

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 25, 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	47.67	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	149.05	+	
		Unit- V	69.56	400kV Malbase - Siliguri	27.63	+	
		Unit- VI	130.23	-	-	-	
		Total	199.79	Error at Station/Auxiliary Consumption/Losses	3.07		
2	720MW MHP	Unit-I	83.00	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	82.70	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	83.00	Error at Station/Auxiliary Consumption/Losses	0.30		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00	-	Unit-I & III under shutdown. 220kV CHP-Birpara Fdr I standby.
		Unit- II	51.11	220kV CHP - Birpara Fdr- II	-17.38	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	7.21	+	
		Unit- IV	56.39	220kV CHP - Semtokha Fdr- IV	93.56	+	
		-	-	220kV Malbase - Birpara Fdr.	-33.48	-	
		-	-	66kV CHP - Chumdo Fdr.	17.91	+	
		-	-	66kV CHP - Gedu Fdr.	2.30	+	
		-	-	3x3MVA, 66/11kV TFR	2.18	+	
Total	107.50	Error at Station/Auxiliary Consumption/Losses	1.72				
4	24MW BHP (U/S)	Unit- I	5.31	220kV BHP - Semtokha Fdr.	-27.80	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	15.15	+	
		Total	5.31	220kV BHP - Tsirang Fdr.	27.71	+	
	40MW BHP (L/S)	Unit- I	10.92	5MVA, 66/11kV TFR	0.76	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.92	Error at Station/Auxiliary Consumption/Losses	0.41				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.42	+	Unit I under maintenance
		Unit-II	16.64	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.64	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	15.45	132kV KHP - Nangkhon Fdr- I	3.46	+	Unit- III & IV Annual Maintenance
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	11.39	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-14.06	-	
		-	-	132kV Motanga - Rangia Fdr.	-14.78	-	
		-	-	220kV Tsirang - Jigmeling	41.20	+	
		Total	15.45	Error at Station/Auxiliary Consumption/Losses	0.20		

Note: Load summary on February 25, 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	340.16	274.52	269.10	24.44	5.42
2	Eastern Grid	98.45	85.79	85.29	53.86	0.50
	Total	438.61	360.31	354.39	78.30	5.92

Note: Load Summary on February 25, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	263.92	263.92	308.60
2	Eastern Grid	50.09	50.09	65.91
	National	314.01	314.01	374.51

NOTES: KHP & JLG 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 26, 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	16.71	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	109.38	+	
		Unit- V	69.81	400kV Malbase - Siliguri	0.00	-	
		Unit- VI	60.18	-	-	-	
		Total	129.99	Error at Station/Auxiliary Consumption/Losses	3.90		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II standby and Unit-IV and Unit-I under shutdown. 400kV MHP-JLG I, II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	83.18	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	83.10	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	83.18	Error at Station/Auxiliary Consumption/Losses	0.08		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00	-	Unit-I & III under shutdown. 220kV CHP-Birpara Fdr I annual maintenance
		Unit- II	29.25	220kV CHP - Birpara Fdr- II	-23.47	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	18.16	+	
		Unit- IV	31.49	220kV CHP - Sementokha Fdr- IV	48.14	+	
		-	-	220kV Malbase - Birpara Fdr.	-51.17	-	
		-	-	66kV CHP - Chumdo Fdr.	13.05	+	
		-	-	66kV CHP - Gedu Fdr.	2.66	+	
		Total	60.74	Error at Station/Auxiliary Consumption/Losses	0.69		
4	24MW BHP (U/S)	Unit- I	6.16	220kV BHP - Sementokha Fdr.	6.51	+	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	14.29	+	
		Total	6.16	220kV BHP - Tsirang Fdr.	-2.44	-	
	40MW BHP (L/S)	Unit- I	12.89	5MVA, 66/11kV TFR	0.59	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	12.89	Error at Station/Auxiliary Consumption/Losses	0.10				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	26.97	+	Unit I under maintenance
		Unit-II	27.02	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	27.02	Error at Station/Auxiliary Consumption/Losses	0.05		
6	60MW KHP	Unit- I	16.13	132kV KHP - Nangkhon Fdr- I	5.00	+	Unit II standby, Unit-III & IV AMP
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	10.08	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-10.89	-	
		-	-	132kV Motanga - Rangia Fdr.	-4.27	-	
		-	-	220kV Tsirang - Jigmeling	22.00	+	
		Total	16.13	Error at Station/Auxiliary Consumption/Losses	0.65		

Note: Load summary on February 26, 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	236.80	272.74	268.00	-57.93	4.74
2	Eastern Grid	99.31	53.37	52.64	67.94	0.73
	Total	336.11	326.10	320.63	10.01	5.47

Note: Load Summary on February 26, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	243.81	264.61	257.31
2	Eastern Grid	36.67	47.02	66.55
	National	280.48	311.63	323.86

NOTES: KHP generation & JLG load collected from site.

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