

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	January 14, 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	84.48	+	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	139.48	400kV THP - Malbase Fdr- III	149.42	+	
		Unit- V	0.00	400kV Malbase - Siliguri	63.66	+	
		Unit- VI	99.05	-	-	-	
		Total	238.53	Error at Station/Auxiliary Consumption/Losses	4.63		
2	720MW MHP	Unit-I	106.25	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	104.25	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	106.25	Error at Station/Auxiliary Consumption/Losses	2.00		
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	0.00	+	
		Unit- III	50.00	220kV CHP - Malbase Fdr- III	27.96	-	
		Unit- IV	51.00	220kV CHP - Sementokha Fdr- IV	53.67	+	
		-	-	220kV Malbase - Birpara Fdr.	-21.30	-	
		-	-	66kV CHP - Chumdo Fdr.	15.50	+	
		-	-	66kV CHP - Gedu Fdr.	4.36	+	
		Total	101.00	Error at Station/Auxiliary Consumption/Losses	-2.38		
4	24MW BHP (U/S)	Unit- I	6.52	220kV BHP - Sementokha Fdr.	12.23	-	U/S Unit-II & L/S Unit I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	17.08	+	
		Total	6.52	220kV BHP - Tsirang Fdr.	-10.33	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	13.35	30MVA ICT, 220/66kV			
Total	13.35	Error at Station/Auxiliary Consumption/Losses	0.00				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	20.69	+	Unit I at Standby.
		Unit-II	20.96	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	20.96	Error at Station/Auxiliary Consumption/Losses	0.27		
6	60MW KHP	Unit- I	13.25	132kV KHP - Nangkhon Fdr- I	17.87	+	Unit-II & III Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	4.36	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.57	+	
		Unit- IV	10.13	132kV Gelephu - Salakati Fdr.	-20.40	-	
		-	-	132kV Motanga - Rangia Fdr.	-6.10	-	
		-	-	220kV Tsirang - Jigmeling	7.76	+	
		Total	23.38	Error at Station/Auxiliary Consumption/Losses	0.58		

Note: Load summary on January 14, 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	380.36	245.76	243.24	126.84	2.52
2	Eastern Grid	129.63	59.64	57.06	77.75	2.58
	Total	509.99	305.40	300.30	204.59	5.10

Note: Load Summary on January 14, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	263.79	263.79	308.60
2	Eastern Grid	60.35	61.47	65.91
	National	324.14	325.26	374.51

NOTES: Eastern 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 15, 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	48.73	+	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	90.33	400kV THP - Malbase Fdr- III	117.62	+	
		Unit- V	0.00	400kV Malbase - Siliguri	30.07	+	
		Unit- VI	80.61	-	-	-	
		Total	170.94	Error at Station/Auxiliary Consumption/Losses	4.59		
2	720MW MHP	Unit-I	106.22	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	106.58	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	106.22	Error at Station/Auxiliary Consumption/Losses	-0.36		
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	-11.05	-	
		Unit- III	34.77	220kV CHP - Malbase Fdr- III	25.44	+	
		Unit- IV	34.08	220kV CHP - Sementokha Fdr- IV	37.09	+	
		-	-	220kV Malbase - Birpara Fdr.	-36.89	-	
		-	-	66kV CHP - Chumdo Fdr.	11.71	+	
		-	-	66kV CHP - Gedu Fdr.	4.50	+	
		Total	68.85	Error at Station/Auxiliary Consumption/Losses	-0.19		
4	24MW BHP (U/S)	Unit- I	6.51	220kV BHP - Sementokha Fdr.	17.54	+	U/S Unit-II & L/S Unit I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	14.53	+	
		Total	6.51	220kV BHP - Tsirang Fdr.	-13.17	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	13.18	30MVA ICT, 220/66kV			
Total	13.18	Error at Station/Auxiliary Consumption/Losses	-0.06				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	20.40	+	Unit-I at Standby
		Unit-II	20.63	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	20.63	Error at Station/Auxiliary Consumption/Losses	0.23		
6	60MW KHP	Unit- I	12.71	132kV KHP - Nangkhor Fdr- I	19.70	+	Unit-II & III Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	3.36	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	11.39	132kV Gelephu - Salakati Fdr.	-15.40	-	
		-	-	132kV Motanga - Rangia Fdr.	-2.89	-	
		-	-	220kV Tsirang - Jigmeling	4.97	+	
		Total	24.10	Error at Station/Auxiliary Consumption/Losses	0.64		

Note: Load summary on January 15, 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	280.11	244.28	239.71	30.86	4.57
2	Eastern Grid	130.32	47.00	46.72	88.29	0.28
	Total	410.43	291.28	286.43	119.15	4.85

Note: Load Summary on January 15, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	244.33	258.84	308.60
2	Eastern Grid	48.16	58.43	65.91
	National	292.49	317.27	374.51

NOTES:Eastern 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.