

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 6, 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	198.00	+	Unit-I under shutdown Unit- II & 400kV THP-SIL Fdr III under Standby. 400kV Tala-Malbase & ICT under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	194.37	+	
		Unit- III	99.54	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	100.11	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	100.44	400kV Malbase - Siliguri	0.00		
		Unit- VI	100.91	-	-	-	
		Total	401.00	Error at Station/Auxiliary Consumption/Losses	2.152%		
2	720MW MHP	Unit-I	90.60	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under Standby. Unit-III under AMP(22/09/20- 30/11/2020). 400kV MHP-Jigmeling Fdr II under Breakdown. 400kV MHP-Jigmeling Fdr I under shutdown.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	112.71	+	
		Unit-IV	135.66	400kV MHP - Jigmeling Fdr - IV	112.05	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	226.26	Error at Station/Auxiliary Consumption/Losses	0.663%		
3	336MW CHP	Unit- I	63.51	220kV CHP - Birpara Fdr- I	41.14	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	40.80	+	
		Unit- III	61.97	220kV CHP - Malbase Fdr- III	99.05	+	
		Unit- IV	66.17	220kV CHP - Semtokha Fdr- IV	-2.89	-	
		-	-	220kV Malbase - Birpara Fdr.	-13.00	-	
		-	-	66kV CHP - Chumdo Fdr.	7.39	+	
		-	-	66kV CHP - Gedu Fdr.	4.14	+	
		-	-	3x3MVA, 66/11kV TFR	1.03	+	
		Total	191.65	Error at Station/Auxiliary Consumption/Losses	0.517%		
4	24MW BHP (U/S)	Unit- I	6.97	220kV BHP - Semtokha Fdr.	38.68	+	
		Unit- II	6.97	66kV BHP - Lobeysa Fdr.	12.93	+	
	Total	13.94	220kV BHP - Tsirang Fdr.	-10.25	-		
	40MW BHP (L/S)	Unit- I	13.99	5MVA, 66/11kV TFR	0.44	+	
Unit- II		13.97	30MVA ICT, 220/66kV				
		Total	27.96	Error at Station/Auxiliary Consumption/Losses	0.239%		
5	126MW DHPC	Unit-I	49.76	220kV DHPC - Tsirang Fdr.	49.50	+	Unit II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	2.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	49.76	Error at Station/Auxiliary Consumption/Losses	0.523%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	19.82	+	Unit I Annual Maintenance
		Unit-II	13.00	132kV KHP - Kilikhar Fdr- II	18.13	+	
		Unit- III	13.00	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	13.00	132kV Gelephu - Salakati Fdr.	0.66	+	
		-	-	132kV Motanga - Rangia Fdr.	22.19	+	
		-	-	220kV Tsirang - Jigmeling	49.18	+	
		Total	39.00	Error at Station/Auxiliary Consumption/Losses	1.821%		

Note: Generation-Load Summary for November 06, 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	684.31	173.82	165.84	461.31	7.98
2	Eastern Grid	265.26	66.83	64.62	247.61	2.21
	Total	949.57	240.65	230.46	708.92	10.19

Note: Generation-Load Summary for November 06, 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	767.66	284.34	273.30	446.79	11.04
2	Eastern Grid	263.08	62.46	58.94	237.15	3.52
	Total	1,030.74	346.80	332.24	683.94	14.56

NOTE: MHP, MAL, KHP & 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.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 7, 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	198.00	+	Unit-I under shutdown Unit- II & 400kV THP-SIL Fdr III under Standby. 400kV Tala-Malbase & ICT under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	194.37	+	
		Unit- III	99.54	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	100.11	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	100.44	400kV Malbase - Siliguri	0.00		
		Unit- VI	100.91	-	-	-	
		Total	401.00	Error at Station/Auxiliary Consumption/Losses	2.152%		
2	720MW MHP	Unit-I	99.30	400kV MHP - Jigmeling Fdr - I	0.00		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 I under shutdown
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	120.40	+	
		Unit-IV	140.21	400kV MHP - Jigmeling Fdr - IV	119.78	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	239.51	Error at Station/Auxiliary Consumption/Losses	-0.280%		
3	336MW CHP	Unit- I	63.51	220kV CHP - Birpara Fdr- I	41.14	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	40.80	+	
		Unit- III	61.97	220kV CHP - Malbase Fdr- III	99.05	+	
		Unit- IV	66.17	220kV CHP - Semtokha Fdr- IV	-2.89	-	
		-	-	220kV Malbase - Birpara Fdr.	-12.00	-	
		-	-	66kV CHP - Chumdo Fdr.	7.39	+	
		-	-	66kV CHP - Gedu Fdr.	4.14	+	
		-	-	3x3MVA, 66/11kV TFR	1.03	+	
		Total	191.65	Error at Station/Auxiliary Consumption/Losses	0.517%		
4	24MW BHP (U/S)	Unit- I	6.97	220kV BHP - Semtokha Fdr.	38.68	+	
		Unit- II	6.97	66kV BHP - Lobeysa Fdr.	12.93	+	
	Total	13.94	220kV BHP - Tsirang Fdr.	-10.25	-		
	40MW BHP (L/S)	Unit- I	13.99	5MVA, 66/11kV TFR	0.44	+	
Unit- II		13.97	30MVA ICT, 220/66kV				
		Total	27.96	Error at Station/Auxiliary Consumption/Losses	0.358%		
5	126MW DHPC	Unit-I	49.76	220kV DHPC - Tsirang Fdr.	49.50	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	49.76	Error at Station/Auxiliary Consumption/Losses	0.523%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	22.94	+	Unit I Annual Maintenance
		Unit-II	13.00	132kV KHP - Kilihar Fdr- II	14.98	+	
		Unit- III	13.00	5MVA, 132/11kV TFR	0.19	+	
		Unit- IV	13.00	132kV Gelephu - Salakati Fdr.	0.60	+	
		-	-	132kV Motanga - Rangia Fdr.	18.97	+	
		-	-	220kV Tsirang - Jigmeling	49.18	+	
		Total	39.00	Error at Station/Auxiliary Consumption/Losses	2.282%		

Note: Generation-Load summary for November 07, 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	684.31	172.82	164.04	462.31	8.78
2	Eastern Grid	278.51	67.94	67.72	259.75	0.22
	Total	962.82	240.76	231.76	722.06	9.00

Note: Generation-Load Summary for November 07, 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	617.55	266.19	258.37	323.76	7.82
2	Eastern Grid	262.8	56.81	50.30	233.59	6.51
	Total	880.35	323.00	308.67	557.35	14.33

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.
 - 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.