

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date: August 23, 2021
Hours: 19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	185.49	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	181.65	400kV THP - Siliguri Line - II	350.10	+	
		Unit- III	184.52	400kV THP - Siliguri Line- IV	334.63	+	
		Unit- IV	185.79	400kV THP - Malbase Line - III	414.73	+	
		Unit- V	185.99	400kV Malbase - Siliguri Line	311.37	+	
		Unit- VI	185.47	-	-	-	
		Total	1,108.91	Auxiliary Consumption & Transformation Losses at Gen. end	0.852%		
2	720MW MHP	Unit-I	197.75	400kV MHP - Jigmeling Line - I	389.98	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby.
		Unit-II	194.23	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.64	400kV MHP - Jigmeling Line - III	391.91	+	
		Unit-IV	197.03	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)	-24.40	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	186.16	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	279.40	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	279.40	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	33.00	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	33.10	+	
		-	-	220kV Tsirang - Jigmeling Line	43.69	+	
-	-	132kV Gelephu - Salakati Line	26.37	+			
Total	786.65	Auxiliary Consumption & Transformation Losses at Gen. end	0.605%				
3	336MW CHP	Unit- I	89.75	220kV CHP - Birpara Line- I	91.73	+	
		Unit- II	76.07	220kV CHP - Birpara Line- II	91.49	+	
		Unit- III	90.66	220kV CHP - Malbase Line- III	120.27	+	
		Unit- IV	90.93	220kV CHP - Semtokha Line- IV	25.59	+	
		-	-	220kV Malbase - Birpara Line	56.43	+	
		-	-	66kV CHP - Chumdo Line	10.46	+	
		-	-	66kV CHP - Gedu Line	5.06	+	
		-	-	3x3MVA, 66/11kV TFR	1.33	+	
		Total	347.41	Auxiliary Consumption & Transformation Losses at Gen. end	0.426%		
4	24MW BHP (U/S)	Unit- I	12.10	220kV BHP - Semtokha Line	49.80	+	
		Unit- II	12.30	66kV BHP - Lobeysa Line	30.78	+	
		Total	24.40	220kV BHP - Tsirang Line	-15.82	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	7.75	+	
		Total	41.80	Auxiliary Consumption & Transformation Losses at Gen. end	0.816%		
6	126MW DHP	Unit-I	63.61	220kV DHP - Tsirang Line	63.15	+	DHP Unit II tripped at 18:22 Hrs 220kV DHP_Dagapela Line on standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.90	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	63.61	Auxiliary Consumption & Transformation Losses at Gen. end	0.252%		
7	60MW KHP	Unit- I	16.61	132kV KHP - Nangkhoh Line	36.31	+	
		Unit-II	16.55	132kV KHP - Kilikhar Line	29.01	+	
		Unit- III	16.59	5MVA, 132/11kV TFR	0.43	+	
		Unit- IV	16.68	132kV Motanga - Rangia Line	43.85	+	
		Total	66.43	Auxiliary Consumption & Transformation Losses at Gen. end	1.027%		

Note: Generation-Load Summary (MW) for August 23, 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	1,586.13	306.69	296.96	1,235.75	9.73
2	Eastern Grid	853.08	81.59	76.15	815.18	5.44
	Total	2,439.21	388.28	373.11	2,050.93	15.17

Note: Generation-Load Summary for August 23, 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	1,683.15	204.75	178.25	1,382.20	26.50
2	Eastern Grid	851.92	65.99	60.43	882.13	5.56
	Total	2,535.07	270.74	238.68	2,264.33	32.06

NOTE-BHP and MHPA 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:	August 24, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	185.06	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	186.51	400kV THP - Siliguri Line - II	362.99	+	
		Unit- III	183.89	400kV THP - Siliguri Line- IV	346.51	+	
		Unit- IV	184.64	400kV THP - Malbase Line - III	395.10	+	
		Unit- V	186.12	400kV Malbase - Siliguri Line	329.89	+	
		Unit- VI	185.85	-	-	-	
		Total	1,112.07	Auxiliary Consumption & Transformation Losses at Generator end	0.672%		
2	720MW MHP	Unit-I	197.82	400kV MHP - Jigmeling Line - I	389.57	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I(Interim) on standby.
		Unit-II	194.04	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.76	400kV MHP - Jigmeling Line - III	392.02	+	
		Unit-IV	196.66	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)	54.60	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	204.30	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	310.20	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	310.20	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	22.20	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	22.30	+	
		-	-	220kV Tsirang - Jigmeling Line	100.70	+	
-	-	132kV Gelephu - Salakati Line	24.72	+			
Total	786.28	Auxiliary Consumption & Transformation Losses at Generator end	0.596%				
3	336MW CHP	Unit- I	90.69	220kV CHP - Birpara Line- I	98.47	+	
		Unit- II	91.22	220kV CHP - Birpara Line- II	98.65	+	
		Unit- III	91.18	220kV CHP - Malbase Line- III	145.37	+	
		Unit- IV	91.57	220kV CHP - Semtokha Line- IV	7.49	-	
		-	-	220kV Malbase - Birpara Line	48.02	+	
		-	-	66kV CHP - Chumdo Line	5.93	+	
		-	-	66kV CHP - Gedu Line	6.22	+	
		-	-	3x3MVA, 66/11kV TFR	0.76	+	
Total	364.66	Auxiliary Consumption & Transformation Losses at Generator end	0.485%				
4	24MW BHP (U/S)	Unit- I	12.10	220kV BHP - Semtokha Line	57.30	+	
		Unit- II	12.30	66kV BHP - Lobeysa Line	31.10	+	
		Total	24.40	220kV BHP - Tsirang Line	-21.58	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	6.40	+	
		Total	41.80	Auxiliary Consumption & Transformation Losses at Generator end	-2.296%		
6	126MW DHP	Unit-I	63.58	220kV DHP - Tsirang Line	126.26	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.20	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.10	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	126.78	Auxiliary Consumption & Transformation Losses at Generator end	0.174%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Line	41.75	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	23.57	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	43.35	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.621%		

Note: Generation-Load Summary (MW) for August 24, 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	1,669.71	284.48	277.64	1,284.53	6.84
2	Eastern Grid	852.28	60.21	55.11	892.77	5.10
	Total	2,521.99	344.69	332.75	2,177.30	11.94

Note: Generation-Load Summary for August 24, 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	1,683.63	184.32	136.34	1,412.70	47.98
2	Eastern Grid	852.77	50.81	45.74	888.57	5.07
	Total	2,536.40	235.13	182.08	2,301.27	53.05

NOTE-BHP, KHP and MHPA data collected from site

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