

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 27, 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	187.55	400kV THP - Siliguri Fdr- I	356.46	+	400kV THP_SIL II under breakdown.
		Unit- II	186.28	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	186.91	400kV THP - Siliguri Fdr- IV	339.85	+	
		Unit- IV	187.31	400kV THP - Malbase Fdr- III	407.88	+	
		Unit- V	186.13	400kV Malbase - Siliguri	318.22	+	
		Unit- VI	186.21	-	-	-	
		Total	1,120.39	Error at Station/Auxiliary Consumption/Losses	16.20		
2	720MW MHP	Unit-I	197.83	400kV MHP - Jigmeling Fdr - I	252.23	+	400kV MHP-JLG IV Standby.
		Unit-II	196.87	400kV MHP - Jigmeling Fdr - II	253.47	+	
		Unit-III	180.23	400kV MHP - Jigmeling Fdr - III	246.39	+	
		Unit-IV	180.21	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	755.14	Error at Station/Auxiliary Consumption/Losses	3.05		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	93.84	+	Unit I under shutdown till 30th June,2020.
		Unit- II	91.63	220kV CHP - Birpara Fdr- II	93.83	+	
		Unit- III	91.28	220kV CHP - Malbase Fdr- III	121.04	+	
		Unit- IV	91.63	220kV CHP - Semtokha Fdr- IV	-45.84	-	
		-	-	220kV Malbase - Birpara Fdr.	61.86	+	
		-	-	66kV CHP - Chumdo Fdr.	3.40	+	
		-	-	66kV CHP - Gedu Fdr.	6.33	+	
		-	-	3x3MVA, 66/11kV TFR	1.18	+	
		Total	274.54	Error at Station/Auxiliary Consumption/Losses	0.76		
4	24MW BHP (U/S)	Unit- I	11.86	220kV BHP - Semtokha Fdr.	68.99	+	
		Unit- II	11.86	66kV BHP - Lobeysa Fdr.	16.71	+	
		Total	23.72	220kV BHP - Tsirang Fdr.	-21.13	-	
	40MW BHP (L/S)	Unit- I	21.00	5MVA, 66/11kV TFR	1.00	+	
		Unit- II	20.13	30MVA ICT, 220/66kV	0.00		
		Total	41.13	Error at Station/Auxiliary Consumption/Losses	0.72		
5	126MW DHPC	Unit-I	52.30	220kV DHPC - Tsirang Fdr.	103.94	+	
		Unit-II	52.19	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	104.49	Error at Station/Auxiliary Consumption/Losses	0.55		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Fdr- I	40.26	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.43	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.22	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	39.30	+	
		-	-	132kV Motanga - Rangia Fdr.	46.50	+	
		-	-	220kV Tsirang - Jigmeling	79.72	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.09		

Note: Generation-Load Summary for June 27, 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	1,564.27	220.49	205.60	1,264.06	14.89
2	Eastern Grid	821.14	62.97	58.83	837.89	4.14
	Total	2,385.41	283.46	264.43	2,101.95	19.03

Note: Generation-Load Summary for June 27, 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	1270.91	255.90	245.29	958.49	10.61
2	Eastern Grid	66.16	57.11	56.98	65.57	0.13
	Total	1,337.07	313.01	302.27	1,024.06	10.74

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:	June 28, 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	365.00	+	400kV THP_SIL II under breakdown.
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	187.00	400kV THP - Siliguri Fdr- IV	349.00	+	
		Unit- IV	186.64	400kV THP - Malbase Fdr- III	390.00	+	
		Unit- V	186.68	400kV Malbase - Siliguri	332.86	+	
		Unit- VI	186.87	-	-	-	
		Total	1,121.19	Error at Station/Auxiliary Consumption/Losses	17.19		
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Fdr - I	252.16	+	400kV MHP-JLG IV Standby.
		Unit-II	196.20	400kV MHP - Jigmeling Fdr - II	253.12	+	
		Unit-III	180.24	400kV MHP - Jigmeling Fdr - III	246.37	+	
		Unit-IV	180.25	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	754.54	Error at Station/Auxiliary Consumption/Losses	2.89		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	100.24	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	92.00	220kV CHP - Birpara Fdr- II	100.51	+	
		Unit- III	92.00	220kV CHP - Malbase Fdr- III	140.24	+	
		Unit- IV	92.00	220kV CHP - Semtokha Fdr- IV	-75.60	-	
		-	-	220kV Malbase - Birpara Fdr.	57.47	+	
		-	-	66kV CHP - Chumdo Fdr.	1.14	+	
		-	-	66kV CHP - Gedu Fdr.	5.77	+	
		-	-	3x3MVA, 66/11kV TFR	0.86	+	
		Total	276.00	Error at Station/Auxiliary Consumption/Losses	2.84		
4	24MW BHP (U/S)	Unit- I	11.83	220kV BHP - Semtokha Fdr.	93.27	+	
		Unit- II	11.83	66kV BHP - Lobeysa Fdr.	15.44	+	
		Total	23.66	220kV BHP - Tsirang Fdr.	-43.26	-	
	40MW BHP (L/S)	Unit- I	21.01	5MVA, 66/11kV TFR	0.39	+	
		Unit- II	20.21	30MVA ICT, 220/66kV			
		Total	41.22	Error at Station/Auxiliary Consumption/Losses	-0.96		
5	126MW DHPC	Unit-I	63.47	220kV DHPC - Tsirang Fdr.	126.12	+	
		Unit-II	63.25	220kV Jigmeling - Dagapela Fdr.	1.40	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.72	Error at Station/Auxiliary Consumption/Losses	0.60		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.98	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	22.28	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	45.74	+	
		-	-	132kV Motanga - Rangia Fdr.	46.00	+	
		-	-	220kV Tsirang - Jigmeling	79.41	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.47		

Note: Generation-Load summary for June 28, 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	1,588.79	204.30	186.03	1,305.08	18.27
2	Eastern Grid	820.54	56.56	52.20	843.39	4.36
	Total	2,409.33	260.86	238.23	2,148.47	22.63

Note: Generation-Load Summary for June 28, 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	1365.95	242.42	233.04	1,080.70	9.38
2	Eastern Grid	66	41.24	41.09	67.59	0.15
	Total	1,431.95	283.66	274.13	1,148.29	9.53

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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