

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 8, 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	187.19	400kV THP - Siliguri Fdr- I	267.63	+	
		Unit- II	188.26	400kV THP - Siliguri Fdr- II	266.21	+	
		Unit- III	187.18	400kV THP - Siliguri Fdr- IV	260.36	+	
		Unit- IV	187.43	400kV THP - Malbase Fdr- III	305.48	+	
		Unit- V	187.30	400kV Malbase - Siliguri	244.32	+	
		Unit- VI	186.24	-	-	-	
		Total	1,123.60	Error at Station/Auxiliary Consumption/Losses	2.129%		
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Fdr - I	255.63	+	400kV MHP-JLG II Breakdown
		Unit-II	197.37	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	195.80	400kV MHP - Jigmeling Fdr - III	264.00	+	
		Unit-IV	195.27	400kV MHP - Jigmeling Fdr - IV	264.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	786.29	Error at Station/Auxiliary Consumption/Losses	0.338%		
3	336MW CHP	Unit- I	91.63	220kV CHP - Birpara Fdr- I	120.57	+	
		Unit- II	91.56	220kV CHP - Birpara Fdr- II	119.93	+	
		Unit- III	90.47	220kV CHP - Malbase Fdr- III	148.73	+	
		Unit- IV	91.70	220kV CHP - Semtokha Fdr- IV	-38.79	-	
		-	-	220kV Malbase - Birpara Fdr.	85.39	+	
		-	-	66kV CHP - Chumdo Fdr.	5.52	+	
		-	-	66kV CHP - Gedu Fdr.	6.40	+	
		-	-	3x3MVA, 66/11kV TFR	1.39	+	
		Total	365.36	Error at Station/Auxiliary Consumption/Losses	0.441%		
4	24MW BHP (U/S)	Unit- I	11.87	220kV BHP - Semtokha Fdr.	66.00	+	
		Unit- II	11.87	66kV BHP - Lobeysa Fdr.	17.06	+	
		Total	23.74	220kV BHP - Tsirang Fdr.	-18.14	-	
	40MW BHP (L/S)	Unit- I	20.48	5MVA, 66/11kV TFR	0.63	+	
		Unit- II	20.73	30MVA ICT, 220/66kV			
		Total	41.21	Error at Station/Auxiliary Consumption/Losses	-0.924%		
5	126MW DHPC	Unit-I	58.35	220kV DHPC - Tsirang Fdr.	116.06	+	
		Unit-II	58.30	220kV Jigmeling - Dagapela Fdr.	2.50	+	
		-	-	5MVA, 220/33kV TFR			
		Total	116.65	Error at Station/Auxiliary Consumption/Losses	0.506%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	37.70	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	27.55	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	44.00	+	
		-	-	132kV Motanga - Rangia Fdr.	50.29	+	
		-	-	220kV Tsirang - Jigmeling	93.63	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.621%		

Note: Generation-Load Summary for September 08, 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	1,670.56	212.52	189.50	1,364.41	23.02
2	Eastern Grid	852.29	68.00	64.93	877.92	3.07
	Total	2,522.85	280.52	254.43	2,242.33	26.09

Note: Generation-Load Summary for September 08, 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	1,538.35	254.70	241.66	1210.08	13.04
2	Eastern Grid	444.08	65.98	64.90	451.67	1.08
	Total	1,982.43	320.68	306.56	1,661.75	14.12

NOTES: KHP 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 9, 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	187.94	400kV THP - Siliguri Fdr- I	276.57	+	
		Unit- II	187.32	400kV THP - Siliguri Fdr- II	275.11	+	
		Unit- III	187.45	400kV THP - Siliguri Fdr- IV	267.78	+	
		Unit- IV	185.45	400kV THP - Malbase Fdr- III	284.87	+	
		Unit- V	187.98	400kV Malbase - Siliguri	257.04	+	
		Unit- VI	186.21	-	-	-	
		Total	1,122.35	Error at Station/Auxiliary Consumption/Losses	1.606%		
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Fdr - I	253.05	+	400kV MHP-JLG II Breakdown
		Unit-II	197.35	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	193.07	400kV MHP - Jigmeling Fdr - III	261.80	+	
		Unit-IV	192.74	400kV MHP - Jigmeling Fdr - IV	262.12	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	781.01	Error at Station/Auxiliary Consumption/Losses	0.517%		
3	336MW CHP	Unit- I	91.31	220kV CHP - Birpara Fdr- I	124.15	+	
		Unit- II	91.35	220kV CHP - Birpara Fdr- II	124.19	+	
		Unit- III	92.32	220kV CHP - Malbase Fdr- III	176.50	+	
		Unit- IV	91.72	220kV CHP - Semtokha Fdr- IV	-66.42	-	
		-	-	220kV Malbase - Birpara Fdr.	69.17	+	
		-	-	66kV CHP - Chumdo Fdr.	1.30	+	
		-	-	66kV CHP - Gedu Fdr.	6.24	+	
		-	-	3x3MVA, 66/11kV TFR	0.87	+	
		Total	366.70	Error at Station/Auxiliary Consumption/Losses	-0.035%		
4	24MW BHP (U/S)	Unit- I	11.84	220kV BHP - Semtokha Fdr.	85.67	+	
		Unit- II	11.84	66kV BHP - Lobeysa Fdr.	16.22	+	
		Total	23.68	220kV BHP - Tsirang Fdr.	-36.34	-	
	40MW BHP (L/S)	Unit- I	20.46	5MVA, 66/11kV TFR	0.38		
		Unit- II	20.72	30MVA ICT, 220/66kV			
		Total	41.18	Error at Station/Auxiliary Consumption/Losses	-2.598%		
5	126MW DHPC	Unit-I	63.54	220kV DHPC - Tsirang Fdr.	126.43	+	
		Unit-II	63.52	220kV Jigmeling - Dagapela Fdr.	1.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	127.06	Error at Station/Auxiliary Consumption/Losses	0.496%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	40.91	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	24.11	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	54.51	+	
		-	-	132kV Motanga - Rangia Fdr.	51.55	+	
		-	-	220kV Tsirang - Jigmeling	87.71	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.068%		

Note: Generation-Load summary for September 09, 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	1,680.97	199.25	183.00	1,394.01	16.25
2	Eastern Grid	847.01	51.69	46.95	883.03	4.74
	Total	2,527.98	250.94	229.95	2,277.04	20.99

Note: Generation-Load Summary for September 09, 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	1530.59	222.22	212.84	1,245.48	9.38
2	Eastern Grid	447.54	42.10	42.04	468.33	0.06
	Total	1,978.13	264.32	254.88	1,713.81	9.44

NOTES: KHP 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.