

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 7, 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	154.25	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	53.10	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	166.27	+	
		Unit- V	0.00	400kV Malbase - Siliguri	29.00	+	
		Unit- VI	70.93	-	-	-	
		Total	225.18	Error at Station/Auxiliary Consumption/Losses		5.81	
2	720MW MHP	Unit-I	87.05	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II,III standby & Unit-IV underbreak down 400kV MHP-JLG I & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	42.91	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	43.16	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	87.05	Error at Station/Auxiliary Consumption/Losses		0.98	
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.
		Unit- II	54.47	220kV CHP - Birpara Fdr- II	-20.23	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	13.99	+	
		Unit- IV	54.47	220kV CHP - Sementokha Fdr- IV	90.99	+	
		-	-	220kV Malbase - Birpara Fdr.	-41.00	-	
		-	-	66kV CHP - Chumdo Fdr.	18.06	+	
		-	-	66kV CHP - Gedu Fdr.	3.45	+	
		-	-	3x3MVA, 66/11kV TFR	2.23	+	
Total	108.94	Error at Station/Auxiliary Consumption/Losses		0.45			
4	24MW BHP (U/S)	Unit- I	5.12	220kV BHP - Sementokha Fdr.	-22.33	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	15.08	+	
		Total	5.12	220kV BHP - Tsirang Fdr.	21.81	+	
	40MW BHP (L/S)	Unit- I	10.75	5MVA, 66/11kV TFR	0.83	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.75	Error at Station/Auxiliary Consumption/Losses		0.48			
5	126MW DHPC	Unit-I	17.23	220kV DHPC - Tsirang Fdr.	17.00	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.23	Error at Station/Auxiliary Consumption/Losses		0.23	
6	60MW KHP	Unit- I	10.38	132kV KHP - Nangkhon Fdr- I	7.44	+	Unit- III & IV Annual Maintenance
		Unit-II	10.10	132kV KHP - Kilikhar Fdr- II	12.35	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-16.08	-	
		-	-	132kV Motanga - Rangia Fdr.	-11.46	-	
		-	-	220kV Tsirang - Jigmeling	36.45	+	
		Total	20.48	Error at Station/Auxiliary Consumption/Losses		0.39	

Note: Load summary on March 07, 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	367.22	309.90	302.93	20.87	6.97
2	Eastern Grid	107.53	85.45	84.08	58.53	1.37
	Total	474.75	395.35	387.01	79.40	8.34

Note: Load Summary on March 07, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	268.62	268.62	286.38
2	Eastern Grid	54.92	58.35	62.64
	National	323.54	326.97	349.02

NOTES: EAST & 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 8, 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	59.45	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	9.29	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	106.63	+	
		Unit- V	0.00	400kV Malbase - Siliguri	-7.00	-	
		Unit- VI	59.66	-	-	-	
		Total	119.11	Error at Station/Auxiliary Consumption/Losses	3.19		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II & IV under standby, Unit-I under breakdown. 400kV MHP-JLG I & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	50.00	+	
		Unit-III	99.90	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	49.87	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	99.90	Error at Station/Auxiliary Consumption/Losses	0.03		
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
		Unit- II	32.23	220kV CHP - Birpara Fdr- II	-19.12	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	13.08	+	
		Unit- IV	30.82	220kV CHP - Sementokha Fdr- IV	51.18	+	
		-	-	220kV Malbase - Birpara Fdr.	-41.00	-	
		-	-	66kV CHP - Chumdo Fdr.	12.42	+	
		-	-	66kV CHP - Gedu Fdr.	2.60	-	
		-	-	3x3MVA, 66/11kV TFR	1.24	+	
Total	63.05	Error at Station/Auxiliary Consumption/Losses	1.65				
4	24MW BHP (U/S)	Unit- I	5.22	220kV BHP - Sementokha Fdr.	-5.11	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.74	+	
		Total	5.22	220kV BHP - Tsirang Fdr.	8.66	+	
	40MW BHP (L/S)	Unit- I	10.77	5MVA, 66/11kV TFR	0.53	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.77	Error at Station/Auxiliary Consumption/Losses	0.17				
5	126MW DHPC	Unit-I	19.75	220kV DHPC - Tsirang Fdr.	19.55	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	19.75	Error at Station/Auxiliary Consumption/Losses	0.20		
6	60MW KHP	Unit- I	10.38	132kV KHP - Nangkhor Fdr- I	9.62	+	Unit-III & IV AMP
		Unit-II	10.05	132kV KHP - Kilikhar Fdr- II	9.98	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-10.82	-	
		-	-	132kV Motanga - Rangia Fdr.	-7.83	-	
		-	-	220kV Tsirang - Jigmeling	26.32	+	
		Total	20.43	Error at Station/Auxiliary Consumption/Losses	0.53		

Note: Load summary on March 08, 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	217.90	249.41	244.20	-57.83	5.21
2	Eastern Grid	120.33	65.43	64.87	81.22	0.56
	Total	338.23	314.84	309.07	23.39	5.77

Note: Load Summary on March 08, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	252.92	278.64	286.38
2	Eastern Grid	44.45	59.57	62.64
	National	297.37	338.21	349.02

NOTES: KHP,MHP,Malbase & JLG 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.