

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: December 30, 2022
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	71.30	Unit-I, II & III under Shutdown. Unit IV 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	0.00	400kV THP - Malbase Line - III	154.25	
		Unit- V	128.91	400kV Malbase - Siliguri Line	48.47	
		Unit- VI	99.84	-	-	
		Total	228.75	Auxiliary Consumption & Transformation Losses at Generator end	1.40%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	72.89	Unit I under Breakdown. 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	169.89	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	94.47	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	130.40	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-21.82	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-33.62	
		-	-	80MVA, 220/132kV ICT - I (HV)	11.10	
		-	-	80MVA, 220/132kV ICT - II (HV)	11.34	
		-	-	220kV Tsirang - Jigmeling Line	-43.39	
-	-	132kV Gelephu - Salakati Line	-9.04			
Total	169.89	Auxiliary Consumption & Transformation Losses at Generator end	1.49%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I on Standby. Unit II under Shutdown. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00	
		Unit- III	91.00	220kV CHP - Malbase Line- III	42.71	
		Unit- IV	75.01	220kV CHP - Semtokha Line- IV	93.15	
		-	-	220kV Malbase - Birpara Line	-32.31	
		-	-	66kV CHP - Chumdo Line	28.31	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.11	
Total	166.01	Auxiliary Consumption & Transformation Losses at Generator end	-0.16%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	58.86	L/S & U/S Unit-I on Standby.
		Unit- II	7.26	66kV BHP - Lobeyasa Line	28.08	
		Total	7.26	220kV BHP - Tsirang Line	-63.59	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.82	L/S & U/S Unit-I on Standby.
		Unit- II	16.30	30MVA ICT, 220/66kV (HV)	21.30	
		Total	16.30	Auxiliary Consumption & Transformation Losses at Generator end	-2.59%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	24.74	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	25.03	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.43	
		-	-	5MVA, 220/33kV TFR	0.28	
Total	25.03	Auxiliary Consumption & Transformation Losses at Gen. end	0.04%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	0.98	Unit-III under Shutdown. Unit-I on Standby.
		Unit-II	10.06	132kV KHP - Kilikhar Line	18.08	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.82	
		Unit- IV	10.10	132kV Motanga - Rangia Line	3.44	
		Total	20.16	Auxiliary Consumption & Transformation Losses at Generator end	1.39%	

Note: Generation-Load Summary (MW) for December 30, 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	443.35	399.28	396.95	87.46	2.33
2	Eastern Grid	190.05	207.70	204.89	-61.04	2.81
Total		633.40	606.98	601.84	26.42	5.14

Note: Generation-Load Summary for December 30, 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	467.00	388.95	386.92	119.82	2.03
2	Eastern Grid	165.61	102.49	100.84	21.35	1.65
Total		632.61	491.44	487.76	141.17	3.68

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 31, 2022
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	72.24	Unit-I, II & III under Shutdown. Unit IV 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	0.00	400kV THP - Malbase Line - III	150.06	
		Unit- V	162.83	400kV Malbase - Siliguri Line	49.60	
		Unit- VI	61.17	-	-	
		Total	224.00	Auxiliary Consumption & Transformation Losses at Generator end	0.76%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	72.12	Unit I under Breakdown. 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	154.81	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	78.49	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	114.29	
		-	-	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)	-25.06	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.74	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.94	
		-	-	220kV Tsirang - Jigmeling Line	-40.72	
-	-	132kV Gelephu - Salakati Line	-12.33			
Total	154.81	Auxiliary Consumption & Transformation Losses at Generator end	2.71%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I on Standby. Unit II under Shutdown. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-5.96	
		Unit- III	70.63	220kV CHP - Malbase Line- III	42.18	
		Unit- IV	64.25	220kV CHP - Semtokha Line- IV	72.67	
		-	-	220kV Malbase - Birpara Line	-41.72	
		-	-	66kV CHP - Chumdo Line	24.32	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.61	
Total	134.88	Auxiliary Consumption & Transformation Losses at Generator end	0.04%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	62.32	L/S & U/S unit-I on Standby
		Unit- II	8.00	66kV BHP - Lobeyasa Line	25.15	
		Total	8.00	220kV BHP - Tsirang Line	-63.48	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.73	L/S & U/S unit-I on Standby
		Unit- II	16.20	30MVA ICT, 220/66kV (HV)	18.00	
		Total	16.20	Auxiliary Consumption & Transformation Losses at Generator end	-2.15%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	25.74	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	26.01	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.53	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	26.01	Auxiliary Consumption & Transformation Losses at Generator end	0.27%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	7.51	Unit-III under Shutdown. Unit-I on Standby.
		Unit-II	12.49	132kV KHP - Kilikhar Line	16.60	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.68	
		Unit- IV	12.49	132kV Motanga - Rangia Line	3.89	
		Total	24.98	Auxiliary Consumption & Transformation Losses at Generator end	0.76%	

Note: Generation-Load Summary (MW) for December 31, 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	409.09	375.65	374.34	74.16	1.31
2	Eastern Grid	179.79	189.30	184.91	-50.23	4.39
Total		588.88	564.95	559.25	23.93	5.70

Note: Generation-Load Summary for December 31, 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	536.66	377.15	373.30	196.82	3.85
2	Eastern Grid	163.45	83.46	82.08	42.68	1.38
Total		700.11	460.61	455.38	239.50	5.23

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