

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 20, 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	187.49	400kV THP - Siliguri Fdr- I	267.47	+	
		Unit- II	187.74	400kV THP - Siliguri Fdr- II	267.05	+	
		Unit- III	187.14	400kV THP - Siliguri Fdr- IV	259.77	+	
		Unit- IV	187.11	400kV THP - Malbase Fdr- III	314.03	+	
		Unit- V	187.01	400kV Malbase - Siliguri	239.76	+	
		Unit- VI	186.67	-	-	-	
		Total	1,123.16	Error at Station/Auxiliary Consumption/Losses	1.321%		
2	720MW MHP	Unit-I	160.22	400kV MHP - Jigmeling Fdr - I	319.27	+	400kV MHP-JLG Fdr II under Breakdown 400kV MHP-JLG Fdr IV under shutdown
		Unit-II	160.20	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	160.91	400kV MHP - Jigmeling Fdr - III	320.00	+	
		Unit-IV	160.51	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	641.84	Error at Station/Auxiliary Consumption/Losses	0.400%		
3	336MW CHP	Unit- I	91.41	220kV CHP - Birpara Fdr- I	121.93	+	
		Unit- II	91.49	220kV CHP - Birpara Fdr- II	122.02	+	
		Unit- III	91.46	220kV CHP - Malbase Fdr- III	139.61	+	
		Unit- IV	90.97	220kV CHP - Semtokha Fdr- IV	-32.50	-	
		-	-	220kV Malbase - Birpara Fdr.	94.39	+	
		-	-	66kV CHP - Chumdo Fdr.	5.47	+	
		-	-	66kV CHP - Gedu Fdr.	6.34	+	
		-	-	3x3MVA, 66/11kV TFR	0.81	+	
		Total	365.33	Error at Station/Auxiliary Consumption/Losses	0.452%		
4	24MW BHP (U/S)	Unit- I	11.81	220kV BHP - Semtokha Fdr.	60.48	+	
		Unit- II	11.81	66kV BHP - Lobeyasa Fdr.	16.97	+	
		Total	23.62	220kV BHP - Tsirang Fdr.	-13.38	-	
	40MW BHP (L/S)	Unit- I	20.40	5MVA, 66/11kV TFR	0.69	+	
		Unit- II	20.68	30MVA ICT, 220/66kV			
Total	41.08	Error at Station/Auxiliary Consumption/Losses	-0.093%				
5	126MW DHPC	Unit-I	51.20	220kV DHPC - Tsirang Fdr.	100.90	+	
		Unit-II	50.30	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	101.50	Error at Station/Auxiliary Consumption/Losses	0.591%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.50	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.00	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	40.18	+	
		-	-	132kV Motanga - Rangia Fdr.	54.92	+	
		-	-	220kV Tsirang - Jigmeling	80.65	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.273%		

Note: Generation-Load Summary for September 20, 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	1,654.69	201.65	185.62	1,372.39	16.03
2	Eastern Grid	707.84	54.12	51.37	734.37	2.75
	Total	2,362.53	255.77	236.99	2,106.76	18.78

Note: Generation-Load Summary for September 20, 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	1465.7	273.57	270.28	1113.84	3.29
2	Eastern Grid	647	65.32	65.46	659.97	-0.14
	Total	2,112.70	338.89	335.74	1,773.81	3.15

NOTES: KHP & MHEP, JLG 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 21, 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	187.09	400kV THP - Siliguri Fdr- I	253.31	+	
		Unit- II	186.44	400kV THP - Siliguri Fdr- II	250.06	+	
		Unit- III	81.06	400kV THP - Siliguri Fdr- IV	244.55	+	
		Unit- IV	187.21	400kV THP - Malbase Fdr- III	250.28	+	
		Unit- V	187.68	400kV Malbase - Siliguri	237.71	+	
		Unit- VI	186.14	-	-	-	
		Total	1,015.62	Error at Station/Auxiliary Consumption/Losses	1.715%		
2	720MW MHP	Unit-I	174.93	400kV MHP - Jigmeling Fdr - I	341.45	+	400kV MHP-JLG II Breakdown. 400kV MHP-JLG IV under shutdown
		Unit-II	169.85	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	170.67	400kV MHP - Jigmeling Fdr - III	342.18	+	
		Unit-IV	170.11	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	685.56	Error at Station/Auxiliary Consumption/Losses	0.282%		
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Fdr- I	117.87	+	
		Unit- II	91.33	220kV CHP - Birpara Fdr- II	117.95	+	
		Unit- III	91.41	220kV CHP - Malbase Fdr- III	170.54	+	
		Unit- IV	91.57	220kV CHP - Semtokha Fdr- IV	-50.40	-	
		-	-	220kV Malbase - Birpara Fdr.	64.11	+	
		-	-	66kV CHP - Chumdo Fdr.	2.07	+	
		-	-	66kV CHP - Gedu Fdr.	6.84	+	
		-	-	3x3MVA, 66/11kV TFR	0.77	+	
		Total	366.05	Error at Station/Auxiliary Consumption/Losses	0.112%		
4	24MW BHP (U/S)	Unit- I	11.82	220kV BHP - Semtokha Fdr.	60.48	+	
		Unit- II	11.82	66kV BHP - Lobeysa Fdr.	16.97	+	
		Total	23.64	220kV BHP - Tsirang Fdr.	-13.38	-	
	40MW BHP (L/S)	Unit- I	20.43	5MVA, 66/11kV TFR	0.69	+	
		Unit- II	20.62	30MVA ICT, 220/66kV			
		Total	41.05	Error at Station/Auxiliary Consumption/Losses	-0.171%		
5	126MW DHPC	Unit-I	47.22	220kV DHPC - Tsirang Fdr.	92.97	+	
		Unit-II	46.25	220kV Jigmeling - Dagapela Fdr.	1.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	93.47	Error at Station/Auxiliary Consumption/Losses	0.535%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	41.57	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.59	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	46.55	+	
		-	-	132kV Motanga - Rangia Fdr.	50.20	+	
		-	-	220kV Tsirang - Jigmeling	69.10	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.788%		

Note: Generation-Load summary for September 21, 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	1,539.83	185.17	168.11	1,285.56	17.06
2	Eastern Grid	751.56	40.28	37.83	780.38	2.45
	Total	2,291.39	225.45	205.94	2,065.94	19.51

Note: Generation-Load Summary for September 21, 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	1550.87	262.82	243.63	1,223.84	19.19
2	Eastern Grid	649.9	48.03	44.33	666.08	3.70
	Total	2,200.77	310.85	287.96	1,889.92	22.89

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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