

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: December 17, 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	85.33	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	59.37	400kV THP - Malbase Line - III	162.83	
		Unit- V	122.61	400kV Malbase - Siliguri Line	62.78	
		Unit- VI	69.89	-	-	
		Total	251.87	Auxiliary Consumption & Transformation Losses at Generator end	1.47%	
2	720MW MHP	Unit-I	79.80	400kV MHP - Jigmeling Line - I	76.10	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	76.85	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	78.90	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	114.30	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-15.27	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-22.88	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.60	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.70	
		-	-	220kV Tsirang - Jigmeling Line	-40.49	
-	-	132kV Gelephu - Salakati Line	-11.21			
Total	156.65	Auxiliary Consumption & Transformation Losses at Generator end	1.05%			
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	-6.44	
		Unit- III	66.30	220kV CHP - Malbase Line- III	27.15	
		Unit- IV	61.83	220kV CHP - Semtokha Line- IV	80.05	
		-	-	220kV Malbase - Birpara Line	-31.50	
		-	-	66kV CHP - Chumdo Line	25.31	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.90	
Total	128.13	Auxiliary Consumption & Transformation Losses at Generator end	0.12%			
4	24MW BHP (U/S)	Unit- I	4.15	220kV BHP - Semtokha Line	63.02	
		Unit- II	4.15	66kV BHP - Lobeyasa Line	27.22	
		Total	8.30	220kV BHP - Tsirang Line	-64.56	
5	40MW BHP (L/S)	Unit- I	9.21	5MVA, 66/11kV TFR	0.80	
		Unit- II	8.49	30MVA ICT, 220/66kV (HV)	19.70	
		Total	17.70	Auxiliary Consumption & Transformation Losses at Generator end	-1.85%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	28.93	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	29.21	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.10	
		-	-	5MVA, 220/33kV TFR	0.27	
Total	29.21	Auxiliary Consumption & Transformation Losses at Gen. end	0.03%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Line	12.36	Unit- I under Shutdown. Unit- III on Standby.
		Unit-II	15.09	132kV KHP - Kilikhar Line	16.80	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.60	
		Unit- IV	15.08	132kV Motanga - Rangia Line	3.34	
		Total	30.17	Auxiliary Consumption & Transformation Losses at Generator end	1.36%	

Note: Generation-Load Summary (MW) for December 17, 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	435.21	365.53	362.13	110.17	3.40
2	Eastern Grid	186.82	192.35	190.29	-46.02	2.06
Total		622.03	557.88	552.42	64.15	5.46

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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	483.94	371.29	368.48	143.46	2.81
2	Eastern Grid	161.20	93.18	90.76	37.21	2.42
Total		645.14	464.47	459.24	180.67	5.23

Note:-

- 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:
 - 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.
 - The clocks of all the locations are not synchronized.
- 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 18, 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	90.59	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	61.56	400kV THP - Malbase Line - III	157.60	
		Unit- V	119.11	400kV Malbase - Siliguri Line	69.25	
		Unit- VI	70.50	-	-	
		Total	251.17	Auxiliary Consumption & Transformation Losses at Generator end	1.19%	
2	720MW MHP	Unit-I	74.83	400kV MHP - Jigmeling Line - I	81.03	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	80.83	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	73.52	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	99.19	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-7.27	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-11.76	
		-	-	80MVA, 220/132kV ICT - I (HV)	3.24	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.33	
		-	-	220kV Tsirang - Jigmeling Line	-29.71	
-	-	132kV Gelephu - Salakati Line	-12.95			
Total	155.66	Auxiliary Consumption & Transformation Losses at Generator end	0.71%			
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	0.01	
		Unit- III	61.45	220kV CHP - Malbase Line- III	32.25	
		Unit- IV	63.64	220kV CHP - Semtokha Line- IV	69.01	
		-	-	220kV Malbase - Birpara Line	-25.54	
		-	-	66kV CHP - Chumdo Line	22.23	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.41	
Total	125.09	Auxiliary Consumption & Transformation Losses at Generator end	0.14%			
4	24MW BHP (U/S)	Unit- I	4.30	220kV BHP - Semtokha Line	56.70	
		Unit- II	4.10	66kV BHP - Lobeyasa Line	24.49	
		Total	8.40	220kV BHP - Tsirang Line	-55.48	
5	40MW BHP (L/S)	Unit- I	9.10	5MVA, 66/11kV TFR	0.52	
		Unit- II	8.50	30MVA ICT, 220/66kV (HV)	16.73	
		Total	17.60	Auxiliary Consumption & Transformation Losses at Generator end	-0.88%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	28.82	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	29.10	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.00	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	29.10	Auxiliary Consumption & Transformation Losses at Generator end	0.27%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	13.98	Unit-I under Shutdown. Unit-III on Standby.
		Unit-II	14.53	132kV KHP - Kilikhar Line	14.16	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.50	
		Unit- IV	14.56	132kV Motanga - Rangia Line	8.08	
		Total	29.09	Auxiliary Consumption & Transformation Losses at Generator end	1.55%	

Note: Generation-Load Summary (MW) for December 18, 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	431.36	326.76	323.75	134.31	3.01
2	Eastern Grid	184.75	178.94	177.38	-23.90	1.56
Total		616.11	505.70	501.13	110.41	4.57

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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	457.95	353.58	350.15	129.61	3.43
2	Eastern Grid	170.15	68.55	67.24	76.36	1.31
Total		628.10	422.13	417.39	205.97	4.74

Note:- BHP & KHP load collected from site.

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.
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