

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 5, 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	185.36	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	186.74	400kV THP - Siliguri Line - II	355.90	+	
		Unit- III	184.98	400kV THP - Siliguri Line- IV	340.30	+	
		Unit- IV	184.31	400kV THP - Malbase Line - III	407.76	+	
		Unit- V	185.37	400kV Malbase - Siliguri Line	318.41	+	
		Unit- VI	185.43	-	-	-	
		Total	1,112.19	Auxiliary Consumption & Transformation Losses at Gen. end	0.740%		
2	720MW MHP	Unit-I	197.82	400kV MHP - Jigmeling Line - I	293.80	+	Unit-III under Restoration 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) under standby
		Unit-II	197.72	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.24	+	
		Unit-IV	197.50	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)	-30.90	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	153.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	229.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	229.80	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	32.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	32.60	+	
		-	-	220kV Tsirang - Jigmeling Line	98.57	+	
-	-	132kV Gelephu - Salakati Line	24.87	+			
Total	593.04	Auxiliary Consumption & Transformation Losses at Gen. end	0.674%				
3	336MW CHP	Unit- I	91.00	220kV CHP - Birpara Line- I	98.37	+	
		Unit- II	91.01	220kV CHP - Birpara Line- II	97.91	+	
		Unit- III	91.57	220kV CHP - Malbase Line- III	131.89	+	
		Unit- IV	91.87	220kV CHP - Semtokha Line- IV	20.47	+	
		-	-	220kV Malbase - Birpara Line	58.35	+	
		-	-	66kV CHP - Chumdo Line	8.12	+	
		-	-	66kV CHP - Gedu Line	5.41	+	
		-	-	3x3MVA, 66/11kV TFR	1.30	+	
		Total	365.45	Auxiliary Consumption & Transformation Losses at Gen. end	0.542%		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	34.74	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	12.10	66kV BHP - Lobeysa Line	22.40	+	
		Total	24.30	220kV BHP - Tsirang Line	6.41	+	
5	40MW BHP (L/S)	Unit- I	20.40	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	20.90	30MVA ICT, 220/66kV (HV)	0.00		
		Total	41.30	Auxiliary Consumption & Transformation Losses at Gen. end	1.768%		
6	126MW DHP	Unit-I	50.36	220kV DHP - Tsirang Line	95.00	+	220kV DHP_Dagapela Line on standby.
		Unit-II	45.09	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.60	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	95.45	Auxiliary Consumption & Transformation Losses at Gen. end	0.157%		
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkor Line	37.54	+	
		Unit-II	16.52	132kV KHP - Kilikhar Line	27.61	+	
		Unit- III	16.57	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	16.49	132kV Motanga - Rangia Line	49.26	+	
		Total	66.12	Auxiliary Consumption & Transformation Losses at Gen. end	0.953%		

Note: Generation-Load Summary (MW) for July 05, 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	1,638.69	270.88	260.96	1,269.24	9.92
2	Eastern Grid	659.16	70.10	65.47	687.63	4.63
Total		2,297.85	340.98	326.43	1,956.87	14.55

Note: Generation-Load Summary for July 05, 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	1,643.10	211.22	195.25	1,353.97	15.97
2	Eastern Grid	855.06	60.27	59.01	872.70	1.26
Total		2,498.16	271.49	254.26	2,226.67	17.23

NOTE-BHP and MHEP 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:	July 6, 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	186.24	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	183.93	400kV THP - Siliguri Line - II	359.90	+	
		Unit- III	185.53	400kV THP - Siliguri Line- IV	341.38	+	
		Unit- IV	185.83	400kV THP - Malbase Line - III	403.75	+	
		Unit- V	186.15	400kV Malbase - Siliguri Line	323.35	+	
		Unit- VI	185.83	-	-	-	
		Total	1,113.51	Auxiliary Consumption & Transformation Losses at Generator end	0.762%		
2	720MW MHP	Unit-I	197.97	400kV MHP - Jigmeling Line - I	294.61	+	Unit-III on Restoration. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line II (Interim) under shutdown.
		Unit-II	197.95	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	296.06	+	
		Unit-IV	197.61	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)	-39.30	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	156.20	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	232.40	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	232.40	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	27.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	27.10	+	
		-	-	220kV Tsirang - Jigmeling Line	95.83	+	
-	-	132kV Gelephu - Salakati Line	24.17	+			
Total	593.53	Auxiliary Consumption & Transformation Losses at Generator end	0.482%				
3	336MW CHP	Unit- I	91.03	220kV CHP - Birpara Line- I	97.66	+	
		Unit- II	90.92	220kV CHP - Birpara Line- II	97.59	+	
		Unit- III	91.79	220kV CHP - Malbase Line- III	137.77	+	
		Unit- IV	97.66	220kV CHP - Semtokha Line- IV	18.75	+	
		-	-	220kV Malbase - Birpara Line	50.27	+	
		-	-	66kV CHP - Chumdo Line	6.12	+	
		-	-	66kV CHP - Gedu Line	5.12	+	
		-	-	3x3MVA, 66/11kV TFR	0.80	+	
		Total	371.40	Auxiliary Consumption & Transformation Losses at Generator end	2.044%		
4	24MW BHP (U/S)	Unit- I	11.80	220kV BHP - Semtokha Line	28.91	+	30MVA ICT(220/66kV) under shutdown
		Unit- II	11.40	66kV BHP - Lobeysa Line	23.20	+	
		Total	23.20	220kV BHP - Tsirang Line	11.02	+	
5	40MW BHP (L/S)	Unit- I	20.00	5MVA, 66/11kV TFR	0.92	+	
		Unit- II	20.20	30MVA ICT, 220/66kV (HV)	0.00		
		Total	40.20	Auxiliary Consumption & Transformation Losses at Generator end	-1.025%		
6	126MW DHP	Unit-I	45.37	220kV DHP - Tsirang Line	91.79	+	220kV DHP_Dagapela Line on standby.
		Unit-II	46.88	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.90	+	
		-	-	5MVA, 220/33kV TFR	0.35	+	
		Total	92.25	Auxiliary Consumption & Transformation Losses at Generator end	0.119%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Line	39.78	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	25.43	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	49.93	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.818%		

Note: Generation-Load Summary (MW) for July 06, 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	1,640.56	274.58	259.95	1,270.15	14.63
2	Eastern Grid	659.53	60.26	56.86	695.10	3.40
	Total	2,300.09	334.84	316.81	1,965.25	18.03

Note: Generation-Load Summary for July 06, 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	1,648.88	214.74	199.78	1,367.30	14.96
2	Eastern Grid	857.41	51.55	47.73	872.70	3.82
	Total	2,506.29	266.29	247.51	2,240.00	18.78

NOTE-BHP and MHEP 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.