

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: December 25, 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	76.07	Unit-I, II & III under Shutdown. 400kV THP- Siliguri Line II on Standby 400kV Tala-Siliguri line IV under 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	109.50	400kV THP - Malbase Line - III	149.92	
		Unit- V	58.82	400kV Malbase - Siliguri Line	54.69	
		Unit- VI	60.51	-	-	
		Total	228.83	Auxiliary Consumption & Transformation Losses at Generator end	1.24%	
2	720MW MHP	Unit-I	99.84	400kV MHP - Jigmeling Line - I	95.37	Unit-III & IV under shutdown. 400kV MHP-JLG Line II, III & IV on Standby. 132kV MHP_Yurmo Line- I not in service. 400kV JLG_ALI line- I (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	83.78	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	87.09	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	127.07	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-12.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-18.97	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.23	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.37	
		-	-	220kV Tsirang - Jigmeling Line	-53.24	
-	-	132kV Gelephu - Salakati Line	-15.77			
Total	183.62	Auxiliary Consumption & Transformation Losses at Generator end	0.63%			
3	336MW CHP	Unit- I	59.56	220kV CHP - Birpara Line- I	0.00	Unit-II & Unit-III on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-16.06	
		Unit- III	0.00	220kV CHP - Malbase Line- III	29.96	
		Unit- IV	61.73	220kV CHP - Semtokha Line- IV	78.32	
		-	-	220kV Malbase - Birpara Line	-49.44	
		-	-	66kV CHP - Chumdo Line	26.90	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.06	
Total	121.29	Auxiliary Consumption & Transformation Losses at Generator end	0.09%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	70.69	BHP(U/S) Unit-I on Standby.
		Unit- II	7.82	66kV BHP - Lobeyasa Line	28.06	
		Total	7.82	220kV BHP - Tsirang Line	-75.29	
5	40MW BHP (L/S)	Unit- I	7.90	5MVA, 66/11kV TFR	0.84	BHP(U/S) Unit-I on Standby.
		Unit- II	7.90	30MVA ICT, 220/66kV (HV)	21.10	
		Total	15.80	Auxiliary Consumption & Transformation Losses at Generator end	-2.88%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	26.66	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	26.93	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.05	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	26.93	Auxiliary Consumption & Transformation Losses at Gen. end	0.26%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	12.26	Unit-III under Shutdown. Unit-I on Standby.
		Unit-II	16.00	132kV KHP - Kilikhar Line	18.70	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.83	
		Unit- IV	16.06	132kV Motanga - Rangia Line	0.00	
		Total	32.06	Auxiliary Consumption & Transformation Losses at Generator end	0.84%	

Note: Generation-Load Summary (MW) for December 25, 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	400.67	388.65	386.31	65.26	2.34
2	Eastern Grid	215.68	209.54	208.11	-47.10	1.43
Total		616.35	598.19	594.42	18.16	3.77

Note: Generation-Load Summary for December 25, 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	424.24	378.48	375.16	88.49	3.32
2	Eastern Grid	157.90	102.66	100.43	12.51	2.23
Total		582.14	481.14	475.59	101.00	5.55

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:	December 26, 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	84.77	Unit-I, II & III under Shutdown. 400kV THP- Siliguri Line II on Standby 400kV Tala-Siliguri line IV under 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	59.72	400kV THP - Malbase Line - III	154.29	
		Unit- V	122.31	400kV Malbase - Siliguri Line	63.25	
		Unit- VI	59.73	-	-	
		Total	241.76	Auxiliary Consumption & Transformation Losses at Generator end	1.12%	
2	720MW MHP	Unit-I	80.18	400kV MHP - Jigmeling Line - I	85.23	Unit-III & IV under shutdown. 400kV MHP-JLG Line II, III & IV on Standby. 132kV MHP_Yurmo Line- I not in service. 400kV JLG_ALI line- I (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	80.18	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	73.54	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	93.86	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-2.91	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-4.83	
		-	-	80MVA, 220/132kV ICT - I (HV)	2.85	
		-	-	80MVA, 220/132kV ICT - II (HV)	2.95	
		-	-	220kV Tsirang - Jigmeling Line	-50.36	
-	-	132kV Gelephu - Salakati Line	-13.72			
Total	160.36	Auxiliary Consumption & Transformation Losses at Generator end	0.99%			
3	336MW CHP	Unit- I	60.54	220kV CHP - Birpara Line- I	0.00	Unit-II & III on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-11.09	
		Unit- III	0.00	220kV CHP - Malbase Line- III	41.72	
		Unit- IV	61.37	220kV CHP - Semtokha Line- IV	65.71	
		-	-	220kV Malbase - Birpara Line	-49.97	
		-	-	66kV CHP - Chumdo Line	24.06	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.49	
Total	121.91	Auxiliary Consumption & Transformation Losses at Generator end	0.02%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	71.41	U/S unit-I on Standby
		Unit- II	7.90	66kV BHP - Lobeyasa Line	26.09	
		Total	7.90	220kV BHP - Tsirang Line	-73.61	
5	40MW BHP (L/S)	Unit- I	8.30	5MVA, 66/11kV TFR	0.53	U/S unit-I on Standby
		Unit- II	8.00	30MVA ICT, 220/66kV (HV)	18.90	
		Total	16.30	Auxiliary Consumption & Transformation Losses at Generator end	-0.91%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	26.63	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	26.91	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	36.62	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	26.91	Auxiliary Consumption & Transformation Losses at Generator end	0.30%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	14.57	Unit-III under Shutdown. Unit-I on Standby.
		Unit-II	16.02	132kV KHP - Kilikhar Line	16.50	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.61	
		Unit- IV	16.09	132kV Motanga - Rangia Line	3.85	
		Total	32.11	Auxiliary Consumption & Transformation Losses at Generator end	1.34%	

Note: Generation-Load Summary (MW) for December 26, 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	414.78	378.18	375.60	86.96	2.58
2	Eastern Grid	192.47	159.72	157.70	-17.61	2.02
Total		607.25	537.90	533.30	69.35	4.60

Note: Generation-Load Summary for December 26, 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	434.33	341.26	337.21	114.33	4.05
2	Eastern Grid	225.23	88.99	86.95	114.98	2.04
Total		659.56	430.25	424.16	229.31	6.09

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- 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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