

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 15, 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-III , IV on standby. Unit-I and II under shutdown. 400kV THP_SIL II under maintenance. 400kV THP_SIL I standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	44.73	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	150.12	+	
		Unit- V	59.70	400kV Malbase - Siliguri	25.38	+	
		Unit- VI	140.34	-	-	-	
		Total	200.04	Error at Station/Auxiliary Consumption/Losses	5.19		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II standby and Unit-IV under shutdown. 400kV MHP-JLG I, II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	90.20	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	87.20	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	90.20	Error at Station/Auxiliary Consumption/Losses	3.00		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-15.38	-	Unit-I & III under shutdown.220kV CHP-Birpara Fdr-II Standby.
		Unit- II	45.90	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	7.61	+	
		Unit- IV	53.80	220kV CHP - Sementokha Fdr- IV	85.50	+	
		-	-	220kV Malbase - Birpara Fdr.	-30.38	-	
		-	-	66kV CHP - Chumdo Fdr.	16.50	+	
		-	-	66kV CHP - Gedu Fdr.	3.31	+	
		-	-	3x3MVA, 66/11kV TFR	2.08	+	
Total	99.70	Error at Station/Auxiliary Consumption/Losses	0.08				
4	24MW BHP (U/S)	Unit- I	5.42	220kV BHP - Sementokha Fdr.	-23.42	-	U/S Unit-II & L/S Unit-I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	14.21	+	
		Total	5.42	220kV BHP - Tsirang Fdr.	24.73	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.75	+	
		Unit- II	11.14	30MVA ICT, 220/66kV			
Total	11.14	Error at Station/Auxiliary Consumption/Losses	0.29				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.90	+	Unit I under maintenance
		Unit-II	17.13	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.13	Error at Station/Auxiliary Consumption/Losses	0.23		
6	60MW KHP	Unit- I	12.36	132kV KHP - Nangkhon Fdr- I	9.50	+	Unit- III & IV under Annual Maintenance
		Unit-II	10.10	132kV KHP - Kilikhar Fdr- II	13.04	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.42	-	
		-	-	132kV Motanga - Rangia Fdr.	-11.16	-	
		-	-	220kV Tsirang - Jigmeling	39.33	+	
		Total	22.46	Error at Station/Auxiliary Consumption/Losses	-0.48		

Note: Load summary on February 15, 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	333.43	269.75	263.96	24.35	5.79
2	Eastern Grid	112.66	91.37	88.85	60.62	2.52
	Total	446.09	361.12	352.81	84.97	8.31

Note: Load Summary on February 15, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	245.40	245.40	308.60
2	Eastern Grid	54.88	59.27	65.91
	National	300.28	304.67	374.51

NOTES: KHP & CHP generation 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 16, 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- III & IV at standby. Unit- I & II under shutdown. 400kV THP_SILI-I & II under shutdown
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	20.90	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	104.70	+	
		Unit- V	60.18	400kV Malbase - Siliguri	6.72	-	
		Unit- VI	70.15	-	-	-	
		Total	130.33	Error at Station/Auxiliary Consumption/Losses	4.73		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & IV shutdown, Unit II standby 400kV MHP-JLG I, II & III standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	87.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	86.80	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	87.00	Error at Station/Auxiliary Consumption/Losses	0.20		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-13.63	-	Unit-I & III under shutdown. 220kV CHP-BIR II standby
		Unit- II	30.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	9.67	+	
		Unit- IV	30.00	220kV CHP - Semtokha Fdr- IV	45.69	+	
		-	-	220kV Malbase - Birpara Fdr.	-29.10	-	
		-	-	66kV CHP - Chumdo Fdr.	11.85	+	
		-	-	66kV CHP - Gedu Fdr.	2.73	+	
		-	-	3x3MVA, 66/11kV TFR	1.46	+	
		Total	60.00	Error at Station/Auxiliary Consumption/Losses	2.23		
4	24MW BHP (U/S)	Unit- I	5.32	220kV BHP - Semtokha Fdr.	0.00		U/S Unit-II and LS Unit I under shutdown. 220kV BHP-Semtokha Fdr under AMP.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	8.62	+	
		Total	5.32	220kV BHP - Tsirang Fdr.	6.85	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.82	+	
		Unit- II	10.93	30MVA ICT, 220/66kV			
Total	10.93	Error at Station/Auxiliary Consumption/Losses	-0.04				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.92	+	Unit I under maintenance
		Unit-II	17.14	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.14	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	6.47	+	Unit II standby. Unit-III & IV Annual Maintenance.
		Unit-II	15.49	132kV KHP - Kilikhar Fdr- II	8.20	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.70	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.40	-	
		-	-	132kV Motanga - Rangia Fdr.	-13.19	-	
		-	-	220kV Tsirang - Jigmeling	21.16	+	
		Total	15.49	Error at Station/Auxiliary Consumption/Losses	0.12		

Note: Load summary on February 16, 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	223.72	217.67	210.53	-15.11	7.14
2	Eastern Grid	102.49	65.44	65.12	58.21	0.32
	Total	326.21	283.11	275.65	43.10	7.46

Note: Load Summary on February 16, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	221.90	231.24	257.31
2	Eastern Grid	46.13	53.80	66.55
	National	268.03	285.04	323.86

NOTES: KHP & CHP generation 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.
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