

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 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-III & IV at standby. Unit- I,II & 400kV Feeder I under shutdown. 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	40.29	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	147.27	+	
		Unit- V	60.30	400kV Malbase - Siliguri	20.22	+	
		Unit- VI	130.61	-	-	-	
		Total	190.91	Error at Station/Auxiliary Consumption/Losses	3.35		
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	74.76	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	72.39	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	74.76	Error at Station/Auxiliary Consumption/Losses	2.37		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-20.12	-	Unit-I & III under shutdown.220kV CHP- Birpara Fdr-II shutdown
		Unit- II	52.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	11.01	+	
		Unit- IV	53.00	220kV CHP - Sementokha Fdr- IV	88.70	+	
		-	-	220kV Malbase - Birpara Fdr.	-41.30	-	
		-	-	66kV CHP - Chumdo Fdr.	16.71	+	
		-	-	66kV CHP - Gedu Fdr.	4.00	+	
		-	-	3x3MVA, 66/11kV TFR	1.90	+	
Total	105.00	Error at Station/Auxiliary Consumption/Losses	2.80				
4	24MW BHP (U/S)	Unit- I	5.15	220kV BHP - Sementokha Fdr.	-23.52	-	U/S Unit-II under maintenace & L/S unit II standby
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	15.44	+	
		Total	5.15	220kV BHP - Tsirang Fdr.	22.78	+	
	40MW BHP (L/S)	Unit- I	10.89	5MVA, 66/11kV TFR	0.81	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.89	Error at Station/Auxiliary Consumption/Losses	0.53				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.43	+	Unit I under maintenance
		Unit-II	16.60	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.60	Error at Station/Auxiliary Consumption/Losses	0.17		
6	60MW KHP	Unit- I	12.85	132kV KHP - Nangkhon Fdr- I	8.10	+	Unit- III & IV under Annual Maintenance
		Unit-II	10.41	132kV KHP - Kilikhar Fdr- II	14.27	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.60	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-14.61	-	
		-	-	132kV Motanga - Rangia Fdr.	-9.98	+	
		-	-	220kV Tsirang - Jigmeling	26.25	+	
		Total	23.26	Error at Station/Auxiliary Consumption/Losses	0.29		

Note: Load summary on February 19, 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	328.55	303.21	296.36	-0.91	6.85
2	Eastern Grid	98.02	76.47	73.81	47.80	2.66
	Total	426.57	379.68	370.17	46.89	9.51

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

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	255.33	255.33	308.60
2	Eastern Grid	53.63	53.63	65.91
	National	308.96	308.96	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 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 at standby. Unit- I, II & III under shutdown. 400kV THP_SILI-I & II Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	10.37	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	106.48	+	
		Unit- V	60.50	400kV Malbase - Siliguri	-5.91	-	
		Unit- VI	60.18	-	-	-	
		Total	120.68	Error at Station/Auxiliary Consumption/Losses	3.83		
2	720MW MHP	Unit-I	89.67	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	89.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	89.67	Error at Station/Auxiliary Consumption/Losses	0.67		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-21.37	-	Unit-I & III under shutdown. 220kV CHP-BIR II under maintenance.
		Unit- II	30.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	4.99	+	
		Unit- IV	30.00	220kV CHP - Sementokha Fdr- IV	58.29	+	
		-	-	220kV Malbase - Birpara Fdr.	-38.58	-	
		-	-	66kV CHP - Chumdo Fdr.	11.95	+	
		-	-	66kV CHP - Gedu Fdr.	3.52	+	
		Total	60.00	Error at Station/Auxiliary Consumption/Losses	1.25		
4	24MW BHP (U/S)	Unit- I	5.23	220kV BHP - Sementokha Fdr.	-9.96		U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.78	+	
		Total	5.23	220kV BHP - Tsirang Fdr.	12.26	+	
	40MW BHP (L/S)	Unit- I	10.81	5MVA, 66/11kV TFR	0.68	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.81	Error at Station/Auxiliary Consumption/Losses	0.28				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.43	+	Unit I under maintenance
		Unit-II	16.66	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.66	Error at Station/Auxiliary Consumption/Losses	0.23		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	5.62	+	Unit-I standby. Unit-III & IV Annual Maintenance.
		Unit-II	15.11	132kV KHP - Kilikhar Fdr- II	8.96	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-13.25	-	
		-	-	132kV Motanga - Rangia Fdr.	-17.70		
		-	-	220kV Tsirang - Jigmeling	26.64	+	
		Total	15.11	Error at Station/Auxiliary Consumption/Losses	0.25		

Note: Load summary on February 20, 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	213.38	242.23	236.64	-55.49	5.59
2	Eastern Grid	104.78	73.37	72.45	58.05	0.92
	Total	318.16	315.60	309.09	2.56	6.51

Note: Load Summary on February 20, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	236.09	253.79	257.31
2	Eastern Grid	42.86	51.45	66.55
	National	278.95	305.24	323.86

NOTES: KHP & CHP generation collected from site.

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 - 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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