

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	January 25, 2022
Hours:	18:00 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	-60.89	
		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	244.66	Unit-I on Standby. Unit-II under Annual Maintenance. 400kV MHP-JLG Line II, III & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I (Interim) under Standby. 400kV JLG_ALI Line II (Direct) on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	100.66	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	144.68	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)	115.92	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	44.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	75.68	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	18.63	
		-	-	80MVA, 220/132kV ICT - II (HV)	18.89	
		-	-	220kV Tsirang - Jigmeling Line	-60.69	
-	-	132kV Gelephu - Salakati Line	-7.27			
Total	245.34	Auxiliary Consumption & Transformation Losses at Generator end	0.28%			
3	336MW CHP	Unit- I	83.34	220kV CHP - Birpara Line- I	7.99	Unit-IV on Standby. Unit-III under Annual Maintenance 220kV CHP_Birpara Line II under Breakdown since 29.12.21.
		Unit- II	83.62	220kV CHP - Birpara Line- II	0.00	
		Unit- III	0.00	220kV CHP - Malbase Line- III	63.98	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	68.42	
		-	-	220kV Malbase - Birpara Line	-36.93	
		-	-	66kV CHP - Chumdo Line	21.37	
		-	-	66kV CHP - Gedu Line	3.26	
		-	-	3x3MVA, 66/11kV TFR	1.96	
Total	166.96	Auxiliary Consumption & Transformation Losses at Generator end	-0.01%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	74.30	U/S unit-I and L/S Unit-I under maintenance.
		Unit- II	7.60	66kV BHP - Lobeyasa Line	27.80	
		Total	7.60	220kV BHP - Tsirang Line	-80.52	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.98	
		Unit- II	14.80	30MVA ICT, 220/66kV (HV)	21.46	
		Total	14.80	Auxiliary Consumption & Transformation Losses at Generator end	-0.71%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	24.77	Unit-I under Annual Maintenance. 220kV DHP-Dagapela Line on standby.
		Unit-II	24.99	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	16.72	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	24.99	Auxiliary Consumption & Transformation Losses at Gen. end	0.08%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	9.70	Unit-II under Annual Maintenance. Unit I on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	19.45	
		Unit- III	15.15	5MVA, 132/11kV TFR	0.70	
		Unit- IV	15.07	132kV Motanga - Rangia Line	2.75	
		Total	30.22	Auxiliary Consumption & Transformation Losses at Generator end	1.22%	

Note: Generation-Load Summary (MW) for January 25, 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	214.35	364.87	365.03	-89.83	-0.16
2	Eastern Grid	275.56	99.35	98.30	115.52	1.05
Total		489.91	464.22	463.33	25.69	0.89

Note: Generation-Load Summary for January 25, 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	301.95	233.63	231.58	56.52	2.05
2	Eastern Grid	126.45	78.07	75.70	60.18	2.37
Total		428.40	311.70	307.28	116.70	4.42

NOTE- BHP load 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.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: January 26, 2022
Hours: 09:00 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	-55.44	
		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	202.70	Unit I on Standby. Unit II under Annual Maintenance. 400kV MHP-JLG Line II, III & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I (Interim) under Standby. 400kV JLG_ALI Line II (Direct) on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	122.01	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	82.06	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)	88.25	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	43.63	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	67.55	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.05	
		-	-	80MVA, 220/132kV ICT - II (HV)	15.22	
		-	-	220kV Tsirang - Jigmeling Line	-42.99	
-	-	132kV Gelephu - Salakati Line	-2.71			
Total	204.07	Auxiliary Consumption & Transformation Losses at Generator end	0.67%			
3	336MW CHP	Unit- I	83.77	220kV CHP - Birpara Line- I	12.13	Unit-IV on Standby. Unit-III under Annual Maintenance. 220kV CHP_Birpara Line II under breakdown.
		Unit- II	83.58	220kV CHP - Birpara Line- II	0.00	
		Unit- III	0.00	220kV CHP - Malbase Line- III	77.05	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	56.07	
		-	-	220kV Malbase - Birpara Line	-39.67	
		-	-	66kV CHP - Chumdo Line	16.60	
		-	-	66kV CHP - Gedu Line	3.75	
		-	-	3x3MVA, 66/11kV TFR	1.68	
Total	167.35	Auxiliary Consumption & Transformation Losses at Generator end	0.04%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	61.80	U/S Unit-I and L/S Unit-I under maintenance.
		Unit- II	7.40	66kV BHP - Lobeysa Line	23.77	
		Total	7.40	220kV BHP - Tsirang Line	-64.43	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.61	
		Unit- II	14.20	30MVA ICT, 220/66kV (HV)	17.19	
		Total	14.20	Auxiliary Consumption & Transformation Losses at Generator end	-0.69%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	24.99	Unit-I under Annual Maintenance. 220kV DHP_Dagapela Line on standby.
		Unit-II	25.21	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	15.67	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	25.21	Auxiliary Consumption & Transformation Losses at Generator end	0.08%			
7	60MW KHP	Unit- I	14.98	132kV KHP - Nangkhoh Line	12.85	Unit-III on standby. Unit-II under Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Line	16.26	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.70	
		Unit- IV	15.08	132kV Motanga - Rangia Line	6.18	
		Total	30.06	Auxiliary Consumption & Transformation Losses at Generator end	0.83%	

Note: Generation-Load Summary (MW) for January 26, 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	214.16	340.13	340.19	-82.98	-0.06
2	Eastern Grid	234.13	76.49	74.87	114.65	1.62
Total		448.29	416.62	415.06	31.67	1.56

Note: Generation-Load Summary for January 26, 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	291.37	227.41	223.61	63.96	3.80
2	Eastern Grid	130.31	65.21	62.86	65.10	2.35
Total		421.68	292.62	286.47	129.06	6.15

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.
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