

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 2, 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	136.49	400kV THP - Siliguri Line - II	206.48	+	
		Unit- III	138.30	400kV THP - Siliguri Line- IV	196.58	+	
		Unit- IV	138.92	400kV THP - Malbase Line - III	252.60	+	
		Unit- V	107.92	400kV Malbase - Siliguri Line	182.14	+	
		Unit- VI	139.77	-	-	-	
		Total	661.40	Auxiliary Consumption & Transformation Losses at Gen. end	0.868%		
2	720MW MHP	Unit-I	129.89	400kV MHP - Jigmeling Line - I	129.59	+	Unit-II & 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	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	130.28	+	
		Unit-IV	130.57	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)	93.81	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	146.74	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	25.32	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	25.81	+	
		-	-	220kV Tsirang - Jigmeling Line	45.19	+	
-	-	132kV Gelephu - Salakati Line	13.80	+			
Total	260.46	Auxiliary Consumption & Transformation Losses at Gen. end	0.227%				
3	336MW CHP	Unit- I	82.37	220kV CHP - Birpara Line- I	71.47	+	
		Unit- II	84.34	220kV CHP - Birpara Line- II	71.75	+	
		Unit- III	86.13	220kV CHP - Malbase Line- III	107.14	+	
		Unit- IV	84.20	220kV CHP - Semtokha Line- IV	62.94	+	
		-	-	220kV Malbase - Birpara Line	33.45	+	
		-	-	66kV CHP - Chumdo Line	17.54	+	
		-	-	66kV CHP - Gedu Line	4.25	+	
		-	-	3x3MVA, 66/11kV TFR	1.80	+	
		Total	337.04	Auxiliary Consumption & Transformation Losses at Gen. end	0.045%		
4	24MW BHP (U/S)	Unit- I	10.20	220kV BHP - Semtokha Line	52.20	+	
		Unit- II	10.20	66kV BHP - Lobeysa Line	28.26	+	
		Total	20.40	220kV BHP - Tsirang Line	-25.34	-	
5	40MW BHP (L/S)	Unit- I	18.30	5MVA, 66/11kV TFR	1.06	+	
		Unit- II	18.30	30MVA ICT, 220/66kV (HV)	9.66	+	
		Total	36.60	Auxiliary Consumption & Transformation Losses at Gen. end	1.439%		
6	126MW DHP	Unit-I	38.32	220kV DHP - Tsirang Line	74.40	+	220kV DHP_Dagapela Line on standby.
		Unit-II	36.50	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	6.60	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	74.82	Auxiliary Consumption & Transformation Losses at Gen. end	0.160%		
7	60MW KHP	Unit- I	12.11	132kV KHP - Nangkhoh Line	26.29	+	
		Unit-II	12.01	132kV KHP - Kilikhar Line	20.91	+	
		Unit- III	11.98	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	11.99	132kV Motanga - Rangia Line	21.54	+	
		Total	48.09	Auxiliary Consumption & Transformation Losses at Gen. end	1.185%		

Note: Generation-Load Summary (MW) for November 02, 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	1,130.26	323.20	322.97	761.87	0.23
2	Eastern Grid	308.55	77.85	76.69	275.89	1.16
	Total	1,438.81	401.05	399.66	1,037.76	1.39

Note: Generation-Load Summary for November 02, 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	778.50	195.89	188.53	528.85	7.36
2	Eastern Grid	293.93	57.11	55.51	290.58	1.60
	Total	1,072.43	253.00	244.04	819.43	8.96

NOTE-BHP, MHP, KHP 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 3, 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	138.07	400kV THP - Siliguri Line - II	217.28	+	
		Unit- III	139.41	400kV THP - Siliguri Line- IV	206.94	+	
		Unit- IV	140.32	400kV THP - Malbase Line - III	263.50	+	
		Unit- V	137.40	400kV Malbase - Siliguri Line	192.62	+	
		Unit- VI	139.13	-	-	-	
		Total	694.33	Auxiliary Consumption & Transformation Losses at Generator end	0.952%		
2	720MW MHP	Unit-I	134.48	400kV MHP - Jigmeling Line - I	133.16	+	Unit II and III 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	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	134.15	+	
		Unit-IV	134.96	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	269.44	Auxiliary Consumption & Transformation Losses at Generator end	0.791%				
3	336MW CHP	Unit- I	38.40	220kV CHP - Birpara Line- I	64.47	+	
		Unit- II	89.41	220kV CHP - Birpara Line- II	64.47	+	
		Unit- III	91.97	220kV CHP - Malbase Line- III	112.47	+	
		Unit- IV	89.02	220kV CHP - Semtokha Line- IV	48.33	+	
		-	-	220kV Malbase - Birpara Line	18.00	+	
		-	-	66kV CHP - Chumdo Line	12.92	+	
		-	-	66kV CHP - Gedu Line	4.12	+	
		-	-	3x3MVA, 66/11kV TFR	1.19	+	
		Total	308.80	Auxiliary Consumption & Transformation Losses at Generator end	0.269%		
4	24MW BHP (U/S)	Unit- I	10.00	220kV BHP - Semtokha Line	52.20	+	
		Unit- II	9.80	66kV BHP - Lobeysa Line	26.04	+	
		Total	19.80	220kV BHP - Tsirang Line	-23.30	-	
5	40MW BHP (L/S)	Unit- I	17.70	5MVA, 66/11kV TFR	0.36	+	
		Unit- II	18.30	30MVA ICT, 220/66kV (HV)	7.04	+	
		Total	36.00	Auxiliary Consumption & Transformation Losses at Generator end	0.896%		
6	126MW DHP	Unit-I	38.82	220kV DHP - Tsirang Line	75.36	+	220kV DHP_Dagapela Line on standby.
		Unit-II	36.98	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	5.77	+	
		-	-	5MVA, 220/33kV TFR	0.27	+	
		Total	75.80	Auxiliary Consumption & Transformation Losses at Generator end	0.224%		
7	60MW KHP	Unit- I	12.10	132kV KHP - Nangkhon Line	29.64	+	
		Unit-II	12.09	132kV KHP - Kilikhar Line	17.91	+	
		Unit- III	12.49	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	11.48	132kV Motanga - Rangia Line	16.89	+	
		Total	48.16	Auxiliary Consumption & Transformation Losses at Generator end	0.783%		

Note: Generation-Load Summary (MW) for November 03, 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	1,134.73	309.55	307.21	763.78	2.34
2	Eastern Grid	317.60	62.05	59.54	316.95	2.51
	Total	1,452.33	371.60	366.75	1,080.73	4.85

Note: Generation-Load Summary for November 03, 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	715.97	164.28	155.04	509.14	9.24
2	Eastern Grid	303.80	45.14	43.12	300.94	2.02
	Total	1,019.77	209.42	198.16	810.08	11.26

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.
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