

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 23, 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 at standby. Unit- I,II & 400kV Feeder I under AMP. 400kV THP_SILI II Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	46.27	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	148.89	+	
		Unit- V	58.87	400kV Malbase - Siliguri	29.03	+	
		Unit- VI	139.80	-	-	-	
		Total	198.67	Error at Station/Auxiliary Consumption/Losses	3.51		
2	720MW MHP	Unit-I	88.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II standby and Unit-IV under shutdown.Unit-III under breakdown. 400kV MHP-JLG I, II & III Standby.
		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	85.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	88.00	Error at Station/Auxiliary Consumption/Losses	3.00		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-8.71	-	Unit-I & III under shutdown.
		Unit- II	53.00	220kV CHP - Birpara Fdr- II	-8.56	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	19.40	+	
		Unit- IV	54.00	220kV CHP - Sementokha Fdr- IV	81.25	+	
		-	-	220kV Malbase - Birpara Fdr.	-29.31	-	
		-	-	66kV CHP - Chumdo Fdr.	15.95	+	
		-	-	66kV CHP - Gedu Fdr.	2.98	+	
		-	-	3x3MVA, 66/11kV TFR	1.85	+	
		Total	107.00	Error at Station/Auxiliary Consumption/Losses	2.84		
4	24MW BHP (U/S)	Unit- I	5.15	220kV BHP - Sementokha Fdr.	-22.21	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	13.80	+	
		Total	5.15	220kV BHP - Tsirang Fdr.	23.06	+	
	40MW BHP (L/S)	Unit- I	10.79	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.79	Error at Station/Auxiliary Consumption/Losses	0.44				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	15.94	+	Unit I under maintenance
		Unit-II	16.18	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.18	Error at Station/Auxiliary Consumption/Losses	0.24		
6	60MW KHP	Unit- I	12.20	132kV KHP - Nangkhon Fdr- I	8.05	+	Unit- III & IV Annual Maintenance
		Unit-II	10.09	132kV KHP - Kilikhar Fdr- II	13.96	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.60	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-12.02	-	
		-	-	132kV Motanga - Rangia Fdr.	-9.37	-	
		-	-	220kV Tsirang - Jigmeling	36.65	+	
		Total	22.29	Error at Station/Auxiliary Consumption/Losses	-0.32		

Note: Load summary on February 23, 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	337.79	272.42	265.39	28.72	7.03
2	Eastern Grid	110.29	83.33	80.65	63.61	2.68
	Total	448.08	355.75	346.04	92.33	9.71

Note: Load Summary on February 23, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	249.33	249.33	308.60
2	Eastern Grid	41.87	47.08	65.91
	National	291.20	296.41	374.51

NOTES: KHP & CHP loads 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 24, 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 standby. Unit- I & II under shutdown. 400kV THP_SILI-I under AMP 400kV THP-SIL II Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	23.36	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	122.50	+	
		Unit- V	69.72	400kV Malbase - Siliguri	6.15	-	
		Unit- VI	81.77	-	-	-	
		Total	151.49	Error at Station/Auxiliary Consumption/Losses	5.63		
2	720MW MHP	Unit-I	87.11	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II standby and Unit-IV under shutdown. Unit-III under breakdown. 400kV MHP-JLG I, II & III Standby.
		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	86.89	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	87.11	Error at Station/Auxiliary Consumption/Losses	0.22		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-12.42	-	Unit-I & III under shutdown.
		Unit- II	33.00	220kV CHP - Birpara Fdr- II	-12.46	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	12.76	+	
		Unit- IV	33.00	220kV CHP - Sementokha Fdr- IV	60.31	+	
		-	-	220kV Malbase - Birpara Fdr.	-29.81	-	
		-	-	66kV CHP - Chumdo Fdr.	13.01	+	
		-	-	66kV CHP - Gedu Fdr.	1.91	+	
		-	-	3x3MVA, 66/11kV TFR	1.43	+	
Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.46				
4	24MW BHP (U/S)	Unit- I	5.04	220kV BHP - Sementokha Fdr.	-12.11	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.31	+	
		Total	5.04	220kV BHP - Tsirang Fdr.	14.56	+	
	40MW BHP (L/S)	Unit- I	10.48	5MVA, 66/11kV TFR	0.55	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.48	Error at Station/Auxiliary Consumption/Losses	0.21				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.97	+	Unit I under maintenance
		Unit-II	18.18	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	18.18	Error at Station/Auxiliary Consumption/Losses	0.21		
6	60MW KHP	Unit- I	12.21	132kV KHP - Nangkhon Fdr- I	10.58	+	Unit-III & IV AMP
		Unit-II	10.31	132kV KHP - Kilikhar Fdr- II	11.11	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.33	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-9.20	-	
		-	-	132kV Motanga - Rangia Fdr.	-11.14	-	
		-	-	220kV Tsirang - Jigmeling	31.04	+	
		Total	22.52	Error at Station/Auxiliary Consumption/Losses	0.50		

Note: Load summary on February 24, 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	251.19	245.33	237.82	-25.18	7.51
2	Eastern Grid	109.63	74.12	73.40	66.55	0.72
	Total	360.82	319.45	311.22	41.37	8.23

Note: Load Summary on February 24, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	229.05	253.06	257.31
2	Eastern Grid	34.82	58.85	66.55
	National	263.87	311.91	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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