

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 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	187.98	400kV THP - Siliguri Fdr- I	273.84	+	
		Unit- II	187.60	400kV THP - Siliguri Fdr- II	270.87	+	
		Unit- III	187.04	400kV THP - Siliguri Fdr- IV	265.27	+	
		Unit- IV	186.65	400kV THP - Malbase Fdr- III	296.16	+	
		Unit- V	187.26	400kV Malbase - Siliguri	251.35	+	
		Unit- VI	187.66	-	-	-	
		Total	1,124.19	Error at Station/Auxiliary Consumption/Losses	18.05		
2	720MW MHP	Unit-I	197.78	400kV MHP - Jigmeling Fdr - I	264.40	+	400kV MHP-JLG IV Standby.
		Unit-II	197.63	400kV MHP - Jigmeling Fdr - II	265.36	+	
		Unit-III	197.85	400kV MHP - Jigmeling Fdr - III	258.10	+	
		Unit-IV	197.93	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	791.19	Error at Station/Auxiliary Consumption/Losses	3.33		
3	336MW CHP	Unit- I	91.68	220kV CHP - Birpara Fdr- I	119.88	+	
		Unit- II	91.53	220kV CHP - Birpara Fdr- II	120.39	+	
		Unit- III	91.82	220kV CHP - Malbase Fdr- III	161.36	+	
		Unit- IV	91.59	220kV CHP - Semtokha Fdr- IV	-48.96	-	
		-	-	220kV Malbase - Birpara Fdr.	74.56	+	
		-	-	66kV CHP - Chumdo Fdr.	4.23	+	
		-	-	66kV CHP - Gedu Fdr.	6.91	+	
		-	-	3x3MVA, 66/11kV TFR	1.09	+	
		Total	366.62	Error at Station/Auxiliary Consumption/Losses	1.72		
4	24MW BHP (U/S)	Unit- I	11.84	220kV BHP - Semtokha Fdr.	74.94	+	
		Unit- II	11.84	66kV BHP - Lobeysa Fdr.	17.44	+	
		Total	23.68	220kV BHP - Tsirang Fdr.	-27.33	-	
	40MW BHP (L/S)	Unit- I	20.96	5MVA, 66/11kV TFR	0.70	+	
		Unit- II	20.09	30MVA ICT, 220/66kV	0.00		
		Total	41.05	Error at Station/Auxiliary Consumption/Losses	1.02		
5	126MW DHPC	Unit-I	63.51	220kV DHPC - Tsirang Fdr.	126.36	+	
		Unit-II	63.53	220kV Jigmeling - Dagapela Fdr.	1.62	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	127.04	Error at Station/Auxiliary Consumption/Losses	0.68		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	38.07	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	26.46	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.18	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	48.00	+	
		-	-	132kV Motanga - Rangia Fdr.	55.70	+	
		-	-	220kV Tsirang - Jigmeling	94.93	+	
Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.29				

Note: Generation-Load Summary for July 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	1,682.58	211.49	193.68	1,376.16	17.81
2	Eastern Grid	857.19	60.56	55.94	891.56	4.62
	Total	2,539.77	272.05	249.62	2,267.72	22.43

Note: Generation-Load Summary for July 07, 2019 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	1255.14	231.46	215.84	951.98	15.62
2	Eastern Grid	248.78	51.05	50.15	269.43	0.90
	Total	1,503.92	282.51	265.99	1,221.41	16.52

NOTE: KHP, MHEP & Motanga datas 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:	July 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	187.00	400kV THP - Siliguri Fdr- I	275.78	+	
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	273.08	+	
		Unit- III	187.00	400kV THP - Siliguri Fdr- IV	266.33	+	
		Unit- IV	185.88	400kV THP - Malbase Fdr- III	285.85	+	
		Unit- V	185.52	400kV Malbase - Siliguri	256.67	+	
		Unit- VI	186.01	-	-	-	
		Total	1,118.41	Error at Station/Auxiliary Consumption/Losses	17.37		
2	720MW MHP	Unit-I	197.81	400kV MHP - Jigmeling Fdr - I	264.21	+	400kV MHP-JLG IV Standby.
		Unit-II	197.29	400kV MHP - Jigmeling Fdr - II	265.46	+	
		Unit-III	197.93	400kV MHP - Jigmeling Fdr - III	257.02	+	
		Unit-IV	197.79	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	790.82	Error at Station/Auxiliary Consumption/Losses	4.13		
3	336MW CHP	Unit- I	91.47	220kV CHP - Birpara Fdr- I	123.10	+	
		Unit- II	91.07	220kV CHP - Birpara Fdr- II	123.63	+	
		Unit- III	91.20	220kV CHP - Malbase Fdr- III	177.45	+	
		Unit- IV	91.25	220kV CHP - Semtokha Fdr- IV	-69.61	-	
		-	-	220kV Malbase - Birpara Fdr.	67.52	+	
		-	-	66kV CHP - Chumdo Fdr.	0.98	+	
		-	-	66kV CHP - Gedu Fdr.	7.35	+	
		-	-	3x3MVA, 66/11kV TFR	0.71	+	
		Total	364.99	Error at Station/Auxiliary Consumption/Losses	1.38		
4	24MW BHP (U/S)	Unit- I	11.81	220kV BHP - Semtokha Fdr.	87.76	+	
		Unit- II	11.81	66kV BHP - Lobeysa Fdr.	16.44	+	
		Total	23.62	220kV BHP - Tsirang Fdr.	-38.79	-	
	40MW BHP (L/S)	Unit- I	21.01	5MVA, 66/11kV TFR	0.40	+	
		Unit- II	20.18	30MVA ICT, 220/66kV			
		Total	41.19	Error at Station/Auxiliary Consumption/Losses	-1.00		
5	126MW DHPC	Unit-I	63.54	220kV DHPC - Tsirang Fdr.	126.49	+	
		Unit-II	63.39	220kV Jigmeling - Dagapela Fdr.	1.03	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.93	Error at Station/Auxiliary Consumption/Losses	0.44		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	40.45	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.03	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	50.20	+	
		-	-	132kV Motanga - Rangia Fdr.	54.84	+	
		-	-	220kV Tsirang - Jigmeling	84.40	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.22		

Note: Generation-Load summary for July 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	1,675.14	204.63	187.47	1,386.11	17.16
2	Eastern Grid	856.82	49.49	44.14	891.73	5.35
	Total	2,531.96	254.12	231.61	2,277.84	22.51

Note: Generation-Load Summary for July 08, 2019 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	1657.28	243.92	255.64	1,344.36	-11.72
2	Eastern Grid	415.2	36.32	31.66	447.88	4.66
	Total	2,072.48	280.24	287.30	1,792.24	-7.06

NOTES: KHP, MHEP & Motanga datas 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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