

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 22, 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	45.32	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	150.93	+	
		Unit- V	60.00	400kV Malbase - Siliguri	24.17	+	
		Unit- VI	140.12	-	-	-	
		Total	200.12	Error at Station/Auxiliary Consumption/Losses	3.87		
2	720MW MHP	Unit-I	89.64	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	89.64	Error at Station/Auxiliary Consumption/Losses	0.64		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-10.04	-	Unit-I & III under shutdown.
		Unit- II	49.60	220kV CHP - Birpara Fdr- II	-10.24	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	10.49	+	
		Unit- IV	50.70	220kV CHP - Sementokha Fdr- IV	88.00	+	
		-	-	220kV Malbase - Birpara Fdr.	-24.56	-	
		-	-	66kV CHP - Chumdo Fdr.	16.54	+	
		-	-	66kV CHP - Gedu Fdr.	2.69	+	
		-	-	3x3MVA, 66/11kV TFR	1.85	+	
		Total	100.30	Error at Station/Auxiliary Consumption/Losses	1.01		
4	24MW BHP (U/S)	Unit- I	5.25	220kV BHP - Sementokha Fdr.	-27.07	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	14.12	+	
		Total	5.25	220kV BHP - Tsirang Fdr.	27.81	+	
	40MW BHP (L/S)	Unit- I	10.91	5MVA, 66/11kV TFR	0.79	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.91	Error at Station/Auxiliary Consumption/Losses	0.51				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.00	+	Unit I under maintenance
		Unit-II	16.65	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.65	Error at Station/Auxiliary Consumption/Losses	0.65		
6	60MW KHP	Unit- I	10.27	132kV KHP - Nangkhon Fdr- I	8.20	+	Unit- III & IV Annual Maintenance
		Unit-II	10.07	132kV KHP - Kilikhar Fdr- II	11.95	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.60	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-11.45	-	
		-	-	132kV Motanga - Rangia Fdr.	-5.29	-	
		-	-	220kV Tsirang - Jigmeling	41.92	+	
		Total	20.34	Error at Station/Auxiliary Consumption/Losses	-0.41		

Note: Load summary on February 22, 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	333.23	266.66	260.62	24.65	6.04
2	Eastern Grid	109.98	79.64	79.41	72.26	0.23
	Total	443.21	346.30	340.03	96.91	6.27

Note: Load Summary on February 22, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	250.94	250.94	308.60
2	Eastern Grid	56.83	56.83	65.91
	National	307.77	307.77	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 23, 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	22.65	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	113.34	+	
		Unit- V	60.12	400kV Malbase - Siliguri	7.07	-	
		Unit- VI	79.92	-	-	-	
		Total	140.04	Error at Station/Auxiliary Consumption/Losses	4.05		
2	720MW MHP	Unit-I	87.95	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	87.80	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	87.95	Error at Station/Auxiliary Consumption/Losses	0.15		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-10.34	-	Unit-I & III under shutdown.
		Unit- II	33.00	220kV CHP - Birpara Fdr- II	-10.34	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	13.25	+	
		Unit- IV	33.00	220kV CHP - Sementokha Fdr- IV	55.51	+	
		-	-	220kV Malbase - Birpara Fdr.	-26.89	-	
		-	-	66kV CHP - Chumdo Fdr.	12.30	+	
		-	-	66kV CHP - Gedu Fdr.	2.20	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	2.09		
4	24MW BHP (U/S)	Unit- I	5.09	220kV BHP - Sementokha Fdr.	-9.27	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.42	+	
		Total	5.09	220kV BHP - Tsirang Fdr.	12.61	+	
	40MW BHP (L/S)	Unit- I	10.44	5MVA, 66/11kV TFR	0.70	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.44	Error at Station/Auxiliary Consumption/Losses	0.07				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	15.95	+	Unit I under maintenance
		Unit-II	16.16	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.16	Error at Station/Auxiliary Consumption/Losses	0.21		
6	60MW KHP	Unit- I	12.62	132kV KHP - Nangkhon Fdr- I	11.74	+	Unit-III & IV AMP
		Unit-II	10.30	132kV KHP - Kilikhar Fdr- II	10.72	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.33	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-11.36	-	
		-	-	132kV Motanga - Rangia Fdr.	-10.85	-	
		-	-	220kV Tsirang - Jigmeling	26.90	+	
		Total	22.92	Error at Station/Auxiliary Consumption/Losses	0.13		

Note: Load summary on February 23, 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	237.73	228.68	222.26	-17.85	6.42
2	Eastern Grid	110.87	72.18	71.90	65.59	0.28
	Total	348.60	300.86	294.16	47.74	6.70

Note: Load Summary on February 23, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	218.71	249.33	257.31
2	Eastern Grid	42.94	47.08	66.55
	National	261.65	296.41	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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