

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date: November 12, 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 shutdown 400kV THP-Siliguri line I under breakdown. 400kV THP-MAL line under Annual Maintenance .
		Unit- II	117.99	400kV THP - Siliguri Line - II	264.98	+	
		Unit- III	147.58	400kV THP - Siliguri Line- IV	255.61	+	
		Unit- IV	119.25	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	-33.41	-	
		Unit- VI	139.18	-	-	-	
		Total	524.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.651%		
2	720MW MHP	Unit-I	100.04	400kV MHP - Jigmeling Line - I	114.25	+	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 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	130.38	400kV MHP - Jigmeling Line - III	115.00	+	
		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)	53.38	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	67.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	104.46	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	25.57	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	25.97	+	
		-	-	220kV Tsirang - Jigmeling Line	8.62	+	
-	-	132kV Gelephu - Salakati Line	7.60	+			
Total	230.42	Auxiliary Consumption & Transformation Losses at Gen. end	0.508%				
3	336MW CHP	Unit- I	84.87	220kV CHP - Birpara Line- I	41.38	+	Unit-IV standby.
		Unit- II	85.82	220kV CHP - Birpara Line- II	41.36	+	
		Unit- III	87.77	220kV CHP - Malbase Line- III	93.11	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	55.66	+	
		-	-	220kV Malbase - Birpara Line	-3.47	-	
		-	-	66kV CHP - Chumdo Line	18.13	+	
		-	-	66kV CHP - Gedu Line	4.74	+	
		-	-	3x3MVA, 66/11kV TFR	1.94	+	
		Total	258.46	Auxiliary Consumption & Transformation Losses at Gen. end	0.828%		
4	24MW BHP (U/S)	Unit- I	8.40	220kV BHP - Semtokha Line	65.89	+	Lobeysa Line
		Unit- II	8.20	66kV BHP - Lobeysa Line	29.01	+	
		Total	16.60	220kV BHP - Tsirang Line	-46.99	-	
5	40MW BHP (L/S)	Unit- I	16.00	5MVA, 66/11kV TFR	0.53	+	Tsirang Line
		Unit- II	16.00	30MVA ICT, 220/66kV (HV)	-13.28	-	
		Total	32.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.329%		
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	58.79	+	Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	59.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	10.59	+	
		-	-	5MVA, 220/33kV TFR	0.23	+	
		Total	59.03	Auxiliary Consumption & Transformation Losses at Gen. end	0.017%		
7	60MW KHP	Unit- I	13.05	132kV KHP - Nangkhon Line	19.55	+	Unit-IV on standby.
		Unit-II	13.08	132kV KHP - Kilikhar Line	18.88	+	
		Unit- III	13.07	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	14.70	+	
		Total	39.20	Auxiliary Consumption & Transformation Losses at Gen. end	1.199%		

Note: Generation-Load Summary (MW) for November 12, 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	890.09	315.02	319.89	566.45	-4.87
2	Eastern Grid	269.62	84.48	82.84	193.76	1.64
	Total	1,159.71	399.50	402.73	760.21	-3.23

Note: Generation-Load Summary for November 12, 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	682.11	209.03	201.40	426.84	7.63
2	Eastern Grid	225.98	55.94	54.08	216.28	1.86
	Total	908.09	264.97	255.48	643.12	9.49

NOTE-BHP, MHPA and Rangia 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.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 13, 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 shutdown. 400kV THP-Siliguri line I under breakdown. 400kV THP-MAL line under Annual Maintenance .
		Unit- II	118.11	400kV THP - Siliguri Line - II	239.61	+	
		Unit- III	98.59	400kV THP - Siliguri Line- IV	231.68	+	
		Unit- IV	119.22	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	-21.06	-	
		Unit- VI	139.00	-	-	-	
		Total	474.92	Auxiliary Consumption & Transformation Losses at Generator end	0.764%		
2	720MW MHP	Unit-I	97.35	400kV MHP - Jigmeling Line - I	112.95	+	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 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	130.36	400kV MHP - Jigmeling Line - III	113.45	+	
		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)	33.97	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	73.45	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	113.86	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	16.78	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	17.09	+	
		-	-	220kV Tsirang - Jigmeling Line	9.88	+	
-	-	132kV Gelephu - Salakati Line	7.14	+			
Total	227.71	Auxiliary Consumption & Transformation Losses at Generator end	0.575%				
3	336MW CHP	Unit- I	82.31	220kV CHP - Birpara Line- I	38.36	+	Unit-IV standby.
		Unit- II	83.06	220kV CHP - Birpara Line- II	38.36	+	
		Unit- III	82.88	220kV CHP - Malbase Line- III	107.21	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	40.97	+	
		-	-	220kV Malbase - Birpara Line	-19.59	-	
		-	-	66kV CHP - Chumdo Line	14.74	+	
		-	-	66kV CHP - Gedu Line	4.69	+	
		-	-	3x3MVA, 66/11kV TFR	1.21	+	
Total	248.25	Auxiliary Consumption & Transformation Losses at Generator end	1.092%				
4	24MW BHP (U/S)	Unit- I	8.20	220kV BHP - Semtokha Line	65.50	+	
		Unit- II	8.00	66kV BHP - Lobeyssa Line	26.55	+	
		Total	16.20	220kV BHP - Tsirang Line	-44.81	-	
5	40MW BHP (L/S)	Unit- I	16.00	5MVA, 66/11kV TFR	0.41	+	
		Unit- II	15.50	30MVA ICT, 220/66kV (HV)	11.07	+	
		Total	31.50	Auxiliary Consumption & Transformation Losses at Generator end	0.105%		
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	58.76	+	Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	59.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	9.81	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		Total	59.03	Auxiliary Consumption & Transformation Losses at Generator end	0.119%		
7	60MW KHP	Unit- I	13.09	132kV KHP - Nangkhoh Line	23.00	+	Unit-IV on standby.
		Unit-II	13.12	132kV KHP - Kilikhar Line	15.55	+	
		Unit- III	13.04	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	7.47	+	
		Total	39.25	Auxiliary Consumption & Transformation Losses at Generator end	0.764%		

Note: Generation-Load Summary (MW) for November 13, 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	829.90	312.66	316.01	507.36	-3.35
2	Eastern Grid	266.96	74.92	73.31	201.92	1.61
	Total	1,096.86	387.58	389.32	709.28	-1.74

Note: Generation-Load Summary for November 13, 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	589.31	185.31	173.92	368.00	11.39
2	Eastern Grid	243.63	47.69	45.15	231.94	2.54
	Total	832.94	233.00	219.07	599.94	13.93

NOTE-BHP, MHPA & 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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