

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 3, 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	56.76	+	Unit-III & IV at standby. Unit-I and II under shutdown. 400kV THP_SILI-II under shutdown & 400kV THP_SILI-IV standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	138.83	+	
		Unit- V	59.81	400kV Malbase - Siliguri	35.21	+	
		Unit- VI	140.03	-	-	-	
		Total	199.84	Error at Station/Auxiliary Consumption/Losses	4.25		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I,II & III standby. 400kV MHP-JLG I & II Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	40.23	+	
		Unit-IV	81.35	400kV MHP - Jigmeling Fdr - IV	40.20	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	81.35	Error at Station/Auxiliary Consumption/Losses	0.92		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-15.59		Unit-I & III under shutdown.
		Unit- II	49.38	220kV CHP - Birpara Fdr- II	0.00	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	22.78	+	
		Unit- IV	49.24	220kV CHP - Sementokha Fdr- IV	68.78	+	
		-	-	220kV Malbase - Birpara Fdr.	-42.01	-	
		-	-	66kV CHP - Chumdo Fdr.	17.67	+	
		-	-	66kV CHP - Gedu Fdr.	2.06	+	
		-	-	3x3MVA, 66/11kV TFR	1.57	+	
		Total	98.62	Error at Station/Auxiliary Consumption/Losses	1.35		
4	24MW BHP (U/S)	Unit- I	5.58	220kV BHP - Sementokha Fdr.	0.81	+	U/S Unit-II & L/S Unit-I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	16.83	+	
		Total	5.58	220kV BHP - Tsirang Fdr.	-1.06	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	11.50	30MVA ICT, 220/66kV			
Total	11.50	Error at Station/Auxiliary Consumption/Losses	0.35				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.41	+	Unit I under maintenance
		Unit-II	17.64	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.64	Error at Station/Auxiliary Consumption/Losses	0.23		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	4.44	+	Unit- III & IV Annual Maintenance
		Unit-II	16.00	132kV KHP - Kilikhar Fdr- II	10.65	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-27.94	-	
		-	-	132kV Motanga - Rangia Fdr.	-25.65	-	
		-	-	220kV Tsirang - Jigmeling	12.85	+	
		Total	16.00	Error at Station/Auxiliary Consumption/Losses	0.41		

Note: Load summary on February 03, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	333.18	285.96	280.48	34.37	5.48
2	Eastern Grid	97.35	83.36	82.03	26.84	1.33
	Total	430.53	369.32	362.51	61.21	6.81

Note: Load Summary on February 03, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	271.39	271.64	308.60
2	Eastern Grid	54.93	54.93	65.91
	National	326.32	326.57	374.51

NOTES: Motanga and KHP units data are 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:	February 4, 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	30.65	+	Unit- III & IV at standby. Unit- I & II under shutdown. 400kV THP_SILI-II under shutdown & 400kV THP_SILI-IV standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	106.76	+	
		Unit- V	58.52	400kV Malbase - Siliguri	12.71	+	
		Unit- VI	80.81	-	-	-	
		Total	139.33	Error at Station/Auxiliary Consumption/Losses	1.92		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I,II & III standby. 400kV MHP-JLG I & II standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	44.40	+	
		Unit-IV	91.94	400kV MHP - Jigmeling Fdr - IV	44.40	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	91.94	Error at Station/Auxiliary Consumption/Losses	3.14		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I & III under shutdown. Unit IV & 220kV CHP-BIR I under breakdown
		Unit- II	24.15	220kV CHP - Birpara Fdr- II	-24.79	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	12.71	+	
		Unit- IV	33.03	220kV CHP - Semtokha Fdr- IV	45.61	+	
		-	-	220kV Malbase - Birpara Fdr.	-53.38	-	
		-	-	66kV CHP - Chumdo Fdr.	13.57	+	
		-	-	66kV CHP - Gedu Fdr.	3.17	+	
		Total	57.18	Error at Station/Auxiliary Consumption/Losses	5.50		
4	24MW BHP (U/S)	Unit- I	5.48	220kV BHP - Semtokha Fdr.	13.55	+	U/S Unit-II & L/S Unit-I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	12.15	+	
		Total	5.48	220kV BHP - Tsirang Fdr.	-9.17	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.42	+	
		Unit- II	11.16	30MVA ICT, 220/66kV			
Total	11.16	Error at Station/Auxiliary Consumption/Losses	-0.31				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.74	+	Unit I under maintenance
		Unit-II	17.97	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.97	Error at Station/Auxiliary Consumption/Losses	0.23		
6	60MW KHP	Unit- I	16.16	132kV KHP - Nangkhon Fdr- I	8.39	+	Unit-III & IV Annual Maintenance. Unit-II standby
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	7.11	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-23.24	-	
		-	-	132kV Motanga - Rangia Fdr.	-26.60	-	
		-	-	220kV Tsirang - Jigmeling	-5.32	+	
		Total	16.16	Error at Station/Auxiliary Consumption/Losses	0.34		

Note: Load summary on February 04, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	231.12	271.25	263.91	-34.81	7.34
2	Eastern Grid	108.10	63.82	60.34	38.96	3.48
	Total	339.22	335.07	324.25	4.15	10.82

Note: Load Summary on February 04, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	251.62	276.34	285.13
2	Eastern Grid	44.37	55.94	66.55
	National	295.99	332.28	351.68

NOTES: 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.