

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 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 & V at standby. Unit- I, IV & 400kV Feeder I under AMP. 400kV THP_SILI II Standby
		Unit- II	149.04	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	52.51	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	163.89	+	
		Unit- V	0.00	400kV Malbase - Siliguri	36.00	+	
		Unit- VI	71.23	-	-	-	
		Total	220.27	Error at Station/Auxiliary Consumption/Losses	3.87		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II under standby. & Unit-IV underbreak down 400kV MHP-JLG I,II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	98.44	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	96.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	98.44	Error at Station/Auxiliary Consumption/Losses	2.44		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I & III under shutdown. 220kV CHP-Birpara Fdr I standby. 220kV CHP-Malbase Fdr III under AMP.
		Unit- II	57.00	220kV CHP - Birpara Fdr- II	9.03	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	57.00	220kV CHP - Sementokha Fdr- IV	80.33	+	
		-	-	220kV Malbase - Birpara Fdr.	-47.00	-	
		-	-	66kV CHP - Chumdo Fdr.	15.56	+	
		-	-	66kV CHP - Gedu Fdr.	5.91	+	
		-	-	3x3MVA, 66/11kV TFR	2.06	+	
Total	114.00	Error at Station/Auxiliary Consumption/Losses	1.11				
4	24MW BHP (U/S)	Unit- I	4.84	220kV BHP - Sementokha Fdr.	-20.64	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	13.87	+	
		Total	4.84	220kV BHP - Tsirang Fdr.	20.58	+	
	40MW BHP (L/S)	Unit- I	10.29	5MVA, 66/11kV TFR	0.80	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.29	Error at Station/Auxiliary Consumption/Losses	0.52				
5	126MW DHPC	Unit-I	16.24	220kV DHPC - Tsirang Fdr.	16.02	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.24	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	10.31	132kV KHP - Nangkhon Fdr- I	6.75	+	Unit- III & IV Annual Maintenance
		Unit-II	10.08	132kV KHP - Kilikhar Fdr- II	12.90	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-13.16	-	
		-	-	132kV Motanga - Rangia Fdr.	-9.93	-	
		-	-	220kV Tsirang - Jigmeling	32.90	+	
		Total	20.39	Error at Station/Auxiliary Consumption/Losses	0.44		

Note: Load summary on March 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	365.64	282.20	276.48	50.54	5.72
2	Eastern Grid	118.83	78.82	75.94	72.91	2.88
	Total	484.47	361.02	352.42	123.45	8.60

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

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	264.43	264.43	286.38
2	Eastern Grid	51.40	51.40	62.64
	National	315.83	315.83	349.02

NOTES: KHP, CHP and Malbase 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 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 & V standby. Unit-I under shutdown. 400kV THP_SILI-I under AMP 400kV THP-SIL II Standby
		Unit- II	110.07	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	40.19	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	137.22	+	
		Unit- V	0.00	400kV Malbase - Siliguri	24.00	+	
		Unit- VI	70.59	-	-	-	
		Total	180.66	Error at Station/Auxiliary Consumption/Losses	3.25		
2	720MW MHP	Unit-I	97.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II & III under 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	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	96.90	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	97.00	Error at Station/Auxiliary Consumption/Losses	0.10		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00	+	Unit-I & III under shutdown. 220kV CHP-Birpara Fdr I under standby. 220kV CHP-Malbase Fdr III under AMP.
		Unit- II	37.00	220kV CHP - Birpara Fdr- II	5.65	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	36.00	220kV CHP - Sementokha Fdr- IV	50.00	+	
		-	-	220kV Malbase - Birpara Fdr.	-33.00	-	
		-	-	66kV CHP - Chumdo Fdr.	10.09	+	
		-	-	66kV CHP - Gedu Fdr.	5.39	+	
		-	-	3x3MVA, 66/11kV TFR	1.25	+	
Total	73.00	Error at Station/Auxiliary Consumption/Losses	0.62				
4	24MW BHP (U/S)	Unit- I	5.10	220kV BHP - Sementokha Fdr.	-7.30	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	10.08	+	
		Total	5.10	220kV BHP - Tsirang Fdr.	11.69	+	
	40MW BHP (L/S)	Unit- I	10.30	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.30	Error at Station/Auxiliary Consumption/Losses	0.03				
5	126MW DHPC	Unit-I	16.50	220kV DHPC - Tsirang Fdr.	15.89	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.50	Error at Station/Auxiliary Consumption/Losses	0.61		
6	60MW KHP	Unit- I	10.53	132kV KHP - Nangkhor Fdr- I	10.00	+	Unit-III & IV AMP
		Unit-II	10.70	132kV KHP - Kilikhar Fdr- II	9.70	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.20	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-9.17	-	
		-	-	132kV Motanga - Rangia Fdr.	-8.08	-	
		-	-	220kV Tsirang - Jigmeling	22.79	+	
		Total	21.23	Error at Station/Auxiliary Consumption/Losses	1.33		

Note: Load summary on March 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	285.56	225.93	221.42	36.84	4.51
2	Eastern Grid	118.23	61.37	59.94	79.65	1.43
	Total	403.79	287.30	281.36	116.49	5.94

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

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	238.37	272.29	286.38
2	Eastern Grid	49.81	62.57	62.64
	National	288.18	334.86	349.02

NOTES: KHP ,JLG and Malbase 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.