

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	January 7, 2023
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	77.40	Unit-I, II & III under Shutdown. Unit-V 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	113.45	400kV THP - Malbase Line - III	153.79	
		Unit- V	0.00	400kV Malbase - Siliguri Line	56.64	
		Unit- VI	119.08	-	-	
		Total	232.53	Auxiliary Consumption & Transformation Losses at Generator end	0.58%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit-I under Breakdown. Unit-III under Shutdown. 400kV MHP-JLG Line II, III & IV on Standby. 132kV MHP_Yurmo Line-I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	79.80	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	69.93	400kV MHP - Jigmeling Line - IV	68.90	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	80.20	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	123.06	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-20.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-32.58	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.43	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.58	
		-	-	220kV Tsirang - Jigmeling Line	-50.32	
-	-	132kV Gelephu - Salakati Line	-15.52			
Total	149.73	Auxiliary Consumption & Transformation Losses at Generator end	0.42%			
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 on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-8.40	
		Unit- III	62.03	220kV CHP - Malbase Line- III	23.30	
		Unit- IV	68.07	220kV CHP - Semtokha Line- IV	83.84	
		-	-	220kV Malbase - Birpara Line	-31.36	
		-	-	66kV CHP - Chumdo Line	24.13	
		-	-	66kV CHP - Gedu Line	5.32	
		-	-	3x3MVA, 66/11kV TFR	1.02	
Total	130.10	Auxiliary Consumption & Transformation Losses at Generator end	0.68%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	63.40	L/S & U/S Unit-I on Standby.
		Unit- II	6.98	66kV BHP - Lobeyasa Line	26.18	
		Total	6.98	220kV BHP - Tsirang Line	-69.03	
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	14.22	30MVA ICT, 220/66kV (HV)	21.00	
		Total	14.22	Auxiliary Consumption & Transformation Losses at Generator end	-0.38%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	23.61	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	23.89	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.61	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	23.89	Auxiliary Consumption & Transformation Losses at Gen. end	0.33%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	11.04	Unit-III under Shutdown. Unit-I on Standby.
		Unit-II	15.05	132kV KHP - Kilikhar Line	18.76	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.85	
		Unit- IV	15.31	132kV Motanga - Rangia Line	4.03	
		Total	30.36	Auxiliary Consumption & Transformation Losses at Generator end	-0.96%	

Note: Generation-Load Summary (MW) for January 07, 2023 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	407.72	363.76	361.53	94.28	2.23
2	Eastern Grid	180.09	194.20	193.86	-64.43	0.34
Total		587.81	557.96	555.39	29.85	2.57

Note: Generation-Load Summary for January 07, 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	237.42	375.27	375.16	-93.55	0.11
2	Eastern Grid	263.76	84.59	82.58	134.87	2.01
Total		501.18	459.86	457.74	41.32	2.12

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:	January 8, 2023
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	73.95	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	153.38	400kV THP - Malbase Line - III	142.30	
		Unit- V	0.00	400kV Malbase - Siliguri Line	54.48	
		Unit- VI	66.76	-	-	
		Total	220.14	Auxiliary Consumption & Transformation Losses at Generator end	1.77%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit-I under Breakdown. Unit-III under Shutdown. 400kV MHP-JLG Line II, III & IV on Standby. 132kV MHP_Yurmo Line-I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	74.85	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	85.43	400kV MHP - Jigmeling Line - IV	81.19	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	77.28	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	110.27	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-10.18	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-16.97	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	3.32	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.40	
		-	-	220kV Tsirang - Jigmeling Line	-42.20	
-	-	132kV Gelephu - Salakati Line	-14.59			
Total	160.28	Auxiliary Consumption & Transformation Losses at Generator end	1.13%			
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 on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-10.35	
		Unit- III	62.79	220kV CHP - Malbase Line- III	25.37	
		Unit- IV	49.79	220kV CHP - Semtokha Line- IV	69.33	
		-	-	220kV Malbase - Birpara Line	-35.83	
		-	-	66kV CHP - Chumdo Line	19.90	
		-	-	66kV CHP - Gedu Line	6.92	
		-	-	3x3MVA, 66/11kV TFR	0.76	
Total	112.58	Auxiliary Consumption & Transformation Losses at Generator end	0.58%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	59.40	L/S & U/S unit-I on Standby
		Unit- II	7.10	66kV BHP - Lobeyasa Line	23.84	
		Total	7.10	220kV BHP - Tsirang Line	-62.19	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.81	L/S & U/S unit-I on Standby
		Unit- II	14.60	30MVA ICT, 220/66kV (HV)	17.71	
		Total	14.60	Auxiliary Consumption & Transformation Losses at Generator end	-0.74%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	23.24	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	23.49	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.34	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	23.49	Auxiliary Consumption & Transformation Losses at Generator end	0.21%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	10.50	Unit-III under Shutdown. Unit-I on Standby.
		Unit-II	12.57	132kV KHP - Kilikhar Line	13.55	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.80	
		Unit- IV	12.58	132kV Motanga - Rangia Line	4.08	
		Total	25.15	Auxiliary Consumption & Transformation Losses at Generator end	1.19%	

Note: Generation-Load Summary (MW) for January 08, 2023 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	377.91	337.86	333.43	82.25	4.43
2	Eastern Grid	185.43	180.89	178.78	-37.66	2.11
Total		563.34	518.75	512.21	44.59	6.54

Note: Generation-Load Summary for January 08, 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	224.03	354.06	353.77	-94.45	0.29
2	Eastern Grid	246.65	82.98	81.69	128.09	1.29
Total		470.68	437.04	435.46	33.64	1.58

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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