

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	December 26, 2022
Hours:	18:00 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	80.75	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	60.72	400kV THP - Malbase Line - III	163.83	
		Unit- V	127.41	400kV Malbase - Siliguri Line	56.64	
		Unit- VI	59.86	-	-	
		Total	247.99	Auxiliary Consumption & Transformation Losses at Generator end	1.38%	
2	720MW MHP	Unit-I	79.82	400kV MHP - Jigmeling Line - I	69.57	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	79.86	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	88.27	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	126.60	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-21.09	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-34.99	
		-	-	80MVA, 220/132kV ICT - I (HV)	7.89	
		-	-	80MVA, 220/132kV ICT - II (HV)	8.08	
		-	-	220kV Tsirang - Jigmeling Line	-48.45	
-	-	132kV Gelephu - Salakati Line	-13.19			
Total	159.68	Auxiliary Consumption & Transformation Losses at Generator end	1.15%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I & Unit-II on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-12.26	
		Unit- III	70.10	220kV CHP - Malbase Line- III	34.92	
		Unit- IV	68.48	220kV CHP - Semtokha Line- IV	85.30	
		-	-	220kV Malbase - Birpara Line	-46.43	
		-	-	66kV CHP - Chumdo Line	28.12	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.17	
Total	138.58	Auxiliary Consumption & Transformation Losses at Generator end	0.24%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	64.79	BHP(U/S) Unit-I on Standby.
		Unit- II	7.90	66kV BHP - Lobeyasa Line	27.78	
		Total	7.90	220kV BHP - Tsirang Line	-69.46	
5	40MW BHP (L/S)	Unit- I	7.90	5MVA, 66/11kV TFR	0.82	
		Unit- II	7.80	30MVA ICT, 220/66kV (HV)	20.70	
		Total	15.70	Auxiliary Consumption & Transformation Losses at Generator end	-1.40%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	26.33	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	26.61	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.52	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	26.61	Auxiliary Consumption & Transformation Losses at Gen. end	0.30%			
7	60MW KHP	Unit- I	10.02	132kV KHP - Nangkhoh Line	1.13	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	10.05	132kV KHP - Kilikhar Line	17.67	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.94	
		Unit- IV	0.00	132kV Motanga - Rangia Line	-2.35	
		Total	20.07	Auxiliary Consumption & Transformation Losses at Generator end	1.64%	

Note: Generation-Load Summary (MW) for December 26, 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	436.78	406.53	403.04	78.70	3.49
2	Eastern Grid	179.75	202.92	200.75	-71.62	2.17
Total		616.53	609.45	603.79	7.08	5.66

Note: Generation-Load Summary for December 26, 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	435.65	379.71	372.02	97.70	7.69
2	Eastern Grid	295.91	108.73	106.66	145.42	2.07
Total		731.56	488.44	478.68	243.12	9.76

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 27, 2022
Hours: 09:00 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	69.82	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	59.96	400kV THP - Malbase Line - III	144.22	
		Unit- V	96.69	400kV Malbase - Siliguri Line	47.52	
		Unit- VI	60.15	-	-	
		Total	216.80	Auxiliary Consumption & Transformation Losses at Generator end	1.27%	
2	720MW MHP	Unit-I	74.85	400kV MHP - Jigmeling Line - I	67.88	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	69.89	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	75.69	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	113.60	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-17.45	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-27.88	
		-	-	80MVA, 220/132kV ICT - I (HV)	3.05	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.16	
		-	-	220kV Tsirang - Jigmeling Line	-43.89	
-	-	132kV Gelephu - Salakati Line	-14.79			
Total	144.74	Auxiliary Consumption & Transformation Losses at Generator end	0.81%			
3	336MW CHP	Unit- I	0.00	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	-15.97	
		Unit- III	54.78	220kV CHP - Malbase Line- III	30.27	
		Unit- IV	54.41	220kV CHP - Semtokha Line- IV	68.90	
		-	-	220kV Malbase - Birpara Line	-49.70	
		-	-	66kV CHP - Chumdo Line	24.27	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.55	
Total	109.19	Auxiliary Consumption & Transformation Losses at Generator end	0.16%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	66.03	U/S unit-I on Standby
		Unit- II	7.77	66kV BHP - Lobeyasa Line	24.88	
		Total	7.77	220kV BHP - Tsirang Line	-66.97	
5	40MW BHP (L/S)	Unit- I	8.15	5MVA, 66/11kV TFR	0.52	U/S unit-I on Standby
		Unit- II	8.10	30MVA ICT, 220/66kV (HV)	17.60	
		Total	16.25	Auxiliary Consumption & Transformation Losses at Generator end	-1.83%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	26.26	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	26.52	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.48	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	26.52	Auxiliary Consumption & Transformation Losses at Generator end	0.23%			
7	60MW KHP	Unit- I	13.53	132kV KHP - Nangkhoh Line	11.16	Unit-III under Shutdown. Unit-I on Standby.
		Unit-II	13.53	132kV KHP - Kilikhar Line	14.87	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.68	
		Unit- IV	0.00	132kV Motanga - Rangia Line	-5.72	
		Total	27.06	Auxiliary Consumption & Transformation Losses at Generator end	1.29%	

Note: Generation-Load Summary (MW) for December 27, 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	376.53	368.75	366.20	51.67	2.55
2	Eastern Grid	171.80	193.75	192.23	-65.84	1.52
Total		548.33	562.50	558.43	-14.17	4.07

Note: Generation-Load Summary for December 27, 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	485.22	347.14	343.98	161.41	3.16
2	Eastern Grid	125.32	86.10	84.90	15.89	1.20
Total		610.54	433.24	428.88	177.30	4.36

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.