

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 4, 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	185.89	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	182.54	400kV THP - Siliguri Line - II	353.57	+	
		Unit- III	185.32	400kV THP - Siliguri Line- IV	339.21	+	
		Unit- IV	185.27	400kV THP - Malbase Line - III	412.94	+	
		Unit- V	185.08	400kV Malbase - Siliguri Line	317.88	+	
		Unit- VI	185.30	-	-	-	
		Total	1,109.40	Auxiliary Consumption & Transformation Losses at Gen. end	0.332%		
2	720MW MHP	Unit-I	197.70	400kV MHP - Jigmeling Line - I	294.15	+	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 shutdown
		Unit-II	197.78	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.55	+	
		Unit-IV	197.66	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)	-32.80	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	153.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	234.48	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	234.04	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	35.20	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	35.40	+	
		-	-	220kV Tsirang - Jigmeling Line	106.30	+	
-	-	132kV Gelephu - Salakati Line	26.17	+			
Total	593.14	Auxiliary Consumption & Transformation Losses at Gen. end	0.580%				
3	336MW CHP	Unit- I	91.16	220kV CHP - Birpara Line- I	101.06	+	
		Unit- II	91.40	220kV CHP - Birpara Line- II	100.94	+	
		Unit- III	91.75	220kV CHP - Malbase Line- III	124.84	+	
		Unit- IV	91.66	220kV CHP - Semtokha Line- IV	21.60	+	
		-	-	220kV Malbase - Birpara Line	67.80	+	
		-	-	66kV CHP - Chumdo Line	9.72	+	
		-	-	66kV CHP - Gedu Line	4.97	+	
		-	-	3x3MVA, 66/11kV TFR	1.40	+	
		Total	365.97	Auxiliary Consumption & Transformation Losses at Gen. end	0.393%		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	37.60	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	12.10	66kV BHP - Lobeysa Line	23.00	+	
		Total	24.30	220kV BHP - Tsirang Line	3.70	+	
5	40MW BHP (L/S)	Unit- I	20.40	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	20.90	30MVA ICT, 220/66kV (HV)	0.00		
		Total	41.30	Auxiliary Consumption & Transformation Losses at Gen. end	0.686%		
6	126MW DHP	Unit-I	54.37	220kV DHP - Tsirang Line	105.89	+	220kV DHP_Dagapela Line on standby. 220kV JLG_Dagapela Line under maintenance.
		Unit-II	52.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.80	+	
		-	-	5MVA, 220/33kV TFR	0.27	+	
		Total	106.37	Auxiliary Consumption & Transformation Losses at Gen. end	0.197%		
7	60MW KHP	Unit- I	16.49	132kV KHP - Nangkor Line	36.50	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	28.54	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.44	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	52.43	+	
		Total	65.99	Auxiliary Consumption & Transformation Losses at Gen. end	0.776%		

Note: Generation-Load Summary (MW) for July 04, 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	1,647.34	260.58	256.60	1,280.46	3.98
2	Eastern Grid	659.13	64.41	60.46	701.02	3.95
	Total	2,306.47	324.99	317.06	1,981.48	7.93

Note: Generation-Load Summary for July 04, 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	1,554.01	225.45	207.75	1,253.44	17.70
2	Eastern Grid	857.22	65.33	61.29	867.01	4.04
	Total	2,411.23	290.78	269.04	2,120.45	21.74

NOTE-BHP and MHEP 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:	July 5, 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	185.02	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	182.47	400kV THP - Siliguri Line - II	353.58	+	
		Unit- III	184.49	400kV THP - Siliguri Line- IV	338.31	+	
		Unit- IV	186.13	400kV THP - Malbase Line - III	411.66	+	
		Unit- V	184.23	400kV Malbase - Siliguri Line	316.21	+	
		Unit- VI	185.43	-	-	-	
		Total	1,107.77	Auxiliary Consumption & Transformation Losses at Generator end	0.381%		
2	720MW MHP	Unit-I	197.92	400kV MHP - Jigmeling Line - I	294.43	+	Unit-III on 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 shutdown.
		Unit-II	197.74	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	296.00	+	
		Unit-IV	197.63	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)	-47.70	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	158.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	237.04	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	236.43	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	26.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	26.70	+	
		-	-	220kV Tsirang - Jigmeling Line	101.62	+	
-	-	132kV Gelephu - Salakati Line	24.46	+			
Total	593.29	Auxiliary Consumption & Transformation Losses at Generator end	0.482%				
3	336MW CHP	Unit- I	91.29	220kV CHP - Birpara Line- I	105.10	+	
		Unit- II	91.50	220kV CHP - Birpara Line- II	105.02	+	
		Unit- III	91.80	220kV CHP - Malbase Line- III	124.37	+	
		Unit- IV	91.49	220kV CHP - Semtokha Line- IV	16.31	+	
		-	-	220kV Malbase - Birpara Line	75.36	+	
		-	-	66kV CHP - Chumdo Line	8.50	+	
		-	-	66kV CHP - Gedu Line	4.76	+	
		-	-	3x3MVA, 66/11kV TFR	1.13	+	
		Total	366.08	Auxiliary Consumption & Transformation Losses at Generator end	0.243%		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	33.35	+	30MVA ICT(220/66kV) under shutdown
		Unit- II	12.10	66kV BHP - Lobeysa Line	23.50	+	
		Total	24.30	220kV BHP - Tsirang Line	7.82	+	
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 Generator end	0.061%		
6	126MW DHP	Unit-I	55.43	220kV DHP - Tsirang Line	97.05	+	220kV DHP_Dagapela Line on standby.
		Unit-II	42.07	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.40	+	
		Total	97.50	Auxiliary Consumption & Transformation Losses at Generator end	0.051%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Line	39.71	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	25.45	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.31	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	47.49	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.803%		

Note: Generation-Load Summary (MW) for July 05, 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	1,636.95	241.75	237.55	1,293.58	4.20
2	Eastern Grid	659.29	57.49	54.10	703.42	3.39
Total		2,296.24	299.24	291.65	1,997.00	7.59

Note: Generation-Load Summary for July 05, 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	1,644.06	212.22	196.15	1,366.77	16.07
2	Eastern Grid	857.28	43.95	40.76	878.40	3.19
Total		2,501.34	256.17	236.91	2,245.17	19.26

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.