

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 7, 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	148.90	400kV THP - Siliguri Fdr- I	0.00		Unit- II & V standby. 400kV THP-SIL I Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	102.27	+	
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	98.77	+	
		Unit- IV	100.49	400kV THP - Malbase Fdr- III	142.34	+	
		Unit- V	0.00	400kV Malbase - Siliguri	88.29	+	
		Unit- VI	99.99	-	-	-	
		Total	349.38	Error at Station/Auxiliary Consumption/Losses	6.00		
2	720MW MHP	Unit-I	120.00	400kV MHP - Jigmeling Fdr - I	117.80	+	Unit- III & Unit IV Standby 400kV MHP-JLG II & III Standby.
		Unit-II	119.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	116.40	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	239.00	Error at Station/Auxiliary Consumption/Losses	4.80		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	57.85	+	Unit-I under shutdown till 30th June. 220kV CHP-Mal under shutdown till 09.5.2020.
		Unit- II	54.51	220kV CHP - Birpara Fdr- II	57.71	+	
		Unit- III	73.47	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	42.32	220kV CHP - Semtokha Fdr- IV	37.97	+	
		-	-	220kV Malbase - Birpara Fdr.	-45.40	-	
		-	-	66kV CHP - Chumdo Fdr.	5.53	+	
		-	-	66kV CHP - Gedu Fdr.	6.32	+	
		-	-	3x3MVA, 66/11kV TFR	1.64	+	
Total	170.30	Error at Station/Auxiliary Consumption/Losses	3.28				
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	-3.16	+	L/S Unit-II Standby,U/S Unit I standby
		Unit- II	6.20	66kV BHP - Lobeysa Fdr.	9.92	+	
		Total	6.20	220kV BHP - Tsirang Fdr.	13.27	+	
	40MW BHP (L/S)	Unit- I	15.15	5MVA, 66/11kV TFR	0.81	+	
		Unit- II	0.00	30MVA ICT, 220/66kV	0.00		
		Total	15.15	Error at Station/Auxiliary Consumption/Losses	0.51		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	20.97	+	Unit-I Standby
		Unit-II	21.19	220kV Jigmeling - Dagapela Fdr.	0.00		
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	21.19	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	14.00	132kV KHP - Nangkhon Fdr- I	33.41	+	
		Unit-II	14.00	132kV KHP - Kilikhar Fdr- II	21.26	+	
		Unit- III	14.00	5MVA, 132/11kV TFR	0.45	+	
		Unit- IV	14.00	132kV Gelephu - Salakati Fdr.	-1.16	-	
		-	-	132kV Motanga - Rangia Fdr.	28.77	+	
		-	-	220kV Tsirang - Jigmeling	32.19	+	
		Total	56.00	Error at Station/Auxiliary Consumption/Losses	0.88		

Note: Generation-Load Summary for May 07, 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	562.22	170.54	160.53	359.49	10.01
2	Eastern Grid	295.00	65.38	59.70	261.81	5.68
	Total	857.22	235.92	220.23	621.30	15.69

Note: Generation-Load Summary for May 07, 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	754.44	280.86	271.72	431.87	9.14
2	Eastern Grid	56.97	69.69	69.39	28.99	0.30
	Total	811.41	350.55	341.11	460.86	9.44

NOTES:KHP 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:	May 8, 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	150.64	400kV THP - Siliguri Fdr- I	0.00		Unit-II,III & V standby. 400kV THP-SIL I under standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	103.00	+	
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	98.42	+	
		Unit- IV	100.78	400kV THP - Malbase Fdr- III	143.32	+	
		Unit- V	0.00	400kV Malbase - Siliguri	88.56	+	
		Unit- VI	100.35	-	-	-	
		Total	351.77	Error at Station/Auxiliary Consumption/Losses	7.03		
2	720MW MHP	Unit-I	179.11	400kV MHP - Jigmeling Fdr - I	178.00	+	Unit-II & IV on Standby. 400kV MHP-JLG II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	178.82	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	177.40	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	357.93	Error at Station/Auxiliary Consumption/Losses	2.53		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	88.80	+	Unit-I under shutdown till 30th June. 220kV CHP-Mal under shutdown till 09.5.2020.
		Unit- II	54.71	220kV CHP - Birpara Fdr- II	88.65	+	
		Unit- III	69.80	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	50.43	220kV CHP - Semtokha Fdr- IV	-16.73	-	
		-	-	220kV Malbase - Birpara Fdr.	-81.71	-	
		-	-	66kV CHP - Chumdo Fdr.	4.58	+	
		-	-	66kV CHP - Gedu Fdr.	7.95	+	
		-	-	3x3MVA, 66/11kV TFR	0.97	+	
		Total	174.94	Error at Station/Auxiliary Consumption/Losses	0.72		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	45.66	+	L/S Unit-II Standby,U/S Unit I standby
		Unit- II	7.82	66kV BHP - Lobeysa Fdr.	10.87	+	
		Total	7.82	220kV BHP - Tsirang Fdr.	-32.67	-	
	40MW BHP (L/S)	Unit- I	15.87	5MVA, 66/11kV TFR	0.00	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	15.87	Error at Station/Auxiliary Consumption/Losses	-0.17				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	39.95	+	Unit I standby.
		Unit-II	40.18	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	40.18	Error at Station/Auxiliary Consumption/Losses	0.23		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	50.25	+	132kV Motanga-Rangia tripped at 22:45hrs
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	14.81	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.16	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	24.33	+	
		-	-	132kV Motanga - Rangia Fdr.	0.00	+	
		-	-	220kV Tsirang - Jigmeling	5.09	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.78		

Note: Generation-Load summary for May 08, 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	590.58	199.77	191.96	385.72	7.81
2	Eastern Grid	423.93	49.29	45.98	379.73	3.31
	Total	1,014.51	249.06	237.94	765.45	11.12

Note: Generation-Load Summary for May 08, 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	863.92	257.84	255.99	579.82	1.85
2	Eastern Grid	56.47	49.24	49.00	33.49	0.24
	Total	920.39	307.08	304.99	613.31	2.09

NOTES: KHP 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.