

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 22, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00		All Units, 400kV THP-Siliguri Line I & II under breakdown. 400kV THP-Siliguri Line IV & 400kV THP-Malbase Line III opened.
		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	-4.27	-	
		Unit- VI	0.00	-	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.000%		
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Line - I	294.05	+	Unit-III under Restoration . 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) under shutdown.
		Unit-II	197.79	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.83	+	
		Unit-IV	197.60	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)	-27.70	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	157.37	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	227.37	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	226.20	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	31.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	31.20	+	
		-	-	220kV Tsirang - Jigmeling Line	92.25	+	
-	-	132kV Gelephu - Salakati Line	23.93	+			
		Total	593.24	Auxiliary Consumption & Transformation Losses at Gen. end	0.566%		
3	336MW CHP	Unit- I	91.97	220kV CHP - Birpara Line- I	92.11	+	
		Unit- II	90.89	220kV CHP - Birpara Line- II	91.89	+	
		Unit- III	91.86	220kV CHP - Malbase Line- III	168.48	+	
		Unit- IV	92.03	220kV CHP - Semtokha Line- IV	-1.55	-	
		-	-	220kV Malbase - Birpara Line	20.36	+	
		-	-	66kV CHP - Chumdo Line	7.90	+	
		-	-	66kV CHP - Gedu Line	5.64	+	
		-	-	3x3MVA, 66/11kV TFR	1.10	+	
		Total	366.75	Auxiliary Consumption & Transformation Losses at Gen. end	0.322%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	59.40	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	27.90	+	
		Total	24.40	220kV BHP - Tsirang Line	-21.23	-	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	3.43	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Gen. end	-1.624%		
6	126MW DHP	Unit-I	57.41	220kV DHP - Tsirang Line	117.80	+	220kV DHP_Dagapela Line on standby.
		Unit-II	61.07	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.60	+	
		-	-	5MVA, 220/33kV TFR	0.68	+	
		Total	118.48	Auxiliary Consumption & Transformation Losses at Gen. end	0.000%		
7	60MW KHP	Unit- I	16.52	132kV KHP - Nangkhon Line	38.16	+	
		Unit-II	16.45	132kV KHP - Kilikhar Line	26.76	+	
		Unit- III	16.45	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	16.45	132kV Motanga - Rangia Line	53.50	+	
		Total	65.87	Auxiliary Consumption & Transformation Losses at Gen. end	1.002%		

Note: Generation-Load Summary (MW) for July 22, 2021 at 19:00hrs.

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) at Generator end.
1	Western Grid	551.13	258.79	260.28	200.09	-1.49
2	Eastern Grid	659.11	62.99	58.97	688.37	4.02
	Total	1,210.24	321.78	319.25	888.46	2.53

Note: Generation-Load Summary for July 22, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,492.05	226.20	211.93	1,178.85	14.27
2	Eastern Grid	851.05	52.17	49.93	885.88	2.24
	Total	2,343.10	278.37	261.86	2,064.73	16.51

NOTE-BHP,JLG and MHP data collected from site

1. The Instantaneous load balance is 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

Maximum Load/Demand till Date

Date:	July 23, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00		Unit I,II,III,IV&V under restoration. 400kV THP-Siliguri Line IV opened. 400kV THP-Siliguri Line I & II under breakdown.
		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	30.12		
		Unit- V	0.00	400kV Malbase - Siliguri Line	36.57	+	
		Unit- VI	32.49	-	-	-	
		Total	32.49	Auxiliary Consumption & Transformation Losses at Generator end	7.295%		
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Line - I	294.05	+	Unit-III under Restoration. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line II (Interim) under standby.
		Unit-II	197.79	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.83	+	
		Unit-IV	197.60	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)	-39.90	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	156.70	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	233.10	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	233.10	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	26.40	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	26.40	+	
		-	-	220kV Tsirang - Jigmeling Line	94.20	+	
-	-	132kV Gelephu - Salakati Line	21.41	+			
		Total	593.24	Auxiliary Consumption & Transformation Losses at Generator end	0.566%		
3	336MW CHP	Unit- I	91.84	220kV CHP - Birpara Line- I	90.57	+	
		Unit- II	90.92	220kV CHP - Birpara Line- II	90.77	+	
		Unit- III	91.57	220kV CHP - Malbase Line- III	172.17	+	
		Unit- IV	91.26	220kV CHP - Semtokha Line- IV	-1.00	-	
		-	-	220kV Malbase - Birpara Line	14.95	+	
		-	-	66kV CHP - Chumdo Line	5.86	+	
		-	-	66kV CHP - Gedu Line	5.75	+	
		-	-	3x3MVA, 66/11kV TFR	0.76	+	
		Total	365.59	Auxiliary Consumption & Transformation Losses at Generator end	0.194%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	55.00	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	26.30	+	
		Total	24.40	220kV BHP - Tsirang Line	-15.70	-	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	2.20	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Generator end	-0.895%		
6	126MW DHP	Unit-I	50.45	220kV DHP - Tsirang Line	113.18	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.22	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.27	+	
		Total	113.67	Auxiliary Consumption & Transformation Losses at Generator end	0.194%		
7	60MW KHP	Unit- I	16.64	132kV KHP - Nangkhon Line	40.36	+	
		Unit-II	16.47	132kV KHP - Kilikhar Line	24.89	+	
		Unit- III	16.60	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.56	132kV Motanga - Rangia Line	41.62	+	
		Total	66.27	Auxiliary Consumption & Transformation Losses at Generator end	1.132%		

Note: Generation-Load Summary (MW) for July 23, 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) at Generator end.
1	Western Grid	577.65	250.59	248.88	232.86	1.71
2	Eastern Grid	659.51	67.78	63.67	685.93	4.11
	Total	1,237.16	318.37	312.55	918.79	5.82

Note: Generation-Load Summary for July 23, 2020 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
1	Western Grid	1,675.62	214.25	197.92	1,380.06	16.33
2	Eastern Grid	850.38	46.16	41.44	885.83	4.72
	Total	2,526.00	260.41	239.36	2,265.89	21.05

NOTE- BHP & MHP data collected from site

- The Instantaneous load balance is 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.