

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: January 10, 2023
Hours: 18:00 Hours

Date **Time** **Load(MW)**
 28-Dec-22 18:03:26hrs 629.23

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	68.40	Unit-I, II & III under Shutdown. Unit-V on Standby. 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	99.08	400kV THP - Malbase Line - III	147.43	
		Unit- V	0.00	400kV Malbase - Siliguri Line	47.31	
		Unit- VI	120.16	-	-	
		Total	219.24	Auxiliary Consumption & Transformation Losses at Generator end	1.56%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit-I under Breakdown. Unit-III under Shutdown. 400kV MHP-JLG Line I & II under Shutdown. 400kV MHP-JLG Line III on Standby. 132kV MHP_Yurmoo Line- I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- 1 (Interim) on Standby.
		Unit-II	89.79	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	85.00	400kV MHP - Jigmeling Line - IV	85.20	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	87.84	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	124.74	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-15.27	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-23.91	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	7.61	
		-	-	80MVA, 220/132kV ICT - II (HV)	7.83	
		-	-	220kV Tsirang - Jigmeling Line	-46.42	
-	-	132kV Gelephu - Salakati Line	-11.50			
Total	174.79	Auxiliary Consumption & Transformation Losses at Generator end	1.00%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I on Standby. Unit-II under Shutdown. 220kV CHP_Birpara Line I on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-0.59	
		Unit- III	85.57	220kV CHP - Malbase Line- III	37.21	
		Unit- IV	74.22	220kV CHP - Semtokha Line- IV	89.90	
		-	-	220kV Malbase - Birpara Line	-29.47	
		-	-	66kV CHP - Chumdo Line	24.21	
		-	-	66kV CHP - Gedu Line	6.44	
		-	-	3x3MVA, 66/11kV TFR	1.04	
Total	159.79	Auxiliary Consumption & Transformation Losses at Generator end	0.99%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	58.01	L/S & U/S Unit-I on Standby.
		Unit- II	6.80	66kV BHP - Lobeyssa Line	26.51	
		Total	6.80	220kV BHP - Tsirang Line	-64.75	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.74	L/S & U/S Unit-I on Standby.
		Unit- II	14.09	30MVA ICT, 220/66kV (HV)	20.40	
		Total	14.09	Auxiliary Consumption & Transformation Losses at Generator end	1.82%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	22.92	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	23.28	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.82	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	23.28	Auxiliary Consumption & Transformation Losses at Gen. end	0.26%			
7	60MW KHP	Unit- I	12.54	132kV KHP - Nangkhoh Line	6.04	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	12.53	132kV KHP - Kilikhar Line	18.08	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.68	
		Unit- IV	0.00	132kV Motanga - Rangia Line	5.40	
		Total	25.07	Auxiliary Consumption & Transformation Losses at Generator end	1.08%	

Note: Generation-Load Summary (MW) for January 10, 2023 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	423.20	383.97	378.54	85.65	5.43
2	Eastern Grid	199.86	198.72	196.70	-45.28	2.02
Total		623.06	582.69	575.24	40.37	7.45

Note: Generation-Load Summary for January 10, 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	223.34	368.69	368.12	-100.06	0.57
2	Eastern Grid	275.32	107.88	105.54	122.15	2.34
Total		498.66	476.57	473.66	22.09	2.91

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: January 11, 2023
Hours: 09:00 Hours

Date: 28-Dec-22 **Time:** 18:03:26hrs **Load(MW):** 629.23

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	75.83	Unit-I, II & III under Shutdown. Unit-V on Standby. 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	132.81	400kV THP - Malbase Line - III	157.96	
		Unit- V	0.00	400kV Malbase - Siliguri Line	53.45	
		Unit- VI	105.12	-	-	
		Total	237.93	Auxiliary Consumption & Transformation Losses at Generator end	1.74%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit-I under Breakdown. Unit-III under Shutdown. 400kV MHP-JLG Line II, III & IV on Standby. 132kV MHP_Yurmo Line-I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	70.13	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	80.01	400kV MHP - Jigmeling Line - IV	69.38	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	79.74	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	113.43	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-16.73	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-26.20	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.69	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.83	
		-	-	220kV Tsirang - Jigmeling Line	-39.81	
-	-	132kV Gelephu - Salakati Line	-10.02			
Total	150.14	Auxiliary Consumption & Transformation Losses at Generator end	0.68%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I on Standby. Unit-II under Shutdown. 220kV CHP_Birpara Line I on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-10.59	
		Unit- III	63.98	220kV CHP - Malbase Line- III	25.46	
		Unit- IV	60.49	220kV CHP - Semtokha Line- IV	79.49	
		-	-	220kV Malbase - Birpara Line	-36.85	
		-	-	66kV CHP - Chumdo Line	20.92	
		-	-	66kV CHP - Gedu Line	7.51	
		-	-	3x3MVA, 66/11kV TFR	0.76	
Total	124.47	Auxiliary Consumption & Transformation Losses at Generator end	0.74%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	56.14	L/S & U/S unit-I on Standby
		Unit- II	7.00	66kV BHP - Lobeyasa Line	24.59	
		Total	7.00	220kV BHP - Tsirang Line	-59.82	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.76	L/S & U/S unit-I on Standby
		Unit- II	14.60	30MVA ICT, 220/66kV (HV)	21.34	
		Total	14.60	Auxiliary Consumption & Transformation Losses at Generator end	-0.32%	
6	126MW DHP	Unit-I	23.23	220kV DHP - Tsirang Line	23.02	Unit-II under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.80	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	23.23	Auxiliary Consumption & Transformation Losses at Generator end	0.04%			
7	60MW KHP	Unit- I	15.07	132kV KHP - Nangkhoh Line	13.75	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	15.05	132kV KHP - Kilikhar Line	15.38	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.73	
		Unit- IV	0.00	132kV Motanga - Rangia Line	3.20	
		Total	30.12	Auxiliary Consumption & Transformation Losses at Generator end	0.86%	

Note: Generation-Load Summary (MW) for January 11, 2023 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	407.23	365.20	360.20	81.84	5.00
2	Eastern Grid	180.26	190.20	188.92	-49.75	1.28
Total		587.49	555.40	549.12	32.09	6.28

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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	204.62	336.69	335.76	-92.18	0.93
2	Eastern Grid	251.82	87.74	85.69	124.19	2.05
Total		456.44	424.43	421.45	32.01	2.98

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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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