

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 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	139.26	400kV THP - Siliguri Line - I	0.00		Unit III under Shutdown. 400kV THP-Siliguri line I under breakdown.
		Unit- II	167.75	400kV THP - Siliguri Line - II	240.08	+	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	230.04	+	
		Unit- IV	168.41	400kV THP - Malbase Line - III	304.99	+	
		Unit- V	166.44	400kV Malbase - Siliguri Line	208.98	+	
		Unit- VI	139.13	-	-	-	
		Total	780.99	Auxiliary Consumption & Transformation Losses at Gen. end	0.753%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	146.17	+	Unit-I & 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. JLG_ALI Line II (Direct) on Ideal charge from India end.
		Unit-II	145.22	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	147.05	+	
		Unit-IV	150.23	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)	16.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	107.63	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	163.81	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	27.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	27.50	+	
		-	-	220kV Tsirang - Jigmeling Line	44.90	+	
-	-	132kV Gelephu - Salakati Line	13.00	+			
		Total	295.45	Auxiliary Consumption & Transformation Losses at Gen. end	0.755%		
3	336MW CHP	Unit- I	91.04	220kV CHP - Birpara Line- I	62.94	+	CHP Unit III tripped at 18:58Hrs
		Unit- II	93.25	220kV CHP - Birpara Line- II	63.13	+	
		Unit- III	0.00	220kV CHP - Malbase Line- III	89.56	+	
		Unit- IV	91.71	220kV CHP - Semtokha Line- IV	37.91	+	
		-	-	220kV Malbase - Birpara Line	33.60	+	
		-	-	66kV CHP - Chumdo Line	15.19	+	
		-	-	66kV CHP - Gedu Line	4.44	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	276.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.446%		
4	24MW BHP (U/S)	Unit- I	11.10	220kV BHP - Semtokha Line	69.00	+	Lobeysa Line
		Unit- II	11.00	66kV BHP - Lobeysa Line	28.85	+	
		Total	22.10	220kV BHP - Tsirang Line	-36.82	-	
5	40MW BHP (L/S)	Unit- I	20.00	5MVA, 66/11kV TFR	0.64	+	
		Unit- II	20.00	30MVA ICT, 220/66kV (HV)	7.92	+	
		Total	40.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.692%		
6	126MW DHP	Unit-I	42.85	220kV DHP - Tsirang Line	84.41	+	220kV DHP_Dagapela Line on standby.
		Unit-II	41.96	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	6.50	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	84.81	Auxiliary Consumption & Transformation Losses at Gen. end	0.118%		
7	60MW KHP	Unit- I	13.46	132kV KHP - Nangkhoh Line	29.82	+	
		Unit-II	13.47	132kV KHP - Kilikhar Line	23.10	+	
		Unit- III	13.42	5MVA, 132/11kV TFR	0.42	+	
		Unit- IV	13.52	132kV Motanga - Rangia Line	26.95	+	
		Total	53.87	Auxiliary Consumption & Transformation Losses at Gen. end	0.984%		

Note: Generation-Load Summary (MW) for October 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	1,203.90	320.23	319.09	838.77	1.14
2	Eastern Grid	349.32	82.83	80.07	311.39	2.76
	Total	1,553.22	403.06	399.16	1,150.16	3.90

Note: Generation-Load Summary for October 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	836.42	149.51	141.46	624.86	8.05
2	Eastern Grid	320.98	53.58	51.00	329.45	2.58
	Total	1,157.40	203.09	192.46	954.31	10.63

NOTE-BHP, MHPA and Rangia data collected from site

1. 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:

- 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.
- ii) The clocks of all the locations are not synchronized.

2. 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 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	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	167.76	400kV THP - Siliguri Line - II	251.05	+	
		Unit- III	138.88	400kV THP - Siliguri Line- IV	241.18	+	
		Unit- IV	168.37	400kV THP - Malbase Line - III	282.03	+	
		Unit- V	166.58	400kV Malbase - Siliguri Line	227.26	+	
		Unit- VI	140.08	-	-	-	
		Total	781.67	Auxiliary Consumption & Transformation Losses at Generator end	0.948%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	141.17	+	Unit I and IV under 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. JLG_ALI Line II (Direct) on Ideal charge from India end.
		Unit-II	140.22	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	142.39	+	
		Unit-IV	145.55	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmoo Line - I	0.00		
		-	-	132kV MHP - Yurmoo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-20.07	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	117.81	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	181.04	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	21.03	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	21.34	+	
		-	-	220kV Tsirang - Jigmeling Line	68.65	+	
-	-	132kV Gelephu - Salakati Line	18.31	+			
Total	285.77	Auxiliary Consumption & Transformation Losses at Generator end	0.773%				
3	336MW CHP	Unit- I	91.14	220kV CHP - Birpara Line- I	82.16	+	
		Unit- II	91.65	220kV CHP - Birpara Line- II	82.34	+	
		Unit- III	91.81	220kV CHP - Malbase Line- III	132.91	+	
		Unit- IV	90.89	220kV CHP - Semtokha Line- IV	48.48	+	
		-	-	220kV Malbase - Birpara Line	30.97	+	
		-	-	66kV CHP - Chumdo Line	12.42	+	
		-	-	66kV CHP - Gedu Line	4.99	+	
		-	-	3x3MVA, 66/11kV TFR	1.05	+	
		Total	365.49	Auxiliary Consumption & Transformation Losses at Generator end	0.312%		
4	24MW BHP (U/S)	Unit- I	10.90	220kV BHP - Semtokha Line	46.20	+	
		Unit- II	10.80	66kV BHP - Lobeysa Line	26.32	+	
		Total	21.70	220kV BHP - Tsirang Line	-13.22	-	
5	40MW BHP (L/S)	Unit- I	19.80	5MVA, 66/11kV TFR	0.36	+	
		Unit- II	19.90	30MVA ICT, 220/66kV (HV)	5.42	+	
		Total	39.70	Auxiliary Consumption & Transformation Losses at Generator end	2.834%		
6	126MW DHP	Unit-I	42.86	220kV DHP - Tsirang Line	84.38	+	220kV DHP_Dagapela Line on standby.
		Unit-II	41.96	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	5.52	+	
		-	-	5MVA, 220/33kV TFR	0.43	+	
		Total	84.82	Auxiliary Consumption & Transformation Losses at Generator end	0.012%		
7	60MW KHP	Unit- I	13.05	132kV KHP - Nangkhoh Line	31.98	+	
		Unit-II	13.09	132kV KHP - Kilikhar Line	19.56	+	
		Unit- III	13.01	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	13.13	132kV Motanga - Rangia Line	22.40	+	
		Total	52.28	Auxiliary Consumption & Transformation Losses at Generator end	0.803%		

Note: Generation-Load Summary (MW) for October 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	1,293.38	309.77	304.99	914.96	4.78
2	Eastern Grid	338.05	67.14	64.51	339.56	2.63
Total		1,631.43	376.91	369.50	1,254.52	7.41

Note: Generation-Load Summary for October 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	791.98	169.60	162.76	578.01	6.84
2	Eastern Grid	312.37	43.39	42.56	313.35	0.83
Total		1,104.35	212.99	205.32	891.36	7.67

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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