

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 9, 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	187.85	400kV THP - Siliguri Fdr- I	267.83	+	
		Unit- II	186.90	400kV THP - Siliguri Fdr- II	265.86	+	
		Unit- III	187.72	400kV THP - Siliguri Fdr- IV	260.39	+	
		Unit- IV	186.10	400kV THP - Malbase Fdr- III	312.24	+	
		Unit- V	186.66	400kV Malbase - Siliguri	239.72	+	
		Unit- VI	186.02	-	-	-	
		Total	1,121.25	Error at Station/Auxiliary Consumption/Losses	1.332%		
2	720MW MHP	Unit-I	197.82	400kV MHP - Jigmeling Fdr - I	252.88	+	400kV MHP-JLG II Breakdown
		Unit-II	196.71	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	193.19	400kV MHP - Jigmeling Fdr - III	261.55	+	
		Unit-IV	192.69	400kV MHP - Jigmeling Fdr - IV	261.73	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	780.41	Error at Station/Auxiliary Consumption/Losses	0.545%		
3	336MW CHP	Unit- I	91.36	220kV CHP - Birpara Fdr- I	119.76	+	
		Unit- II	91.69	220kV CHP - Birpara Fdr- II	119.68	+	
		Unit- III	91.46	220kV CHP - Malbase Fdr- III	148.05	+	
		Unit- IV	91.37	220kV CHP - Semtokha Fdr- IV	-35.64	-	
		-	-	220kV Malbase - Birpara Fdr.	84.42	+	
		-	-	66kV CHP - Chumdo Fdr.	5.31	+	
		-	-	66kV CHP - Gedu Fdr.	6.48	+	
		-	-	3x3MVA, 66/11kV TFR	1.34	+	
		Total	365.88	Error at Station/Auxiliary Consumption/Losses	0.246%		
4	24MW BHP (U/S)	Unit- I	11.87	220kV BHP - Semtokha Fdr.	64.11	+	
		Unit- II	11.87	66kV BHP - Lobeysa Fdr.	17.91	+	
		Total	23.74	220kV BHP - Tsirang Fdr.	-17.95	-	
	40MW BHP (L/S)	Unit- I	20.15	5MVA, 66/11kV TFR	0.64	+	
		Unit- II	20.50	30MVA ICT, 220/66kV			
		Total	40.65	Error at Station/Auxiliary Consumption/Losses	-0.497%		
5	126MW DHPC	Unit-I	59.34	220kV DHPC - Tsirang Fdr.	118.00	+	
		Unit-II	59.32	220kV Jigmeling - Dagapela Fdr.	2.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	118.66	Error at Station/Auxiliary Consumption/Losses	0.556%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	36.12	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	28.76	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	45.40	+	
		-	-	132kV Motanga - Rangia Fdr.	56.08	+	
		-	-	220kV Tsirang - Jigmeling	95.44	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.182%		

Note: Generation-Load Summary for September 09, 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	1,670.18	217.08	202.91	1,357.66	14.17
2	Eastern Grid	846.41	64.21	59.18	877.64	5.03
	Total	2,516.59	281.29	262.09	2,235.30	19.20

Note: Generation-Load Summary for September 09, 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	1,534.08	238.14	237.36	1250.57	0.78
2	Eastern Grid	182.77	55.35	54.24	172.79	1.11
	Total	1,716.85	293.49	291.60	1,423.36	1.89

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 10, 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	187.64	400kV THP - Siliguri Fdr- I	276.15	+	
		Unit- II	186.69	400kV THP - Siliguri Fdr- II	273.27	+	
		Unit- III	186.75	400kV THP - Siliguri Fdr- IV	266.62	+	
		Unit- IV	187.25	400kV THP - Malbase Fdr- III	286.60	+	
		Unit- V	185.64	400kV Malbase - Siliguri	254.97	+	
		Unit- VI	186.03	-	-	-	
		Total	1,120.00	Error at Station/Auxiliary Consumption/Losses	1.550%		
2	720MW MHP	Unit-I	197.82	400kV MHP - Jigmeling Fdr - I	250.54	+	400kV MHP-JLG II Breakdown
		Unit-II	197.84	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	198.00	400kV MHP - Jigmeling Fdr - III	258.90	+	
		Unit-IV	177.35	400kV MHP - Jigmeling Fdr - IV	259.27	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	771.01	Error at Station/Auxiliary Consumption/Losses	0.298%		
3	336MW CHP	Unit- I	91.71	220kV CHP - Birpara Fdr- I	122.18	+	
		Unit- II	91.50	220kV CHP - Birpara Fdr- II	122.42	+	
		Unit- III	91.31	220kV CHP - Malbase Fdr- III	167.69	+	
		Unit- IV	90.77	220kV CHP - Semtokha Fdr- IV	-57.22	-	
		-	-	220kV Malbase - Birpara Fdr.	72.34	+	
		-	-	66kV CHP - Chumdo Fdr.	1.78	+	
		-	-	66kV CHP - Gedu Fdr.	6.20	+	
		-	-	3x3MVA, 66/11kV TFR	0.83	+	
		Total	365.29	Error at Station/Auxiliary Consumption/Losses	0.386%		
4	24MW BHP (U/S)	Unit- I	11.84	220kV BHP - Semtokha Fdr.	75.38	+	
		Unit- II	11.84	66kV BHP - Lobeysa Fdr.	16.02	+	
		Total	23.68	220kV BHP - Tsirang Fdr.	-25.90	-	
	40MW BHP (L/S)	Unit- I	20.43	5MVA, 66/11kV TFR	0.37		
		Unit- II	20.75	30MVA ICT, 220/66kV			
		Total	41.18	Error at Station/Auxiliary Consumption/Losses	-2.453%		
5	126MW DHPC	Unit-I	55.40	220kV DHPC - Tsirang Fdr.	110.15	+	
		Unit-II	55.31	220kV Jigmeling - Dagapela Fdr.	1.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	110.71	Error at Station/Auxiliary Consumption/Losses	0.506%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.19	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	23.77	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	48.53	+	
		-	-	132kV Motanga - Rangia Fdr.	51.71	+	
		-	-	220kV Tsirang - Jigmeling	80.87	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.158%		

Note: Generation-Load summary for September 10, 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	1,660.86	192.04	174.92	1,387.95	17.12
2	Eastern Grid	837.01	48.93	45.87	868.95	3.06
	Total	2,497.87	240.97	220.79	2,256.90	20.18

Note: Generation-Load Summary for September 10, 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	1535.59	218.69	209.41	1,248.56	9.28
2	Eastern Grid	442.43	53.91	52.71	456.86	1.20
	Total	1,978.02	272.60	262.12	1,705.42	10.48

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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