

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	August 7, 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	185.71	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	186.93	400kV THP - Siliguri Line - II	356.01	+	
		Unit- III	185.53	400kV THP - Siliguri Line- IV	338.92	+	
		Unit- IV	185.71	400kV THP - Malbase Line - III	411.96	+	
		Unit- V	186.19	400kV Malbase - Siliguri Line	314.93	+	
		Unit- VI	185.54	-	-	-	
		Total	1,115.61	Auxiliary Consumption & Transformation Losses at Gen. end	0.782%		
2	720MW MHP	Unit-I	197.66	400kV MHP - Jigmeling Line - I	294.76	+	Unit-III under Restoration . 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALL Line I(Interim) on standby.
		Unit-II	197.81	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	296.61	+	
		Unit-IV	197.89	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)	-16.70	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	149.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	224.71	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	224.71	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	25.40	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	25.40	+	
		-	-	220kV Tsirang - Jigmeling Line	69.75	+	
-	-	132kV Gelephu - Salakati Line	16.90	+			
Total	593.36	Auxiliary Consumption & Transformation Losses at Gen. end	0.335%				
3	336MW CHP	Unit- I	92.63	220kV CHP - Birpara Line- I	97.10	+	
		Unit- II	91.05	220kV CHP - Birpara Line- II	96.90	+	
		Unit- III	91.44	220kV CHP - Malbase Line- III	123.74	+	
		Unit- IV	91.78	220kV CHP - Semtokha Line- IV	29.50	+	
		-	-	220kV Malbase - Birpara Line	62.72	+	
		-	-	66kV CHP - Chumdo Line	9.97	+	
		-	-	66kV CHP - Gedu Line	6.23	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		Total	366.90	Auxiliary Consumption & Transformation Losses at Gen. end	0.616%		
4	24MW BHP (U/S)	Unit- I	11.80	220kV BHP - Semtokha Line	38.54	+	
		Unit- II	11.50	66kV BHP - Lobeysa Line	23.70	+	
		Total	23.30	220kV BHP - Tsirang Line	-3.04	-	
5	40MW BHP (L/S)	Unit- I	19.60	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	19.60	30MVA ICT, 220/66kV (HV)	3.39	+	
		Total	39.20	Auxiliary Consumption & Transformation Losses at Gen. end	3.856%		
6	126MW DHP	Unit-I	47.05	220kV DHP - Tsirang Line	76.64	+	220kV DHP_Dagapela Line on standby.
		Unit-II	30.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.00	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	77.08	Auxiliary Consumption & Transformation Losses at Gen. end	0.182%		
7	60MW KHP	Unit- I	16.53	132kV KHP - Nangkhon Line	37.79	+	
		Unit-II	16.56	132kV KHP - Kilikhar Line	27.41	+	
		Unit- III	16.59	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.61	132kV Motanga - Rangia Line	41.37	+	
		Total	66.29	Auxiliary Consumption & Transformation Losses at Gen. end	1.041%		

Note: Generation-Load Summary (MW) for August 07, 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	1,622.09	285.76	274.23	1,266.58	11.53
2	Eastern Grid	659.65	71.91	69.23	657.49	2.68
Total		2,281.74	357.67	343.46	1,924.07	14.21

Note: Generation-Load Summary for August 07, 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	1,614.01	220.72	204.90	1,314.44	15.82
2	Eastern Grid	840.11	64.24	62.89	854.72	1.35
Total		2,454.12	284.96	267.79	2,169.16	17.17

NOTE-BHP and MHPA 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:	August 8, 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	184.30	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	183.91	400kV THP - Siliguri Line - II	359.09	+	
		Unit- III	185.40	400kV THP - Siliguri Line- IV	342.79	+	
		Unit- IV	183.86	400kV THP - Malbase Line - III	399.99	+	
		Unit- V	186.42	400kV Malbase - Siliguri Line	323.56	+	
		Unit- VI	186.10	-	-	-	
		Total	1,109.99	Auxiliary Consumption & Transformation Losses at Generator end	0.732%		
2	720MW MHP	Unit-I	197.72	400kV MHP - Jigmeling Line - I	294.87	+	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 1(Interim) on standby.
		Unit-II	197.54	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	296.60	+	
		Unit-IV	197.77	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)	-51.40	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	157.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	238.27	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	238.37	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	15.30	+	
		-	-	220kV Tsirang - Jigmeling Line	82.70	+	
-	-	132kV Gelephu - Salakati Line	19.03	+			
Total	593.03	Auxiliary Consumption & Transformation Losses at Generator end	0.263%				
3	336MW CHP	Unit- I	91.52	220kV CHP - Birpara Line- I	94.98	+	
		Unit- II	90.88	220kV CHP - Birpara Line- II	95.26	+	
		Unit- III	91.49	220kV CHP - Malbase Line- III	139.22	+	
		Unit- IV	91.53	220kV CHP - Semtokha Line- IV	22.03	+	
		-	-	220kV Malbase - Birpara Line	47.42	+	
		-	-	66kV CHP - Chumdo Line	5.46	+	
		-	-	66kV CHP - Gedu Line	6.30	+	
		-	-	3x3MVA, 66/11kV TFR	0.86	+	
Total	365.42	Auxiliary Consumption & Transformation Losses at Generator end	0.358%				
4	24MW BHP (U/S)	Unit- I	11.80	220kV BHP - Semtokha Line	35.70	+	
		Unit- II	11.70	66kV BHP - Lobeysa Line	26.50	+	
		Total	23.50	220kV BHP - Tsirang Line	0.49	+	
5	40MW BHP (L/S)	Unit- I	20.10	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	20.10	30MVA ICT, 220/66kV (HV)	3.84	+	
		Total	40.20	Auxiliary Consumption & Transformation Losses at Generator end	0.173%		
6	126MW DHP	Unit-I	54.41	220kV DHP - Tsirang Line	84.97	+	220kV DHP_Dagapela Line on standby.
		Unit-II	31.01	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	85.42	Auxiliary Consumption & Transformation Losses at Generator end	0.176%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Line	42.50	+	
		Unit-II	16.54	132kV KHP - Kilikhar Line	22.89	+	
		Unit- III	16.62	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.49	132kV Motanga - Rangia Line	28.13	+	
		Total	66.15	Auxiliary Consumption & Transformation Losses at Generator end	0.544%		

Note: Generation-Load Summary (MW) for August 08, 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	1,624.53	278.73	270.04	1,263.10	8.69
2	Eastern Grid	659.18	60.28	58.36	681.60	1.92
	Total	2,283.71	339.01	328.40	1,944.70	10.61

Note: Generation-Load Summary for August 08, 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	1,673.90	216.63	199.70	1,372.56	16.93
2	Eastern Grid	840.09	53.23	51.80	871.57	1.43
	Total	2,513.99	269.86	251.50	2,244.13	18.36

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.
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