

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 17, 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	187.81	400kV THP - Siliguri Fdr- I	272.37	+	
		Unit- II	186.96	400kV THP - Siliguri Fdr- II	271.27	+	
		Unit- III	186.93	400kV THP - Siliguri Fdr- IV	263.7	+	
		Unit- IV	187.3	400kV THP - Malbase Fdr- III	296.38	+	
		Unit- V	187.02	400kV Malbase - Siliguri	250.59	+	
		Unit- VI	186.02	-	-	-	
		Total	1,122.04	Error at Station/Auxiliary Consumption/Losses	1.633%		
2	720MW MHP	Unit-I	197.21	400kV MHP - Jigmeling Fdr - I	390.66	+	400kV MHP-JLG Fdr II under Breakdown 400kV MHP-JLG Fdr IV under shutdown
		Unit-II	197.16	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	193.67	400kV MHP - Jigmeling Fdr - III	391.39	+	
		Unit-IV	195.36	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	783.40	Error at Station/Auxiliary Consumption/Losses	0.172%		
3	336MW CHP	Unit- I	91.61	220kV CHP - Birpara Fdr- I	121.39	+	
		Unit- II	91.42	220kV CHP - Birpara Fdr- II	120.85	+	
		Unit- III	91.73	220kV CHP - Malbase Fdr- III	155.49	+	
		Unit- IV	91.37	220kV CHP - Semtokha Fdr- IV	-46.11	-	
		-	-	220kV Malbase - Birpara Fdr.	81.09	+	
		-	-	66kV CHP - Chumdo Fdr.	5.08	+	
		-	-	66kV CHP - Gedu Fdr.	6.79	+	
		-	-	3x3MVA, 66/11kV TFR	1.40	+	
		Total	366.13	Error at Station/Auxiliary Consumption/Losses	0.339%		
4	24MW BHP (U/S)	Unit- I	11.84	220kV BHP - Semtokha Fdr.	76.42	+	
		Unit- II	11.84	66kV BHP - Lobeyasa Fdr.	18.07	+	
		Total	23.68	220kV BHP - Tsirang Fdr.	-29.38	-	
	40MW BHP (L/S)	Unit- I	20.40	5MVA, 66/11kV TFR	0.70	+	
		Unit- II	20.68	30MVA ICT, 220/66kV			
		Total	41.08	Error at Station/Auxiliary Consumption/Losses	-1.621%		
5	126MW DHPC	Unit-I	60.27	220kV DHPC - Tsirang Fdr.	119.06	+	
		Unit-II	59.27	220kV Jigmeling - Dagapela Fdr.	2.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	119.54	Error at Station/Auxiliary Consumption/Losses	0.402%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	36.18	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	28.11	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.38	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	46.65	+	
		-	-	132kV Motanga - Rangia Fdr.	54.34	+	
		-	-	220kV Tsirang - Jigmeling	86.48	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	2.015%		

Note: Generation-Load Summary for September 17, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	1,672.47	204.73	187.94	1,381.26	16.79
2	Eastern Grid	849.40	52.84	50.16	883.04	2.68
	Total	2,521.87	257.57	238.10	2,264.30	19.47

Note: Generation-Load Summary for September 17, 2019 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	1,586.78	255.61	238.20	1241.61	17.41
2	Eastern Grid	426.16	64.49	57.13	451.23	7.36
	Total	2,012.94	320.10	295.33	1,692.84	24.77

NOTES: KHP & MHEP load 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:	September 18, 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	187.51	400kV THP - Siliguri Fdr- I	279.36	+	
		Unit- II	186.42	400kV THP - Siliguri Fdr- II	276.69	+	
		Unit- III	186.68	400kV THP - Siliguri Fdr- IV	270.82	+	
		Unit- IV	187.30	400kV THP - Malbase Fdr- III	278.71	+	
		Unit- V	187.22	400kV Malbase - Siliguri	261.58	+	
		Unit- VI	186.93	-	-	-	
		Total	1,122.06	Error at Station/Auxiliary Consumption/Losses	1.469%		
2	720MW MHP	Unit-I	184.72	400kV MHP - Jigmeling Fdr - I	353.53	+	400kV MHP-JLG II Breakdown. 400kV MHP-JLG IV under shutdown
		Unit-II	184.92	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	181.04	400kV MHP - Jigmeling Fdr - III	354.75	+	
		Unit-IV	160.83	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	711.51	Error at Station/Auxiliary Consumption/Losses	0.454%		
3	336MW CHP	Unit- I	91.46	220kV CHP - Birpara Fdr- I	122.98	+	
		Unit- II	91.60	220kV CHP - Birpara Fdr- II	122.86	+	
		Unit- III	91.53	220kV CHP - Malbase Fdr- III	178.86	+	
		Unit- IV	91.73	220kV CHP - Semtokha Fdr- IV	-68.18	-	
		-	-	220kV Malbase - Birpara Fdr.	65.68	+	
		-	-	66kV CHP - Chumdo Fdr.	1.50	+	
		-	-	66kV CHP - Gedu Fdr.	6.47	+	
		-	-	3x3MVA, 66/11kV TFR	0.94	+	
		Total	366.32	Error at Station/Auxiliary Consumption/Losses	0.243%		
4	24MW BHP (U/S)	Unit- I	11.85	220kV BHP - Semtokha Fdr.	87.30	+	
		Unit- II	11.85	66kV BHP - Lobeysa Fdr.	16.25	+	
		Total	23.70	220kV BHP - Tsirang Fdr.	-38.39	-	
	40MW BHP (L/S)	Unit- I	20.27	5MVA, 66/11kV TFR	0.43	+	
		Unit- II	20.75	30MVA ICT, 220/66kV			
Total	41.02	Error at Station/Auxiliary Consumption/Losses	-2.121%				
5	126MW DHPC	Unit-I	58.32	220kV DHPC - Tsirang Fdr.	115.09	+	
		Unit-II	57.31	220kV Jigmeling - Dagapela Fdr.	1.50	+	
		-	-	5MVA, 220/33kV TFR			
		Total	115.63	Error at Station/Auxiliary Consumption/Losses	0.467%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	40.67	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.23	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.24	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	51.74	+	
		-	-	132kV Motanga - Rangia Fdr.	51.70	+	
		-	-	220kV Tsirang - Jigmeling	72.45	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.303%		

Note: Generation-Load summary for September 18, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	1,668.73	196.31	180.77	1,399.97	15.54
2	Eastern Grid	777.51	38.24	34.15	811.72	4.09
	Total	2,446.24	234.55	214.92	2,211.69	19.63

Note: Generation-Load Summary for September 18, 2019 at 09:00hrs

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	1562.6	238.26	220.67	1,260.30	17.59
2	Eastern Grid	605.51	41.46	34.21	628.09	7.25
	Total	2,168.11	279.72	254.88	1,888.39	24.84

NOTES: KHP, MHP load 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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