

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

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

Date: 7-Nov-22 **Time:** 18:11hrs **Load(MW):** 609.06

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	164.08	
		Unit- III	98.04	400kV THP - Siliguri Line- IV	158.91	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	87.64	400kV Malbase - Siliguri Line	-93.47	
		Unit- VI	138.29	-	-	
		Total	323.97	Auxiliary Consumption & Transformation Losses at Generator end	0.30%	
2	720MW MHP	Unit-I	105.18	400kV MHP - Jigmeling Line - I	0.00	Unit-IV on standby. Unit-III 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	105.16	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	128.53	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	80.26	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	121.40	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	1.22	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	3.78	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	6.90	
		-	-	80MVA, 220/132kV ICT - II (HV)	7.09	
		-	-	220kV Tsirang - Jigmeling Line	-44.18	
-	-	132kV Gelephu - Salakati Line	0.00			
Total	210.34	Auxiliary Consumption & Transformation Losses at Generator end	0.74%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	14.46	Unit-I under Shutdown.
		Unit- II	61.46	220kV CHP - Birpara Line- II	14.67	
		Unit- III	60.73	220kV CHP - Malbase Line- III	55.02	
		Unit- IV	52.30	220kV CHP - Semtokha Line- IV	59.33	
		-	-	220kV Malbase - Birpara Line	-18.10	
		-	-	66kV CHP - Chumdo Line	23.54	
		-	-	66kV CHP - Gedu Line	5.10	
		-	-	3x3MVA, 66/11kV TFR	1.83	
Total	174.49	Auxiliary Consumption & Transformation Losses at Generator end	0.31%			
4	24MW BHP (U/S)	Unit- I	6.10	220kV BHP - Semtokha Line	86.00	
		Unit- II	5.90	66kV BHP - Lobeyasa Line	29.47	
		Total	12.00	220kV BHP - Tsirang Line	-79.57	
5	40MW BHP (L/S)	Unit- I	12.20	5MVA, 66/11kV TFR	0.60	
		Unit- II	12.20	30MVA ICT, 220/66kV (HV)	18.39	
		Total	24.40	Auxiliary Consumption & Transformation Losses at Generator end	-0.27%	
6	126MW DHP	Unit-I	39.82	220kV DHP - Tsirang Line	39.58	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.06	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	39.82	Auxiliary Consumption & Transformation Losses at Gen. end	0.10%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	17.74	Unit I on Standby.
		Unit-II	12.26	132kV KHP - Kilikhar Line	18.39	
		Unit- III	12.25	5MVA, 132/11kV TFR	0.54	
		Unit- IV	12.51	132kV Motanga - Rangia Line	0.10	
		Total	37.02	Auxiliary Consumption & Transformation Losses at Generator end	0.95%	

Note: Generation-Load Summary (MW) for November 18, 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	574.68	378.31	376.85	240.55	1.46
2	Eastern Grid	247.36	198.08	196.18	5.10	1.90
Total		822.04	576.39	573.03	245.65	3.36

Note: Generation-Load Summary for November 18, 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	756.63	346.57	355.37	403.88	-8.80
2	Eastern Grid	236.44	94.75	92.85	147.87	1.90
Total		993.07	441.32	448.22	551.75	-6.90

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 19, 2022
Hours: 09:00 Hours

Date	Time	Load(MW)
7-Nov-22	18:11hrs	609.06

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	174.68	
		Unit- III	79.71	400kV THP - Siliguri Line- IV	168.11	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	127.88	400kV Malbase - Siliguri Line	-55.76	
		Unit- VI	139.03	-	-	
		Total	346.62	Auxiliary Consumption & Transformation Losses at Generator end	1.10%	
2	720MW MHP	Unit-I	100.21	400kV MHP - Jigmeling Line - I	0.00	Unit-IV on standby. Unit-III 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	105.21	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	124.78	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	79.48	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	88.42	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	13.86	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	20.92	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	7.33	
		-	-	80MVA, 220/132kV ICT - II (HV)	7.50	
		-	-	220kV Tsirang - Jigmeling Line	-12.19	
-	-	132kV Gelephu - Salakati Line	-3.14			
Total	205.42	Auxiliary Consumption & Transformation Losses at Generator end	0.56%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	3.99	Unit-I & III under shutdown.
		Unit- II	90.06	220kV CHP - Birpara Line- II	3.45	
		Unit- III	0.00	220kV CHP - Malbase Line- III	63.01	
		Unit- IV	74.31	220kV CHP - Semtokha Line- IV	66.74	
		-	-	220kV Malbase - Birpara Line	-42.83	
		-	-	66kV CHP - Chumdo Line	18.79	
		-	-	66kV CHP - Gedu Line	6.97	
		-	-	3x3MVA, 66/11kV TFR	1.12	
		Total	164.37	Auxiliary Consumption & Transformation Losses at Generator end	0.18%	
4	24MW BHP (U/S)	Unit- I	5.76	220kV BHP - Semtokha Line	59.99	
		Unit- II	5.76	66kV BHP - Lobeysa Line	24.79	
		Total	11.52	220kV BHP - Tsirang Line	-48.96	
5	40MW BHP (L/S)	Unit- I	12.18	5MVA, 66/11kV TFR	0.57	
		Unit- II	12.19	30MVA ICT, 220/66kV (HV)	13.80	
		Total	24.37	Auxiliary Consumption & Transformation Losses at Generator end	-1.39%	
6	126MW DHP	Unit-I	39.83	220kV DHP - Tsirang Line	39.62	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.74	
		-	-	5MVA, 220/33kV TFR	0.15	
Total	39.83	Auxiliary Consumption & Transformation Losses at Generator end	0.15%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	20.38	Unit-I on standby.
		Unit-II	12.22	132kV KHP - Kilikhar Line	15.82	
		Unit- III	12.22	5MVA, 132/11kV TFR	0.44	
		Unit- IV	12.56	132kV Motanga - Rangia Line	8.36	
		Total	37.00	Auxiliary Consumption & Transformation Losses at Generator end	0.97%	

Note: Generation-Load Summary (MW) for November 19, 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	586.71	347.26	343.57	251.64	3.69
2	Eastern Grid	242.42	190.23	188.71	40.00	1.52
Total		829.13	537.49	532.28	291.64	5.21

Note: Generation-Load Summary for November 19, 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	735.65	351.79	349.69	375.60	2.10
2	Eastern Grid	242.71	77.49	76.28	173.48	1.21
Total		978.36	429.28	425.97	549.08	3.31

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.
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