

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	January 16, 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	74.00	+	Unit- III & V AND 400kV THP_SIL II standby. Unit-I & II under shutdown. 400kV THP_SILL-IV under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	140.00	400kV THP - Malbase Fdr- III	141.00	+	
		Unit- V	0.00	400kV Malbase - Siliguri	56.00	+	
		Unit- VI	80.00	-	-	-	
		Total	220.00	Error at Station/Auxiliary Consumption/Losses	5.00		
2	720MW MHP	Unit-I	105.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under maintenance. Unit-II & IV standby. 400kV MHP-JLG I & II under shutdown. 400kV MHP-JLG IV standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	102.30	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	105.00	Error at Station/Auxiliary Consumption/Losses	2.70		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		220kV CHP-BIR I standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	-2.60	-	
		Unit- III	52.30	220kV CHP - Malbase Fdr- III	29.10	+	
		Unit- IV	51.63	220kV CHP - Sementokha Fdr- IV	58.00	+	
		-	-	220kV Malbase - Birpara Fdr.	-31.00	-	
		-	-	66kV CHP - Chumdo Fdr.	15.30	+	
		-	-	66kV CHP - Gedu Fdr.	4.10	+	
		Total	103.93	Error at Station/Auxiliary Consumption/Losses	-1.81		
4	24MW BHP (U/S)	Unit- I	6.60	220kV BHP - Sementokha Fdr.	4.99	+	U/S Unit-II & L/S Unit I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeysha Fdr.	17.57	+	
		Total	6.60	220kV BHP - Tsirang Fdr.	-3.60	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.87	+	
		Unit- II	13.30	30MVA ICT, 220/66kV			
		Total	13.30	Error at Station/Auxiliary Consumption/Losses	0.07		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	19.89	+	Unit I under shutdown
		Unit-II	20.10	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	20.10	Error at Station/Auxiliary Consumption/Losses	0.21		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	10.75	+	Unit-II & III Annual Maintenance. Unit-I Standby
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	4.27	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.60	+	
		Unit- IV	16.20	132kV Gelephu - Salakati Fdr.	-20.20	-	
		-	-	132kV Motanga - Rangia Fdr.	-11.41	-	
		-	-	220kV Tsirang - Jigmeling	10.68	+	
		Total	16.20	Error at Station/Auxiliary Consumption/Losses	0.58		

Note: Load summary on January 16, 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	363.93	256.85	253.38	96.40	3.47
2	Eastern Grid	121.20	61.19	57.91	70.69	3.28
	Total	485.13	318.04	311.29	167.09	6.75

Note: Load Summary on January 16, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	252.70	252.70	308.60
2	Eastern Grid	60.70	61.13	65.91
	National	313.40	313.83	374.51

NOTES: Eastern & Western Data 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:	January 17, 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	40.00	+	Unit- III & V at standby. Unit-I & II under shutdown. 400kV THP_SILI-IV under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	70.00	400kV THP - Malbase Fdr- III	106.00	+	
		Unit- V	0.00	400kV Malbase - Siliguri	22.00	+	
		Unit- VI	80.00	-	-	-	
		Total	150.00	Error at Station/Auxiliary Consumption/Losses	4.00		
2	720MW MHP	Unit-I	107.91	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under maintenance. Unit-I & II standby. 400kV MHP-JLG I & II under shutdown. 400kV MHP-JLG IV standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	105.00	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	107.91	Error at Station/Auxiliary Consumption/Losses	2.91		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I & II under shutdownn. 220kV CHP-BIR I Standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	-13.50	-	
		Unit- III	35.37	220kV CHP - Malbase Fdr- III	28.60	+	
		Unit- IV	35.50	220kV CHP - Sementokha Fdr- IV	36.30	+	
		-	-	220kV Malbase - Birpara Fdr.	-45.00	-	
		-	-	66kV CHP - Chumdo Fdr.	12.10	+	
		-	-	66kV CHP - Gedu Fdr.	4.30	+	
		-	-	3x3MVA, 66/11kV TFR	1.70	+	
Total	70.87	Error at Station/Auxiliary Consumption/Losses	1.37				
4	24MW BHP (U/S)	Unit- I	6.60	220kV BHP - Sementokha Fdr.	16.64	+	U/S Unit-II & L/S Unit I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	14.30	+	
		Total	6.60	220kV BHP - Tsirang Fdr.	-12.44	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.95	+	
		Unit- II	13.10	30MVA ICT, 220/66kV			
Total	13.10	Error at Station/Auxiliary Consumption/Losses	0.25				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	21.12	+	Unit I under shutdown
		Unit-II	21.36	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	21.36	Error at Station/Auxiliary Consumption/Losses	0.24		
6	60MW KHP	Unit- I	12.56	132kV KHP - Nangkhor Fdr- I	18.73	+	Unit-II & III Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	3.03	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.45	+	
		Unit- IV	10.16	132kV Gelephu - Salakati Fdr.	-17.20	-	
		-	-	132kV Motanga - Rangia Fdr.	-16.47	-	
		-	-	220kV Tsirang - Jigmeling	2.49	+	
		Total	22.72	Error at Station/Auxiliary Consumption/Losses	0.51		

Note: Load summary on January 17, 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	261.93	255.94	250.08	3.50	5.86
2	Eastern Grid	130.63	61.79	58.37	71.33	3.42
	Total	392.56	317.73	308.45	74.83	9.28

Note: Load Summary on January 17, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	241.79	263.77	308.60
2	Eastern Grid	47.08	61.33	65.91
	National	288.87	325.10	374.51

NOTES:Eastern and Western Data 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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