

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 14, 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	168.56	400kV THP - Siliguri Fdr- I	152.13	+	Unit-IV standby.
		Unit- II	119.21	400kV THP - Siliguri Fdr- II	150.26	+	
		Unit- III	99.96	400kV THP - Siliguri Fdr- IV	146.55	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	198.90	+	
		Unit- V	99.97	400kV Malbase - Siliguri	132.35	+	
		Unit- VI	169.93	-	-	-	
		Total	657.63	Error at Station/Auxiliary Consumption/Losses	1.489%		
2	720MW MHP	Unit-I	130.12	400kV MHP - Jigmeling Fdr - I	198.47	+	Unit-III under maintenance (22/09/20-30/11/2020). 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	130.21	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	140.56	400kV MHP - Jigmeling Fdr - IV	199.36	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	400.89	Error at Station/Auxiliary Consumption/Losses	0.763%		
3	336MW CHP	Unit- I	75.44	220kV CHP - Birpara Fdr- I	91.00	+	
		Unit- II	74.90	220kV CHP - Birpara Fdr- II	90.90	+	
		Unit- III	78.34	220kV CHP - Malbase Fdr- III	113.64	+	
		Unit- IV	78.99	220kV CHP - Semtokha Fdr- IV	-3.43	-	
		-	-	220kV Malbase - Birpara Fdr.	63.93	+	
		-	-	66kV CHP - Chumdo Fdr.	6.67	+	
		-	-	66kV CHP - Gedu Fdr.	6.13	+	
		-	-	3x3MVA, 66/11kV TFR	1.32	+	
		Total	307.67	Error at Station/Auxiliary Consumption/Losses	0.468%		
4	24MW BHP (U/S)	Unit- I	10.64	220kV BHP - Semtokha Fdr.	34.51	+	
		Unit- II	10.64	66kV BHP - Lobeysa Fdr.	15.64	+	
		Total	21.28	220kV BHP - Tsirang Fdr.	9.82	+	
	40MW BHP (L/S)	Unit- I	19.43	5MVA, 66/11kV TFR	0.60	+	
		Unit- II	19.90	30MVA ICT, 220/66kV			
		Total	39.33	Error at Station/Auxiliary Consumption/Losses	0.066%		
5	126MW DHPC	Unit-I	38.52	220kV DHPC - Tsirang Fdr.	75.23	+	
		Unit-II	37.25	220kV Jigmeling - Dagapela Fdr.	2.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	75.77	Error at Station/Auxiliary Consumption/Losses	0.713%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	36.14	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	28.14	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	28.60	+	
		-	-	132kV Motanga - Rangia Fdr.	59.48	+	
		-	-	220kV Tsirang - Jigmeling	82.00	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	2.000%		

Note: Generation-Load Summary for October 14, 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	1,101.68	192.56	182.85	827.12	9.71
2	Eastern Grid	466.89	62.98	58.60	485.91	4.38
	Total	1,568.57	255.54	241.45	1,313.03	14.09

Note: Generation-Load Summary for October 14, 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	1099.73	241.50	237.25	792.89	4.25
2	Eastern Grid	458.37	68.36	66.76	455.35	1.60
	Total	1,558.10	309.86	304.01	1,248.24	5.85

NOTE: KHP, Motanga & MHP 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 15, 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	169.64	400kV THP - Siliguri Fdr- I	157.30	+	Unit-IV standby.
		Unit- II	100.26	400kV THP - Siliguri Fdr- II	155.83	+	
		Unit- III	101.01	400kV THP - Siliguri Fdr- IV	151.77	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	164.91	+	
		Unit- V	99.60	400kV Malbase - Siliguri	145.82	+	
		Unit- VI	170.53	-	-	-	
		Total	641.04	Error at Station/Auxiliary Consumption/Losses	1.752%		
2	720MW MHP	Unit-I	135.21	400kV MHP - Jigmeling Fdr - I	204.99	+	Unit-III under maintenance (22/09/20-30/11/2020). 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	135.27	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	140.56	400kV MHP - Jigmeling Fdr - IV	205.78	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	411.04	Error at Station/Auxiliary Consumption/Losses	0.066%		
3	336MW CHP	Unit- I	75.44	220kV CHP - Birpara Fdr- I	91.40	+	
		Unit- II	72.83	220kV CHP - Birpara Fdr- II	91.65	+	
		Unit- III	78.31	220kV CHP - Malbase Fdr- III	147.53	+	
		Unit- IV	79.07	220kV CHP - Semtokha Fdr- IV	-36.20	-	
		-	-	220kV Malbase - Birpara Fdr.	37.37	+	
		-	-	66kV CHP - Chumdo Fdr.	2.77	+	
		-	-	66kV CHP - Gedu Fdr.	6.52	+	
		-	-	3x3MVA, 66/11kV TFR	0.79	+	
		Total	305.65	Error at Station/Auxiliary Consumption/Losses	0.389%		
4	24MW BHP (U/S)	Unit- I	10.56	220kV BHP - Semtokha Fdr.	57.00	+	
		Unit- II	10.56	66kV BHP - Lobeysa Fdr.	14.44	+	
		Total	21.12	220kV BHP - Tsirang Fdr.	-12.30	-	
	40MW BHP (L/S)	Unit- I	19.15	5MVA, 66/11kV TFR	0.34	+	
		Unit- II	19.12	30MVA ICT, 220/66kV			
		Total	38.27	Error at Station/Auxiliary Consumption/Losses	-0.152%		
5	126MW DHPC	Unit-I	38.21	220kV DHPC - Tsirang Fdr.	76.46	+	
		Unit-II	38.74	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	76.95	Error at Station/Auxiliary Consumption/Losses	0.637%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	40.79	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	23.76	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	33.83	+	
		-	-	132kV Motanga - Rangia Fdr.	50.68	+	
		-	-	220kV Tsirang - Jigmeling	76.37	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.591%		

Note: Generation-Load summary for October 15, 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	1,083.03	175.52	163.80	831.14	11.72
2	Eastern Grid	477.04	58.13	56.81	495.28	1.32
	Total	1,560.07	233.65	220.61	1,326.42	13.04

Note: Generation-Load Summary for October 15, 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	1058.05	231.42	218.34	769.37	13.08
2	Eastern Grid	451.89	45.04	45.62	464.11	-0.58
	Total	1,509.94	276.46	263.96	1,233.48	12.50

NOTES: KHP, Motanga & MHP data collected from site.

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