

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 13, 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	170.00	400kV THP - Siliguri Fdr- I	196.00	+	Unit IV under shutdown.
		Unit- II	170.00	400kV THP - Siliguri Fdr- II	193.00	+	
		Unit- III	170.00	400kV THP - Siliguri Fdr- IV	187.00	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	228.00	+	
		Unit- V	170.00	400kV Malbase - Siliguri	179.00	+	
		Unit- VI	140.00	-	-	-	
		Total	820.00	Error at Station/Auxiliary Consumption/Losses	16.00		
2	720MW MHP	Unit-I	197.66	400kV MHP - Jigmeling Fdr - I	198.55	+	Unit-III & 400kV MHP-JLG III Standby
		Unit-II	197.88	400kV MHP - Jigmeling Fdr - II	198.17	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	197.79	400kV MHP - Jigmeling Fdr - IV	193.03	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	593.33	Error at Station/Auxiliary Consumption/Losses	3.58		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	85.70	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	92.00	220kV CHP - Birpara Fdr- II	85.60	+	
		Unit- III	92.00	220kV CHP - Malbase Fdr- III	138.50	+	
		Unit- IV	92.00	220kV CHP - Semtokha Fdr- IV	-47.60	-	
		-	-	220kV Malbase - Birpara Fdr.	36.00	+	
		-	-	66kV CHP - Chumdo Fdr.	3.20	+	
		-	-	66kV CHP - Gedu Fdr.	7.20	+	
		-	-	3x3MVA, 66/11kV TFR	1.10	+	
		Total	276.00	Error at Station/Auxiliary Consumption/Losses	2.30		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Fdr.	65.20	+	
		Unit- II	12.20	66kV BHP - Lobeysa Fdr.	15.90	+	
		Total	24.40	220kV BHP - Tsirang Fdr.	-19.25	-	
	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.00	30MVA ICT, 220/66kV	0.00		
		Total	41.60	Error at Station/Auxiliary Consumption/Losses	3.25		
5	126MW DHPC	Unit-I	44.28	220kV DHPC - Tsirang Fdr.	87.96	+	220kV DHP-Dagapela line under breakdown.
		Unit-II	44.21	220kV Jigmeling - Dagapela Fdr.	0.00		
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	88.49	Error at Station/Auxiliary Consumption/Losses	0.53		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	39.66	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	25.34	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.38	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	20.40	+	
		-	-	132kV Motanga - Rangia Fdr.	55.97	+	
		-	-	220kV Tsirang - Jigmeling	64.00	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.62		

Note: Generation-Load Summary for June 13, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	1,250.49	224.19	202.11	962.30	22.08
2	Eastern Grid	659.33	57.21	53.01	666.12	4.20
	Total	1,909.82	281.40	255.12	1,628.42	26.28

Note: Generation-Load Summary for June 13, 2019 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	683.12	245.67	235.86	403.55	9.81
2	Eastern Grid	58.13	49.54	49.06	42.49	0.48
	Total	741.25	295.21	284.92	446.04	10.29

NOTE: All Loads 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:	June 14, 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	170.00	400kV THP - Siliguri Fdr- I	259.00	+	
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	257.00	+	
		Unit- III	187.00	400kV THP - Siliguri Fdr- IV	249.00	+	
		Unit- IV	170.00	400kV THP - Malbase Fdr- III	284.00	+	
		Unit- V	187.00	400kV Malbase - Siliguri	239.00	+	
		Unit- VI	170.00	-	-	-	
		Total	1,071.00	Error at Station/Auxiliary Consumption/Losses	22.00		
2	720MW MHP	Unit-I	197.80	400kV MHP - Jigmeling Fdr - I	198.65	+	Unit-III & 400kV MHP-JLG III Standby
		Unit-II	197.89	400kV MHP - Jigmeling Fdr - II	198.31	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	197.84	400kV MHP - Jigmeling Fdr - IV	193.26	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	593.53	Error at Station/Auxiliary Consumption/Losses	3.31		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	85.00	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	92.00	220kV CHP - Birpara Fdr- II	84.90	+	
		Unit- III	92.00	220kV CHP - Malbase Fdr- III	131.00	+	
		Unit- IV	92.00	220kV CHP - Semtokha Fdr- IV	-35.00	-	
		-	-	220kV Malbase - Birpara Fdr.	45.00	+	
		-	-	66kV CHP - Chumdo Fdr.	2.10	+	
		-	-	66kV CHP - Gedu Fdr.	6.00	+	
		-	-	3x3MVA, 66/11kV TFR	0.78	+	
		Total	276.00	Error at Station/Auxiliary Consumption/Losses	1.22		
4	24MW BHP (U/S)	Unit- I	10.00	220kV BHP - Semtokha Fdr.	57.90	+	
		Unit- II	9.80	66kV BHP - Lobeysa Fdr.	13.40	+	
		Total	19.80	220kV BHP - Tsirang Fdr.	-15.88	-	
	40MW BHP (L/S)	Unit- I	17.00	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	18.00	30MVA ICT, 220/66kV			
		Total	35.00	Error at Station/Auxiliary Consumption/Losses	-1.51		
5	126MW DHPC	Unit-I	33.28	220kV DHPC - Tsirang Fdr.	66.03	+	220kV DHP-Dagapela Line under breakdown
		Unit-II	36.19	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	69.47	Error at Station/Auxiliary Consumption/Losses	3.44		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	42.51	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	22.14	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.37	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	26.80	+	
		-	-	132kV Motanga - Rangia Fdr.	51.06	+	
		-	-	220kV Tsirang - Jigmeling	47.00	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.98		

Note: Generation-Load summary for June 14, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	1,471.27	205.37	180.22	1,218.90	25.15
2	Eastern Grid	659.53	38.45	34.16	668.08	4.29
	Total	2,130.80	243.82	214.38	1,886.98	29.44

Note: Generation-Load Summary for June 14, 2019 at 09:00hrs

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	667.28	249.27	239.43	381.88	9.84
2	Eastern Grid	54.75	54.28	54.14	36.60	0.14
	Total	722.03	303.55	293.57	418.48	9.98

NOTES: All load and generation 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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