

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	December 23, 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	98.06	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	93.94	400kV THP - Malbase Line - III	177.23	
		Unit- V	115.02	400kV Malbase - Siliguri Line	75.58	
		Unit- VI	70.82	-	-	
		Total	279.78	Auxiliary Consumption & Transformation Losses at Generator end	1.60%	
2	720MW MHP	Unit-I	70.15	400kV MHP - Jigmeling Line - I	53.17	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	64.84	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	80.47	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	117.37	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-25.45	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-38.76	
		-	-	80MVA, 220/132kV ICT - I (HV)	4.82	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.00	
		-	-	220kV Tsirang - Jigmeling Line	-44.66	
-	-	132kV Gelephu - Salakati Line	-17.31			
Total	134.99	Auxiliary Consumption & Transformation Losses at Generator end	1.00%			
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	-9.84	
		Unit- III	73.78	220kV CHP - Malbase Line- III	37.34	
		Unit- IV	66.57	220kV CHP - Semtokha Line- IV	83.46	
		-	-	220kV Malbase - Birpara Line	-45.28	
		-	-	66kV CHP - Chumdo Line	27.00	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.07	
Total	140.35	Auxiliary Consumption & Transformation Losses at Generator end	0.23%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	64.75	BHP(U/S) Unit-I on Standby.
		Unit- II	8.30	66kV BHP - Lobeyasa Line	27.72	
		Total	8.30	220kV BHP - Tsirang Line	-67.94	
5	40MW BHP (L/S)	Unit- I	8.50	5MVA, 66/11kV TFR	0.72	BHP(U/S) Unit-I on Standby.
		Unit- II	8.30	30MVA ICT, 220/66kV (HV)	20.46	
		Total	16.80	Auxiliary Consumption & Transformation Losses at Generator end	-0.60%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	27.42	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	27.69	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.46	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	27.69	Auxiliary Consumption & Transformation Losses at Gen. end	0.25%			
7	60MW KHP	Unit- I	12.56	132kV KHP - Nangkhoh Line	7.69	Unit-III under Shutdown. Unit-II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	16.34	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.78	
		Unit- IV	12.53	132kV Motanga - Rangia Line	0.00	
		Total	25.09	Auxiliary Consumption & Transformation Losses at Generator end	1.12%	

Note: Generation-Load Summary (MW) for December 23, 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	472.92	399.06	394.33	118.52	4.73
2	Eastern Grid	160.08	196.94	195.31	-81.52	1.63
Total		633.00	596.00	589.64	37.00	6.36

Note: Generation-Load Summary for December 23, 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	472.68	381.38	378.53	134.74	2.85
2	Eastern Grid	177.05	103.49	101.35	30.12	2.14
Total		649.73	484.87	479.88	164.86	4.99

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 24, 2022
Hours:	09:00 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	75.69	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	60.06	400kV THP - Malbase Line - III	149.72	
		Unit- V	89.09	400kV Malbase - Siliguri Line	56.71	
		Unit- VI	79.08	-	-	
		Total	228.23	Auxiliary Consumption & Transformation Losses at Generator end	1.24%	
2	720MW MHP	Unit-I	79.79	400kV MHP - Jigmeling Line - I	74.39	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	74.79	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	78.84	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	110.28	
		-	-	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)	-21.52	
		-	-	80MVA, 220/132kV ICT - I (HV)	4.35	
		-	-	80MVA, 220/132kV ICT - II (HV)	4.45	
		-	-	220kV Tsirang - Jigmeling Line	-40.71	
-	-	132kV Gelephu - Salakati Line	-16.14			
Total	154.58	Auxiliary Consumption & Transformation Losses at Generator end	0.87%			
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	-14.44	
		Unit- III	62.03	220kV CHP - Malbase Line- III	35.51	
		Unit- IV	52.52	220kV CHP - Semtokha Line- IV	68.70	
		-	-	220kV Malbase - Birpara Line	-49.86	
		-	-	66kV CHP - Chumdo Line	23.32	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.41	
Total	114.55	Auxiliary Consumption & Transformation Losses at Generator end	0.04%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	62.98	U/S unit-I on Standby
		Unit- II	8.20	66kV BHP - Lobeyasa Line	25.31	
		Total	8.20	220kV BHP - Tsirang Line	-64.66	
5	40MW BHP (L/S)	Unit- I	8.50	5MVA, 66/11kV TFR	0.56	U/S unit-I on Standby
		Unit- II	8.20	30MVA ICT, 220/66kV (HV)	17.60	
		Total	16.70	Auxiliary Consumption & Transformation Losses at Generator end	2.85%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	27.08	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	27.35	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.11	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	27.35	Auxiliary Consumption & Transformation Losses at Generator end	0.26%			
7	60MW KHP	Unit- I	10.11	132kV KHP - Nangkhor Line	6.70	Unit-III under Shutdown. Unit-II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	12.61	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.69	
		Unit- IV	10.10	132kV Motanga - Rangia Line	-7.52	
		Total	20.21	Auxiliary Consumption & Transformation Losses at Generator end	1.04%	

Note: Generation-Load Summary (MW) for December 24, 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	395.03	367.64	363.99	68.10	3.65
2	Eastern Grid	174.79	194.53	192.97	-60.45	1.56
Total		569.82	562.17	556.96	7.65	5.21

Note: Generation-Load Summary for December 24, 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	404.40	360.26	357.77	76.01	2.49
2	Eastern Grid	166.98	83.68	82.20	51.43	1.48
Total		571.38	443.94	439.97	127.44	3.97

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- 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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