

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date: August 29, 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	181.77	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	182.75	400kV THP - Siliguri Line - II	345.77	+	
		Unit- III	185.01	400kV THP - Siliguri Line- IV	330.34	+	
		Unit- IV	181.12	400kV THP - Malbase Line - III	411.22	+	
		Unit- V	181.86	400kV Malbase - Siliguri Line	306.20	+	
		Unit- VI	183.23	-	-	-	
		Total	1,095.74	Auxiliary Consumption & Transformation Losses at Gen. end	0.768%		
2	720MW MHP	Unit-I	197.71	400kV MHP - Jigmeling Line - I	386.90	+	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	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)	-22.20	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	198.53	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	299.82	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	299.82	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	37.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	37.40	+	
		-	-	220kV Tsirang - Jigmeling Line	100.70	+	
-	-	132kV Gelephu - Salakati Line	31.87	+			
Total	787.16	Auxiliary Consumption & Transformation Losses at Gen. end	1.608%				
3	336MW CHP	Unit- I	92.50	220kV CHP - Birpara Line- I	99.55	+	
		Unit- II	91.56	220kV CHP - Birpara Line- II	99.86	+	
		Unit- III	92.19	220kV CHP - Malbase Line- III	129.21	+	
		Unit- IV	92.50	220kV CHP - Semtokha Line- IV	16.96	+	
		-	-	220kV Malbase - Birpara Line	62.23	+	
		-	-	66kV CHP - Chumdo Line	10.83	+	
		-	-	66kV CHP - Gedu Line	5.69	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	368.75	Auxiliary Consumption & Transformation Losses at Gen. end	1.369%		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	61.10	+	
		Unit- II	12.40	66kV BHP - Lobeyssa Line	25.63	+	
		Total	24.60	220kV BHP - Tsirang Line	-21.86	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	2.57	+	
		Total	41.80	Auxiliary Consumption & Transformation Losses at Gen. end	0.979%		
6	126MW DHP	Unit-I	63.64	220kV DHP - Tsirang Line	126.26	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.12	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.10	+	
		-	-	5MVA, 220/33kV TFR	0.54	+	
		Total	126.76	Auxiliary Consumption & Transformation Losses at Gen. end	-0.032%		
7	60MW KHP	Unit- I	16.60	132kV KHP - Nangkhoh Line	36.36	+	
		Unit-II	16.57	132kV KHP - Kilikhar Line	28.73	+	
		Unit- III	16.66	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	16.72	132kV Motanga - Rangia Line	46.55	+	
		Total	66.55	Auxiliary Consumption & Transformation Losses at Gen. end	1.713%		

Note: Generation-Load Summary (MW) for August 29, 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	1,657.65	313.00	301.03	1,243.95	11.97
2	Eastern Grid	853.71	77.82	64.02	876.59	13.80
	Total	2,511.36	390.82	365.05	2,120.54	25.77

Note: Generation-Load Summary for August 29, 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	1,660.25	217.61	201.23	1,366.46	16.38
2	Eastern Grid	667.40	79.46	56.62	664.12	22.84
	Total	2,327.65	297.07	257.85	2,030.58	39.22

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 30, 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	184.57	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	185.59	400kV THP - Siliguri Line - II	364.04	+	
		Unit- III	184.85	400kV THP - Siliguri Line- IV	346.81	+	
		Unit- IV	185.54	400kV THP - Malbase Line - III	394.83	+	
		Unit- V	185.59	400kV Malbase - Siliguri Line	329.62	+	
		Unit- VI	185.36	-	-	-	
		Total	1,111.50	Auxiliary Consumption & Transformation Losses at Generator end	0.524%		
2	720MW MHP	Unit-I	197.71	400kV MHP - Jigmeling Line - I	390.30	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALLI 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)	-50.70	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	205.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	309.30	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	309.30	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	26.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	26.20	+	
		-	-	220kV Tsirang - Jigmeling Line	104.34	+	
-	-	132kV Gelephu - Salakati Line	23.31	+			
Total	787.16	Auxiliary Consumption & Transformation Losses at Generator end	0.579%				
3	336MW CHP	Unit- I	92.23	220kV CHP - Birpara Line- I	97.11	+	
		Unit- II	92.83	220kV CHP - Birpara Line- II	97.27	+	
		Unit- III	92.41	220kV CHP - Malbase Line- III	145.83	+	
		Unit- IV	92.30	220kV CHP - Semtokha Line- IV	11.41	+	
		-	-	220kV Malbase - Birpara Line	45.07	+	
		-	-	66kV CHP - Chumdo Line	5.96	+	
		-	-	66kV CHP - Gedu Line	5.87	+	
		-	-	3x3MVA, 66/11kV TFR	0.71	+	
		Total	369.77	Auxiliary Consumption & Transformation Losses at Generator end	1.517%		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	57.22	+	
		Unit- II	12.30	66kV BHP - Lobeyssa Line	27.65	+	
		Total	24.70	220kV BHP - Tsirang Line	-18.69	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	3.82	-	
		Total	41.90	Auxiliary Consumption & Transformation Losses at Generator end	-0.721%		
6	126MW DHP	Unit-I	63.58	220kV DHP - Tsirang Line	126.10	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.08	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.90	+	
		-	-	5MVA, 220/33kV TFR	0.50	+	
		Total	126.66	Auxiliary Consumption & Transformation Losses at Generator end	0.047%		
7	60MW KHP	Unit- I	16.52	132kV KHP - Nangkhoh Line	41.69	+	
		Unit-II	16.63	132kV KHP - Kilikhar Line	23.31	+	
		Unit- III	16.35	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.51	132kV Motanga - Rangia Line	35.67	+	
		Total	66.01	Auxiliary Consumption & Transformation Losses at Generator end	1.121%		

Note: Generation-Load Summary (MW) for August 30, 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	1,674.53	290.27	280.16	1,279.92	10.11
2	Eastern Grid	853.17	74.13	68.83	883.38	5.30
	Total	2,527.70	364.40	348.99	2,163.30	15.41

Note: Generation-Load Summary for August 30, 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	1,658.67	198.47	180.42	1,390.77	18.05
2	Eastern Grid	736.92	69.81	43.10	736.54	26.71
	Total	2,395.59	268.28	223.52	2,127.31	44.76

NOTE-BHP data collected from site

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 - 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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