unit- II	59.74	220kV CHP - Birpara Line- II	-1.95	
		Unit- III	58.44	220kV CHP - Malbase Line- III	52.73	
		Unit- IV	43.52	220kV CHP - Semtokha Line- IV	82.18	
		-	-	220kV Malbase - Birpara Line	-43.80	
		-	-	66kV CHP - Chumdo Line	23.27	
		-	-	66kV CHP - Gedu Line	5.44	
		-	-	3x3MVA, 66/11kV TFR	2.11	
Total	161.70	Auxiliary Consumption & Transformation Losses at Generator end	-0.11%			
4	24MW BHP (U/S)	Unit- I	5.65	220kV BHP - Semtokha Line	62.51	
		Unit- II	5.60	66kV BHP - Lobeyasa Line	27.49	
		Total	11.25	220kV BHP - Tsirang Line	-57.07	
5	40MW BHP (L/S)	Unit- I	11.10	5MVA, 66/11kV TFR	0.80	
		Unit- II	11.00	30MVA ICT, 220/66kV (HV)	17.40	
		Total	22.10	Auxiliary Consumption & Transformation Losses at Generator end	-1.14%	
6	126MW DHP	Unit-I	38.34	220kV DHP - Tsirang Line	38.09	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.90	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	38.34	Auxiliary Consumption & Transformation Losses at Gen. end	0.13%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	15.50	Unit I on Standby.
		Unit-II	12.10	132kV KHP - Kilikhar Line	19.90	
		Unit- III	12.10	5MVA, 132/11kV TFR	0.50	
		Unit- IV	12.10	132kV Motanga - Rangia Line	6.25	
		Total	36.30	Auxiliary Consumption & Transformation Losses at Generator end	1.10%	

Note: Generation-Load Summary (MW) for November 20, 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	559.09	333.29	332.83	202.25	0.46
2	Eastern Grid	236.74	247.96	244.12	12.33	3.84
Total		795.83	581.25	576.95	214.58	4.30

Note: Generation-Load Summary for November 20, 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	728.60	349.13	356.73	384.01	-7.60
2	Eastern Grid	238.21	92.21	90.21	141.46	2.00
Total		966.81	441.34	446.94	525.47	-5.60

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 21, 2022
Hours: 09:00 Hours

Date	Time	Load(MW)
17-Nov-22	18:39:09hrs	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	165.96	
		Unit- III	80.19	400kV THP - Siliguri Line- IV	158.50	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	107.56	400kV Malbase - Siliguri Line	-55.19	
		Unit- VI	139.37	-	-	
		Total	327.12	Auxiliary Consumption & Transformation Losses at Generator end	0.81%	
2	720MW MHP	Unit-I	99.82	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	100.14	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	122.45	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	76.21	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	89.84	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	12.41	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	19.31	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	6.88	
		-	-	80MVA, 220/132kV ICT - II (HV)	7.10	
		-	-	220kV Tsirang - Jigmeling Line	-14.09	
-	-	132kV Gelephu - Salakati Line	-2.29			
Total	199.96	Auxiliary Consumption & Transformation Losses at Generator end	0.65%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	2.04	Unit-I under shutdown.
		Unit- II	59.74	220kV CHP - Birpara Line- II	1.94	
		Unit- III	58.44	220kV CHP - Malbase Line- III	64.42	
		Unit- IV	43.52	220kV CHP - Semtokha Line- IV	70.21	
		-	-	220kV Malbase - Birpara Line	-46.20	
		-	-	66kV CHP - Chumdo Line	18.80	
		-	-	66kV CHP - Gedu Line	7.45	
		-	-	3x3MVA, 66/11kV TFR	1.16	
Total	161.70	Auxiliary Consumption & Transformation Losses at Generator end	-2.67%			
4	24MW BHP (U/S)	Unit- I	5.54	220kV BHP - Semtokha Line	59.54	
		Unit- II	5.54	66kV BHP - Lobeyasa Line	25.18	
		Total	11.08	220kV BHP - Tsirang Line	-49.61	
5	40MW BHP (L/S)	Unit- I	12.07	5MVA, 66/11kV TFR	0.46	
		Unit- II	11.99	30MVA ICT, 220/66kV (HV)	14.56	
		Total	24.06	Auxiliary Consumption & Transformation Losses at Generator end	-1.22%	
6	126MW DHP	Unit-I	38.31	220kV DHP - Tsirang Line	38.08	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.65	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	38.31	Auxiliary Consumption & Transformation Losses at Generator end	0.08%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	19.62	Unit-I on standby.
		Unit-II	11.97	132kV KHP - Kilikhar Line	15.65	
		Unit- III	11.98	5MVA, 132/11kV TFR	0.31	
		Unit- IV	12.00	132kV Motanga - Rangia Line	4.28	
		Total	35.95	Auxiliary Consumption & Transformation Losses at Generator end	1.03%	

Note: Generation-Load Summary (MW) for November 21, 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	562.27	349.31	351.37	227.05	-2.06
2	Eastern Grid	235.91	188.11	186.44	33.71	1.67
Total		798.18	537.42	537.81	260.76	-0.39

Note: Generation-Load Summary for November 21, 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	727.74	345.31	351.31	376.18	-6.00
2	Eastern Grid	235.59	65.68	60.02	176.16	5.66
Total		963.33	410.99	411.33	552.34	-0.34

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.

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