

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	March 10, 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	94.66	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	135.94	400kV THP - Siliguri Line - II	71.93	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	154.68	
		Unit- V	0.00	400kV Malbase - Siliguri Line	50.27	
		Unit- VI	0.00	-	-	
		Total	230.60	Auxiliary Consumption & Transformation Losses at Generator end	1.73%	
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, III & IV 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	100.12	400kV MHP - Jigmeling Line - II	58.13	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	39.95	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	80.51	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	122.69	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-33.15	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-31.77	
		-	-	80MVA, 220/132kV ICT - I (HV)	4.99	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.12	
		-	-	220kV Tsirang - Jigmeling Line	-46.59	
-	-	132kV Gelephu - Salakati Line	-13.72			
Total	140.07	Auxiliary Consumption & Transformation Losses at Generator end	1.02%			
3	336MW CHP	Unit- I	61.18	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	-6.05	
		Unit- III	49.38	220kV CHP - Malbase Line- III	12.63	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	75.70	
		-	-	220kV Malbase - Birpara Line	-19.64	
		-	-	66kV CHP - Chumdo Line	22.33	
		-	-	66kV CHP - Gedu Line	4.76	
		-	-	3x3MVA, 66/11kV TFR	0.69	
Total	110.56	Auxiliary Consumption & Transformation Losses at Generator end	0.45%			
4	24MW BHP (U/S)	Unit- I	4.90	220kV BHP - Semtokha Line	50.02	L/S & U/S Unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	24.03	
		Total	4.90	220kV BHP - Tsirang Line	-59.45	
5	40MW BHP (L/S)	Unit- I	10.20	5MVA, 66/11kV TFR	0.58	L/S & U/S Unit-II under AMP.
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	19.86	
		Total	10.20	Auxiliary Consumption & Transformation Losses at Generator end	-0.53%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	16.13	Unit-I on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	16.38	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	66.27	
		-	-	5MVA, 220/33kV TFR	0.24	
Total	16.38	Auxiliary Consumption & Transformation Losses at Gen. end	0.06%			
7	60MW KHP	Unit- I	12.58	132kV KHP - Nangkhoh Line	10.29	Unit-II on Standby. Unit-IV under AMP.
		Unit-II	0.00	132kV KHP - Kilikhar Line	14.04	
		Unit- III	12.54	5MVA, 132/11kV TFR	0.53	
		Unit- IV	0.00	132kV Motanga - Rangia Line	2.66	
		Total	25.12	Auxiliary Consumption & Transformation Losses at Generator end	1.04%	

Note: Generation-Load Summary (MW) for March 10, 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	372.64	322.72	318.30	96.51	4.42
2	Eastern Grid	165.19	194.58	192.89	-75.98	1.69
Total		537.83	517.30	511.19	20.53	6.11

Note: Generation-Load Summary for March 10, 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	210.83	351.39	350.36	-73.50	1.03
2	Eastern Grid	225.45	59.34	58.07	99.05	1.27
Total		436.28	410.73	408.43	25.55	2.30

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 11, 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	97.65	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	122.73	400kV THP - Siliguri Line - II	69.59	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	147.70	
		Unit- V	0.00	400kV Malbase - Siliguri Line	48.01	
		Unit- VI	0.00	-	-	
		Total	220.38	Auxiliary Consumption & Transformation Losses at Generator end	1.40%	
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,III & IV 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	85.22	400kV MHP - Jigmeling Line - II	91.81	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	90.11	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	81.99	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	123.21	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-17.78	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-19.31	
		-	-	80MVA, 220/132kV ICT - I (HV)	4.27	
		-	-	80MVA, 220/132kV ICT - II (HV)	4.43	
		-	-	220kV Tsirang - Jigmeling Line	-49.37	
-	-	132kV Gelephu - Salakati Line	-13.54			
Total	175.33	Auxiliary Consumption & Transformation Losses at Generator end	0.87%			
3	336MW CHP	Unit- I	52.98	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	-13.06	
		Unit- III	46.29	220kV CHP - Malbase Line- III	15.37	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	69.34	
		-	-	220kV Malbase - Birpara Line	-32.90	
		-	-	66kV CHP - Chumdo Line	21.34	
		-	-	66kV CHP - Gedu Line	5.33	
		-	-	3x3MVA, 66/11kV TFR	0.61	
Total	99.27	Auxiliary Consumption & Transformation Losses at Generator end	0.34%			
4	24MW BHP (U/S)	Unit- I	5.00	220kV BHP - Semtokha Line	54.24	L/S & U/S unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	23.52	
		Total	5.00	220kV BHP - Tsirang Line	-62.69	
5	40MW BHP (L/S)	Unit- I	10.30	5MVA, 66/11kV TFR	0.39	L/S & U/S unit-II under AMP.
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	19.08	
		Total	10.30	Auxiliary Consumption & Transformation Losses at Generator end	-1.05%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	16.20	Unit-I on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	16.46	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	65.93	
		-	-	5MVA, 220/33kV TFR	0.25	
Total	16.46	Auxiliary Consumption & Transformation Losses at Generator end	0.06%			
7	60MW KHP	Unit- I	10.02	132kV KHP - Nangkhoh Line	7.14	Unit-III on Standby. Unit-IV under AMP.
		Unit-II	10.02	132kV KHP - Kilikhar Line	12.18	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.53	
		Unit- IV	0.00	132kV Motanga - Rangia Line	2.72	
		Total	20.04	Auxiliary Consumption & Transformation Losses at Generator end	0.95%	

Note: Generation-Load Summary (MW) for March 11, 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	351.41	329.14	325.86	71.64	3.28
2	Eastern Grid	195.37	193.91	192.19	-47.91	1.72
Total		546.78	523.05	518.05	23.73	5.00

Note: Generation-Load Summary for March 11, 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	219.73	349.74	348.20	-69.76	1.54
2	Eastern Grid	221.01	50.94	50.15	109.82	0.79
Total		440.74	400.68	398.35	40.06	2.33

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