

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 24, 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	96.57	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I & II under breakdown.
		Unit- II	98.76	400kV THP - Siliguri Line - II	0.00		
		Unit- III	68.15	400kV THP - Siliguri Line- IV	259.78		
		Unit- IV	60.43	400kV THP - Malbase Line - III	256.41	+	
		Unit- V	97.19	400kV Malbase - Siliguri Line	257.33	+	
		Unit- VI	99.32	-	-	-	
		Total	520.42	Auxiliary Consumption & Transformation Losses at Gen. end	0.813%		
2	720MW MHP	Unit-I	197.69	400kV MHP - Jigmeling Line - I	293.93	+	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	197.57	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.46	+	
		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)	-24.38	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	151.46	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	227.73	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	226.60	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	-38.30	-	
		-	-	80MVA, 220/132kV ICT - II (HV)	-38.33	-	
		-	-	220kV Tsirang - Jigmeling Line	99.86	+	
-	-	132kV Gelephu - Salakati Line	24.00	+			
Total	592.89	Auxiliary Consumption & Transformation Losses at Gen. end	0.590%				
3	336MW CHP	Unit- I	91.40	220kV CHP - Birpara Line- I	111.28	+	
		Unit- II	90.91	220kV CHP - Birpara Line- II	108.42	+	
		Unit- III	91.32	220kV CHP - Malbase Line- III	102.42	+	
		Unit- IV	91.28	220kV CHP - Semtokha Line- IV	21.58	+	
		-	-	220kV Malbase - Birpara Line	99.73	+	
		-	-	66kV CHP - Chumdo Line	7.51	+	
		-	-	66kV CHP - Gedu Line	6.92	+	
		-	-	3x3MVA, 66/11kV TFR	1.10	+	
		Total	364.91	Auxiliary Consumption & Transformation Losses at Gen. end	1.557%		
4	24MW BHP (U/S)	Unit- I	12.10	220kV BHP - Semtokha Line	34.55	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	25.40	+	
		Total	24.30	220kV BHP - Tsirang Line	4.66	+	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.92	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	2.26	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Gen. end	0.410%		
6	126MW DHP	Unit-I	51.37	220kV DHP - Tsirang Line	103.86	+	220kV DHP_Dagapela Line on standby.
		Unit-II	52.94	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.88	+	
		-	-	5MVA, 220/33kV TFR	0.45	+	
		Total	104.31	Auxiliary Consumption & Transformation Losses at Gen. end	0.000%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Line	37.32	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	27.57	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	53.81	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Gen. end	1.270%		

Note: Generation-Load Summary (MW) for July 24, 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	1,055.44	119.04	110.74	836.54	8.30
2	Eastern Grid	658.89	75.15	70.81	683.60	4.34
	Total	1,714.33	194.19	181.55	1,520.14	12.64

Note: Generation-Load Summary for July 24, 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	1,680.53	208.68	191.79	1,379.52	16.89
2	Eastern Grid	642.12	55.49	53.88	648.96	1.61
	Total	2,322.65	264.17	245.67	2,028.48	18.50

NOTE-BHP & MHP 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 25, 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	97.67	400kV THP - Siliguri Line - I	0.00		Unit III&IV under restoration. 400kV THP-Siliguri Line I & II under breakdown.
		Unit- II	97.33	400kV THP - Siliguri Line - II	0.00		
		Unit- III	108.75	400kV THP - Siliguri Line- IV	280.54	+	
		Unit- IV	100.03	400kV THP - Malbase Line - III	316.79	+	
		Unit- V	97.10	400kV Malbase - Siliguri Line	268.70	+	
		Unit- VI	98.32	-	-	-	
		Total	599.20	Auxiliary Consumption & Transformation Losses at Generator end	0.312%		
2	720MW MHP	Unit-I	197.66	400kV MHP - Jigmeling Line - I	294.04	+	Unit-III under 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 standby.
		Unit-II	197.57	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.65	+	
		Unit-IV	197.70	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)	-49.90	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	155.30	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	238.07	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	237.20	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	28.98	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.02	+	
		-	-	220kV Tsirang - Jigmeling Line	110.20	+	
		-	-	132kV Gelephu - Salakati Line	24.40	+	
Total	592.93	Auxiliary Consumption & Transformation Losses at Generator end	0.546%				
3	336MW CHP	Unit- I	91.73	220kV CHP - Birpara Line- I	104.74	+	
		Unit- II	90.70	220kV CHP - Birpara Line- II	104.18	+	
		Unit- III	91.62	220kV CHP - Malbase Line- III	116.07	+	
		Unit- IV	91.35	220kV CHP - Semtokha Line- IV	26.61	+	
		-	-	220kV Malbase - Birpara Line	81.56	+	
		-	-	66kV CHP - Chumdo Line	7.13	+	
		-	-	66kV CHP - Gedu Line	4.59	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
Total	365.40	Auxiliary Consumption & Transformation Losses at Generator end	0.378%				
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	26.24	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	23.70	+	
		Total	24.30	220kV BHP - Tsirang Line	13.97	+	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	1.13	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Generator end	1.505%		
6	126MW DHP	Unit-I	49.88	220kV DHP - Tsirang Line	99.32	+	220kV DHP_Dagapela Line on standby.
		Unit-II	49.91	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	99.79	Auxiliary Consumption & Transformation Losses at Generator end	0.170%		
7	60MW KHP	Unit- I	16.40	132kV KHP - Nangkhon Line	39.60	+	
		Unit-II	16.30	132kV KHP - Kilikhar Line	25.30	+	
		Unit- III	16.40	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.60	132kV Motanga - Rangia Line	47.90	+	
		Total	65.70	Auxiliary Consumption & Transformation Losses at Generator end	0.837%		

Note: Generation-Load Summary (MW) for July 25, 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	1,130.19	180.27	176.86	839.72	3.41
2	Eastern Grid	658.63	65.96	62.17	702.87	3.79
	Total	1,788.82	246.23	239.03	1,542.59	7.20

Note: Generation-Load Summary for July 25, 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	1,675.30	200.96	187.82	1,396.27	13.14
2	Eastern Grid	840.53	36.66	36.41	881.94	0.25
	Total	2,515.83	237.62	224.23	2,278.21	13.39

NOTE- BHP,JLG & MHP 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.
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2. This report is generated to give an idea of the generation & load flow for the system at a particular instant.