

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 26, 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	300.47	+	Unit-I & 400kV THP-SIL Fdr II under Standby.
		Unit- II	187.92	400kV THP - Siliguri Fdr- II	0.00	-	
		Unit- III	170.74	400kV THP - Siliguri Fdr- IV	286.69	+	
		Unit- IV	184.74	400kV THP - Malbase Fdr- III	314.46	+	
		Unit- V	185.85	400kV Malbase - Siliguri	274.48	+	
		Unit- VI	187.29	-	-	-	
		Total	916.54	Error at Station/Auxiliary Consumption/Losses	1.627%		
2	720MW MHP	Unit-I	185.00	400kV MHP - Jigmeling Fdr - I	275.00	+	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	185.00	400kV MHP - Jigmeling Fdr - II	0.00	-	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00	-	
		Unit-IV	185.00	400kV MHP - Jigmeling Fdr - IV	276.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	555.00	Error at Station/Auxiliary Consumption/Losses	0.721%		
3	336MW CHP	Unit- I	92.08	220kV CHP - Birpara Fdr- I	119.60	+	
		Unit- II	91.75	220kV CHP - Birpara Fdr- II	119.48	+	
		Unit- III	91.78	220kV CHP - Malbase Fdr- III	160.86	+	
		Unit- IV	91.99	220kV CHP - Semtokha Fdr- IV	-43.93	-	
		-	-	220kV Malbase - Birpara Fdr.	74.08	+	
		-	-	66kV CHP - Chumdo Fdr.	5.66	+	
		-	-	66kV CHP - Gedu Fdr.	5.66	+	
		-	-	3x3MVA, 66/11kV TFR	1.43	+	
		Total	367.60	Error at Station/Auxiliary Consumption/Losses	-0.316%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Fdr.	75.60	+	
		Unit- II	12.20	66kV BHP - Lobeysa Fdr.	18.00	+	
		Total	24.50	220kV BHP - Tsirang Fdr.	-29.86	-	
	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.00	30MVA ICT, 220/66kV			
		Total	41.60	Error at Station/Auxiliary Consumption/Losses	2.209%		
5	126MW DHPC	Unit-I	63.48	220kV DHPC - Tsirang Fdr.	126.24	+	
		Unit-II	63.30	220kV Jigmeling - Dagapela Fdr.	2.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.78	Error at Station/Auxiliary Consumption/Losses	0.426%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	36.73	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	28.17	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.31	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	48.40	+	
		-	-	132kV Motanga - Rangia Fdr.	60.54	+	
		-	-	220kV Tsirang - Jigmeling	94.00	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.197%		

Note: Generation-Load Summary for October 26, 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	1,477.02	208.22	194.46	1,174.80	13.76
2	Eastern Grid	621.00	55.06	50.27	659.94	4.79
	Total	2,098.02	263.28	244.73	1,834.74	18.55

Note: Generation-Load Summary for October 26, 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	831.72	269.18	260.00	515.82	9.18
2	Eastern Grid	330.65	61.08	61.35	316.29	-0.27
	Total	1,162.37	330.26	321.35	832.11	8.91

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 27, 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	222.35		Unit-I, Unit-II & 400kV THP-SIL Fdr II under Standby
		Unit- II	186.87	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	119.72	400kV THP - Siliguri Fdr- IV	214.57		
		Unit- IV	120.51	400kV THP - Malbase Fdr- III	218.07	+	
		Unit- V	119.36	400kV Malbase - Siliguri	209.82	+	
		Unit- VI	120.78	-	-	-	
		Total	667.24	Error at Station/Auxiliary Consumption/Losses	1.836%		
2	720MW MHP	Unit-I	144.89	400kV MHP - Jigmeling Fdr - I	183.82	+	Unit-III under maintenance (22/09/20-30/11/2020). Unit-IV under standby. 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	144.92	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	80.10	400kV MHP - Jigmeling Fdr - IV	184.95	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	369.91	Error at Station/Auxiliary Consumption/Losses	0.308%		
3	336MW CHP	Unit- I	83.28	220kV CHP - Birpara Fdr- I	98.99	+	
		Unit- II	82.25	220kV CHP - Birpara Fdr- II	98.93	+	
		Unit- III	83.52	220kV CHP - Malbase Fdr- III	158.80	+	
		Unit- IV	84.45	220kV CHP - Semtokha Fdr- IV	-33.39	-	
		-	-	220kV Malbase - Birpara Fdr.	41.44	+	
		-	-	66kV CHP - Chumdo Fdr.	3.95	+	
		-	-	66kV CHP - Gedu Fdr.	5.34	+	
		-	-	3x3MVA, 66/11kV TFR	0.89	+	
		Total	333.50	Error at Station/Auxiliary Consumption/Losses	-0.003%		
4	24MW BHP (U/S)	Unit- I	10.30	220kV BHP - Semtokha Fdr.	54.00	+	
		Unit- II	10.00	66kV BHP - Lobeysa Fdr.	15.30	+	
		Total	20.30	220kV BHP - Tsirang Fdr.	-13.21	-	
	40MW BHP (L/S)	Unit- I	18.90	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	18.00	30MVA ICT, 220/66kV			
		Total	36.90	Error at Station/Auxiliary Consumption/Losses	0.569%		
5	126MW DHPC	Unit-I	52.26	220kV DHPC - Tsirang Fdr.	104.00	+	
		Unit-II	52.20	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	104.46	Error at Station/Auxiliary Consumption/Losses	0.440%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	40.55	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	24.56	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	35.60	+	
		-	-	132kV Motanga - Rangia Fdr.	50.48	+	
		-	-	220kV Tsirang - Jigmeling	58.66	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.939%		

Note: Generation-Load summary for October 27, 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	1,162.40	217.64	206.63	886.10	11.01
2	Eastern Grid	435.91	39.72	37.96	454.85	1.76
	Total	1,598.31	257.36	244.59	1,340.95	12.77

Note: Generation-Load Summary for October 27, 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	763.58	262.93	248.47	464.90	14.46
2	Eastern Grid	328.51	49.83	47.29	314.43	2.54
	Total	1,092.09	312.76	295.76	779.33	17.00

NOTES: KHP,MHP & 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.
 - 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.