

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 1, 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	187	400kV THP - Siliguri Fdr- I	239	+	
		Unit- II	187	400kV THP - Siliguri Fdr- II	239	+	
		Unit- III	90	400kV THP - Siliguri Fdr- IV	231	+	
		Unit- IV	160	400kV THP - Malbase Fdr- III	272	+	
		Unit- V	187	400kV Malbase - Siliguri	219	+	
		Unit- VI	187	-	-	-	
		Total	998.00	Error at Station/Auxiliary Consumption/Losses	1.703%		
2	720MW MHP	Unit-I	100.50	400kV MHP - Jigmeling Fdr - I	159.55	+	Unit-III under Shutdown (22/09/20-17/10/2020). 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III opened due to less inflow.
		Unit-II	100.39	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	120.00	400kV MHP - Jigmeling Fdr - IV	159.78	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	320.89	Error at Station/Auxiliary Consumption/Losses	0.486%		
3	336MW CHP	Unit- I	92.00	220kV CHP - Birpara Fdr- I	119.10	+	
		Unit- II	92.00	220kV CHP - Birpara Fdr- II	119.00	+	
		Unit- III	92.00	220kV CHP - Malbase Fdr- III	151.60	+	
		Unit- IV	92.00	220kV CHP - Semtokha Fdr- IV	-37.90	-	
		-	-	220kV Malbase - Birpara Fdr.	81.00	+	
		-	-	66kV CHP - Chumdo Fdr.	5.10	+	
		-	-	66kV CHP - Gedu Fdr.	7.40	+	
		-	-	3x3MVA, 66/11kV TFR	1.31	+	
		Total	368.00	Error at Station/Auxiliary Consumption/Losses	0.649%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Fdr.	70.30	+	
		Unit- II	12.20	66kV BHP - Lobeyasa Fdr.	18.40	+	
		Total	24.50	220kV BHP - Tsirang Fdr.	-21.94	-	
	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	21.10	30MVA ICT, 220/66kV			
Total	41.70	Error at Station/Auxiliary Consumption/Losses	-2.130%				
5	126MW DHPC	Unit-I	59.22	220kV DHPC - Tsirang Fdr.	116.91	+	
		Unit-II	58.27	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	117.49	Error at Station/Auxiliary Consumption/Losses	0.494%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Fdr- I	37.09	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	27.23	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	46.52	+	
		-	-	132kV Motanga - Rangia Fdr.	59.74	+	
		-	-	220kV Tsirang - Jigmeling	97.94	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	2.091%		

Note: Generation-Load Summary for October 01, 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	1,549.69	204.65	187.99	1,247.10	16.66
2	Eastern Grid	386.89	59.24	56.30	425.59	2.94
	Total	1,936.58	263.89	244.29	1,672.69	19.60

Note: Generation-Load Summary for October 01, 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	1574.11	282.75	266.89	1244.74	15.86
2	Eastern Grid	538.04	66.61	58.10	518.05	8.51
	Total	2,112.15	349.36	324.99	1,762.79	24.37

NOTES: KHP & MHEP load 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 2, 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	187.87	400kV THP - Siliguri Fdr- I	267.80	+	
		Unit- II	188.37	400kV THP - Siliguri Fdr- II	265.12	+	
		Unit- III	150.74	400kV THP - Siliguri Fdr- IV	258.40	+	
		Unit- IV	186.50	400kV THP - Malbase Fdr- III	276.70	+	
		Unit- V	187.70	400kV Malbase - Siliguri	248.89	+	
		Unit- VI	187.23	-	-	-	
		Total	1,088.41	Error at Station/Auxiliary Consumption/Losses	1.873%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00	+	ALL units and feeders under shutdown due to flood.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	0.00	Error at Station/Auxiliary Consumption/Losses	#DIV/0!		
3	336MW CHP	Unit- I	91.23	220kV CHP - Birpara Fdr- I	122.09	+	
		Unit- II	91.32	220kV CHP - Birpara Fdr- II	121.73	+	
		Unit- III	91.88	220kV CHP - Malbase Fdr- III	172.57	+	
		Unit- IV	91.94	220kV CHP - Semtokha Fdr- IV	-60.94	-	
		-	-	220kV Malbase - Birpara Fdr.	68.65	+	
		-	-	66kV CHP - Chumdo Fdr.	1.65	+	
		-	-	66kV CHP - Gedu Fdr.	7.74	+	
		-	-	3x3MVA, 66/11kV TFR	0.90	+	
		Total	366.37	Error at Station/Auxiliary Consumption/Losses	0.172%		
4	24MW BHP (U/S)	Unit- I	11.83	220kV BHP - Semtokha Fdr.	81.10	+	
		Unit- II	11.83	66kV BHP - Lobeysa Fdr.	15.71	+	
		Total	23.66	220kV BHP - Tsirang Fdr.	-31.41	-	
	40MW BHP (L/S)	Unit- I	20.41	5MVA, 66/11kV TFR	0.40	+	
		Unit- II	20.77	30MVA ICT, 220/66kV			
		Total	41.18	Error at Station/Auxiliary Consumption/Losses	-2.331%		
5	126MW DHPC	Unit-I	58.24	220kV DHPC - Tsirang Fdr.	114.97	+	
		Unit-II	57.18	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	115.42	Error at Station/Auxiliary Consumption/Losses	0.390%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.85	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.39	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	52.26	+	
		-	-	132kV Motanga - Rangia Fdr.	50.17	+	
		-	-	220kV Tsirang - Jigmeling	80.56		
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.545%		

Note: Generation-Load summary for October 02, 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	1,635.04	201.80	182.39	1,352.68	19.41
2	Eastern Grid	66.00	44.13	43.77	102.43	0.36
	Total	1,701.04	245.93	226.16	1,455.11	19.77

Note: Generation-Load Summary for October 02, 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	1565.25	260.71	246.16	1,212.23	14.55
2	Eastern Grid	537.53	39.54	39.34	520.30	0.20
	Total	2,102.78	300.25	285.50	1,732.53	14.75

NOTES: KHP, MHP load 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.