

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 11, 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 on standby. Unit-I and II under shutdown. 400kV THP_SIL I & II under maintenance.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	34.80	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	144.38	+	
		Unit- V	59.59	400kV Malbase - Siliguri	11.56	+	
		Unit- VI	120.81	-	-	-	
		Total	180.40	Error at Station/Auxiliary Consumption/Losses	1.22		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II 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	90.45	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	88.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	90.45	Error at Station/Auxiliary Consumption/Losses	2.45		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-22.48	-	Unit-I & III under shutdown.220kV CHP- Birpara Fdr-II Standby.
		Unit- II	40.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	40.00	220kV CHP - Semtokha Fdr- IV	77.49	+	
		-	-	220kV Malbase - Birpara Fdr.	-36.63	-	
		-	-	66kV CHP - Chumdo Fdr.	18.47	+	
		-	-	66kV CHP - Gedu Fdr.	2.17	+	
		Total	80.00	Error at Station/Auxiliary Consumption/Losses	2.46		
4	24MW BHP (U/S)	Unit- I	5.31	220kV BHP - Semtokha Fdr.	0.00		U/S Unit-II & L/S Unit-I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	8.42	+	
		Total	5.31	220kV BHP - Tsirang Fdr.	-3.34	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.23	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	0.00	Error at Station/Auxiliary Consumption/Losses	0.00				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.94	+	Unit I under maintenance
		Unit-II	17.16	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.16	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	12.50	132kV KHP - Nangkhon Fdr- I	10.90	+	Unit- III & IV under Annual Maintenance
		Unit-II	10.36	132kV KHP - Kilikhar Fdr- II	11.30	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-32.37	-	
		-	-	132kV Motanga - Rangia Fdr.	-9.56	-	
		-	-	220kV Tsirang - Jigmeling	9.40	+	
		Total	22.86	Error at Station/Auxiliary Consumption/Losses	0.26		

Note: Load summary on February 11, 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	282.87	286.22	282.32	-12.75	3.90
2	Eastern Grid	113.31	76.64	73.93	46.07	2.71
	Total	396.18	362.86	356.25	33.32	6.61

Note: Load Summary on February 11, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	198.06	198.06	308.60
2	Eastern Grid	66.55	66.55	65.91
	National	264.61	264.61	374.51

NOTES:

- 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 12, 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 at standby. Unit- I & II under shutdown. 400kV THP_SILI-I & II under shutdown
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	18.71	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	119.02	+	
		Unit- V	59.82	400kV Malbase - Siliguri	0.00	-	
		Unit- VI	79.88	-	-	-	
		Total	139.70	Error at Station/Auxiliary Consumption/Losses	1.97		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & IV shutdown, Unit II standby 400kV MHP-JLG I, II & III standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	90.50	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	88.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	90.50	Error at Station/Auxiliary Consumption/Losses	2.50		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-26.63	-	Unit-I & III under shutdown. 220kV CHP-BIR II standby
		Unit- II	30.80	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	3.85	+	
		Unit- IV	33.20	220kV CHP - Sementokha Fdr- IV	66.82	+	
		-	-	220kV Malbase - Birpara Fdr.	-45.82	-	
		-	-	66kV CHP - Chumdo Fdr.	14.08	+	
		-	-	66kV CHP - Gedu Fdr.	2.05	+	
		-	-	3x3MVA, 66/11kV TFR	1.63	+	
		Total	64.00	Error at Station/Auxiliary Consumption/Losses	2.20		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Sementokha Fdr.	-0.62	-	U/S Unit-II & 66kV SY under maintenance.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	0.00	+	
		Total	0.00	220kV BHP - Tsirang Fdr.	7.20	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.30	+	
		Unit- II	6.70	30MVA ICT, 220/66kV			
Total	6.70	Error at Station/Auxiliary Consumption/Losses	-0.18				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.92	+	Unit I under maintenance
		Unit-II	17.15	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.15	Error at Station/Auxiliary Consumption/Losses	0.23		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	8.08	+	Unit-III & IV Annual Maintenance. Unit-I standby
		Unit-II	16.39	132kV KHP - Kilikhar Fdr- II	7.81	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.78	-	
		-	-	132kV Motanga - Rangia Fdr.	-7.04	-	
		-	-	220kV Tsirang - Jigmeling	22.07	+	
		Total	16.39	Error at Station/Auxiliary Consumption/Losses	0.20		

Note: Load summary on February 12, 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	227.55	259.22	255.00	-53.74	4.22
2	Eastern Grid	106.89	63.78	61.08	65.18	2.70
	Total	334.44	323.00	316.08	11.44	6.92

Note: Load Summary on February 12, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	215.46	252.33	285.13
2	Eastern Grid	39.33	56.28	66.55
	National	254.79	308.61	351.68

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.
 - The clocks of all the locations are not synchronized.
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