

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	March 14, 2023
Hours:	18:00 Hours

Date	Time	Load(MW)
10-Feb-23	19:12:46hrs	646.17

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	20.20	400kV THP - Siliguri Line - I	0.00	Unit-IV, V & VI under AMP. Unit-III on Standby. 400kV THP- Siliguri Line I under Shutdown. 400kV THP- Siliguri Line IV on Standby.
		Unit- II	29.21	400kV THP - Siliguri Line - II	-28.33	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	78.19	
		Unit- V	0.00	400kV Malbase - Siliguri Line	-47.50	
		Unit- VI	0.00	-	-	
		Total	49.41	Auxiliary Consumption & Transformation Losses at Generator end	-0.92%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit-I & Unit-III under AMP. 400kV MHP-JLG Line I, II & III on Standby. 132kV MHP_Yurmoo Line- I not in service. 400kV JLG_ALI Line- I (Interim) under Shutdown. 400kV JLG_ALI line -II (Interim) on Standby.
		Unit-II	24.10	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	40.30	400kV MHP - Jigmeling Line - IV	-14.10	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	78.50	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	145.60	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-78.13	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-79.20	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.60	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.80	
		-	-	220kV Tsirang - Jigmeling Line	-65.66	
-	-	132kV Gelephu - Salakati Line	-14.60			
Total	64.40	Auxiliary Consumption & Transformation Losses at Generator end	0.00%			
3	336MW CHP	Unit- I	21.00	220kV CHP - Birpara Line- I	0.00	Unit-II and IV under AMP. 220kV CHP-Birpara Line-I on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-46.70	
		Unit- III	20.10	220kV CHP - Malbase Line- III	-11.30	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	68.60	
		-	-	220kV Malbase - Birpara Line	-65.12	
		-	-	66kV CHP - Chumdo Line	24.20	
		-	-	66kV CHP - Gedu Line	4.70	
		-	-	3x3MVA, 66/11kV TFR	0.90	
Total	41.10	Auxiliary Consumption & Transformation Losses at Generator end	1.70%			
4	24MW BHP (U/S)	Unit- I	5.00	220kV BHP - Semtokha Line	67.82	L/S & U/S Unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	25.71	
		Total	5.00	220kV BHP - Tsirang Line	-78.74	
5	40MW BHP (L/S)	Unit- I	10.20	5MVA, 66/11kV TFR	0.50	L/S & U/S Unit-II under AMP.
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	21.71	
		Total	10.20	Auxiliary Consumption & Transformation Losses at Generator end	-0.59%	
6	126MW DHP	Unit-I	16.19	220kV DHP - Tsirang Line	15.94	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	66.10	
		-	-	5MVA, 220/33kV TFR	0.23	
Total	16.19	Auxiliary Consumption & Transformation Losses at Gen. end	0.12%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	7.73	Unit-I on Standby and Unit-II under AMP
		Unit-II	0.00	132kV KHP - Kilikhar Line	16.21	
		Unit- III	12.48	5MVA, 132/11kV TFR	0.50	
		Unit- IV	12.53	132kV Motanga - Rangia Line	3.94	
		Total	25.01	Auxiliary Consumption & Transformation Losses at Generator end	2.28%	

Note: Generation-Load Summary (MW) for March 14, 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	121.90	375.21	375.03	-187.65	0.18
2	Eastern Grid	89.41	191.74	191.17	-167.99	0.57
Total		211.31	566.95	566.20	-355.64	0.75

Note: Generation-Load Summary for March 14, 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	227.90	343.72	341.32	-55.50	2.40
2	Eastern Grid	196.01	49.54	47.61	86.15	1.93
Total		423.91	393.26	388.93	30.65	4.33

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:	March 15, 2023
Hours:	09:00 Hours

Date	Time	Load(MW)
10-Feb-23	19:12:46hrs	646.17

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	128.18	400kV THP - Siliguri Line - I	0.00	Unit-IV, V & VI under AMP. Unit-III on Standby. 400kV THP- Siliguri Line I under shutdown. 400kV THP- Siliguri Line IV on standby
		Unit- II	87.41	400kV THP - Siliguri Line - II	62.82	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	149.91	
		Unit- V	0.00	400kV Malbase - Siliguri Line	40.17	
		Unit- VI	0.00	-	-	
		Total	215.59	Auxiliary Consumption & Transformation Losses at Generator end	1.33%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit-I & Unit-III under AMP. 400kV MHP-JLG Line I,II & III on Standby. 132kV MHP_Yurmoo Line-I not in service. 400kV JLG_ALI Line-I (Interim) under Shutdown. 400kV JLG_ALI Line-II (Interim) on Standby.
		Unit-II	99.86	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	94.74	400kV MHP - Jigmeling Line - IV	115.54	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	77.62	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	124.58	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-4.40	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-5.71	
		-	-	80MVA, 220/132kV ICT - I (HV)	2.03	
		-	-	80MVA, 220/132kV ICT - II (HV)	2.11	
		-	-	220kV Tsirang - Jigmeling Line	-55.75	
-	-	132kV Gelephu - Salakati Line	-12.66			
Total	194.60	Auxiliary Consumption & Transformation Losses at Generator end	0.74%			
3	336MW CHP	Unit- I	52.26	220kV CHP - Birpara Line- I	0.00	Unit-II and IV under AMP. 220kV CHP-Birpara Line-I on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-15.28	
		Unit- III	47.48	220kV CHP - Malbase Line- III	22.15	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	63.48	
		-	-	220kV Malbase - Birpara Line	-41.83	
		-	-	66kV CHP - Chumdo Line	22.04	
		-	-	66kV CHP - Gedu Line	6.28	
		-	-	3x3MVA, 66/11kV TFR	0.59	
Total	99.74	Auxiliary Consumption & Transformation Losses at Generator end	0.48%			
4	24MW BHP (U/S)	Unit- I	5.40	220kV BHP - Semtokha Line	63.30	L/S & U/S unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	23.77	
		Total	5.40	220kV BHP - Tsirang Line	-70.36	
5	40MW BHP (L/S)	Unit- I	11.50	5MVA, 66/11kV TFR	0.47	L/S & U/S unit-II under AMP.
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	18.94	
		Total	11.50	Auxiliary Consumption & Transformation Losses at Generator end	-1.66%	
6	126MW DHP	Unit-I	17.40	220kV DHP - Tsirang Line	17.16	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	65.20	
		-	-	5MVA, 220/33kV TFR	0.23	
Total	17.40	Auxiliary Consumption & Transformation Losses at Generator end	0.06%			
7	60MW KHP	Unit- I	12.53	132kV KHP - Nangkhoh Line	11.79	Unit-III on Standby. Unit-II under AMP.
		Unit-II	0.00	132kV KHP - Kilikhar Line	12.56	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.54	
		Unit- IV	12.54	132kV Motanga - Rangia Line	0.00	
		Total	25.07	Auxiliary Consumption & Transformation Losses at Generator end	0.72%	

Note: Generation-Load Summary (MW) for March 15, 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	349.63	359.50	356.43	45.88	3.07
2	Eastern Grid	219.67	186.69	185.07	-22.77	1.62
Total		569.30	546.19	541.50	23.11	4.69

Note: Generation-Load Summary for March 15, 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	180.72	344.54	344.42	-94.53	0.12
2	Eastern Grid	245.90	45.10	43.62	131.51	1.48
Total		426.62	389.64	388.04	36.98	1.60

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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