

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 19, 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	0.00	+	Unit-IV & 400kV THP-SIL Fdr I under Standby Unit- I,II,400kV Tala-Malbase & ICT under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	168.88	+	
		Unit- III	100.38	400kV THP - Siliguri Fdr- IV	165.40	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	100.29	400kV Malbase - Siliguri	0.00		
		Unit- VI	139.43	-	-	-	
		Total	340.10	Error at Station/Auxiliary Consumption/Losses	1.711%		
2	720MW MHP	Unit-I	49.80	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II on Standby. Unit-III under AMP(22/09/20-30/11/2020). 400kV MHP-Jigmeling Fdr I under shutdown. 400kV MHP-Jigmeling Fdr II under Breakdown.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	93.65	+	
		Unit-IV	137.59	400kV MHP - Jigmeling Fdr - IV	93.11	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	187.39	Error at Station/Auxiliary Consumption/Losses	0.336%		
3	336MW CHP	Unit- I	55.74	220kV CHP - Birpara Fdr- I	31.94	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	32.02	+	
		Unit- III	49.80	220kV CHP - Malbase Fdr- III	88.61	+	
		Unit- IV	67.06	220kV CHP - Semtokha Fdr- IV	5.96	+	
		-	-	220kV Malbase - Birpara Fdr.	-47.42	-	
		-	-	66kV CHP - Chumdo Fdr.	7.06	+	
		-	-	66kV CHP - Gedu Fdr.	4.49	+	
		-	-	3x3MVA, 66/11kV TFR	1.74	+	
		Total	172.60	Error at Station/Auxiliary Consumption/Losses	0.452%		
4	24MW BHP (U/S)	Unit- I	6.19	220kV BHP - Semtokha Fdr.	27.10	+	
		Unit- II	6.19	66kV BHP - Lobeysa Fdr.	11.66	+	
	Total	12.38	220kV BHP - Tsirang Fdr.	-2.47	-		
	40MW BHP (L/S)	Unit- I	12.38	5MVA, 66/11kV TFR	0.80	+	
Unit- II		11.86	30MVA ICT, 220/66kV				
		Total	24.24	Error at Station/Auxiliary Consumption/Losses	-1.283%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	40.63	+	Unit I on Standby
		Unit-II	40.72	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	40.72	Error at Station/Auxiliary Consumption/Losses	0.221%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	16.17	+	Unit I under Annual Maintenance. Unit-IV under shutdown.
		Unit-II	16.00	132kV KHP - Kilihar Fdr- II	15.19	+	
		Unit- III	16.00	5MVA, 132/11kV TFR	0.24	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-8.00	-	
		-	-	132kV Motanga - Rangia Fdr.	13.10	+	
		-	-	220kV Tsirang - Jigmeling	34.56	+	
		Total	32.00	Error at Station/Auxiliary Consumption/Losses	1.250%		

Note: Generation-Load Summary for November 19, 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	590.04	204.66	199.44	350.82	5.22
2	Eastern Grid	219.39	62.09	61.06	191.86	1.03
	Total	809.43	266.75	260.50	542.68	6.25

Note: Generation-Load Summary for November 19, 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	602.52	277.42	270.83	301.22	6.59
2	Eastern Grid	218.5	60.01	54.95	182.37	5.06
	Total	821.02	337.43	325.78	483.59	11.65

NOTE: KHP & Motanga data 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 20, 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	0.00	+	Unit-IV & 400kV THP-SIL Fdr I under Standby Unit- I,II,400kV Tala-Malbase & ICT under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	165.00	+	
		Unit- III	100.00	400kV THP - Siliguri Fdr- IV	158.00	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	90.00	400kV Malbase - Siliguri	0.00		
		Unit- VI	140.00	-	-	-	
		Total	330.00	Error at Station/Auxiliary Consumption/Losses	2.121%		
2	720MW MHP	Unit-I	64.89	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under AMP (22/09/20-30/11/2020) Unit-II on 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	100.23	+	
		Unit-IV	135.61	400kV MHP - Jigmeling Fdr - IV	99.39	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	200.50	Error at Station/Auxiliary Consumption/Losses	0.439%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	18.80	+	Unit I on Standby. Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	18.80	+	
		Unit- III	81.80	220kV CHP - Malbase Fdr- III	91.00	+	
		Unit- IV	77.80	220kV CHP - Semtokha Fdr- IV	13.60	+	
		-	-	220kV Malbase - Birpara Fdr.	-33.80	-	
		-	-	66kV CHP - Chumdo Fdr.	8.70	+	
		-	-	66kV CHP - Gedu Fdr.	4.10	+	
		-	-	3x3MVA, 66/11kV TFR	1.44	+	
		Total	159.60	Error at Station/Auxiliary Consumption/Losses	1.980%		
4	24MW BHP (U/S)	Unit- I	5.00	220kV BHP - Semtokha Fdr.	28.20	+	
		Unit- II	6.70	66kV BHP - Lobeysa Fdr.	13.50	+	
		Total	11.70	220kV BHP - Tsirang Fdr.	-6.31	-	
	40MW BHP (L/S)	Unit- I	12.40	5MVA, 66/11kV TFR	0.38	+	
		Unit- II	12.50	30MVA ICT, 220/66kV			
		Total	24.90	Error at Station/Auxiliary Consumption/Losses	3.333%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	40.17	+	Unit-I on Standby
		Unit-II	40.20	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	40.20	Error at Station/Auxiliary Consumption/Losses	0.075%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	16.84	+	Unit I under Annual Maintenance
		Unit-II	10.09	132kV KHP - Kilihar Fdr- II	11.94	+	
		Unit- III	10.14	5MVA, 132/11kV TFR	0.43	+	
		Unit- IV	10.14	132kV Gelephu - Salakati Fdr.	2.40	+	
		-	-	132kV Motanga - Rangia Fdr.	19.68	+	
		-	-	220kV Tsirang - Jigmeling	29.50	+	
		Total	30.37	Error at Station/Auxiliary Consumption/Losses	3.820%		

Note: Generation-Load summary for November 20, 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	566.40	210.10	200.18	326.80	9.92
2	Eastern Grid	230.87	38.67	36.63	221.70	2.04
	Total	797.27	248.77	236.81	548.50	11.96

Note: Generation-Load Summary for November 20, 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	487.05	256.48	251.85	223.65	4.63
2	Eastern Grid	209.37	45.70	42.72	170.59	2.98
	Total	696.42	302.18	294.57	394.24	7.61

NOTES: All data 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.