

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 20, 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	187.48	400kV THP - Siliguri Fdr- I	264.74	+	
		Unit- II	187.87	400kV THP - Siliguri Fdr- II	262.87	+	
		Unit- III	187.39	400kV THP - Siliguri Fdr- IV	256.51	+	
		Unit- IV	187.38	400kV THP - Malbase Fdr- III	322.05	+	
		Unit- V	187.98	400kV Malbase - Siliguri	235.77	+	
		Unit- VI	186.44	-	-	-	
		Total	1,124.54	Error at Station/Auxiliary Consumption/Losses	18.37		
2	720MW MHP	Unit-I	197.80	400kV MHP - Jigmeling Fdr - I	197.78	+	Unit-III shutdown & 400kV MHP-JLG IV Standby
		Unit-II	197.80	400kV MHP - Jigmeling Fdr - II	198.50	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	193.22	+	
		Unit-IV	197.97	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	593.57	Error at Station/Auxiliary Consumption/Losses	4.07		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	91.94	+	Unit I under shutdown till 30th June,2020.
		Unit- II	91.46	220kV CHP - Birpara Fdr- II	91.44	+	
		Unit- III	91.52	220kV CHP - Malbase Fdr- III	123.78	+	
		Unit- IV	91.59	220kV CHP - Semtokha Fdr- IV	-44.78	-	
		-	-	220kV Malbase - Birpara Fdr.	55.64	+	
		-	-	66kV CHP - Chumdo Fdr.	3.71	+	
		-	-	66kV CHP - Gedu Fdr.	6.15	+	
		-	-	3x3MVA, 66/11kV TFR	1.13	+	
		Total	274.57	Error at Station/Auxiliary Consumption/Losses	1.20		
4	24MW BHP (U/S)	Unit- I	11.79	220kV BHP - Semtokha Fdr.	68.44	+	
		Unit- II	11.79	66kV BHP - Lobeysa Fdr.	17.13	+	
		Total	23.58	220kV BHP - Tsirang Fdr.	-21.63	-	
	40MW BHP (L/S)	Unit- I	20.61	5MVA, 66/11kV TFR	0.79	+	
		Unit- II	19.81	30MVA ICT, 220/66kV	0.00		
		Total	40.42	Error at Station/Auxiliary Consumption/Losses	0.73		
5	126MW DHPC	Unit-I	50.32	220kV DHPC - Tsirang Fdr.	100.55	+	
		Unit-II	50.73	220kV Jigmeling - Dagapela Fdr.	1.70	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	101.05	Error at Station/Auxiliary Consumption/Losses	0.50		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.80	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.58	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	45.55	+	
		-	-	132kV Motanga - Rangia Fdr.	38.19	+	
		-	-	220kV Tsirang - Jigmeling	74.44	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.34		

Note: Generation-Load Summary for June 20, 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	1,564.16	230.81	213.17	1,258.91	17.64
2	Eastern Grid	659.57	60.77	56.36	673.24	4.41
	Total	2,223.73	291.58	269.53	1,932.15	22.05

Note: Generation-Load Summary for June 20, 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	638.27	236.47	227.87	361.03	8.60
2	Eastern Grid	66.19	63.16	62.48	43.80	0.68
	Total	704.46	299.63	290.35	404.83	9.28

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 21, 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	274.39	+	
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	270.18	+	
		Unit- III	186.59	400kV THP - Siliguri Fdr- IV	264.28	+	
		Unit- IV	186.36	400kV THP - Malbase Fdr- III	295.75	+	
		Unit- V	187.00	400kV Malbase - Siliguri	252.01	+	
		Unit- VI	185.77	-	-	-	
		Total	1,119.72	Error at Station/Auxiliary Consumption/Losses	15.12		
2	720MW MHP	Unit-I	197.90	400kV MHP - Jigmeling Fdr - I	197.58	+	Unit-III shutdown & 400kV MHP-JLG IV Standby.
		Unit-II	196.56	400kV MHP - Jigmeling Fdr - II	198.19	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	193.20	+	
		Unit-IV	197.88	400kV MHP - Jigmeling Fdr - IV	0.00	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	592.34	Error at Station/Auxiliary Consumption/Losses	3.37		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	97.40	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	91.72	220kV CHP - Birpara Fdr- II	97.30	+	
		Unit- III	91.58	220kV CHP - Malbase Fdr- III	146.76	+	
		Unit- IV	91.54	220kV CHP - Semtokha Fdr- IV	-75.55	-	
		-	-	220kV Malbase - Birpara Fdr.	46.76	+	
		-	-	66kV CHP - Chumdo Fdr.	0.92	+	
		-	-	66kV CHP - Gedu Fdr.	6.24	+	
		-	-	3x3MVA, 66/11kV TFR	0.83	+	
		Total	274.84	Error at Station/Auxiliary Consumption/Losses	0.94		
4	24MW BHP (U/S)	Unit- I	11.79	220kV BHP - Semtokha Fdr.	94.00	+	
		Unit- II	11.79	66kV BHP - Lobeysa Fdr.	15.86	+	
		Total	23.58	220kV BHP - Tsirang Fdr.	-44.07	-	
	40MW BHP (L/S)	Unit- I	20.99	5MVA, 66/11kV TFR	0.39	+	
		Unit- II	20.23	30MVA ICT, 220/66kV			
		Total	41.22	Error at Station/Auxiliary Consumption/Losses	-1.38		
5	126MW DHPC	Unit-I	58.28	220kV DHPC - Tsirang Fdr.	115.91	+	
		Unit-II	58.24	220kV Jigmeling - Dagapela Fdr.	0.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	116.52	Error at Station/Auxiliary Consumption/Losses	0.61		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	42.31	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	21.51	+	
		Unit- III	15.46	5MVA, 132/11kV TFR	0.19	+	
		Unit- IV	16.29	132kV Gelephu - Salakati Fdr.	46.15	+	
		-	-	132kV Motanga - Rangia Fdr.	41.06	+	
		-	-	220kV Tsirang - Jigmeling	67.08	+	
		Total	64.75	Error at Station/Auxiliary Consumption/Losses	0.74		

Note: Generation-Load summary for June 21, 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	1,575.88	206.48	192.09	1,302.32	14.39
2	Eastern Grid	657.09	47.99	43.88	676.18	4.11
	Total	2,232.97	254.47	235.97	1,978.50	18.50

Note: Generation-Load Summary for June 21, 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	560.27	225.03	218.24	314.43	6.79
2	Eastern Grid	60.61	37.31	37.16	44.11	0.15
	Total	620.88	262.34	255.40	358.54	6.94

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.
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