

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 28, 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	91.16	400kV THP - Siliguri Fdr- I	111.51	+	Unit-V standby. Unit-III & IV under shutdown. 400kV THP-SIL II & IV Standby
		Unit- II	101.47	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	176.32	+	
		Unit- V	0.00	400kV Malbase - Siliguri	89.69	+	
		Unit- VI	100.99	-	-	-	
		Total	293.62	Error at Station/Auxiliary Consumption/Losses	5.79		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II 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	139.20	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	136.70	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	139.20	Error at Station/Auxiliary Consumption/Losses	2.50		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	19.06	+	Unit-I & III under shutdown.
		Unit- II	80.51	220kV CHP - Birpara Fdr- II	18.71	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	54.68	+	
		Unit- IV	79.86	220kV CHP - Sementokha Fdr- IV	49.34	+	
		-	-	220kV Malbase - Birpara Fdr.	-10.19	-	
		-	-	66kV CHP - Chumdo Fdr.	11.51	+	
		-	-	66kV CHP - Gedu Fdr.	3.80	+	
		-	-	3x3MVA, 66/11kV TFR	1.61	+	
		Total	160.37	Error at Station/Auxiliary Consumption/Losses	1.66		
4	24MW BHP (U/S)	Unit- I	5.43	220kV BHP - Sementokha Fdr.	-4.90	-	U/S Unit-II under shutdown and L/S unit-II under standby.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.22	+	
		Total	5.43	220kV BHP - Tsirang Fdr.	9.52	+	
	40MW BHP (L/S)	Unit- I	11.47	5MVA, 66/11kV TFR	0.75	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	11.47	Error at Station/Auxiliary Consumption/Losses	0.31				
5	126MW DHPC	Unit-I	18.44	220kV DHPC - Tsirang Fdr.	18.23	+	Unit-II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	18.44	Error at Station/Auxiliary Consumption/Losses	0.21		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	15.37	+	Unit-I & IV under AM.
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	16.14	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.45	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-8.24	-	
		-	-	132kV Motanga - Rangia Fdr.	11.32	+	
		-	-	220kV Tsirang - Jigmeling	25.83	+	
		Total	33.00	Error at Station/Auxiliary Consumption/Losses	1.04		

Note: Load summary on March 28, 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	489.33	234.72	226.75	228.78	7.97
2	Eastern Grid	172.20	58.25	54.71	139.78	3.54
	Total	661.53	292.97	281.46	368.56	11.51

Note: Load Summary on March 28, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	263.50	272.25	286.38
2	Eastern Grid	62.52	62.52	62.64
	National	326.02	334.77	349.02

NOTES:KHP,MHP 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 29, 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	86.14	400kV THP - Siliguri Fdr- I	82.12	+	Unit-V standby. Unit-I, III & IV under shutdown. 400kV THP-SIL II & IV Standby
		Unit- II	59.73	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	138.28	+	
		Unit- V	0.00	400kV Malbase - Siliguri	64.61	+	
		Unit- VI	79.31	-	-	-	
		Total	225.18	Error at Station/Auxiliary Consumption/Losses	4.78		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II 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	169.01	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	166.38	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	169.01	Error at Station/Auxiliary Consumption/Losses	2.63		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	9.53	-	Unit-I & III under shutdown.
		Unit- II	49.49	220kV CHP - Birpara Fdr- II	9.66	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	51.74	+	
		Unit- IV	50.22	220kV CHP - Sementokha Fdr- IV	16.44	+	
		-	-	220kV Malbase - Birpara Fdr.	-24.23	-	
		-	-	66kV CHP - Chumdo Fdr.	6.58	+	
		-	-	66kV CHP - Gedu Fdr.	3.26	+	
		-	-	3x3MVA, 66/11kV TFR	1.07	+	
		Total	99.71	Error at Station/Auxiliary Consumption/Losses	1.43		
4	24MW BHP (U/S)	Unit- I	5.74	220kV BHP - Sementokha Fdr.	13.06	+	U/S Unit-II under shutdown and LS Unit II under standby.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	8.37	+	
		Total	5.74	220kV BHP - Tsirang Fdr.	-3.67	-	
	40MW BHP (L/S)	Unit- I	12.32	5MVA, 66/11kV TFR	0.44	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	12.32	Error at Station/Auxiliary Consumption/Losses	-0.14				
5	126MW DHPC	Unit-I	19.44	220kV DHPC - Tsirang Fdr.	19.26	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	19.44	Error at Station/Auxiliary Consumption/Losses	0.18		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	19.03	+	Unit-I & IV AMP.
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	12.37	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-3.89	-	
		-	-	132kV Motanga - Rangia Fdr.	11.88	+	
		-	-	220kV Tsirang - Jigmeling	13.66	+	
		Total	33.00	Error at Station/Auxiliary Consumption/Losses	1.20		

Note: Load summary on March 29, 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	362.39	207.04	200.79	141.69	6.25
2	Eastern Grid	202.01	41.30	37.47	174.37	3.83
	Total	564.40	248.34	238.26	316.06	10.08

Note: Load Summary on March 29, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	226.64	250.14	286.38
2	Eastern Grid	44.87	58.64	62.64
	National	271.51	308.78	349.02

NOTES: KHP, MHP load 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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