

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: January 13, 2023
Hours: 18:00 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	73.85	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	118.11	400kV THP - Malbase Line - III	151.30	
		Unit- V	0.00	400kV Malbase - Siliguri Line	51.57	
		Unit- VI	109.33	-	-	
		Total	227.44	Auxiliary Consumption & Transformation Losses at Generator end	1.01%	
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- I (Interim) on Standby.
		Unit-II	75.21	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	85.49	400kV MHP - Jigmeling Line - IV	71.64	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	87.86	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	123.67	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-20.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-32.39	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	7.60	
		-	-	80MVA, 220/132kV ICT - II (HV)	7.80	
		-	-	220kV Tsirang - Jigmeling Line	-45.53	
-	-	132kV Gelephu - Salakati Line	-13.56			
Total	160.70	Auxiliary Consumption & Transformation Losses at Generator end	0.75%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-4.42	Unit-I on Standby. Unit-II under Shutdown. 220kV CHP_Birpara Line II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00	
		Unit- III	78.91	220kV CHP - Malbase Line- III	30.83	
		Unit- IV	66.21	220kV CHP - Semtokha Line- IV	87.19	
		-	-	220kV Malbase - Birpara Line	-29.81	
		-	-	66kV CHP - Chumdo Line	22.22	
		-	-	66kV CHP - Gedu Line	7.14	
		-	-	3x3MVA, 66/11kV TFR	0.99	
Total	145.12	Auxiliary Consumption & Transformation Losses at Generator end	0.81%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	56.71	L/S & U/S Unit-I on Standby.
		Unit- II	7.00	66kV BHP - Lobeyasa Line	26.65	
		Total	7.00	220kV BHP - Tsirang Line	-63.10	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.77	L/S & U/S Unit-I on Standby.
		Unit- II	14.00	30MVA ICT, 220/66kV (HV)	20.89	
		Total	14.00	Auxiliary Consumption & Transformation Losses at Generator end	-0.14%	
6	126MW DHP	Unit-I	22.63	220kV DHP - Tsirang Line	22.38	Unit-II under standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.52	
		-	-	5MVA, 220/33kV TFR	0.23	
Total	22.63	Auxiliary Consumption & Transformation Losses at Gen. end	0.09%			
7	60MW KHP	Unit- I	12.88	132kV KHP - Nangkhoh Line	3.85	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	12.57	132kV KHP - Kilikhar Line	16.49	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.96	
		Unit- IV	0.00	132kV Motanga - Rangia Line	0.99	
		Total	25.45	Auxiliary Consumption & Transformation Losses at Generator end	16.31%	

Note: Generation-Load Summary (MW) for January 13, 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	416.19	370.53	367.08	91.19	3.45
2	Eastern Grid	186.15	205.94	200.59	-65.32	5.35
Total		602.34	576.47	567.67	25.87	8.80

Note: Generation-Load Summary for January 13, 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	224.12	361.51	360.79	-96.99	0.72
2	Eastern Grid	260.86	101.65	99.43	118.81	2.22
Total		484.98	463.16	460.22	21.82	2.94

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 14, 2023
Hours:	09:00 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	78.10	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	119.87	400kV THP - Malbase Line - III	159.05	
		Unit- V	0.00	400kV Malbase - Siliguri Line	54.12	
		Unit- VI	120.04	-	-	
		Total	239.91	Auxiliary Consumption & Transformation Losses at Generator end	1.15%	
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	60.17	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	65.40	400kV MHP - Jigmeling Line - IV	50.72	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	74.13	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	110.50	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-23.27	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-36.34	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.42	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.55	
		-	-	220kV Tsirang - Jigmeling Line	-38.32	
-	-	132kV Gelephu - Salakati Line	-9.24			
Total	125.57	Auxiliary Consumption & Transformation Losses at Generator end	0.57%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-9.32	Unit-I on Standby. Unit-II under Shutdown. 220kV CHP_Birpara Line II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00	
		Unit- III	65.20	220kV CHP - Malbase Line- III	27.29	
		Unit- IV	64.93	220kV CHP - Semtokha Line- IV	84.74	
		-	-	220kV Malbase - Birpara Line	-35.72	
		-	-	66kV CHP - Chumdo Line	9.40	
		-	-	66kV CHP - Gedu Line	16.17	
		-	-	3x3MVA, 66/11kV TFR	0.76	
Total	130.13	Auxiliary Consumption & Transformation Losses at Generator end	0.84%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	54.57	L/S & U/S unit-I on Standby
		Unit- II	7.00	66kV BHP - Lobeysa Line	24.56	
		Total	7.00	220kV BHP - Tsirang Line	-58.11	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.60	L/S & U/S unit-I on Standby
		Unit- II	14.50	30MVA ICT, 220/66kV (HV)	18.30	
		Total	14.50	Auxiliary Consumption & Transformation Losses at Generator end	-0.56%	
6	126MW DHP	Unit-I	22.72	220kV DHP - Tsirang Line	22.49	Unit-II under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.70	
		-	-	5MVA, 220/33kV TFR	0.22	
Total	22.72	Auxiliary Consumption & Transformation Losses at Generator end	0.04%			
7	60MW KHP	Unit- I	15.05	132kV KHP - Nangkhoh Line	13.42	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	15.05	132kV KHP - Kilikhar Line	15.74	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.77	
		Unit- IV	0.00	132kV Motanga - Rangia Line	6.26	
		Total	30.10	Auxiliary Consumption & Transformation Losses at Generator end	0.56%	

Note: Generation-Load Summary (MW) for January 14, 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	414.26	365.40	361.66	87.18	3.74
2	Eastern Grid	155.67	179.94	179.05	-62.59	0.89
Total		569.93	545.34	540.71	24.59	4.63

Note: Generation-Load Summary for January 14, 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	220.13	342.89	342.98	-89.70	-0.09
2	Eastern Grid	252.02	93.78	91.47	125.18	2.31
Total		472.15	436.67	434.45	35.48	2.22

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