

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 30, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
30-Oct-21	19:00hrs	406.14 MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00		Unit I under Shutdown. 400kV THP-Siliguri line I under breakdown.
		Unit- II	169.10	400kV THP - Siliguri Line - II	232.00	+	
		Unit- III	140.40	400kV THP - Siliguri Line- IV	221.00	+	
		Unit- IV	169.90	400kV THP - Malbase Line - III	281.00	+	
		Unit- V	128.60	400kV Malbase - Siliguri Line	207.00	+	
		Unit- VI	140.80	-	-	-	
		Total	748.80	Auxiliary Consumption & Transformation Losses at Gen. end	1.976%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	143.68	+	Unit-I & III on Standby. 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. JLG_ALI Line II (Direct) opened (Both end).
		Unit-II	144.38	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	144.76	+	
		Unit-IV	145.47	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)	10.71	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	106.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	165.74	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	30.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	30.56	+	
		-	-	220kV Tsirang - Jigmeling Line	57.49	+	
-	-	132kV Gelephu - Salakati Line	16.20	+			
Total	289.85	Auxiliary Consumption & Transformation Losses at Gen. end	0.486%				
3	336MW CHP	Unit- I	92.23	220kV CHP - Birpara Line- I	83.37	+	
		Unit- II	92.22	220kV CHP - Birpara Line- II	83.31	+	
		Unit- III	92.10	220kV CHP - Malbase Line- III	121.14	+	
		Unit- IV	92.60	220kV CHP - Semtokha Line- IV	55.94	+	
		-	-	220kV Malbase - Birpara Line	42.00	+	
		-	-	66kV CHP - Chumdo Line	15.50	+	
		-	-	66kV CHP - Gedu Line	5.10	+	
		-	-	3x3MVA, 66/11kV TFR	1.68	+	
		Total	369.15	Auxiliary Consumption & Transformation Losses at Gen. end	0.842%		
4	24MW BHP (U/S)	Unit- I	10.90	220kV BHP - Semtokha Line	51.70	+	
		Unit- II	10.70	66kV BHP - Lobeysa Line	28.48	+	
		Total	21.60	220kV BHP - Tsirang Line	-21.13	-	
5	40MW BHP (L/S)	Unit- I	19.30	5MVA, 66/11kV TFR	0.69	+	
		Unit- II	19.60	30MVA ICT, 220/66kV (HV)	8.16	+	
		Total	38.90	Auxiliary Consumption & Transformation Losses at Gen. end	1.256%		
6	126MW DHP	Unit-I	41.83	220kV DHP - Tsirang Line	81.93	+	220kV DHP_Dagapela Line on standby.
		Unit-II	40.49	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	6.50	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	82.32	Auxiliary Consumption & Transformation Losses at Gen. end	0.109%		
7	60MW KHP	Unit- I	13.07	132kV KHP - Nangkhoh Line	29.01	+	
		Unit-II	13.07	132kV KHP - Kilikhar Line	22.40	+	
		Unit- III	13.04	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	13.15	132kV Motanga - Rangia Line	25.10	+	
		Total	52.33	Auxiliary Consumption & Transformation Losses at Gen. end	0.994%		

Note: Generation-Load Summary (MW) for October 30, 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	1,260.77	334.60	322.34	868.68	12.26
2	Eastern Grid	342.18	85.73	83.80	313.94	1.93
	Total	1,602.95	420.33	406.14	1,182.62	14.19

Note: Generation-Load Summary for October 30, 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	792.06	203.26	196.73	530.29	6.53
2	Eastern Grid	307.33	55.95	54.07	309.89	1.88
	Total	1,099.39	259.21	250.80	840.18	8.41

NOTE-All loads 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:	October 31, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
30-Oct-21	19:00hrs	406.14 MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00		Unit I under breakdown. 400kV THP-Siliguri line I under breakdown. THP unit-III under shutdown.
		Unit- II	162.98	400kV THP - Siliguri Line - II	237.74	+	
		Unit- III	138.73	400kV THP - Siliguri Line- IV	226.44	+	
		Unit- IV	168.14	400kV THP - Malbase Line - III	265.82	+	
		Unit- V	127.51	400kV Malbase - Siliguri Line	216.20	+	
		Unit- VI	138.94	-	-	-	
		Total	736.30	Auxiliary Consumption & Transformation Losses at Generator end	0.856%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	147.18	+	Unit I and IV under Standby. 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. JLG_ALI Line II (Direct) opened (Both end).
		Unit-II	146.86	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	148.13	+	
		Unit-IV	150.20	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)	-31.36	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	124.35	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	190.54	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	20.16	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	20.47	+	
		-	-	220kV Tsirang - Jigmeling Line	78.15	+	
-	-	132kV Gelephu - Salakati Line	16.90	+			
Total	297.06	Auxiliary Consumption & Transformation Losses at Generator end	0.589%				
3	336MW CHP	Unit- I	91.24	220kV CHP - Birpara Line- I	80.03	+	
		Unit- II	91.08	220kV CHP - Birpara Line- II	79.95	+	
		Unit- III	91.27	220kV CHP - Malbase Line- III	138.52	+	
		Unit- IV	90.79	220kV CHP - Semtokha Line- IV	47.69	+	
		-	-	220kV Malbase - Birpara Line	23.03	+	
		-	-	66kV CHP - Chumdo Line	12.46	+	
		-	-	66kV CHP - Gedu Line	4.37	+	
		-	-	3x3MVA, 66/11kV TFR	1.09	+	
		Total	364.38	Auxiliary Consumption & Transformation Losses at Generator end	0.074%		
4	24MW BHP (U/S)	Unit- I	10.70	220kV BHP - Semtokha Line	45.83	+	
		Unit- II	10.50	66kV BHP - Lobeysa Line	25.62	+	
		Total	21.20	220kV BHP - Tsirang Line	-12.89	-	
5	40MW BHP (L/S)	Unit- I	19.10	5MVA, 66/11kV TFR	0.38	+	
		Unit- II	19.10	30MVA ICT, 220/66kV (HV)	5.30	+	
		Total	38.20	Auxiliary Consumption & Transformation Losses at Generator end	0.774%		
6	126MW DHP	Unit-I	40.85	220kV DHP - Tsirang Line	81.43	+	220kV DHP_Dagapela Line on standby.
		Unit-II	40.97	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	5.35	+	
		-	-	5MVA, 220/33kV TFR		+	
		Total	81.82	Auxiliary Consumption & Transformation Losses at Generator end	0.477%		
7	60MW KHP	Unit- I	12.51	132kV KHP - Nangkhon Line	30.70	+	
		Unit-II	12.49	132kV KHP - Kilikhar Line	18.52	+	
		Unit- III	12.48	5MVA, 132/11kV TFR	0.20	+	
		Unit- IV	12.53	132kV Motanga - Rangia Line	18.28	+	
		Total	50.01	Auxiliary Consumption & Transformation Losses at Generator end	1.180%		

Note: Generation-Load Summary (MW) for October 31, 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	1,241.90	300.36	298.29	863.39	2.07
2	Eastern Grid	347.07	75.15	72.81	350.07	2.34
	Total	1,588.97	375.51	371.10	1,213.46	4.41

Note: Generation-Load Summary for October 31, 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	804.59	180.28	172.26	582.66	8.02
2	Eastern Grid	404.21	39.19	36.83	406.67	2.36
	Total	1,208.80	219.47	209.09	989.33	10.38

NOTE-BHP, MHPA & Rangia data collected from site.

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- 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.
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