

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date: **November 21, 2021**
Hours: **19:00 Hours**

Date	Time	Load(MW)
18-Nov-21	18:00hrs	456.37 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 & III under AMP. Unit-V on standby. 400kV THP-Siliguri line I under breakdown. 400kV THP-MAL line under Annual Maintenance .
		Unit- II	147.40	400kV THP - Siliguri Line - II	209.68	+	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	202.56	+	
		Unit- IV	129.05	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	-58.15	-	
		Unit- VI	138.86	-	-	-	
		Total	415.31	Auxiliary Consumption & Transformation Losses at Gen. end	0.739%		
2	720MW MHP	Unit-I	85.30	400kV MHP - Jigmeling Line - I	98.33	+	Unit-III 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	113.12	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	98.94	+	
		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)	59.10	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	53.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	81.89	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	20.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	21.00	+	
-	-	220kV Tsirang - Jigmeling Line	4.80	+			
-	-	132kV Gelephu - Salakati Line	0.81	+			
		Total	198.42	Auxiliary Consumption & Transformation Losses at Gen. end	0.580%		
3	336MW CHP	Unit- I	65.52	220kV CHP - Birpara Line- I	20.19	+	Unit-IV under AMP.
		Unit- II	65.43	220kV CHP - Birpara Line- II	20.47	+	
		Unit- III	83.77	220kV CHP - Malbase Line- III	78.00	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	68.89	+	
		-	-	220kV Malbase - Birpara Line	-29.38	-	
		-	-	66kV CHP - Chumdo Line	19.10	+	
		-	-	66kV CHP - Gedu Line	3.80	+	
		-	-	3x3MVA, 66/11kV TFR	2.10	+	
		Total	214.72	Auxiliary Consumption & Transformation Losses at Gen. end	1.011%		
4	24MW BHP (U/S)	Unit- I	7.30	220kV BHP - Semtokha Line	62.00	+	Lobeysa Line
		Unit- II	7.10	66kV BHP - Lobeysa Line	29.33	+	
		Total	14.40	220kV BHP - Tsirang Line	-50.32	-	
5	40MW BHP (L/S)	Unit- I	13.70	5MVA, 66/11kV TFR	0.73	+	
		Unit- II	13.70	30MVA ICT, 220/66kV (HV)	15.96	+	
		Total	27.40	Auxiliary Consumption & Transformation Losses at Gen. end	0.144%		
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	49.83	+	Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	50.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	13.20	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		Total	50.03	Auxiliary Consumption & Transformation Losses at Gen. end	0.000%		
7	60MW KHP	Unit- I	12.47	132kV KHP - Nangkhor Line	16.85	+	Unit-IV under AMP.
		Unit-II	12.52	132kV KHP - Kilikhar Line	19.27	+	
		Unit- III	12.09	5MVA, 132/11kV TFR	0.39	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	8.83	+	
		Total	37.08	Auxiliary Consumption & Transformation Losses at Gen. end	1.526%		

Note: Generation-Load Summary (MW) for November 21, 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	721.86	351.69	359.59	365.37	-7.90
2	Eastern Grid	235.50	94.97	93.25	145.33	1.72
	Total	957.36	446.66	452.84	510.70	-6.18

Note: Generation-Load Summary for November 21, 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	539.12	225.19	222.59	282.53	2.60
2	Eastern Grid	209.83	51.32	49.00	189.91	2.32
	Total	748.95	276.51	271.59	472.44	4.92

NOTE-BHP,CHP,DHP,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 22, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
19-Nov-21	18:00hrs	456.37 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 & III under AMP. Unit-V on standby. 400kV THP-Siliguri line I under breakdown. 400kV THP-MAL line under Annual Maintenance .
		Unit- II	147.54	400kV THP - Siliguri Line - II	209.69	+	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	201.62	+	
		Unit- IV	128.94	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	-52.83	-	
		Unit- VI	139.18	-	-	-	
		Total	415.66	Auxiliary Consumption & Transformation Losses at Generator end	1.047%		
2	720MW MHP	Unit-I	84.96	400kV MHP - Jigmeling Line - I	104.75	+	Unit-III 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	124.76	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	104.76	+	
		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)	45.14	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	64.38	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	97.04	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	20.08	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	20.42	+	
		-	-	220kV Tsirang - Jigmeling Line	7.79	+	
-	-	132kV Gelephu - Salakati Line	6.40	+			
		Total	209.72	Auxiliary Consumption & Transformation Losses at Generator end	0.100%		
3	336MW CHP	Unit- I	62.00	220kV CHP - Birpara Line- I	23.75	+	Unit-IV under AMP.
		Unit- II	62.66	220kV CHP - Birpara Line- II	23.45	+	
		Unit- III	83.92	220kV CHP - Malbase Line- III	81.35	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	58.44	+	
		-	-	220kV Malbase - Birpara Line	-22.12	-	
		-	-	66kV CHP - Chumdo Line	15.50	+	
		-	-	66kV CHP - Gedu Line	3.10	+	
		-	-	3x3MVA, 66/11kV TFR	1.41	+	
		Total	208.58	Auxiliary Consumption & Transformation Losses at Generator end	0.758%		
4	24MW BHP (U/S)	Unit- I	7.20	220kV BHP - Semtokha Line	50.40	+	
		Unit- II	7.00	66kV BHP - Lobeyssa Line	26.71	+	
		Total	14.20	220kV BHP - Tsirang Line	-35.58	-	
5	40MW BHP (L/S)	Unit- I	13.80	5MVA, 66/11kV TFR	0.44	+	
		Unit- II	14.00	30MVA ICT, 220/66kV (HV)	13.13	+	
		Total	27.80	Auxiliary Consumption & Transformation Losses at Generator end	0.071%		
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	50.27	+	Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	50.47	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	12.61	+	
		-	-	5MVA, 220/33kV TFR	0.19	+	
		Total	50.47	Auxiliary Consumption & Transformation Losses at Generator end	0.020%		
7	60MW KHP	Unit- I	11.79	132kV KHP - Nangkhoh Line	19.62	+	Unit-IV under AMP.
		Unit-II	11.78	132kV KHP - Kilikhar Line	15.13	+	
		Unit- III	11.79	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	3.62	+	
		Total	35.36	Auxiliary Consumption & Transformation Losses at Generator end	1.075%		

Note: Generation-Load Summary (MW) for November 22, 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	716.71	325.36	332.00	383.56	-6.64
2	Eastern Grid	245.08	81.43	80.84	171.44	0.59
	Total	961.79	406.79	412.84	555.00	-6.05

Note: Generation-Load Summary for November 22, 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	562.03	198.01	191.74	230.07	6.27
2	Eastern Grid	315.00	37.80	35.54	211.15	2.26
	Total	877.03	235.81	227.28	441.22	8.53

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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