

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 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	167.87	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	178.04	400kV THP - Siliguri Line - II	324.84	+	
		Unit- III	167.71	400kV THP - Siliguri Line- IV	311.47	+	
		Unit- IV	169.18	400kV THP - Malbase Line - III	380.72	+	
		Unit- V	165.79	400kV Malbase - Siliguri Line	289.12	+	
		Unit- VI	173.43	-	-	-	
		Total	1,022.02	Auxiliary Consumption & Transformation Losses at Gen. end	0.488%		
2	720MW MHP	Unit-I	197.97	400kV MHP - Jigmeling Line - I	294.16	+	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) on standby.
		Unit-II	197.90	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.87	+	
		Unit-IV	197.81	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)	-25.30	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	152.10	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	227.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	227.50	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	35.00	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	35.80	+	
		-	-	220kV Tsirang - Jigmeling Line	98.39	+	
-	-	132kV Gelephu - Salakati Line	22.36	+			
Total	593.68	Auxiliary Consumption & Transformation Losses at Gen. end	0.615%				
3	336MW CHP	Unit- I	92.10	220kV CHP - Birpara Line- I	100.76	+	
		Unit- II	90.47	220kV CHP - Birpara Line- II	101.17	+	
		Unit- III	92.35	220kV CHP - Malbase Line- III	134.64	+	
		Unit- IV	92.16	220kV CHP - Semtokha Line- IV	12.73	+	
		-	-	220kV Malbase - Birpara Line	60.67	+	
		-	-	66kV CHP - Chumdo Line	7.66	+	
		-	-	66kV CHP - Gedu Line	5.83	+	
		-	-	3x3MVA, 66/11kV TFR	1.10	+	
		Total	367.08	Auxiliary Consumption & Transformation Losses at Gen. end	0.869%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	47.01	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	25.10	+	
		Total	24.50	220kV BHP - Tsirang Line	-7.09	-	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	2.62	+	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Gen. end	0.438%		
6	126MW DHP	Unit-I	55.39	220kV DHP - Tsirang Line	109.89	+	220kV DHP_Dagapela Line on standby.
		Unit-II	55.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.60	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	110.39	Auxiliary Consumption & Transformation Losses at Gen. end	0.181%		
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkor Line	24.71	+	Unit IV tripped at 18:53 hrs.
		Unit-II	16.58	132kV KHP - Kilikhar Line	23.98	+	
		Unit- III	16.61	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	41.01	+	
		Total	49.73	Auxiliary Consumption & Transformation Losses at Gen. end	1.508%		

Note: Generation-Load Summary (MW) for July 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	1,565.69	279.27	272.20	1,188.03	7.07
2	Eastern Grid	643.41	71.33	66.93	670.47	4.40
	Total	2,209.10	350.60	339.13	1,858.50	11.47

Note: Generation-Load Summary for July 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	1,676.42	209.23	193.51	1,369.52	15.72
2	Eastern Grid	659.59	52.56	48.09	704.70	4.47
	Total	2,336.01	261.79	241.60	2,074.22	20.19

NOTE-BHP & 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.
 - 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 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	176.16	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	181.06	400kV THP - Siliguri Line - II	350.67	+	
		Unit- III	176.63	400kV THP - Siliguri Line- IV	335.75	+	
		Unit- IV	178.01	400kV THP - Malbase Line - III	381.76	+	
		Unit- V	176.23	400kV Malbase - Siliguri Line	318.72	+	
		Unit- VI	183.09	-	-	-	
		Total	1,071.18	Auxiliary Consumption & Transformation Losses at Generator end	0.280%		
2	720MW MHP	Unit-I	197.70	400kV MHP - Jigmeling Line - I	294.41	+	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) on standby.
		Unit-II	197.78	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.75	+	
		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)	-44.10	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	157.10	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	235.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	235.50	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	25.40	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	25.40	+	
		-	-	220kV Tsirang - Jigmeling Line	95.20	+	
-	-	132kV Gelephu - Salakati Line	18.97	+			
Total	593.37	Auxiliary Consumption & Transformation Losses at Generator end	0.541%				
3	336MW CHP	Unit- I	92.10	220kV CHP - Birpara Line- I	97.24	+	
		Unit- II	90.47	220kV CHP - Birpara Line- II	97.18	+	
		Unit- III	92.35	220kV CHP - Malbase Line- III	151.34	+	
		Unit- IV	92.16	220kV CHP - Semtokha Line- IV	5.90	-	
		-	-	220kV Malbase - Birpara Line	41.91	+	
		-	-	66kV CHP - Chumdo Line	6.70	+	
		-	-	66kV CHP - Gedu Line	5.49	+	
		-	-	3x3MVA, 66/11kV TFR	0.82	+	
		Total	367.08	Auxiliary Consumption & Transformation Losses at Generator end	0.657%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	49.10	+	
		Unit- II	12.20	66kV BHP - Lobeyssa Line	24.01	+	
		Total	24.50	220kV BHP - Tsirang Line	-9.14	-	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	1.59	+	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	2.009%		
6	126MW DHP	Unit-I	52.56	220kV DHP - Tsirang Line	105.15	+	220kV DHP_Dagapela Line on standby.
		Unit-II	53.02	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.10	+	
		-	-	5MVA, 220/33kV TFR	0.40	+	
		Total	105.58	Auxiliary Consumption & Transformation Losses at Generator end	0.028%		
7	60MW KHP	Unit- I	16.43	132kV KHP - Nangkhoh Line	28.27	+	KHP unit IV tripped at 06:26 hours
		Unit-II	16.35	132kV KHP - Kilikhar Line	20.25	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	34.65	+	
		Total	49.28	Auxiliary Consumption & Transformation Losses at Generator end	0.933%		

Note: Generation-Load Summary (MW) for August 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	1,610.04	273.37	267.70	1,241.47	5.67
2	Eastern Grid	642.65	56.13	52.46	681.72	3.67
	Total	2,252.69	329.50	320.16	1,923.19	9.34

Note: Generation-Load Summary for August 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	1,678.91	225.42	206.91	1,370.17	18.51
2	Eastern Grid	660.25	41.29	38.32	702.28	2.97
	Total	2,339.16	266.71	245.23	2,072.45	21.48

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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