

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	April 8, 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	58.70	400kV THP - Siliguri Fdr- I	63.84	+	Unit- II & V standby. Unit-III & IV under shutdown. 400kV THP-SIL II standby & 400kV Mal-Siliguri under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	60.91	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	100.35	+	
		Unit- V	0.00	400kV Malbase - Siliguri	0.00	+	
		Unit- VI	170.47	-	-	-	
		Total	229.17	Error at Station/Auxiliary Consumption/Losses	4.07		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit- I under standby. Unit- II & III 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	145.50	400kV MHP - Jigmeling Fdr - IV	144.50	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	145.50	Error at Station/Auxiliary Consumption/Losses	1.00		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	29.20	+	Unit-I, IV & 220kV CHP- Mal under shutdown.
		Unit- II	70.69	220kV CHP - Birpara Fdr- II	29.17	+	
		Unit- III	57.60	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	0.00	220kV CHP - Semtokha Fdr- IV	49.21	+	
		-	-	220kV Malbase - Birpara Fdr.	-61.69	-	
		-	-	66kV CHP - Chumdo Fdr.	11.69	+	
		-	-	66kV CHP - Gedu Fdr.	5.96	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	128.29	Error at Station/Auxiliary Consumption/Losses	1.46		
4	24MW BHP (U/S)	Unit- I	4.36	220kV BHP - Semtokha Fdr.	-1.40	-	U/S Unit-II under shutdown./L/S Unit I standby
		Unit- II	0.00	66kV BHP - Lobeysha Fdr.	11.29	+	
		Total	4.36	220kV BHP - Tsirang Fdr.	3.08	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.74	+	
		Unit- II	9.41	30MVA ICT, 220/66kV			
Total	9.41	Error at Station/Auxiliary Consumption/Losses	0.06				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	15.15	+	Unit-I Standby
		Unit-II	15.39	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	15.39	Error at Station/Auxiliary Consumption/Losses	0.24		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	12.48	+	Unit-I Shutdown. Unit-II Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	14.68	+	
		Unit- III	14.26	5MVA, 132/11kV TFR	0.60	+	
		Unit- IV	14.26	132kV Gelephu - Salakati Fdr.	-16.20	-	
		-	-	132kV Motanga - Rangia Fdr.	5.59	+	
		-	-	220kV Tsirang - Jigmeling	16.40	+	
		Total	28.52	Error at Station/Auxiliary Consumption/Losses	0.76		

Note: Load summary on April 08, 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	386.62	248.79	242.96	121.43	5.83
2	Eastern Grid	174.02	56.53	54.77	133.89	1.76
	Total	560.64	305.32	297.73	255.32	7.59

Note: Load Summary on April 08, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	272.32	272.32	286.38
2	Eastern Grid	51.20	51.20	62.64
	National	323.52	323.52	349.02

NOTES:KHP 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:	April 9, 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	58.60	400kV THP - Siliguri Fdr- I	37.92	+	Unit- II & V standby. Unit-III & IV under shutdown. 400kV THP-SIL II standby. 400kV MAL_SIL under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	36.40		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	71.75	+	
		Unit- V	0.00	400kV Malbase - Siliguri	0.00	+	
		Unit- VI	90.11	-	-	-	
		Total	148.71	Error at Station/Auxiliary Consumption/Losses	2.64		
2	720MW MHP	Unit-I	100.19	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II & III Standby.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	105.14	400kV MHP - Jigmeling Fdr - IV	199.25	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	205.33	Error at Station/Auxiliary Consumption/Losses	6.08		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	22.84	+	Unit-I & IV under shutdown. 220kV CHP-MAL line under shutdown.
		Unit- II	35.39	220kV CHP - Birpara Fdr- II	22.82	+	
		Unit- III	39.86	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	0.00	220kV CHP - Sementokha Fdr- IV	15.05	+	
		-	-	220kV Malbase - Birpara Fdr.	-80.28	-	
		-	-	66kV CHP - Chumdo Fdr.	6.85	+	
		-	-	66kV CHP - Gedu Fdr.	5.77	+	
		Total	75.25	Error at Station/Auxiliary Consumption/Losses	0.96		
4	24MW BHP (U/S)	Unit- I	4.59	220kV BHP - Sementokha Fdr.	18.89	+	U/S Unit-II under shutdown and LS Unit I under standby.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	9.40	+	
		Total	4.59	220kV BHP - Tsirang Fdr.	-14.64	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.39	+	
		Unit- II	9.53	30MVA ICT, 220/66kV			
Total	9.53	Error at Station/Auxiliary Consumption/Losses	0.08				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	14.95	+	Unit I standby.
		Unit-II	15.16	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	15.16	Error at Station/Auxiliary Consumption/Losses	0.21		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Fdr- I	32.48	+	Unit-I AMP.
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	15.62	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.37	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	-12.01	-	
		-	-	132kV Motanga - Rangia Fdr.	16.20	+	
		-	-	220kV Tsirang - Jigmeling	1.33	+	
		Total	49.50	Error at Station/Auxiliary Consumption/Losses	1.03		

Note: Load summary on April 09, 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	253.24	212.21	208.32	39.70	3.89
2	Eastern Grid	254.83	52.72	45.61	203.44	7.11
	Total	508.07	264.93	253.93	243.14	11.00

Note: Load Summary on April 09, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	259.49	277.08	286.38
2	Eastern Grid	26.42	49.45	62.64
	National	285.91	326.53	349.02

NOTES: KHP 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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