

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 2, 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	187.52	400kV THP - Siliguri Fdr- I	259.96	+	
		Unit- II	186.64	400kV THP - Siliguri Fdr- II	259.31	+	
		Unit- III	150.59	400kV THP - Siliguri Fdr- IV	252.18	+	
		Unit- IV	185.36	400kV THP - Malbase Fdr- III	295.62	+	
		Unit- V	188.03	400kV Malbase - Siliguri	234.71	+	
		Unit- VI	186.74	-	-	-	
		Total	1,084.88	Error at Station/Auxiliary Consumption/Losses	1.642%		
2	720MW MHP	Unit-I	150.31	400kV MHP - Jigmeling Fdr - I	198.62	+	Unit-III under Shutdown (22/09/20-17/10/2020). 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	150.25	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	98.41	400kV MHP - Jigmeling Fdr - IV	199.25	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	398.97	Error at Station/Auxiliary Consumption/Losses	0.276%		
3	336MW CHP	Unit- I	91.77	220kV CHP - Birpara Fdr- I	118.56	+	
		Unit- II	91.40	220kV CHP - Birpara Fdr- II	118.15	+	
		Unit- III	91.56	220kV CHP - Malbase Fdr- III	152.87	+	
		Unit- IV	91.45	220kV CHP - Semtokha Fdr- IV	-37.23	-	
		-	-	220kV Malbase - Birpara Fdr.	78.59	+	
		-	-	66kV CHP - Chumdo Fdr.	4.85	+	
		-	-	66kV CHP - Gedu Fdr.	7.58	+	
		-	-	3x3MVA, 66/11kV TFR	1.27	+	
		Total	366.18	Error at Station/Auxiliary Consumption/Losses	0.036%		
4	24MW BHP (U/S)	Unit- I	11.84	220kV BHP - Semtokha Fdr.	66.38	+	
		Unit- II	11.84	66kV BHP - Lobeysha Fdr.	17.20	+	
		Total	23.68	220kV BHP - Tsirang Fdr.	-19.37	-	
	40MW BHP (L/S)	Unit- I	20.46	5MVA, 66/11kV TFR	0.61	+	
		Unit- II	20.70	30MVA ICT, 220/66kV			
		Total	41.16	Error at Station/Auxiliary Consumption/Losses	0.031%		
5	126MW DHPC	Unit-I	57.27	220kV DHPC - Tsirang Fdr.	112.03	+	
		Unit-II	55.24	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	112.51	Error at Station/Auxiliary Consumption/Losses	0.427%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Fdr- I	38.14	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	26.52	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.24	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	46.44	+	
		-	-	132kV Motanga - Rangia Fdr.	51.54	+	
		-	-	220kV Tsirang - Jigmeling	90.33	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.667%		

Note: Generation-Load Summary for October 02, 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	1,628.41	216.62	200.08	1,321.46	16.54
2	Eastern Grid	464.97	59.45	57.25	495.85	2.20
	Total	2,093.38	276.07	257.33	1,817.31	18.74

Note: Generation-Load Summary for October 02, 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	1565.32	225.15	213.46	1311.58	11.69
2	Eastern Grid	537.99	43.11	43.82	523.47	-0.71
	Total	2,103.31	268.26	257.28	1,835.05	10.98

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:	October 3, 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	187.05	400kV THP - Siliguri Fdr- I	244.93	+	
		Unit- II	188.70	400kV THP - Siliguri Fdr- II	242.48	+	
		Unit- III	99.78	400kV THP - Siliguri Fdr- IV	237.44	+	
		Unit- IV	140.06	400kV THP - Malbase Fdr- III	247.43	+	
		Unit- V	188.41	400kV Malbase - Siliguri	222.14	+	
		Unit- VI	186.41	-	-	-	
		Total	990.41	Error at Station/Auxiliary Consumption/Losses	1.831%		
2	720MW MHP	Unit-I	165.07	400kV MHP - Jigmeling Fdr - I	253.79	+	Unit-III under Shutdown (22/09/20-17/10/2020). 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	165.10	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00	+	
		Unit-IV	180.27	400kV MHP - Jigmeling Fdr - IV	254.95		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	510.44	Error at Station/Auxiliary Consumption/Losses	0.333%		
3	336MW CHP	Unit- I	91.93	220kV CHP - Birpara Fdr- I	118.20	+	
		Unit- II	91.46	220kV CHP - Birpara Fdr- II	117.65	+	
		Unit- III	91.06	220kV CHP - Malbase Fdr- III	175.24	+	
		Unit- IV	91.36	220kV CHP - Semtokha Fdr- IV	-56.64	-	
		-	-	220kV Malbase - Birpara Fdr.	59.97	+	
		-	-	66kV CHP - Chumdo Fdr.	1.87	+	
		-	-	66kV CHP - Gedu Fdr.	7.85	+	
		-	-	3x3MVA, 66/11kV TFR	0.80	+	
		Total	365.81	Error at Station/Auxiliary Consumption/Losses	0.230%		
4	24MW BHP (U/S)	Unit- I	11.84	220kV BHP - Semtokha Fdr.	76.51	+	
		Unit- II	11.84	66kV BHP - Lobeysa Fdr.	15.60	+	
		Total	23.68	220kV BHP - Tsirang Fdr.	-26.66	-	
	40MW BHP (L/S)	Unit- I	20.46	5MVA, 66/11kV TFR	0.40	+	
		Unit- II	20.71	30MVA ICT, 220/66kV			
		Total	41.17	Error at Station/Auxiliary Consumption/Losses	-2.429%		
5	126MW DHPC	Unit-I	57.27	220kV DHPC - Tsirang Fdr.	112.03	+	
		Unit-II	55.24	220kV Jigmeling - Dagapela Fdr.	1.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	112.51	Error at Station/Auxiliary Consumption/Losses	0.427%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.34	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.05	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	45.50	+	
		-	-	132kV Motanga - Rangia Fdr.	52.70	+	
		-	-	220kV Tsirang - Jigmeling	81.64		
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.318%		

Note: Generation-Load summary for October 03, 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	1,533.58	209.13	191.88	1,242.81	17.25
2	Eastern Grid	576.44	51.14	49.23	606.94	1.91
	Total	2,110.02	260.27	241.11	1,849.75	19.16

Note: Generation-Load Summary for October 03, 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	1565.32	225.15	213.46	1,311.58	11.69
2	Eastern Grid	537.99	43.11	43.82	523.47	-0.71
	Total	2,103.31	268.26	257.28	1,835.05	10.98

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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