

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 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	68.65	+	Unit-V standby. Unit-I & IV under shutdown. 400kV THP-SIL II & IV Standby
		Unit- II	59.81	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	98.72	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	145.79	+	
		Unit- V	0.00	400kV Malbase - Siliguri	46.99	+	
		Unit- VI	60.99	-	-	-	
		Total	219.52	Error at Station/Auxiliary Consumption/Losses	5.08		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit I, II Under 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	110.15	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	109.63	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	110.15	Error at Station/Auxiliary Consumption/Losses	0.52		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-3.74	-	Unit-I & III under shutdown.
		Unit- II	51.56	220kV CHP - Birpara Fdr- II	-3.72	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	40.00	+	
		Unit- IV	55.99	220kV CHP - Sementokha Fdr- IV	54.76	+	
		-	-	220kV Malbase - Birpara Fdr.	-36.14	-	
		-	-	66kV CHP - Chumdo Fdr.	13.95	+	
		-	-	66kV CHP - Gedu Fdr.	2.90	+	
		-	-	3x3MVA, 66/11kV TFR	2.00	+	
		Total	107.55	Error at Station/Auxiliary Consumption/Losses	1.40		
4	24MW BHP (U/S)	Unit- I	4.90	220kV BHP - Sementokha Fdr.	0.34	+	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.29	+	
		Total	4.90	220kV BHP - Tsirang Fdr.	1.39	+	
	40MW BHP (L/S)	Unit- I	9.95	5MVA, 66/11kV TFR	0.77	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
		Total	9.95	Error at Station/Auxiliary Consumption/Losses	0.06		
5	126MW DHPC	Unit-I	16.34	220kV DHPC - Tsirang Fdr.	16.14	+	Unit-II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.34	Error at Station/Auxiliary Consumption/Losses	0.20		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	11.27	+	Unit-I & IV under AM.
		Unit-II	13.06	132kV KHP - Kilikhar Fdr- II	13.67	+	
		Unit- III	13.03	5MVA, 132/11kV TFR	0.20	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-18.00	-	
		-	-	132kV Motanga - Rangia Fdr.	-3.18	-	
		-	-	220kV Tsirang - Jigmeling	15.23	+	
		Total	26.09	Error at Station/Auxiliary Consumption/Losses	0.95		

Note: Load summary on March 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	358.26	270.99	264.25	72.04	6.74
2	Eastern Grid	136.24	63.02	61.55	88.45	1.47
	Total	494.50	334.01	325.80	160.49	8.21

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

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	262.69	271.09	286.38
2	Eastern Grid	49.83	54.50	62.64
	National	312.52	325.59	349.02

NOTES:KHP,MHP 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:	March 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	37.38	+	Unit-V standby. Unit-I, III & IV under shutdown. 400kV THP-SIL II & IV Standby
		Unit- II	82.22	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	101.14	+	
		Unit- V	0.00	400kV Malbase - Siliguri	22.28	+	
		Unit- VI	60.12	-	-	-	
		Total	142.34	Error at Station/Auxiliary Consumption/Losses	3.82		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II Standby. Unit-IV under shutdown. 400kV MHP-JLG I,II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	124.69	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	123.20	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	124.69	Error at Station/Auxiliary Consumption/Losses	1.49		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-6.97	-	Unit-I & III under shutdown.
		Unit- II	31.65	220kV CHP - Birpara Fdr- II	-7.24	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	39.85	+	
		Unit- IV	33.47	220kV CHP - Sementokha Fdr- IV	25.88	+	
		-	-	220kV Malbase - Birpara Fdr.	-41.70	-	
		-	-	66kV CHP - Chumdo Fdr.	8.31	+	
		-	-	66kV CHP - Gedu Fdr.	3.12	+	
		-	-	3x3MVA, 66/11kV TFR	1.13	+	
		Total	65.12	Error at Station/Auxiliary Consumption/Losses	1.04		
4	24MW BHP (U/S)	Unit- I	5.06	220kV BHP - Sementokha Fdr.	10.94	+	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	9.75	+	
		Total	5.06	220kV BHP - Tsirang Fdr.	-5.29	-	
	40MW BHP (L/S)	Unit- I	10.74	5MVA, 66/11kV TFR	0.52	+	
		Unit- II		30MVA ICT, 220/66kV			
Total	10.74	Error at Station/Auxiliary Consumption/Losses	-0.12				
5	126MW DHPC	Unit-I	16.31	220kV DHPC - Tsirang Fdr.	16.11	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.31	Error at Station/Auxiliary Consumption/Losses	0.20		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	19.51	+	Unit-IV AMP. Unit III standby
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	12.48	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.66	-	
		-	-	132kV Motanga - Rangia Fdr.	8.94	+	
		-	-	220kV Tsirang - Jigmeling	9.12	+	
		Total	33.00	Error at Station/Auxiliary Consumption/Losses	0.71		

Note: Load summary on March 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	239.57	226.70	221.76	3.75	4.94
2	Eastern Grid	157.69	50.33	48.13	116.48	2.20
	Total	397.26	277.03	269.89	120.23	7.14

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

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	252.08	280.39	286.38
2	Eastern Grid	31.13	50.85	62.64
	National	283.21	331.24	349.02

NOTES: KHP load 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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