

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 5, 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	139.91	400kV THP - Siliguri Fdr- I	153.86	+	Unit-V Standby
		Unit- II	138.69	400kV THP - Siliguri Fdr- II	151.43	+	
		Unit- III	99.81	400kV THP - Siliguri Fdr- IV	147.26	+	
		Unit- IV	139.72	400kV THP - Malbase Fdr- III	193.22	+	
		Unit- V	0.00	400kV Malbase - Siliguri	136.66	+	
		Unit- VI	139.28	-	-	-	
		Total	657.41	Error at Station/Auxiliary Consumption/Losses	11.64		
2	720MW MHP	Unit-I	197.49	400kV MHP - Jigmeling Fdr - I	198.10	+	Unit III under shutdown (01.06.2020-10.06.2020) 400kV MHP-JLG III Standby.
		Unit-II	195.53	400kV MHP - Jigmeling Fdr - II	196.40	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	198.56	400kV MHP - Jigmeling Fdr - IV	193.50	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	591.58	Error at Station/Auxiliary Consumption/Losses	3.58		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	72.57	+	Unit-I under shutdown till 30th June, 2020. 220kV Mal-BIR under shutdown (30.05-13.06.2020)
		Unit- II	91.45	220kV CHP - Birpara Fdr- II	72.61	+	
		Unit- III	91.75	220kV CHP - Malbase Fdr- III	108.48	+	
		Unit- IV	91.65	220kV CHP - Semtokha Fdr- IV	6.42	+	
		-	-	220kV Malbase - Birpara Fdr.	0.00		
		-	-	66kV CHP - Chumdo Fdr.	6.57	+	
		-	-	66kV CHP - Gedu Fdr.	4.83	+	
		-	-	3x3MVA, 66/11kV TFR	1.22	+	
Total	274.85	Error at Station/Auxiliary Consumption/Losses	2.15				
4	24MW BHP (U/S)	Unit- I	5.04	220kV BHP - Semtokha Fdr.	21.45	+	
		Unit- II	5.04	66kV BHP - Lobeysa Fdr.	10.93	+	
		Total	10.08	220kV BHP - Tsirang Fdr.	-1.29	-	
	40MW BHP (L/S)	Unit- I	11.02	5MVA, 66/11kV TFR	0.60	+	
		Unit- II	10.58	30MVA ICT, 220/66kV	0.00		
		Total	21.60	Error at Station/Auxiliary Consumption/Losses	0.01		
5	126MW DHPC	Unit-I	30.19	220kV DHPC - Tsirang Fdr.	0.00		220kV DHP-TSI line under idle charged.
		Unit-II	28.21	220kV DHP - Dagapela Fdr.	57.97	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	58.40	Error at Station/Auxiliary Consumption/Losses	0.43		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	39.30	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	25.24	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	24.93	+	
		-	-	132kV Motanga - Rangia Fdr.	60.89	+	
		-	-	220kV Tsirang - Jigmeling	-3.98	-	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.16		

Note: Generation-Load Summary for June 05, 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	1,022.34	233.53	219.75	734.39	13.78
2	Eastern Grid	657.58	37.75	33.01	673.82	4.74
	Total	1,679.92	271.28	252.76	1,408.21	18.52

Note: Generation-Load Summary for June 05, 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	562.44	262.20	252.93	268.57	9.27
2	Eastern Grid	49.71	57.19	56.61	24.19	0.58
	Total	612.15	319.39	309.54	292.76	9.85

NOTE: KHP & Motanga Loads 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 6, 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	139.78	400kV THP - Siliguri Fdr- I	200.29	+	Unit-V Standby
		Unit- II	169.02	400kV THP - Siliguri Fdr- II	197.42	+	
		Unit- III	187.01	400kV THP - Siliguri Fdr- IV	191.46	+	
		Unit- IV	186.80	400kV THP - Malbase Fdr- III	219.95	+	
		Unit- V	0.30	400kV Malbase - Siliguri	182.36	+	
		Unit- VI	140.93	-	-	-	
		Total	823.84	Error at Station/Auxiliary Consumption/Losses	14.72		
2	720MW MHP	Unit-I	197.49	400kV MHP - Jigmeling Fdr - I	189.80	+	Unit III under shutdown (01.06.2020-10.06.2020) 400kV MHP-JLG III Standby.
		Unit-II	195.59	400kV MHP - Jigmeling Fdr - II	195.60	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	198.52	400kV MHP - Jigmeling Fdr - IV	196.30	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	591.60	Error at Station/Auxiliary Consumption/Losses	9.90		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	80.06	+	Unit-I under shutdown till 30th June, 2020. 220kV Mal-BIR under shutdown (30.05-13.06.2020)
		Unit- II	91.77	220kV CHP - Birpara Fdr- II	80.16	+	
		Unit- III	91.73	220kV CHP - Malbase Fdr- III	113.30	+	
		Unit- IV	91.74	220kV CHP - Semtokha Fdr- IV	-8.34	-	
		-	-	220kV Malbase - Birpara Fdr.	0.00		
		-	-	66kV CHP - Chumdo Fdr.	4.24	+	
		-	-	66kV CHP - Gedu Fdr.	4.54	+	
		Total	275.24	Error at Station/Auxiliary Consumption/Losses	0.29		
4	24MW BHP (U/S)	Unit- I	5.86	220kV BHP - Semtokha Fdr.	31.89	+	
		Unit- II	5.86	66kV BHP - Lobeysa Fdr.	11.19	+	
		Total	11.72	220kV BHP - Tsirang Fdr.	-7.04	-	
	40MW BHP (L/S)	Unit- I	12.59	5MVA, 66/11kV TFR	0.42	+	
		Unit- II	12.10	30MVA ICT, 220/66kV			
		Total	24.69	Error at Station/Auxiliary Consumption/Losses	-0.05		
5	126MW DHPC	Unit-I	25.23	220kV DHPC - Tsirang Fdr.	0.00		DHP-TSI line under idle charge.
		Unit-II	25.24	220kV DHP - Dagapela Fdr.	50.02	+	
		-	-	5MVA, 220/33kV TFR			
		Total	50.47	Error at Station/Auxiliary Consumption/Losses	0.45		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	42.13	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	22.27	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.26	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	24.80	+	
		-	-	132kV Motanga - Rangia Fdr.	51.91	+	
		-	-	220kV Tsirang - Jigmeling	-8.55	-	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.34		

Note: Generation-Load summary for June 06, 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	1,185.96	212.29	197.33	931.75	14.96
2	Eastern Grid	657.60	40.66	29.42	658.41	11.24
	Total	1,843.56	252.95	226.75	1,590.16	26.20

Note: Generation-Load Summary for June 06, 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	481.49	228.54	222.29	229.65	6.25
2	Eastern Grid	65.40	43.07	42.71	45.63	0.36
	Total	546.89	271.61	265.00	275.28	6.61

NOTES: KHP & Motanga loads 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.