

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 16, 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	0.00	400kV THP - Siliguri Line - I	0.00		Unit I & Unit-II on Standby. 400kV THP-Siliguri line I under breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	147.31	+	
		Unit- III	129.17	400kV THP - Siliguri Line- IV	141.19	+	
		Unit- IV	129.13	400kV THP - Malbase Line - III	223.98	+	
		Unit- V	127.65	400kV Malbase - Siliguri Line	119.34	+	
		Unit- VI	129.18	-	-	-	
		Total	515.13	Auxiliary Consumption & Transformation Losses at Gen. end	0.514%		
2	720MW MHP	Unit-I	150.02	400kV MHP - Jigmeling Line - I	153.92	+	Unit-II & Unit III on standby. 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	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	155.20	+	
		Unit-IV	160.31	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)	22.70	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	69.08	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	106.09	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	106.09	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	29.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	30.10	+	
		-	-	220kV Tsirang - Jigmeling Line	39.60	+	
-	-	132kV Gelephu - Salakati Line	10.17	+			
Total	310.33	Auxiliary Consumption & Transformation Losses at Gen. end	0.390%				
3	336MW CHP	Unit- I	65.57	220kV CHP - Birpara Line- I	57.19	+	66kV CHP_Gedu line opened at 10:01hrs (08/10/2021) to regulate 66kV voltage.
		Unit- II	64.45	220kV CHP - Birpara Line- II	57.16	+	
		Unit- III	69.78	220kV CHP - Malbase Line- III	72.34	+	
		Unit- IV	69.98	220kV CHP - Semtokha Line- IV	59.07	+	
		-	-	220kV Malbase - Birpara Line	36.29	+	
		-	-	66kV CHP - Chumdo Line	22.45	+	
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	1.33	+	
		Total	269.78	Auxiliary Consumption & Transformation Losses at Gen. end	0.089%		
4	24MW BHP (U/S)	Unit- I	8.40	220kV BHP - Semtokha Line	27.72	+	
		Unit- II	8.20	66kV BHP - Lobeyssa Line	28.25	+	
		Total	16.60	220kV BHP - Tsirang Line	-8.86	-	
5	40MW BHP (L/S)	Unit- I	16.00	5MVA, 66/11kV TFR	0.00		
		Unit- II	15.70	30MVA ICT, 220/66kV (HV)	12.82	+	
		Total	31.70	Auxiliary Consumption & Transformation Losses at Gen. end	2.464%		
6	126MW DHP	Unit-I	50.55	220kV DHP - Tsirang Line	50.30	+	DHP Unit II on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.50	+	
		-	-	5MVA, 220/33kV TFR	0.24	+	
		Total	50.55	Auxiliary Consumption & Transformation Losses at Gen. end	0.020%		
7	60MW KHP	Unit- I	13.49	132kV KHP - Nangkhoh Line	29.02	+	
		Unit-II	13.51	132kV KHP - Kilikhar Line	23.90	+	
		Unit- III	13.54	5MVA, 132/11kV TFR	0.46	+	
		Unit- IV	13.45	132kV Motanga - Rangia Line	36.61	+	
		Total	53.99	Auxiliary Consumption & Transformation Losses at Gen. end	1.132%		

Note: Generation-Load Summary (MW) for October 16, 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	883.76	285.68	284.09	558.48	1.59
2	Eastern Grid	364.32	75.88	74.06	328.04	1.82
	Total	1,248.08	361.56	358.15	886.52	3.41

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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	1,044.98	218.36	208.57	752.93	9.79
2	Eastern Grid	446.76	57.43	54.26	463.02	3.17
	Total	1,491.74	275.79	262.83	1,215.95	12.96

NOTE-BHP, MHPA and Rangia 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:	October 17, 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	0.00	400kV THP - Siliguri Line - I	0.00		Unit-I & II on standby. 400kV THP-Siliguri line I under breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	214.25	+	
		Unit- III	169.27	400kV THP - Siliguri Line- IV	203.32	+	
		Unit- IV	167.92	400kV THP - Malbase Line - III	250.85	+	
		Unit- V	167.88	400kV Malbase - Siliguri Line	190.00	+	
		Unit- VI	169.85	-	-	-	
		Total	674.92	Auxiliary Consumption & Transformation Losses at Generator end	0.963%		
2	720MW MHP	Unit-I	110.15	400kV MHP - Jigmeling Line - I	186.81	+	MHP Unit II on standby. 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	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	130.68	400kV MHP - Jigmeling Line - III	187.78	+	
		Unit-IV	135.19	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)	-33.23	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	100.35	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	151.15	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	151.15	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.97	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	16.18	+	
		-	-	220kV Tsirang - Jigmeling Line	68.28	+	
-	-	132kV Gelephu - Salakati Line	16.17	+			
Total	376.02	Auxiliary Consumption & Transformation Losses at Generator end	0.380%				
3	336MW CHP	Unit- I	92.11	220kV CHP - Birpara Line- I	79.52	+	66kV CHP_Gedu line opened at 10:01hrs (08/10/2021) to regulate 66kV voltage.
		Unit- II	90.36	220kV CHP - Birpara Line- II	79.25	+	
		Unit- III	91.82	220kV CHP - Malbase Line- III	130.15	+	
		Unit- IV	91.70	220kV CHP - Semtokha Line- IV	57.11	+	
		-	-	220kV Malbase - Birpara Line	27.41	+	
		-	-	66kV CHP - Chumdo Line	18.23	+	
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	0.64	+	
Total	365.99	Auxiliary Consumption & Transformation Losses at Generator end	0.298%				
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	23.50	+	
		Unit- II	12.30	66kV BHP - Lobeysa Line	32.13	+	
		Total	24.50	220kV BHP - Tsirang Line	12.51	+	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.00		
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	5.36	+	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	-2.931%		
6	126MW DHP	Unit-I	59.37	220kV DHP - Tsirang Line	59.10	+	DHP-Unit II on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.01	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	59.37	Auxiliary Consumption & Transformation Losses at Generator end	-0.051%		
7	60MW KHP	Unit- I	16.56	132kV KHP - Nangkhoh Line	42.25	+	
		Unit-II	16.59	132kV KHP - Kilikhar Line	23.13	+	
		Unit- III	16.59	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.52	132kV Motanga - Rangia Line	38.60	+	
		Total	66.26	Auxiliary Consumption & Transformation Losses at Generator end	0.724%		

Note: Generation-Load Summary (MW) for October 17, 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	1,166.48	304.45	300.84	793.75	3.61
2	Eastern Grid	442.28	53.14	51.23	457.42	1.91
	Total	1,608.76	357.59	352.07	1,251.17	5.52

Note: Generation-Load Summary for October 17, 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	1,043.55	191.95	180.53	791.73	11.42
2	Eastern Grid	451.39	46.82	43.92	464.44	2.90
	Total	1,494.94	238.77	224.45	1,256.17	14.32

NOTE-BHP,MHPA & Rangia data collected from site

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