

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 1, 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	187.85	400kV THP - Siliguri Fdr- I	264.53	+	
		Unit- II	179.37	400kV THP - Siliguri Fdr- II	262.63	+	
		Unit- III	187.77	400kV THP - Siliguri Fdr- IV	254.75	+	
		Unit- IV	187.28	400kV THP - Malbase Fdr- III	316.16	+	
		Unit- V	187.91	400kV Malbase - Siliguri	236.05	+	
		Unit- VI	186.59	-	-	-	
		Total	1,116.77	Error at Station/Auxiliary Consumption/Losses	18.70		
2	720MW MHP	Unit-I	197.86	400kV MHP - Jigmeling Fdr - I	251.87	+	400kV MHP-JLG IV Standby.
		Unit-II	194.95	400kV MHP - Jigmeling Fdr - II	253.10	+	
		Unit-III	180.11	400kV MHP - Jigmeling Fdr - III	246.10	+	
		Unit-IV	180.25	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	753.17	Error at Station/Auxiliary Consumption/Losses	2.10		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	85.61	+	Unit I under shutdown till 6th July,2020.
		Unit- II	91.26	220kV CHP - Birpara Fdr- II	85.86	+	
		Unit- III	91.21	220kV CHP - Malbase Fdr- III	119.84	+	
		Unit- IV	91.29	220kV CHP - Semtokha Fdr- IV	-29.72	-	
		-	-	220kV Malbase - Birpara Fdr.	50.34	+	
		-	-	66kV CHP - Chumdo Fdr.	4.04	+	
		-	-	66kV CHP - Gedu Fdr.	6.24	+	
		-	-	3x3MVA, 66/11kV TFR	0.99	+	
		Total	273.76	Error at Station/Auxiliary Consumption/Losses	0.90		
4	24MW BHP (U/S)	Unit- I	11.83	220kV BHP - Semtokha Fdr.	53.08	+	
		Unit- II	11.83	66kV BHP - Lobeysa Fdr.	16.04	+	
		Total	23.66	220kV BHP - Tsirang Fdr.	-5.01	-	
	40MW BHP (L/S)	Unit- I	21.01	5MVA, 66/11kV TFR	0.92	+	
		Unit- II	20.13	30MVA ICT, 220/66kV	0.00		
		Total	41.14	Error at Station/Auxiliary Consumption/Losses	0.23		
5	126MW DHPC	Unit-I	43.30	220kV DHPC - Tsirang Fdr.	86.04	+	
		Unit-II	43.26	220kV Jigmeling - Dagapela Fdr.	1.69	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	86.56	Error at Station/Auxiliary Consumption/Losses	0.52		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	39.82	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.75	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	33.77	+	
		-	-	132kV Motanga - Rangia Fdr.	47.74	+	
		-	-	220kV Tsirang - Jigmeling	79.00	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.13		

Note: Generation-Load Summary for July 01, 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	1,541.89	223.12	204.92	1,239.77	18.20
2	Eastern Grid	819.17	65.59	62.36	832.58	3.23
	Total	2,361.06	288.71	267.28	2,072.35	21.43

Note: Generation-Load Summary for July 01, 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	785.83	221.94	215.74	520.34	6.20
2	Eastern Grid	246.57	54.25	52.05	235.87	2.20
	Total	1,032.40	276.19	267.79	756.21	8.40

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 2, 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	188.35	400kV THP - Siliguri Fdr- I	274.39	+	
		Unit- II	187.52	400kV THP - Siliguri Fdr- II	270.57	+	
		Unit- III	187.54	400kV THP - Siliguri Fdr- IV	264.12	+	
		Unit- IV	185.93	400kV THP - Malbase Fdr- III	296.08	+	
		Unit- V	187.93	400kV Malbase - Siliguri	251.60	+	
		Unit- VI	186.78	-	-	-	
		Total	1,124.05	Error at Station/Auxiliary Consumption/Losses	18.89		
2	720MW MHP	Unit-I	197.86	400kV MHP - Jigmeling Fdr - I	251.87	+	400kV MHP-JLG IV Standby.
		Unit-II	194.95	400kV MHP - Jigmeling Fdr - II	253.10	+	
		Unit-III	180.11	400kV MHP - Jigmeling Fdr - III	246.10	+	
		Unit-IV	180.25	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	753.17	Error at Station/Auxiliary Consumption/Losses	2.10		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	92.55	+	Unit-I under shutdown till 06th July, 2020.
		Unit- II	92.00	220kV CHP - Birpara Fdr- II	92.47	+	
		Unit- III	91.72	220kV CHP - Malbase Fdr- III	144.67	+	
		Unit- IV	92.08	220kV CHP - Semtokha Fdr- IV	-62.97	-	
		-	-	220kV Malbase - Birpara Fdr.	41.76	+	
		-	-	66kV CHP - Chumdo Fdr.	1.81	+	
		-	-	66kV CHP - Gedu Fdr.	6.31	+	
		-	-	3x3MVA, 66/11kV TFR	0.93	+	
		Total	275.80	Error at Station/Auxiliary Consumption/Losses	0.03		
4	24MW BHP (U/S)	Unit- I	11.83	220kV BHP - Semtokha Fdr.	83.89	+	
		Unit- II	11.83	66kV BHP - Lobeysa Fdr.	16.18	+	
		Total	23.66	220kV BHP - Tsirang Fdr.	-34.76	-	
	40MW BHP (L/S)	Unit- I	21.01	5MVA, 66/11kV TFR	0.43	+	
		Unit- II	20.20	30MVA ICT, 220/66kV			
		Total	41.21	Error at Station/Auxiliary Consumption/Losses	-0.87		
5	126MW DHPC	Unit-I	49.31	220kV DHPC - Tsirang Fdr.	98.07	+	
		Unit-II	49.26	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	98.57	Error at Station/Auxiliary Consumption/Losses	0.50		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.54	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	22.70	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.15	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	35.22	+	
		-	-	132kV Motanga - Rangia Fdr.	44.59	+	
		-	-	220kV Tsirang - Jigmeling	60.13	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.61		

Note: Generation-Load summary for July 02, 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	1,563.29	215.70	198.25	1,287.46	17.45
2	Eastern Grid	819.17	48.42	44.71	830.88	3.71
	Total	2,382.46	264.12	242.96	2,118.34	21.16

Note: Generation-Load Summary for July 02, 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	834.62	210.35	198.13	586.21	12.22
2	Eastern Grid	247.18	42.43	44.13	242.81	-1.70
	Total	1,081.80	252.78	242.26	829.02	10.52

NOTES: KHP, MHP & Motanga 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.