

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 26, 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 at standby. Unit- I,II & 400kV Feeder I under AMP. 400kV THP_SILI II Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	102.46	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	210.47	+	
		Unit- V	149.73	400kV Malbase - Siliguri	82.00	+	
		Unit- VI	160.21	-	-	-	
		Total	309.94	Error at Station/Auxiliary Consumption/Losses	-2.99		
2	720MW MHP	Unit-I	120.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II standby and Unit-IV under shutdown.Unit-III under breakdown. 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	119.77	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	120.00	Error at Station/Auxiliary Consumption/Losses	0.23		
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	76.00	220kV CHP - Birpara Fdr- II	7.56	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	45.00	+	
		Unit- IV	76.00	220kV CHP - Semtokha Fdr- IV	74.81	+	
		-	-	220kV Malbase - Birpara Fdr.	-22.22	-	
		-	-	66kV CHP - Chumdo Fdr.	17.79	+	
		-	-	66kV CHP - Gedu Fdr.	3.58	+	
		-	-	3x3MVA, 66/11kV TFR	2.19	+	
Total	152.00	Error at Station/Auxiliary Consumption/Losses	1.07				
4	24MW BHP (U/S)	Unit- I	7.25	220kV BHP - Semtokha Fdr.	-4.10	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	17.88	+	
		Total	7.25	220kV BHP - Tsirang Fdr.	7.26	+	
	40MW BHP (L/S)	Unit- I	15.07	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	15.07	Error at Station/Auxiliary Consumption/Losses	0.39				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	32.95	+	Unit I under maintenance
		Unit-II	33.17	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	33.17	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	12.75	132kV KHP - Nangkhon Fdr- I	8.55	+	Unit- III & IV Annual Maintenance
		Unit-II	10.03	132kV KHP - Kilikhar Fdr- II	13.39	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.26	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-7.06	-	
		-	-	132kV Motanga - Rangia Fdr.	-6.35	-	
		-	-	220kV Tsirang - Jigmeling	36.31	+	
		Total	22.78	Error at Station/Auxiliary Consumption/Losses	0.58		

Note: Load summary on February 26, 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	517.43	311.32	312.63	169.80	-1.31
2	Eastern Grid	142.78	72.73	71.92	106.36	0.81
	Total	660.21	384.05	384.55	276.16	-0.50

Note: Load Summary on February 26, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	262.86	264.61	308.60
2	Eastern Grid	39.67	47.02	65.91
	National	302.53	311.63	374.51

NOTES: KHP & 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.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 27, 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 standby. Unit- I & II under shutdown. 400kV THP_SILI-I under AMP 400kV THP-SIL II Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	29.03	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	119.35	+	
		Unit- V	80.25	400kV Malbase - Siliguri	12.56	-	
		Unit- VI	71.54	-	-	-	
		Total	151.79	Error at Station/Auxiliary Consumption/Losses	3.41		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II standby and Unit-IV and Unit-I under shutdown. 400kV MHP-JLG I, II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	90.23	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	90.54	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	90.23	Error at Station/Auxiliary Consumption/Losses	-0.31		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I & III under shutdown. 220kV CHP-Birpara Fdr I annual maintenance
		Unit- II	37.51	220kV CHP - Birpara Fdr- II	-9.46	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	25.47	+	
		Unit- IV	46.22	220kV CHP - Semtokha Fdr- IV	49.99	+	
		-	-	220kV Malbase - Birpara Fdr.	-34.19	-	
		-	-	66kV CHP - Chumdo Fdr.	12.55	+	
		-	-	66kV CHP - Gedu Fdr.	2.77	+	
		Total	83.73	Error at Station/Auxiliary Consumption/Losses	1.06		
4	24MW BHP (U/S)	Unit- I	5.42	220kV BHP - Semtokha Fdr.	2.19	+	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.80	+	
		Total	5.42	220kV BHP - Tsirang Fdr.	0.98	+	
	40MW BHP (L/S)	Unit- I	11.25	5MVA, 66/11kV TFR	0.65	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	11.25	Error at Station/Auxiliary Consumption/Losses	0.05				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	22.92	+	Unit I under maintenance
		Unit-II	23.14	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	23.14	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	12.31	132kV KHP - Nangkhon Fdr- I	11.79	+	Unit II standby, Unit-III & IV AMP
		Unit-II	10.12	132kV KHP - Kilikhar Fdr- II	9.90	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-9.78	-	
		-	-	132kV Motanga - Rangia Fdr.	1.42	+	
		-	-	220kV Tsirang - Jigmeling	22.10	+	
		Total	22.43	Error at Station/Auxiliary Consumption/Losses	0.34		

Note: Load summary on February 27, 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	275.33	255.29	250.55	-2.06	4.74
2	Eastern Grid	112.66	52.58	52.55	82.18	0.03
	Total	387.99	307.87	303.10	80.12	4.77

Note: Load Summary on February 27, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	252.91	285.13	257.31
2	Eastern Grid	40.25	62.50	66.55
	National	293.16	347.63	323.86

NOTES: KHP generation & JLG load collected from site.

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 - 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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