

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	January 15, 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	0.00	Unit-I, II & III under Shutdown. Unit-V on Standby. 400kV THP- Siliguri Line I on Standby 400kV Tala-Siliguri line IV under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	84.12	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	143.44	400kV THP - Malbase Line - III	167.35	
		Unit- V	0.00	400kV Malbase - Siliguri Line	58.43	
		Unit- VI	110.10	-	-	
		Total	253.54	Auxiliary Consumption & Transformation Losses at Generator end	0.82%	
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 & III 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	85.22	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	85.16	400kV MHP - Jigmeling Line - IV	84.27	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	84.24	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	124.97	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-16.73	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-27.23	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	4.75	
		-	-	80MVA, 220/132kV ICT - II (HV)	4.80	
		-	-	220kV Tsirang - Jigmeling Line	-53.34	
-	-	132kV Gelephu - Salakati Line	-17.69			
Total	170.38	Auxiliary Consumption & Transformation Losses at Generator end	1.10%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-13.71	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	61.46	220kV CHP - Malbase Line- III	25.97	
		Unit- IV	58.07	220kV CHP - Semtokha Line- IV	77.53	
		-	-	220kV Malbase - Birpara Line	-43.05	
		-	-	66kV CHP - Chumdo Line	20.00	
		-	-	66kV CHP - Gedu Line	7.97	
		-	-	3x3MVA, 66/11kV TFR	1.07	
Total	119.53	Auxiliary Consumption & Transformation Losses at Generator end	0.59%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	64.00	L/S & U/S Unit-I on Standby.
		Unit- II	6.66	66kV BHP - Lobeyasa Line	26.72	
		Total	6.66	220kV BHP - Tsirang Line	-71.57	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.89	L/S & U/S Unit-I on Standby.
		Unit- II	13.52	30MVA ICT, 220/66kV (HV)	21.00	
		Total	13.52	Auxiliary Consumption & Transformation Losses at Generator end	0.69%	
6	126MW DHP	Unit-I	22.63	220kV DHP - Tsirang Line	22.38	Unit-II under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.58	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	22.63	Auxiliary Consumption & Transformation Losses at Gen. end	0.22%			
7	60MW KHP	Unit- I	12.42	132kV KHP - Nangkhoh Line	7.39	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	12.49	132kV KHP - Kilikhar Line	16.44	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.74	
		Unit- IV	0.00	132kV Motanga - Rangia Line	-1.27	
		Total	24.91	Auxiliary Consumption & Transformation Losses at Generator end	1.36%	

Note: Generation-Load Summary (MW) for January 15, 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	415.88	383.43	380.47	85.79	2.96
2	Eastern Grid	195.29	204.87	202.66	-62.92	2.21
Total		611.17	588.30	583.13	22.87	5.17

Note: Generation-Load Summary for January 15, 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	228.06	383.81	383.34	-100.54	0.47
2	Eastern Grid	285.34	104.80	102.67	125.33	2.13
Total		513.40	488.61	486.01	24.79	2.60

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:	January 16, 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	0.00	Unit-I, II & III under Shutdown. Unit-V on Standby. 400kV THP- Siliguri Line I on Standby 400kV Tala-Siliguri line IV under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	82.99	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	123.31	400kV THP - Malbase Line - III	171.55	
		Unit- V	0.00	400kV Malbase - Siliguri Line	58.12	
		Unit- VI	133.62	-	-	
		Total	256.93	Auxiliary Consumption & Transformation Losses at Generator end	0.93%	
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 & III 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	70.16	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	74.98	400kV MHP - Jigmeling Line - IV	66.81	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	77.75	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	115.04	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-18.91	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-29.25	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	4.88	
		-	-	80MVA, 220/132kV ICT - II (HV)	4.99	
		-	-	220kV Tsirang - Jigmeling Line	-43.82	
-	-	132kV Gelephu - Salakati Line	-11.91			
Total	145.14	Auxiliary Consumption & Transformation Losses at Generator end	0.40%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-12.63	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	59.28	220kV CHP - Malbase Line- III	30.07	
		Unit- IV	60.89	220kV CHP - Semtokha Line- IV	73.86	
		-	-	220kV Malbase - Birpara Line	-42.94	
		-	-	66kV CHP - Chumdo Line	17.93	
		-	-	66kV CHP - Gedu Line	9.38	
		-	-	3x3MVA, 66/11kV TFR	0.80	
Total	120.17	Auxiliary Consumption & Transformation Losses at Generator end	0.63%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	57.50	L/S & U/S unit-I on Standby
		Unit- II	6.80	66kV BHP - Lobeyasa Line	24.20	
		Total	6.80	220kV BHP - Tsirang Line	-61.72	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.59	L/S & U/S unit-I on Standby
		Unit- II	13.70	30MVA ICT, 220/66kV (HV)	18.14	
		Total	13.70	Auxiliary Consumption & Transformation Losses at Generator end	-0.34%	
6	126MW DHP	Unit-I	22.61	220kV DHP - Tsirang Line	22.38	Unit-II under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.64	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	22.61	Auxiliary Consumption & Transformation Losses at Generator end	0.13%			
7	60MW KHP	Unit- I	15.01	132kV KHP - Nangkhoh Line	13.18	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	15.00	132kV KHP - Kilikhar Line	15.73	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.70	
		Unit- IV	0.00	132kV Motanga - Rangia Line	3.75	
		Total	30.01	Auxiliary Consumption & Transformation Losses at Generator end	1.33%	

Note: Generation-Load Summary (MW) for January 16, 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	420.21	378.49	375.38	85.54	3.11
2	Eastern Grid	175.15	187.65	186.67	-56.32	0.98
Total		595.36	566.14	562.05	29.22	4.09

Note: Generation-Load Summary for January 16, 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	219.58	352.28	351.82	-89.85	0.46
2	Eastern Grid	255.02	92.37	90.70	119.80	1.67
Total		474.60	444.65	442.52	29.95	2.13

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.