

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: February 17, 2022
Hours: 18:00 Hours

Date: 12-Jan-22 **Time:** 18:00hrs **Load(MW):** 492.25

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	0.00	THP under total 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	0.00	
		Unit- V	0.00	400kV Malbase - Siliguri Line	-44.69	
		Unit- VI	0.00	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.00%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	200.42	Unit-I & II under Annual Maintenance. 400kV MHP-JLG Line II, III & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on Standby. 400kV JLG_ALI Line I & II (Direct) under Breakdown.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	130.81	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	71.04	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	101.06	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	97.39	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	16.98	
		-	-	80MVA, 220/132kV ICT - II (HV)	17.25	
		-	-	220kV Tsirang - Jigmeling Line	-85.42	
-	-	132kV Gelephu - Salakati Line	-3.76			
Total	201.85	Auxiliary Consumption & Transformation Losses at Generator end	0.71%			
3	336MW CHP	Unit- I	84.89	220kV CHP - Birpara Line- I	7.69	Unit-IV on Standby. Unit-III under Annual Maintenance.
		Unit- II	83.25	220kV CHP - Birpara Line- II	7.59	
		Unit- III	0.00	220kV CHP - Malbase Line- III	68.25	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	59.20	
		-	-	220kV Malbase - Birpara Line	-39.72	
		-	-	66kV CHP - Chumdo Line	19.19	
		-	-	66kV CHP - Gedu Line	2.79	
		-	-	3x3MVA, 66/11kV TFR	1.87	
Total	168.14	Auxiliary Consumption & Transformation Losses at Generator end	0.93%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	81.20	U/S Unit-I under maintenance. L/S Unit-II on Standby.
		Unit- II	7.30	66kV BHP - Lobeyasa Line	26.70	
		Total	7.30	220kV BHP - Tsirang Line	-80.84	
5	40MW BHP (L/S)	Unit- I	20.10	5MVA, 66/11kV TFR	0.73	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	20.38	
		Total	20.10	Auxiliary Consumption & Transformation Losses at Generator end	-1.42%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	0.00	Unit-I under Annual Maintenance. 220kV DHP_Tsirang Line on Standby.
		Unit-II	26.97	220kV DHP - Dagapela Line	26.77	
		-	-	220kV Jigmeling - Dagapela Line	-18.40	
		-	-	5MVA, 220/33kV TFR	0.19	
Total	26.97	Auxiliary Consumption & Transformation Losses at Gen. end	0.04%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	10.40	Unit-I under AMP. Unit-II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	15.75	
		Unit- III	13.53	5MVA, 132/11kV TFR	0.89	
		Unit- IV	13.56	132kV Motanga - Rangia Line	13.03	
		Total	27.09	Auxiliary Consumption & Transformation Losses at Generator end	0.18%	

Note: Generation-Load Summary (MW) for February 17, 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	222.51	377.06	375.88	-69.13	1.18
2	Eastern Grid	228.94	36.86	35.38	106.66	1.48
Total		451.45	413.92	411.26	37.53	2.66

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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	265.13	254.25	249.01	16.61	5.24
2	Eastern Grid	111.54	46.26	45.14	59.55	1.12
Total		376.67	300.51	294.15	76.16	6.36

NOTE- BHP data collected from site.

- 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:
 - 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.
 - The clocks of all the locations are not synchronized.
- 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: February 18, 2022
Hours: 09:00 Hours

Date **Time** **Load(MW)**
 12-Jan-22 18:00hrs 492.25

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	0.00	THP under total 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	0.00	
		Unit- V	0.00	400kV Malbase - Siliguri Line	-50.47	
		Unit- VI	0.00	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.00%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	210.25	Unit-I & II under Annual Maintenance. 400kV MHP-JLG Line II, III & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I & II (Direct) under Breakdown.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	95.61	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	115.12	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	87.89	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	59.94	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	58.18	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	14.91	
		-	-	80MVA, 220/132kV ICT - II (HV)	15.12	
		-	-	220kV Tsirang - Jigmeling Line	-77.88	
-	-	132kV Gelephu - Salakati Line	-5.03			
Total	210.73	Auxiliary Consumption & Transformation Losses at Generator end	0.23%			
3	336MW CHP	Unit- I	83.21	220kV CHP - Birpara Line- I	8.12	Unit-IV on Standby. Unit-III under Annual Maintenance.
		Unit- II	83.53	220kV CHP - Birpara Line- II	8.26	
		Unit- III	0.00	220kV CHP - Malbase Line- III	71.62	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	55.34	
		-	-	220kV Malbase - Birpara Line	-42.34	
		-	-	66kV CHP - Chumdo Line	17.32	
		-	-	66kV CHP - Gedu Line	2.55	
		-	-	3x3MVA, 66/11kV TFR	1.54	
Total	166.74	Auxiliary Consumption & Transformation Losses at Generator end	1.19%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	75.40	U/S Unit-I under Annual maintenance. L/S Unit-II on Standby.
		Unit- II	7.10	66kV BHP - Lobeyasa Line	24.88	
		Total	7.10	220kV BHP - Tsirang Line	-73.33	
5	40MW BHP (L/S)	Unit- I	20.10	5MVA, 66/11kV TFR	0.60	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	17.16	
		Total	20.10	Auxiliary Consumption & Transformation Losses at Generator end	-1.29%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	0.00	Unit-I under Annual Maintenance. 220kV DHP_Tsirang Line on Standby.
		Unit-II	27.93	220kV DHP - Dagapela Line	27.74	
		-	-	220kV Jigmeling - Dagapela Line	-19.85	
		-	-	5MVA, 220/33kV TFR		
Total	27.93	Auxiliary Consumption & Transformation Losses at Generator end	0.68%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	10.73	Unit-I under AMP. Unit-IV on Standby.
		Unit-II	13.17	132kV KHP - Kilikhar Line	14.69	
		Unit- III	13.21	5MVA, 132/11kV TFR	0.60	
		Unit- IV	0.00	132kV Motanga - Rangia Line	4.92	
		Total	26.38	Auxiliary Consumption & Transformation Losses at Generator end	1.36%	

Note: Generation-Load Summary (MW) for February 18, 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	221.87	376.18	374.35	-76.43	1.83
2	Eastern Grid	237.11	41.22	40.38	118.01	0.84
Total		458.98	417.40	414.73	41.58	2.67

Note: Generation-Load Summary for February 18, 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	262.65	236.26	232.66	38.39	3.60
2	Eastern Grid	113.59	31.30	31.05	70.29	0.25
Total		376.24	267.56	263.71	108.68	3.85

NOTE-BHP data collected from Site.

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.