

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 1, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
1-Nov-21	19:00hrs	429.42MW

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 under Breakdown. 400kV THP-Siliguri line I under breakdown.
		Unit- II	127.34	400kV THP - Siliguri Line - II	207.42	+	
		Unit- III	138.70	400kV THP - Siliguri Line- IV	197.43	+	
		Unit- IV	139.06	400kV THP - Malbase Line - III	259.61	+	
		Unit- V	127.18	400kV Malbase - Siliguri Line	181.41	+	
		Unit- VI	138.89	-	-	-	
		Total	671.17	Auxiliary Consumption & Transformation Losses at Gen. end	1.000%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	138.90	+	Unit-I & III on Standby. 400kV MHP-JLg Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby. JLG_ALI Line II (Direct) opened (Both end).
		Unit-II	140.19	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	139.77	+	
		Unit-IV	140.54	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)	22.84	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	99.63	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	151.92	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	28.66	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.10	+	
		-	-	220kV Tsirang - Jigmeling Line	41.79	+	
-	-	132kV Gelephu - Salakati Line	6.99	+			
Total	280.73	Auxiliary Consumption & Transformation Losses at Gen. end	0.734%				
3	336MW CHP	Unit- I	80.95	220kV CHP - Birpara Line- I	69.67	+	
		Unit- II	81.74	220kV CHP - Birpara Line- II	69.80	+	
		Unit- III	84.99	220kV CHP - Malbase Line- III	113.23	+	
		Unit- IV	82.89	220kV CHP - Semtokha Line- IV	54.01	+	
		-	-	220kV Malbase - Birpara Line	25.66	+	
		-	-	66kV CHP - Chumdo Line	17.07	+	
		-	-	66kV CHP - Gedu Line	4.14	+	
		-	-	3x3MVA, 66/11kV TFR	1.90	+	
		Total	330.57	Auxiliary Consumption & Transformation Losses at Gen. end	0.227%		
4	24MW BHP (U/S)	Unit- I	10.40	220kV BHP - Semtokha Line	60.40	+	
		Unit- II	10.20	66kV BHP - Lobeysa Line	28.96	+	
		Total	20.60	220kV BHP - Tsirang Line	-32.32	-	
5	40MW BHP (L/S)	Unit- I	18.71	5MVA, 66/11kV TFR	0.64	+	
		Unit- II	18.70	30MVA ICT, 220/66kV (HV)	9.45	+	
		Total	37.41	Auxiliary Consumption & Transformation Losses at Gen. end	0.569%		
6	126MW DHP	Unit-I	39.34	220kV DHP - Tsirang Line	77.41	+	220kV DHP_Dagapela Line on standby.
		Unit-II	38.47	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	6.63	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	77.81	Auxiliary Consumption & Transformation Losses at Gen. end	0.129%		
7	60MW KHP	Unit- I	13.06	132kV KHP - Nangkhoh Line	28.34	+	
		Unit-II	13.08	132kV KHP - Kilikhar Line	23.27	+	
		Unit- III	13.12	5MVA, 132/11kV TFR	0.35	+	
		Unit- IV	13.18	132kV Motanga - Rangia Line	27.58	+	
		Total	52.44	Auxiliary Consumption & Transformation Losses at Gen. end	0.915%		

Note: Generation-Load Summary (MW) for November 01, 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	1,137.56	344.38	343.12	751.39	1.26
2	Eastern Grid	333.17	88.84	86.30	286.12	2.54
	Total	1,470.73	433.22	429.42	1,037.51	3.80

Note: Generation-Load Summary for November 01, 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	786.66	211.02	205.85	515.29	5.17
2	Eastern Grid	297.60	56.84	56.87	301.11	-0.03
	Total	1,084.26	267.86	262.72	816.40	5.14

NOTE-BHP, MHP and Rangia 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:	November 2, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
1-Nov-21	19:00hrs	429.42MW

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 under breakdown. 400kV THP-Siliguri line I under breakdown.
		Unit- II	126.76	400kV THP - Siliguri Line - II	207.16	+	
		Unit- III	138.92	400kV THP - Siliguri Line- IV	197.90	+	
		Unit- IV	138.90	400kV THP - Malbase Line - III	240.98	+	
		Unit- V	107.37	400kV Malbase - Siliguri Line	185.63	+	
		Unit- VI	139.45	-	-	-	
		Total	651.40	Auxiliary Consumption & Transformation Losses at Generator end	0.823%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	136.88	+	Unit I and IV under Standby. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby. JLG_ALI Line II (Direct) opened (Both end).
		Unit-II	137.92	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	137.72	+	
		Unit-IV	138.37	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)	-20.91	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	112.72	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	171.74	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	20.91	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	20.53	+	
-	-	220kV Tsirang - Jigmeling Line	61.40	+			
-	-	132kV Gelephu - Salakati Line	15.60	+			
		Total	276.29	Auxiliary Consumption & Transformation Losses at Generator end	0.612%		
3	336MW CHP	Unit- I	91.57	220kV CHP - Birpara Line- I	78.10	+	
		Unit- II	90.42	220kV CHP - Birpara Line- II	78.36	+	
		Unit- III	89.11	220kV CHP - Malbase Line- III	132.68	+	
		Unit- IV	91.34	220kV CHP - Semtokha Line- IV	53.99	+	
		-	-	220kV Malbase - Birpara Line	24.76	+	
		-	-	66kV CHP - Chumdo Line	12.50	+	
		-	-	66kV CHP - Gedu Line	4.88	+	
		-	-	3x3MVA, 66/11kV TFR	1.03	+	
		Total	362.44	Auxiliary Consumption & Transformation Losses at Generator end	0.248%		
4	24MW BHP (U/S)	Unit- I	10.02	220kV BHP - Semtokha Line	42.30	+	
		Unit- II	10.00	66kV BHP - Lobeysa Line	25.62	+	
		Total	20.02	220kV BHP - Tsirang Line	-11.18	-	
5	40MW BHP (L/S)	Unit- I	18.70	5MVA, 66/11kV TFR	0.43	+	
		Unit- II	18.60	30MVA ICT, 220/66kV (HV)	6.09	+	
		Total	37.30	Auxiliary Consumption & Transformation Losses at Generator end	0.262%		
6	126MW DHP	Unit-I	38.32	220kV DHP - Tsirang Line	74.89	+	220kV DHP_Dagapela Line on standby.
		Unit-II	36.98	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	5.80	+	
		-	-	5MVA, 220/33kV TFR	0.27	+	
		Total	75.30	Auxiliary Consumption & Transformation Losses at Generator end	0.186%		
7	60MW KHP	Unit- I	12.52	132kV KHP - Nangkhon Line	30.81	+	
		Unit-II	12.60	132kV KHP - Kilikhar Line	18.73	+	
		Unit- III	12.64	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	12.50	132kV Motanga - Rangia Line	19.34	+	
		Total	50.26	Auxiliary Consumption & Transformation Losses at Generator end	0.969%		

Note: Generation-Load Summary (MW) for November 02, 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	1,146.46	313.15	312.40	771.91	0.75
2	Eastern Grid	326.55	68.55	66.37	319.40	2.18
	Total	1,473.01	381.70	378.77	1,091.31	2.93

Note: Generation-Load Summary for November 02, 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	742.67	181.31	173.32	514.80	7.99
2	Eastern Grid	264.81	42.03	40.33	269.34	1.70
	Total	1,007.48	223.34	213.65	784.14	9.69

NOTE-BHP, DHP,MHPA, KHP & Rangia 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.