

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 16, 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	187.46	400kV THP - Siliguri Fdr- I	270.5	+	
		Unit- II	186.63	400kV THP - Siliguri Fdr- II	268.09	+	
		Unit- III	187.43	400kV THP - Siliguri Fdr- IV	261.55	+	
		Unit- IV	187.37	400kV THP - Malbase Fdr- III	304.7	+	
		Unit- V	187.95	400kV Malbase - Siliguri	244.87	+	
		Unit- VI	186.87	-	-	-	
		Total	1,123.71	Error at Station/Auxiliary Consumption/Losses	1.679%		
2	720MW MHP	Unit-I	197.86	400kV MHP - Jigmeling Fdr - I	294.16	+	400kV MHP-JLG Fdr II under Breakdown Unit IV & 400kV MHP-JLG Fdr IV under shutdown
		Unit-II	197.88	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	197.78	400kV MHP - Jigmeling Fdr - III	295.75	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	593.52	Error at Station/Auxiliary Consumption/Losses	0.608%		
3	336MW CHP	Unit- I	91.45	220kV CHP - Birpara Fdr- I	118.43	+	
		Unit- II	91.34	220kV CHP - Birpara Fdr- II	118.65	+	
		Unit- III	91.62	220kV CHP - Malbase Fdr- III	150.25	+	
		Unit- IV	91.97	220kV CHP - Semtokha Fdr- IV	-34.23	-	
		-	-	220kV Malbase - Birpara Fdr.	81.87	+	
		-	-	66kV CHP - Chumdo Fdr.	5.65	+	
		-	-	66kV CHP - Gedu Fdr.	6.60	+	
		-	-	3x3MVA, 66/11kV TFR	1.40	+	
		Total	366.38	Error at Station/Auxiliary Consumption/Losses	-0.101%		
4	24MW BHP (U/S)	Unit- I	11.85	220kV BHP - Semtokha Fdr.	65.89	+	
		Unit- II	11.85	66kV BHP - Lobeyasa Fdr.	18.19	+	
		Total	23.70	220kV BHP - Tsirang Fdr.	-19.50	-	
	40MW BHP (L/S)	Unit- I	20.49	5MVA, 66/11kV TFR	0.70	+	
		Unit- II	20.69	30MVA ICT, 220/66kV			
		Total	41.18	Error at Station/Auxiliary Consumption/Losses	-0.617%		
5	126MW DHPC	Unit-I	56.33	220kV DHPC - Tsirang Fdr.	111.05	+	
		Unit-II	55.31	220kV Jigmeling - Dagapela Fdr.	2.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	111.64	Error at Station/Auxiliary Consumption/Losses	0.528%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Fdr- I	36.65	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	27.99	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	46.38	+	
		-	-	132kV Motanga - Rangia Fdr.	56.75	+	
		-	-	220kV Tsirang - Jigmeling	87.72	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.606%		

Note: Generation-Load Summary for September 16, 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	1,666.61	214.93	198.34	1,363.96	16.59
2	Eastern Grid	659.52	54.20	49.53	693.04	4.67
	Total	2,326.13	269.13	247.87	2,057.00	21.26

Note: Generation-Load Summary for September 16, 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	1,582.90	259.10	250.79	1241.37	8.31
2	Eastern Grid	604.85	60.06	58.59	627.22	1.47
	Total	2,187.75	319.16	309.38	1,868.59	9.78

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 17, 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	187.36	400kV THP - Siliguri Fdr- I	278.78	+	
		Unit- II	186.10	400kV THP - Siliguri Fdr- II	276.21	+	
		Unit- III	187.10	400kV THP - Siliguri Fdr- IV	269.40	+	
		Unit- IV	186.73	400kV THP - Malbase Fdr- III	278.56	+	
		Unit- V	188.15	400kV Malbase - Siliguri	261.10	+	
		Unit- VI	186.40	-	-	-	
		Total	1,121.84	Error at Station/Auxiliary Consumption/Losses	1.684%		
2	720MW MHP	Unit-I	197.18	400kV MHP - Jigmeling Fdr - I	390.66	+	400kV MHP-JLG II Breakdown. 400kV MHP-JLG IV under shutdown
		Unit-II	197.92	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	193.04	400kV MHP - Jigmeling Fdr - III	391.39	+	
		Unit-IV	195.63	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	783.77	Error at Station/Auxiliary Consumption/Losses	0.219%		
3	336MW CHP	Unit- I	91.63	220kV CHP - Birpara Fdr- I	121.37	+	
		Unit- II	91.35	220kV CHP - Birpara Fdr- II	121.36	+	
		Unit- III	91.56	220kV CHP - Malbase Fdr- III	178.94	+	
		Unit- IV	91.85	220kV CHP - Semtokha Fdr- IV	-65.02	-	
		-	-	220kV Malbase - Birpara Fdr.	63.61	+	
		-	-	66kV CHP - Chumdo Fdr.	1.32	+	
		-	-	66kV CHP - Gedu Fdr.	6.75	+	
		-	-	3x3MVA, 66/11kV TFR	0.92	+	
		Total	366.39	Error at Station/Auxiliary Consumption/Losses	0.205%		
4	24MW BHP (U/S)	Unit- I	11.86	220kV BHP - Semtokha Fdr.	84.57	+	
		Unit- II	11.86	66kV BHP - Lobeysa Fdr.	15.61	+	
		Total	23.72	220kV BHP - Tsirang Fdr.	-34.77	-	
	40MW BHP (L/S)	Unit- I	20.46	5MVA, 66/11kV TFR	0.57	+	
		Unit- II	20.72	30MVA ICT, 220/66kV			
		Total	41.18	Error at Station/Auxiliary Consumption/Losses	-2.623%		
5	126MW DHPC	Unit-I	56.36	220kV DHPC - Tsirang Fdr.	112.00	+	
		Unit-II	56.35	220kV Jigmeling - Dagapela Fdr.	1.50	+	
		-	-	5MVA, 220/33kV TFR			
		Total	112.71	Error at Station/Auxiliary Consumption/Losses	0.630%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	40.34	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.99	+	
		Unit- III	16.20	5MVA, 132/11kV TFR	0.24	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	49.83	+	
		-	-	132kV Motanga - Rangia Fdr.	57.66	+	
		-	-	220kV Tsirang - Jigmeling	72.71	+	
		Total	65.70	Error at Station/Auxiliary Consumption/Losses	1.720%		

Note: Generation-Load summary for September 17, 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	1,665.84	201.30	183.53	1,391.83	17.77
2	Eastern Grid	849.47	32.64	29.79	889.54	2.85
	Total	2,515.31	233.94	213.32	2,281.37	20.62

Note: Generation-Load Summary for September 17, 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	1489.15	234.36	220.69	1,191.25	13.67
2	Eastern Grid	604.54	44.62	44.04	623.46	0.58
	Total	2,093.69	278.98	264.73	1,814.71	14.25

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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