

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 13, 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	187.00	400kV THP - Siliguri Fdr- I	272.69	+	
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	271.04	+	
		Unit- III	187.00	400kV THP - Siliguri Fdr- IV	263.73	+	
		Unit- IV	186.38	400kV THP - Malbase Fdr- III	298.08	+	
		Unit- V	186.87	400kV Malbase - Siliguri	249.79	+	
		Unit- VI	185.95	-	-	-	
		Total	1,120.20	Error at Station/Auxiliary Consumption/Losses		14.66	
2	720MW MHP	Unit-I	197.47	400kV MHP - Jigmeling Fdr - I	265.60	+	400kV MHP-JLG IV Standby.
		Unit-II	198.09	400kV MHP - Jigmeling Fdr - II	247.60	+	
		Unit-III	197.02	400kV MHP - Jigmeling Fdr - III	277.10	+	
		Unit-IV	198.44	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	791.02	Error at Station/Auxiliary Consumption/Losses		0.72	
3	336MW CHP	Unit- I	91.64	220kV CHP - Birpara Fdr- I	119.68	+	
		Unit- II	91.37	220kV CHP - Birpara Fdr- II	119.59	+	
		Unit- III	91.65	220kV CHP - Malbase Fdr- III	167.22	+	
		Unit- IV	91.28	220kV CHP - Semtokha Fdr- IV	-53.45	-	
		-	-	220kV Malbase - Birpara Fdr.	68.92	+	
		-	-	66kV CHP - Chumdo Fdr.	3.67	+	
		-	-	66kV CHP - Gedu Fdr.	7.05	+	
		-	-	3x3MVA, 66/11kV TFR	1.24	+	
		Total	365.94	Error at Station/Auxiliary Consumption/Losses		0.94	
4	24MW BHP (U/S)	Unit- I	11.82	220kV BHP - Semtokha Fdr.	77.52	+	
		Unit- II	11.82	66kV BHP - Lobeysa Fdr.	16.82	+	
		Total	23.64	220kV BHP - Tsirang Fdr.	-29.28	-	
	40MW BHP (L/S)	Unit- I	20.99	5MVA, 66/11kV TFR	0.65	+	
		Unit- II	20.14	30MVA ICT, 220/66kV	0.00		
		Total	41.13	Error at Station/Auxiliary Consumption/Losses		0.94	
5	126MW DHPC	Unit-I	63.44	220kV DHPC - Tsirang Fdr.	126.17	+	
		Unit-II	63.41	220kV Jigmeling - Dagapela Fdr.	1.51	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	126.85	Error at Station/Auxiliary Consumption/Losses		0.68	
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	39.03	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	25.54	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.26	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	47.90	+	
		-	-	132kV Motanga - Rangia Fdr.	52.00	+	
		-	-	220kV Tsirang - Jigmeling	92.61	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses		1.17	

Note: Generation-Load Summary for July 13, 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	1,677.76	219.71	205.88	1,365.44	13.83
2	Eastern Grid	857.02	59.43	57.54	890.20	1.89
	Total	2,534.78	279.14	263.42	2,255.64	15.72

Note: Generation-Load Summary for July 13, 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	1646.03	244.16	224.93	1,316.52	19.23
2	Eastern Grid	237.32	58.90	58.63	263.77	0.27
	Total	1,883.35	303.06	283.56	1,580.29	19.50

NOTE: KHP & 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 14, 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	187.46	400kV THP - Siliguri Fdr- I	277.28	+	
		Unit- II	186.94	400kV THP - Siliguri Fdr- II	273.55	+	
		Unit- III	187.38	400kV THP - Siliguri Fdr- IV	267.76	+	
		Unit- IV	187.61	400kV THP - Malbase Fdr- III	285.88	+	
		Unit- V	187.21	400kV Malbase - Siliguri	256.19	+	
		Unit- VI	186.42	-	-	-	
		Total	1,123.02	Error at Station/Auxiliary Consumption/Losses	18.55		
2	720MW MHP	Unit-I	197.35	400kV MHP - Jigmeling Fdr - I	265.50	+	400kV MHP-JLG IV Standby.
		Unit-II	197.88	400kV MHP - Jigmeling Fdr - II	247.60	+	
		Unit-III	196.85	400kV MHP - Jigmeling Fdr - III	277.00	+	
		Unit-IV	198.35	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	790.43	Error at Station/Auxiliary Consumption/Losses	0.33		
3	336MW CHP	Unit- I	90.49	220kV CHP - Birpara Fdr- I	122.64	+	
		Unit- II	91.40	220kV CHP - Birpara Fdr- II	122.38	+	
		Unit- III	90.71	220kV CHP - Malbase Fdr- III	176.94	+	
		Unit- IV	91.61	220kV CHP - Semtokha Fdr- IV	-65.02	-	
		-	-	220kV Malbase - Birpara Fdr.	66.31	+	
		-	-	66kV CHP - Chumdo Fdr.	1.49	+	
		-	-	66kV CHP - Gedu Fdr.	6.67	+	
		-	-	3x3MVA, 66/11kV TFR	0.81	+	
		Total	364.21	Error at Station/Auxiliary Consumption/Losses	-1.70		
4	24MW BHP (U/S)	Unit- I	11.82	220kV BHP - Semtokha Fdr.	84.41	+	
		Unit- II	11.82	66kV BHP - Lobeysa Fdr.	15.86	+	
		Total	23.64	220kV BHP - Tsirang Fdr.	-34.74	-	
	40MW BHP (L/S)	Unit- I	21.05	5MVA, 66/11kV TFR	0.41	+	
		Unit- II	20.18	30MVA ICT, 220/66kV			
		Total	41.23	Error at Station/Auxiliary Consumption/Losses	-1.07		
5	126MW DHPC	Unit-I	63.43	220kV DHPC - Tsirang Fdr.	126.18	+	
		Unit-II	63.36	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.79	Error at Station/Auxiliary Consumption/Losses	0.61		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	41.80	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.66	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.24	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	51.07	+	
		-	-	132kV Motanga - Rangia Fdr.	51.47	+	
		-	-	220kV Tsirang - Jigmeling	87.14	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.30		

Note: Generation-Load summary for July 14, 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	1,678.89	205.64	190.25	1,386.11	15.39
2	Eastern Grid	856.43	50.93	50.30	892.64	0.63
	Total	2,535.32	256.57	240.55	2,278.75	16.02

Note: Generation-Load Summary for July 14, 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	1679.11	228.95	210.19	1,374.22	18.76
2	Eastern Grid	414.63	48.62	49.14	441.95	-0.52
	Total	2,093.74	277.57	259.33	1,816.17	18.24

NOTES: KHP & 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.