

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date: **August 31, 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	185.30	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	184.93	400kV THP - Siliguri Line - II	351.10	+	
		Unit- III	184.72	400kV THP - Siliguri Line- IV	336.77	+	
		Unit- IV	184.91	400kV THP - Malbase Line - III	416.50	+	
		Unit- V	185.27	400kV Malbase - Siliguri Line	311.82	+	
		Unit- VI	186.33	-	-	-	
		Total	1,111.46	Auxiliary Consumption & Transformation Losses at Gen. end	0.638%		
2	720MW MHP	Unit-I	197.95	400kV MHP - Jigmeling Line - I	391.24	+	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	196.58	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.86	400kV MHP - Jigmeling Line - III	393.60	+	
		Unit-IV	196.67	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)	-11.20	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	194.89	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	294.67	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	294.67	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	40.60	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	40.70	+	
		-	-	220kV Tsirang - Jigmeling Line	95.82	+	
-	-	132kV Gelephu - Salakati Line	32.56	+			
Total	789.06	Auxiliary Consumption & Transformation Losses at Gen. end	0.535%				
3	336MW CHP	Unit- I	91.94	220kV CHP - Birpara Line- I	100.67	+	
		Unit- II	91.35	220kV CHP - Birpara Line- II	101.04	+	
		Unit- III	92.03	220kV CHP - Malbase Line- III	119.33	+	
		Unit- IV	91.36	220kV CHP - Semtokha Line- IV	26.83	+	
		-	-	220kV Malbase - Birpara Line	72.95	+	
		-	-	66kV CHP - Chumdo Line	10.94	+	
		-	-	66kV CHP - Gedu Line	5.34	+	
		-	-	3x3MVA, 66/11kV TFR	1.29	+	
		Total	366.68	Auxiliary Consumption & Transformation Losses at Gen. end	0.338%		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	80.49	+	
		Unit- II	12.30	66kV BHP - Lobeyasa Line	11.10	+	
		Total	24.70	220kV BHP - Tsirang Line	-26.08	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	-12.66	-	
		Total	41.90	Auxiliary Consumption & Transformation Losses at Gen. end	0.300%		
6	126MW DHP	Unit-I	63.57	220kV DHP - Tsirang Line	126.15	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.15	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.20	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	126.72	Auxiliary Consumption & Transformation Losses at Gen. end	0.213%		
7	60MW KHP	Unit- I	16.47	132kV KHP - Nangkhoh Line	35.34	+	
		Unit-II	16.53	132kV KHP - Kilikhar Line	28.91	+	
		Unit- III	16.02	5MVA, 132/11kV TFR	0.45	+	
		Unit- IV	16.49	132kV Motanga - Rangia Line	47.84	+	
		Total	65.51	Auxiliary Consumption & Transformation Losses at Gen. end	1.230%		

Note: Generation-Load Summary (MW) for August 31, 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	1,671.46	301.29	294.69	1,274.35	6.60
2	Eastern Grid	854.57	85.76	80.73	864.63	5.03
	Total	2,526.03	387.05	375.42	2,138.98	11.63

Note: Generation-Load Summary for August 31, 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	1,562.00	232.61	215.36	1,284.27	17.25
2	Eastern Grid	632.20	36.73	10.54	640.59	26.19
	Total	2,194.20	269.34	225.90	1,924.86	43.44

NOTE-BHP and 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:	September 1, 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	186.28	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	184.50	400kV THP - Siliguri Line - II	360.87	+	
		Unit- III	185.27	400kV THP - Siliguri Line- IV	343.97	+	
		Unit- IV	186.35	400kV THP - Malbase Line - III	399.42	+	
		Unit- V	185.33	400kV Malbase - Siliguri Line	326.95	+	
		Unit- VI	186.37	-	-	-	
		Total	1,114.10	Auxiliary Consumption & Transformation Losses at Generator end	0.883%		
2	720MW MHP	Unit-I	197.76	400kV MHP - Jigmeling Line - I	391.47	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I(Interim) on standby.
		Unit-II	196.91	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.63	400kV MHP - Jigmeling Line - III	394.68	+	
		Unit-IV	197.16	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)	-57.00	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	206.52	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	312.96	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	312.96	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	23.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.60	+	
		-	-	220kV Tsirang - Jigmeling Line	104.70	+	
-	-	132kV Gelephu - Salakati Line	27.90	+			
Total	789.46	Auxiliary Consumption & Transformation Losses at Generator end	0.419%				
3	336MW CHP	Unit- I	91.41	220kV CHP - Birpara Line- I	98.02	+	
		Unit- II	91.09	220kV CHP - Birpara Line- II	97.85	+	
		Unit- III	90.97	220kV CHP - Malbase Line- III	136.82	+	
		Unit- IV	91.56	220kV CHP - Semtokha Line- IV	18.60	+	
		-	-	220kV Malbase - Birpara Line	52.90	+	
		-	-	66kV CHP - Chumdo Line	6.80	+	
		-	-	66kV CHP - Gedu Line	5.99	+	
		-	-	3x3MVA, 66/11kV TFR	0.80	+	
		Total	365.03	Auxiliary Consumption & Transformation Losses at Generator end	0.041%		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	76.10	+	
		Unit- II	12.30	66kV BHP - Lobeyssa Line	7.50	+	
		Total	24.70	220kV BHP - Tsirang Line	-18.36	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.91	+	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	-16.02	+	
		Total	41.90	Auxiliary Consumption & Transformation Losses at Generator end	0.676%		
6	126MW DHP	Unit-I	63.51	220kV DHP - Tsirang Line	126.23	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.16	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.40	+	
		Total	126.67	Auxiliary Consumption & Transformation Losses at Generator end	0.032%		
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkhoh Line	41.38	+	
		Unit-II	16.54	132kV KHP - Kilikhar Line	23.18	+	
		Unit- III	15.80	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.52	132kV Motanga - Rangia Line	43.75	+	
		Total	65.40	Auxiliary Consumption & Transformation Losses at Generator end	0.872%		

Note: Generation-Load Summary (MW) for September 01, 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	1,672.40	287.14	277.66	1,280.56	9.48
2	Eastern Grid	854.86	55.47	51.59	904.09	3.88
Total		2,527.26	342.61	329.25	2,184.65	13.36

Note: Generation-Load Summary for September 01, 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	1,535.70	171.46	155.16	1,284.78	16.30
2	Eastern Grid	658.98	45.01	42.36	693.43	2.65
Total		2,194.68	216.47	197.52	1,978.21	18.95

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.