

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 30, 2020
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Fdr- I	230.22	+	Unit-I & II at Standby. 400kV THP-SIL Fdr II at standby 400kV THP-Malbase Fdr under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	-	
		Unit- III	120.13	400kV THP - Siliguri Fdr- IV	223.67	+	
		Unit- IV	140.58	400kV THP - Malbase Fdr- III	0.00	-	
		Unit- V	99.51	400kV Malbase - Siliguri	-44.00	+	
		Unit- VI	100.40	-	-	-	
		Total	460.62	Error at Station/Auxiliary Consumption/Losses	1.461%		
2	720MW MHP	Unit-I	130.15	400kV MHP - Jigmeling Fdr - I	131.48	+	Unit-II at standby. Unit-III under AMP(22/09/20-30/11/2020). 400kV MHP-Jigmeling Fdr II under Breakdown. 400kV MHP-Jigmeling Fdr III at standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	-	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00	-	
		Unit-IV	135.18	400kV MHP - Jigmeling Fdr - IV	132.65	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	265.33	Error at Station/Auxiliary Consumption/Losses	0.452%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	52.34	+	Unit I at standby
		Unit- II	77.05	220kV CHP - Birpara Fdr- II	52.06	+	
		Unit- III	74.50	220kV CHP - Malbase Fdr- III	93.95	+	
		Unit- IV	77.16	220kV CHP - Semtokha Fdr- IV	13.95	+	
		-	-	220kV Malbase - Birpara Fdr.	16.00	+	
		-	-	66kV CHP - Chumdo Fdr.	9.72	+	
		-	-	66kV CHP - Gedu Fdr.	4.36	+	
		-	-	3x3MVA, 66/11kV TFR	1.42	+	
				Total	228.71	Error at Station/Auxiliary Consumption/Losses	
4	24MW BHP (U/S)	Unit- I	7.86	220kV BHP - Semtokha Fdr.	26.87	+	
		Unit- II	7.86	66kV BHP - Lobeysa Fdr.	14.60	+	
		Total	15.72	220kV BHP - Tsirang Fdr.	4.15	+	
	40MW BHP (L/S)	Unit- I	15.53	5MVA, 66/11kV TFR	0.64	+	
		Unit- II	15.18	30MVA ICT, 220/66kV			
		Total	30.71	Error at Station/Auxiliary Consumption/Losses	0.366%		
5	126MW DHPC	Unit-I	56.30	220kV DHPC - Tsirang Fdr.	55.98	+	Unit II at standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.60	+	
		-	-	5MVA, 220/33kV TFR			
		Total	56.30	Error at Station/Auxiliary Consumption/Losses	0.568%		
6	60MW KHP	Unit- I	14.00	132kV KHP - Nangkhor Fdr- I	21.23	+	Unit III at standby
		Unit-II	14.00	132kV KHP - Kilihar Fdr- II	19.72	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.37	+	
		Unit- IV	14.00	132kV Gelephu - Salakati Fdr.	10.75	+	
		-	-	132kV Motanga - Rangia Fdr.	35.01	+	
		-	-	220kV Tsirang - Jigmeling	58.51	+	
		Total	42.00	Error at Station/Auxiliary Consumption/Losses	1.619%		

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)	Load Balance (MW)
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: Generation-Load Summary for October 30, 2019 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	816.75	245.90	237.17	525.05	8.73
2	Eastern Grid	428.71	71.50	63.88	403.01	7.62
	Total	1,245.46	317.40	301.05	928.06	16.35

NOTE: BHP & EASTERN DATAS 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, 2020
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Fdr- I	239.25	+	Unit-I , II & 400kV THP-SIL Fdr II under Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	119.02	400kV THP - Siliguri Fdr- IV	230.52	+	
		Unit- IV	140.06	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	119.16	400kV Malbase - Siliguri	10.00	-	
		Unit- VI	99.17	-	-	-	
		Total	477.41	Error at Station/Auxiliary Consumption/Losses	1.600%		
2	720MW MHP	Unit-I	180.13	400kV MHP - Jigmeling Fdr - I	179.15	+	Unit-III under maintenance (22/09/20-30/11/2020). Unit-II under standby. 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	180.58	400kV MHP - Jigmeling Fdr - IV	180.06	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	360.71	Error at Station/Auxiliary Consumption/Losses	0.416%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	57.99	+	Unit I standby
		Unit- II	74.06	220kV CHP - Birpara Fdr- II	57.90	+	
		Unit- III	75.66	220kV CHP - Malbase Fdr- III	112.43	+	
		Unit- IV	76.82	220kV CHP - Semtokha Fdr- IV	-14.60	-	
		-	-	220kV Malbase - Birpara Fdr.	-13.00	-	
		-	-	66kV CHP - Chumdo Fdr.	5.98	+	
		-	-	66kV CHP - Gedu Fdr.	4.43	+	
		-	-	3x3MVA, 66/11kV TFR	1.07	+	
		Total	226.54	Error at Station/Auxiliary Consumption/Losses	0.592%		
4	24MW BHP (U/S)	Unit- I	7.81	220kV BHP - Semtokha Fdr.	44.27	+	
		Unit- II	7.81	66kV BHP - Lobeysa Fdr.	13.30	+	
		Total	15.62	220kV BHP - Tsirang Fdr.	-12.24	-	
	40MW BHP (L/S)	Unit- I	15.00	5MVA, 66/11kV TFR	0.42	+	
		Unit- II	14.84	30MVA ICT, 220/66kV			
		Total	29.84	Error at Station/Auxiliary Consumption/Losses	-0.972%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	54.85	+	Unit I Standby
		Unit-II	55.18	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	55.18	Error at Station/Auxiliary Consumption/Losses	0.598%		
6	60MW KHP	Unit- I	14.50	132kV KHP - Nangkhon Fdr- I	25.89	+	Unit III standby
		Unit-II	14.40	132kV KHP - Kilihar Fdr- II	16.66	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.09	+	
		Unit- IV	14.60	132kV Gelephu - Salakati Fdr.	16.04	+	
		-	-	132kV Motanga - Rangia Fdr.	31.42	+	
		-	-	220kV Tsirang - Jigmeling	41.65	+	
		Total	43.50	Error at Station/Auxiliary Consumption/Losses	1.975%		

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)	Load Balance (MW)
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: Generation-Load Summary for October 31, 2019 at 09:00hrs

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	701.74	256.57	248.54	409.68	8.03
2	Eastern Grid	292.9	50.46	48.72	277.93	1.74
	Total	994.64	307.03	297.26	687.61	9.77

NOTES: KHP,MHP,MAL & Motanga datas 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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