

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 24, 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	354.46	+	400kV THP_SIL II under breakdown.
		Unit- II	185.42	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	187.60	400kV THP - Siliguri Fdr- IV	335.91	+	
		Unit- IV	187.53	400kV THP - Malbase Fdr- III	411.42	+	
		Unit- V	187.29	400kV Malbase - Siliguri	314.96	+	
		Unit- VI	187.09	-	-	-	
		Total	1,121.93	Error at Station/Auxiliary Consumption/Losses	20.14		
2	720MW MHP	Unit-I	197.32	400kV MHP - Jigmeling Fdr - I	197.10	+	Unit-III shutdown & 400kV MHP-JLG IV Standby
		Unit-II	195.45	400kV MHP - Jigmeling Fdr - II	195.60	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	195.23	+	
		Unit-IV	198.54	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	591.31	Error at Station/Auxiliary Consumption/Losses	3.38		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	86.74	+	Unit I under shutdown till 30th June,2020.
		Unit- II	90.96	220kV CHP - Birpara Fdr- II	86.83	+	
		Unit- III	91.63	220kV CHP - Malbase Fdr- III	120.05	+	
		Unit- IV	91.50	220kV CHP - Semtokha Fdr- IV	-32.42	-	
		-	-	220kV Malbase - Birpara Fdr.	49.85	+	
		-	-	66kV CHP - Chumdo Fdr.	3.41	+	
		-	-	66kV CHP - Gedu Fdr.	7.66	+	
		-	-	3x3MVA, 66/11kV TFR	1.08	+	
		Total	274.09	Error at Station/Auxiliary Consumption/Losses	0.74		
4	24MW BHP (U/S)	Unit- I	11.87	220kV BHP - Semtokha Fdr.	55.65	+	
		Unit- II	11.87	66kV BHP - Lobeysa Fdr.	16.70	+	
		Total	23.74	220kV BHP - Tsirang Fdr.	-8.26	-	
	40MW BHP (L/S)	Unit- I	20.98	5MVA, 66/11kV TFR	1.15	+	
		Unit- II	20.21	30MVA ICT, 220/66kV	0.00		
		Total	41.19	Error at Station/Auxiliary Consumption/Losses	0.31		
5	126MW DHPC	Unit-I	41.25	220kV DHPC - Tsirang Fdr.	81.98	+	
		Unit-II	41.24	220kV Jigmeling - Dagapela Fdr.	1.50	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	82.49	Error at Station/Auxiliary Consumption/Losses	0.51		
6	60MW KHP	Unit- I	16.30	132kV KHP - Nangkhon Fdr- I	39.43	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	25.06	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.10	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	31.58	+	
		-	-	132kV Motanga - Rangia Fdr.	49.48	+	
		-	-	220kV Tsirang - Jigmeling	71.35	+	
		Total	65.80	Error at Station/Auxiliary Consumption/Losses	1.21		

Note: Generation-Load Summary for June 24, 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	1,543.44	243.34	223.76	1,228.75	19.58
2	Eastern Grid	657.11	59.47	54.88	668.99	4.59
	Total	2,200.55	302.81	278.64	1,897.74	24.17

Note: Generation-Load Summary for June 24, 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	604.5	254.09	244.93	310.76	9.16
2	Eastern Grid	66.21	63.22	62.94	42.64	0.28
	Total	670.71	317.31	307.87	353.40	9.44

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:	June 25, 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	360.00	+	400kV THP_SIL II under breakdown.
		Unit- II	185.96	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	187.00	400kV THP - Siliguri Fdr- IV	344.00	+	
		Unit- IV	187.00	400kV THP - Malbase Fdr- III	399.52	+	
		Unit- V	187.00	400kV Malbase - Siliguri	322.36	+	
		Unit- VI	186.08	-	-	-	
		Total	1,120.04	Error at Station/Auxiliary Consumption/Losses	16.52		
2	720MW MHP	Unit-I	197.90	400kV MHP - Jigmeling Fdr - I	258.61	+	400kV MHP-JLG IV Standby.
		Unit-II	196.72	400kV MHP - Jigmeling Fdr - II	259.52	+	
		Unit-III	180.16	400kV MHP - Jigmeling Fdr - III	252.34	+	
		Unit-IV	197.80	400kV MHP - Jigmeling Fdr - IV	0.00	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	772.58	Error at Station/Auxiliary Consumption/Losses	2.11		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	86.79	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	91.59	220kV CHP - Birpara Fdr- II	86.92	+	
		Unit- III	91.73	220kV CHP - Malbase Fdr- III	130.14	+	
		Unit- IV	91.00	220kV CHP - Semtokha Fdr- IV	-40.10	-	
		-	-	220kV Malbase - Birpara Fdr.	42.73	+	
		-	-	66kV CHP - Chumdo Fdr.	2.27	+	
		-	-	66kV CHP - Gedu Fdr.	6.37	+	
		-	-	3x3MVA, 66/11kV TFR	0.87	+	
		Total	274.32	Error at Station/Auxiliary Consumption/Losses	1.06		
4	24MW BHP (U/S)	Unit- I	11.77	220kV BHP - Semtokha Fdr.	57.53	+	
		Unit- II	11.77	66kV BHP - Lobeysa Fdr.	15.02	+	
		Total	23.54	220kV BHP - Tsirang Fdr.	-8.12	-	
	40MW BHP (L/S)	Unit- I	20.99	5MVA, 66/11kV TFR	0.40	+	
		Unit- II	20.24	30MVA ICT, 220/66kV			
		Total	41.23	Error at Station/Auxiliary Consumption/Losses	-0.06		
5	126MW DHPC	Unit-I	40.28	220kV DHPC - Tsirang Fdr.	79.01	+	
		Unit-II	39.21	220kV Jigmeling - Dagapela Fdr.	0.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	79.49	Error at Station/Auxiliary Consumption/Losses	0.48		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	-5.86	-	All Units under shutdown for Dam Scouring
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	5.20	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.17	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	24.12	+	
		-	-	132kV Motanga - Rangia Fdr.	-2.19	-	
		-	-	220kV Tsirang - Jigmeling	67.96	+	
Total	0.00	Error at Station/Auxiliary Consumption/Losses	0.50				

Note: Generation-Load summary for June 25, 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	1,538.62	227.86	210.76	1,242.80	17.10
2	Eastern Grid	772.58	48.14	45.54	792.40	2.61
	Total	2,311.20	276.00	256.30	2,035.20	19.70

Note: Generation-Load Summary for June 25, 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	0	0.00	0.00	0.00	0.00
2	Eastern Grid	0	0.00	0.00	0.00	0.00
	Total	0.00	0.00	0.00	0.00	0.00

NOTES: KHP & Motanga 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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