

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 11, 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	187.62	400kV THP - Siliguri Fdr- I	267.50	+	
		Unit- II	186.68	400kV THP - Siliguri Fdr- II	265.63	+	
		Unit- III	186.26	400kV THP - Siliguri Fdr- IV	259.69	+	
		Unit- IV	186.17	400kV THP - Malbase Fdr- III	309.66	+	
		Unit- V	187.39	400kV Malbase - Siliguri	241.89	+	
		Unit- VI	186.53	-	-	-	
		Total	1,120.65	Error at Station/Auxiliary Consumption/Losses	1.621%		
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Fdr - I	256.82	+	400kV MHP-JLG II Breakdown
		Unit-II	197.20	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	198.05	400kV MHP - Jigmeling Fdr - III	264.86	+	
		Unit-IV	196.96	400kV MHP - Jigmeling Fdr - IV	265.05	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	790.06	Error at Station/Auxiliary Consumption/Losses	0.421%		
3	336MW CHP	Unit- I	91.80	220kV CHP - Birpara Fdr- I	119.26	+	
		Unit- II	91.59	220kV CHP - Birpara Fdr- II	119.29	+	
		Unit- III	91.67	220kV CHP - Malbase Fdr- III	149.88	+	
		Unit- IV	91.36	220kV CHP - Semtokha Fdr- IV	-35.09	-	
		-	-	220kV Malbase - Birpara Fdr.	81.66	+	
		-	-	66kV CHP - Chumdo Fdr.	5.45	+	
		-	-	66kV CHP - Gedu Fdr.	6.30	+	
		-	-	3x3MVA, 66/11kV TFR	1.38	+	
		Total	366.42	Error at Station/Auxiliary Consumption/Losses	-0.014%		
4	24MW BHP (U/S)	Unit- I	11.85	220kV BHP - Semtokha Fdr.	63.76	+	
		Unit- II	11.85	66kV BHP - Lobeyasa Fdr.	17.46	+	
		Total	23.70	220kV BHP - Tsirang Fdr.	-16.88	-	
	40MW BHP (L/S)	Unit- I	20.42	5MVA, 66/11kV TFR	0.64	+	
		Unit- II	20.73	30MVA ICT, 220/66kV			
Total	41.15	Error at Station/Auxiliary Consumption/Losses	-0.200%				
5	126MW DHPC	Unit-I	57.36	220kV DHPC - Tsirang Fdr.	114.00	+	
		Unit-II	57.27	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	114.63	Error at Station/Auxiliary Consumption/Losses	0.550%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	36.70	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	28.27	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	44.05	+	
		-	-	132kV Motanga - Rangia Fdr.	54.66	+	
		-	-	220kV Tsirang - Jigmeling	95.04	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.076%		

Note: Generation-Load Summary for September 11, 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	1,666.55	216.59	199.87	1,354.92	16.72
2	Eastern Grid	856.06	65.66	61.62	885.44	4.04
	Total	2,522.61	282.25	261.49	2,240.36	20.76

Note: Generation-Load Summary for September 11, 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	1,269.77	258.43	247.54	933.736	10.89
2	Eastern Grid	447.98	61.32	60.67	464.26	0.65
	Total	1,717.75	319.75	308.21	1,398.00	11.54

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 12, 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	187.10	400kV THP - Siliguri Fdr- I	277.40	+	
		Unit- II	186.14	400kV THP - Siliguri Fdr- II	275.53	+	
		Unit- III	187.77	400kV THP - Siliguri Fdr- IV	269.29	+	
		Unit- IV	186.39	400kV THP - Malbase Fdr- III	282.57	+	
		Unit- V	187.17	400kV Malbase - Siliguri	258.99	+	
		Unit- VI	186.81	-	-	-	
		Total	1,121.38	Error at Station/Auxiliary Consumption/Losses	1.479%		
2	720MW MHP	Unit-I	197.17	400kV MHP - Jigmeling Fdr - I	189.45	+	400kV MHP-JLG II Breakdown ,Unit II under shutdown
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	197.63	400kV MHP - Jigmeling Fdr - III	200.36	+	
		Unit-IV	197.11	400kV MHP - Jigmeling Fdr - IV	198.90	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	591.91	Error at Station/Auxiliary Consumption/Losses	0.541%		
3	336MW CHP	Unit- I	92.06	220kV CHP - Birpara Fdr- I	122.70	+	
		Unit- II	91.22	220kV CHP - Birpara Fdr- II	122.46	+	
		Unit- III	91.83	220kV CHP - Malbase Fdr- III	172.07	+	
		Unit- IV	90.17	220kV CHP - Semtokha Fdr- IV	-62.13	-	
		-	-	220kV Malbase - Birpara Fdr.	71.07	+	
		-	-	66kV CHP - Chumdo Fdr.	1.75	+	
		-	-	66kV CHP - Gedu Fdr.	6.18	+	
		-	-	3x3MVA, 66/11kV TFR	0.89	+	
		Total	365.28	Error at Station/Auxiliary Consumption/Losses	0.372%		
4	24MW BHP (U/S)	Unit- I	12.23	220kV BHP - Semtokha Fdr.	80.53	+	
		Unit- II	12.20	66kV BHP - Lobeysa Fdr.	16.04	+	
		Total	24.43	220kV BHP - Tsirang Fdr.	-31.00	-	
	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.41		
		Unit- II	21.10	30MVA ICT, 220/66kV			
Total	41.80	Error at Station/Auxiliary Consumption/Losses	0.598%				
5	126MW DHPC	Unit-I	58.33	220kV DHPC - Tsirang Fdr.	116.05	+	
		Unit-II	58.28	220kV Jigmeling - Dagapela Fdr.	1.16	+	
		-	-	5MVA, 220/33kV TFR			
		Total	116.61	Error at Station/Auxiliary Consumption/Losses	0.480%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	40.18	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.30	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	49.90	+	
		-	-	132kV Motanga - Rangia Fdr.	51.10	+	
		-	-	220kV Tsirang - Jigmeling	81.71	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.848%		

Note: Generation-Load summary for September 12, 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	1,669.50	190.35	172.75	1,397.44	17.60
2	Eastern Grid	657.91	49.91	45.49	689.71	4.42
	Total	2,327.41	240.26	218.24	2,087.15	22.02

Note: Generation-Load Summary for September 12, 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	1546.95	253.03	231.82	1,223.62	21.21
2	Eastern Grid	446.46	52.52	51.54	464.24	0.98
	Total	1,993.41	305.55	283.36	1,687.86	22.19

NOTES: KHP & MHP 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.
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