

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	December 19, 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	66.41	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	61.26	400kV THP - Malbase Line - III	143.67	
		Unit- V	82.67	400kV Malbase - Siliguri Line	44.58	
		Unit- VI	70.05	-	-	
		Total	213.98	Auxiliary Consumption & Transformation Losses at Generator end	1.82%	
2	720MW MHP	Unit-I	85.08	400kV MHP - Jigmeling Line - I	76.71	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	76.76	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	83.45	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	119.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-16.73	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-25.49	
		-	-	80MVA, 220/132kV ICT - I (HV)	6.34	
		-	-	80MVA, 220/132kV ICT - II (HV)	6.53	
		-	-	220kV Tsirang - Jigmeling Line	-42.78	
-	-	132kV Gelephu - Salakati Line	-11.55			
Total	161.84	Auxiliary Consumption & Transformation Losses at Generator end	1.04%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I under Shutdown. Unit-II on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-7.96	
		Unit- III	70.19	220kV CHP - Malbase Line- III	32.03	
		Unit- IV	70.22	220kV CHP - Semtokha Line- IV	86.88	
		-	-	220kV Malbase - Birpara Line	-36.87	
		-	-	66kV CHP - Chumdo Line	27.24	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.08	
Total	140.41	Auxiliary Consumption & Transformation Losses at Generator end	0.10%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	64.02	BHP(U/S) unit I on standby.
		Unit- II	8.60	66kV BHP - Lobeyasa Line	28.25	
		Total	8.60	220kV BHP - Tsirang Line	-66.97	
5	40MW BHP (L/S)	Unit- I	9.10	5MVA, 66/11kV TFR	0.78	BHP(U/S) unit I on standby.
		Unit- II	8.20	30MVA ICT, 220/66kV (HV)	20.73	
		Total	17.30	Auxiliary Consumption & Transformation Losses at Generator end	-0.69%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	28.42	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	28.69	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.14	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	28.69	Auxiliary Consumption & Transformation Losses at Gen. end	0.24%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	9.00	Unit- I under Shutdown. Unit- III on Standby.
		Unit-II	13.07	132kV KHP - Kilikhar Line	16.12	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.78	
		Unit- IV	13.09	132kV Motanga - Rangia Line	-6.63	
		Total	26.16	Auxiliary Consumption & Transformation Losses at Generator end	0.99%	

Note: Generation-Load Summary (MW) for December 19, 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	408.98	385.60	381.67	66.16	3.93
2	Eastern Grid	188.00	205.62	203.68	-60.40	1.94
Total		596.98	591.22	585.35	5.76	5.87

Note: Generation-Load Summary for December 19, 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	447.97	372.74	369.12	115.36	3.62
2	Eastern Grid	157.86	91.87	89.54	25.86	2.33
Total		605.83	464.61	458.66	141.22	5.96

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 20, 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	83.88	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	89.15	400kV THP - Malbase Line - III	152.94	
		Unit- V	78.11	400kV Malbase - Siliguri Line	62.64	
		Unit- VI	70.96	-	-	
		Total	238.22	Auxiliary Consumption & Transformation Losses at Generator end	0.59%	
2	720MW MHP	Unit-I	79.77	400kV MHP - Jigmeling Line - I	73.59	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	70.21	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	73.81	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	105.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-18.67	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-12.36	
		-	-	80MVA, 220/132kV ICT - I (HV)	3.10	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.30	
		-	-	220kV Tsirang - Jigmeling Line	-39.63	
-	-	132kV Gelephu - Salakati Line	-15.13			
Total	149.98	Auxiliary Consumption & Transformation Losses at Generator end	1.72%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I under Shutdown. Unit-II on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-10.95	
		Unit- III	64.14	220kV CHP - Malbase Line- III	34.46	
		Unit- IV	55.97	220kV CHP - Semtokha Line- IV	71.63	
		-	-	220kV Malbase - Birpara Line	-43.87	
		-	-	66kV CHP - Chumdo Line	23.64	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.60	
Total	120.11	Auxiliary Consumption & Transformation Losses at Generator end	-0.22%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	64.47	U/S unit-I on standby
		Unit- II	8.60	66kV BHP - Lobeyasa Line	25.89	
		Total	8.60	220kV BHP - Tsirang Line	-64.48	
5	40MW BHP (L/S)	Unit- I	9.30	5MVA, 66/11kV TFR	0.52	U/S unit-I on standby
		Unit- II	8.40	30MVA ICT, 220/66kV (HV)	17.98	
		Total	17.70	Auxiliary Consumption & Transformation Losses at Generator end	-0.38%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	28.02	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	28.29	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.70	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	28.29	Auxiliary Consumption & Transformation Losses at Generator end	0.25%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	12.34	Unit-I under Shutdown. Unit-III on Standby.
		Unit-II	14.17	132kV KHP - Kilikhar Line	15.11	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.60	
		Unit- IV	14.19	132kV Motanga - Rangia Line	0.00	
		Total	28.36	Auxiliary Consumption & Transformation Losses at Generator end	1.09%	

Note: Generation-Load Summary (MW) for December 20, 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	412.92	360.85	359.75	91.70	1.10
2	Eastern Grid	178.34	184.87	181.98	-46.16	2.89
Total		591.26	545.72	541.73	45.54	3.99

Note: Generation-Load Summary for December 20, 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	420.84	366.72	430.65	94.64	-63.93
2	Eastern Grid	167.97	77.35	75.33	50.10	2.02
Total		588.81	444.07	505.98	144.74	-61.91

Note:- BHP & KHP load collected from site.

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