

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 13, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
11-Nov-21	19:00hrs	445.49 MW

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 AMP. Unit-V under standby. 400kV THP-Siliguri line I under breakdown. 400kV THP-MAL line under Annual Maintenance .
		Unit- II	118.24	400kV THP - Siliguri Line - II	240.04	+	
		Unit- III	99.90	400kV THP - Siliguri Line- IV	232.38	+	
		Unit- IV	119.43	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	-44.02	-	
		Unit- VI	139.64	-	-	-	
		Total	477.21	Auxiliary Consumption & Transformation Losses at Gen. end	1.004%		
2	720MW MHP	Unit-I	93.14	400kV MHP - Jigmeling Line - I	110.45	+	Unit-II on Standby. Unit IV under Annual Maintenance. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby. JLG_ALI Line II (Direct) opened (Both end).
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	130.48	400kV MHP - Jigmeling Line - III	111.14	+	
		Unit-IV	0.00	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)	60.43	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	64.68		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	97.25	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	23.45	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.80	+	
-	-	220kV Tsirang - Jigmeling Line	-1.06	-			
-	-	132kV Gelephu - Salakati Line	2.52	+			
		Total	223.62	Auxiliary Consumption & Transformation Losses at Gen. end	0.908%		
3	336MW CHP	Unit- I	79.74	220kV CHP - Birpara Line- I	34.02	+	Unit-IV standby.
		Unit- II	75.61	220kV CHP - Birpara Line- II	33.98	+	
		Unit- III	83.17	220kV CHP - Malbase Line- III	96.38	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	48.27	+	
		-	-	220kV Malbase - Birpara Line	-19.10	-	
		-	-	66kV CHP - Chumdo Line	17.79	+	
		-	-	66kV CHP - Gedu Line	4.70	+	
		-	-	3x3MVA, 66/11kV TFR	1.90	+	
		Total	238.52	Auxiliary Consumption & Transformation Losses at Gen. end	0.620%		
4	24MW BHP (U/S)	Unit- I	8.30	220kV BHP - Semtokha Line	72.10	+	Lobeysa Line
		Unit- II	8.00	66kV BHP - Lobeysa Line	29.23	+	
		Total	16.30	220kV BHP - Tsirang Line	-53.85	-	
5	40MW BHP (L/S)	Unit- I	16.00	5MVA, 66/11kV TFR	0.66	+	
		Unit- II	16.00	30MVA ICT, 220/66kV (HV)	14.02	+	
		Total	32.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.331%		
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	58.33	+	Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	58.54	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	10.48	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		Total	58.54	Auxiliary Consumption & Transformation Losses at Gen. end	0.017%		
7	60MW KHP	Unit- I	13.07	132kV KHP - Nangkhoh Line	20.05	+	Unit-IV on standby.
		Unit-II	13.10	132kV KHP - Kilikhar Line	18.39	+	
		Unit- III	13.09	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	12.18	+	
		Total	39.26	Auxiliary Consumption & Transformation Losses at Gen. end	1.325%		

Note: Generation-Load Summary (MW) for November 13, 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	822.57	346.33	350.37	477.30	-4.04
2	Eastern Grid	262.88	85.19	82.64	176.63	2.55
	Total	1,085.45	431.52	433.01	653.93	-1.49

Note: Generation-Load Summary for November 13, 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	701.57	214.76	206.98	442.28	7.78
2	Eastern Grid	225.36	58.74	56.58	211.15	2.16
	Total	926.93	273.50	263.56	653.43	9.94

NOTE-BHP, MHPA 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 14, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
11-Nov-21	19:00hrs	445.49 MW

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 AMP. Unit-V under standby. 400kV THP-Siliguri line I under breakdown. 400kV THP-MAL line under Annual Maintenance .
		Unit- II	117.75	400kV THP - Siliguri Line - II	240.85	+	
		Unit- III	100.31	400kV THP - Siliguri Line- IV	232.06	+	
		Unit- IV	119.29	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	-35.00	-	
		Unit- VI	138.91	-	-	-	
		Total	476.26	Auxiliary Consumption & Transformation Losses at Generator end	0.703%		
2	720MW MHP	Unit-I	93.27	400kV MHP - Jigmeling Line - I	111.25	+	Unit-II on Standby. Unit IV under Annual Maintenance. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby. JLG_ALI Line II(Direct) opened (Both end).
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	130.43	400kV MHP - Jigmeling Line - III	112.36	+	
		Unit-IV	0.00	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)	41.31	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	73.26	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	111.38	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	21.88	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	22.21	+	
-	-	220kV Tsirang - Jigmeling Line	12.94	+			
-	-	132kV Gelephu - Salakati Line	9.16	+			
		Total	223.70	Auxiliary Consumption & Transformation Losses at Generator end	0.040%		
3	336MW CHP	Unit- I	77.82	220kV CHP - Birpara Line- I	37.79	+	Unit-IV standby.
		Unit- II	80.00	220kV CHP - Birpara Line- II	37.89	+	
		Unit- III	85.35	220kV CHP - Malbase Line- III	101.81	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	43.99	+	
		-	-	220kV Malbase - Birpara Line	-18.00	-	
		-	-	66kV CHP - Chumdo Line	14.91	+	
		-	-	66kV CHP - Gedu Line	4.43	+	
		-	-	3x3MVA, 66/11kV TFR	1.43	+	
		Total	243.17	Auxiliary Consumption & Transformation Losses at Generator end	0.378%		
4	24MW BHP (U/S)	Unit- I	8.10	220kV BHP - Semtokha Line	61.90	+	
		Unit- II	7.90	66kV BHP - Lobeysa Line	26.41	+	
		Total	16.00	220kV BHP - Tsirang Line	-41.30	-	
5	40MW BHP (L/S)	Unit- I	15.90	5MVA, 66/11kV TFR	0.43	+	
		Unit- II	15.70	30MVA ICT, 220/66kV (HV)	11.27	+	
		Total	31.60	Auxiliary Consumption & Transformation Losses at Generator end	0.336%		
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	57.74	+	Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	57.94	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	9.97	+	
		-	-	5MVA, 220/33kV TFR	0.10	+	
		Total	57.94	Auxiliary Consumption & Transformation Losses at Generator end	0.173%		
7	60MW KHP	Unit- I	13.08	132kV KHP - Nangkhon Line	22.05	+	Unit-IV on standby.
		Unit-II	13.08	132kV KHP - Kilikhar Line	16.49	+	
		Unit- III	13.05	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	12.12	+	
		Total	39.21	Auxiliary Consumption & Transformation Losses at Generator end	0.944%		

Note: Generation-Load Summary (MW) for November 14, 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	824.97	316.44	321.88	495.59	-5.44
2	Eastern Grid	262.91	69.93	69.47	205.92	0.46
	Total	1,087.88	386.37	391.35	701.51	-4.98

Note: Generation-Load Summary for November 14, 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	567.19	186.22	178.89	345.46	7.33
2	Eastern Grid	241.07	47.41	45.79	229.17	1.62
	Total	808.26	233.63	224.68	574.63	8.95

NOTE-BHP, MHPA,MAL & Rangia data collected from site.

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- 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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