

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	August 26, 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	185.07	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	185.78	400kV THP - Siliguri Line - II	352.16	+	
		Unit- III	185.06	400kV THP - Siliguri Line- IV	337.26	+	
		Unit- IV	184.11	400kV THP - Malbase Line - III	414.02	+	
		Unit- V	185.87	400kV Malbase - Siliguri Line	313.92	+	
		Unit- VI	185.96	-	-	-	
		Total	1,111.85	Auxiliary Consumption & Transformation Losses at Gen. end	0.756%		
2	720MW MHP	Unit-I	197.71	400kV MHP - Jigmeling Line - I	390.30	+	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	194.71	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.65	400kV MHP - Jigmeling Line - III	392.30	+	
		Unit-IV	197.09	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)	-18.50	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	197.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	297.96	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	297.96	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	37.40	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	37.50	+	
		-	-	220kV Tsirang - Jigmeling Line	96.85	+	
-	-	132kV Gelephu - Salakati Line	28.97	+			
Total	787.16	Auxiliary Consumption & Transformation Losses at Gen. end	0.579%				
3	336MW CHP	Unit- I	91.48	220kV CHP - Birpara Line- I	102.80	+	
		Unit- II	91.14	220kV CHP - Birpara Line- II	102.28	+	
		Unit- III	91.67	220kV CHP - Malbase Line- III	121.30	+	
		Unit- IV	91.58	220kV CHP - Semtokha Line- IV	20.86	+	
		-	-	220kV Malbase - Birpara Line	74.05	+	
		-	-	66kV CHP - Chumdo Line	10.44	+	
		-	-	66kV CHP - Gedu Line	5.42	+	
		-	-	3x3MVA, 66/11kV TFR	1.40	+	
		Total	365.87	Auxiliary Consumption & Transformation Losses at Gen. end	0.374%		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	58.80	+	
		Unit- II	12.30	66kV BHP - Lobeysa Line	31.20	+	
		Total	24.70	220kV BHP - Tsirang Line	-25.22	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.91	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	8.42	+	
		Total	41.80	Auxiliary Consumption & Transformation Losses at Gen. end	1.218%		
6	126MW DHP	Unit-I	63.56	220kV DHP - Tsirang Line	126.18	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.17	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.00	+	
		-	-	5MVA, 220/33kV TFR	0.54	+	
		Total	126.73	Auxiliary Consumption & Transformation Losses at Gen. end	0.008%		
7	60MW KHP	Unit- I	16.38	132kV KHP - Nangkhoh Line	35.27	+	
		Unit-II	16.19	132kV KHP - Kilikhar Line	28.13	+	
		Unit- III	15.61	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	16.26	132kV Motanga - Rangia Line	44.30	+	
		Total	64.44	Auxiliary Consumption & Transformation Losses at Gen. end	1.111%		

Note: Generation-Load Summary (MW) for August 26, 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	1,670.95	291.63	283.03	1,282.47	8.60
2	Eastern Grid	851.60	81.46	76.18	866.99	5.28
	Total	2,522.55	373.09	359.21	2,149.46	13.88

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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	1,283.23	104.90	90.02	1,048.41	14.88
2	Eastern Grid	775.33	99.84	97.38	805.41	2.46
	Total	2,058.56	204.74	187.40	1,853.82	17.34

NOTE-BHP 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 27, 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	184.69	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	186.60	400kV THP - Siliguri Line - II	359.65	+	
		Unit- III	184.81	400kV THP - Siliguri Line- IV	343.75	+	
		Unit- IV	185.70	400kV THP - Malbase Line - III	400.38	+	
		Unit- V	185.49	400kV Malbase - Siliguri Line	326.11	+	
		Unit- VI	185.29	-	-	-	
		Total	1,112.58	Auxiliary Consumption & Transformation Losses at Generator end	0.791%		
2	720MW MHP	Unit-I	197.71	400kV MHP - Jigmeling Line - I	386.10	+	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. 500MVA ICT at JLG tripped.
		Unit-II	194.71	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.70	400kV MHP - Jigmeling Line - III	387.60	+	
		Unit-IV	197.09	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)	-52.20	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	205.07	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	310.42	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	310.42	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	22.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	22.80	+	
		-	-	220kV Tsirang - Jigmeling Line	99.60	+	
-	-	132kV Gelephu - Salakati Line	26.57	+			
Total	787.21	Auxiliary Consumption & Transformation Losses at Generator end	1.716%				
3	336MW CHP	Unit- I	91.58	220kV CHP - Birpara Line- I	99.68	+	
		Unit- II	90.97	220kV CHP - Birpara Line- II	99.75	+	
		Unit- III	91.65	220kV CHP - Malbase Line- III	141.21	+	
		Unit- IV	91.61	220kV CHP - Semtokha Line- IV	10.93	-	
		-	-	220kV Malbase - Birpara Line	52.97	+	
		-	-	66kV CHP - Chumdo Line	6.27	+	
		-	-	66kV CHP - Gedu Line	5.84	+	
		-	-	3x3MVA, 66/11kV TFR	0.79	+	
		Total	365.81	Auxiliary Consumption & Transformation Losses at Generator end	0.366%		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	58.40	+	
		Unit- II	12.30	66kV BHP - Lobeysa Line	28.10	+	
		Total	24.70	220kV BHP - Tsirang Line	-23.20	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.98	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	6.59	+	
		Total	41.80	Auxiliary Consumption & Transformation Losses at Generator end	3.338%		
6	126MW DHP	Unit-I	63.63	220kV DHP - Tsirang Line	126.24	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.25	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.10	+	
		-	-	5MVA, 220/33kV TFR		+	
		Total	126.88	Auxiliary Consumption & Transformation Losses at Generator end	0.504%		
7	60MW KHP	Unit- I	16.53	132kV KHP - Nangkhoh Line	41.04	+	
		Unit-II	16.54	132kV KHP - Kilikhar Line	22.97	+	
		Unit- III	15.60	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.13	132kV Motanga - Rangia Line	33.96	+	
		Total	64.80	Auxiliary Consumption & Transformation Losses at Generator end	0.756%		

Note: Generation-Load Summary (MW) for August 27, 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	1,671.77	290.26	278.36	1,281.91	11.90
2	Eastern Grid	852.01	65.17	51.17	886.44	14.00
	Total	2,523.78	355.43	329.53	2,168.35	25.90

Note: Generation-Load Summary for August 27, 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	1,579.62	189.32	169.82	1,307.62	19.50
2	Eastern Grid	752.23	38.82	39.21	796.09	-0.39
	Total	2,331.85	228.14	209.03	2,103.71	19.11

NOTE-BHP 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:
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