

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 14, 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	148.79	400kV THP - Siliguri Fdr- I	0.00		Unit-II, V, VI & 400kV THP-SIL I under standby. 400kV Tala-Malbase Fdr III under shutdown (12-14.05.2020)
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	150.91	+	
		Unit- III	70.43	400kV THP - Siliguri Fdr- IV	144.75	+	
		Unit- IV	81.50	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri	-63.12	-	
		Unit- VI	0.00	-	-	-	
		Total	300.72	Error at Station/Auxiliary Consumption/Losses	5.06		
2	720MW MHP	Unit-I	75.05	400kV MHP - Jigmeling Fdr - I	0.00	+	Unit- II & IV Standby. 400kV MHP-JLG I & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	102.00		
		Unit-III	130.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	102.00	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	205.05	Error at Station/Auxiliary Consumption/Losses	1.05		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	11.42	+	Unit-I under shutdown till 30th June Unit-II Standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	11.43	+	
		Unit- III	78.52	220kV CHP - Malbase Fdr- III	61.13	+	
		Unit- IV	74.06	220kV CHP - Semtokha Fdr- IV	51.07	+	
		-	-	220kV Malbase - Birpara Fdr.	-28.42	-	
		-	-	66kV CHP - Chumdo Fdr.	9.60	+	
		-	-	66kV CHP - Gedu Fdr.	4.05	+	
		-	-	3x3MVA, 66/11kV TFR	1.61	+	
		Total	152.58	Error at Station/Auxiliary Consumption/Losses	2.27		
4	24MW BHP (U/S)	Unit- I	1.70	220kV BHP - Semtokha Fdr.	-12.99	-	L/S Unit-II Standby,
		Unit- II	2.17	66kV BHP - Lobeysa Fdr.	9.35	+	
		Total	3.87	220kV BHP - Tsirang Fdr.	17.26	+	
	40MW BHP (L/S)	Unit- I	10.79	5MVA, 66/11kV TFR	0.67	+	
		Unit- II	0.00	30MVA ICT, 220/66kV	0.00		
		Total	10.79	Error at Station/Auxiliary Consumption/Losses	0.37		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.47	+	Unit-I Standby
		Unit-II	17.68	220kV Jigmeling - Dagapela Fdr.	0.00		
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	17.68	Error at Station/Auxiliary Consumption/Losses	0.21		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	21.53	+	Unit-I standby
		Unit-II	13.35	132kV KHP - Kilihar Fdr- II	17.11	+	
		Unit- III	13.10	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	13.50	132kV Gelephu - Salakati Fdr.	-6.36	-	
		-	-	132kV Motanga - Rangia Fdr.	15.02	+	
		-	-	220kV Tsirang - Jigmeling	32.73	+	
		Total	39.95	Error at Station/Auxiliary Consumption/Losses	1.08		

Note: Generation-Load Summary for May 14, 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	485.64	225.94	218.03	226.97	7.91
2	Eastern Grid	245.00	65.07	62.94	212.66	2.13
	Total	730.64	291.01	280.97	439.63	10.04

Note: Generation-Load Summary for May 14, 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	631.43	273.73	265.57	325.16	8.16
2	Eastern Grid	48.70	69.95	69.88	11.29	0.07
	Total	680.13	343.68	335.45	336.45	8.23

NOTE: KHP & Motanga 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:	May 15, 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	148.95	400kV THP - Siliguri Fdr- I	0.00		Unit- II, V, VI & 400kV THP-SIL I under standby. 400kV Tala-Malbase Fdr III under shutdown (12-14.05.2020)
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	149.94	+	
		Unit- III	69.56	400kV THP - Siliguri Fdr- IV	144.09	+	
		Unit- IV	81.78	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri	-38.27	-	
		Unit- VI	0.00	-	-	-	
		Total	300.29	Error at Station/Auxiliary Consumption/Losses	6.26		
2	720MW MHP	Unit-I	165.00	400kV MHP - Jigmeling Fdr - I	0.00	+	Unit- II & IV on Standby. 400kV MHP-JLG I & IV Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	164.88		
		Unit-III	165.00	400kV MHP - Jigmeling Fdr - III	164.91		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	330.00	Error at Station/Auxiliary Consumption/Losses	0.21		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	20.28	+	Unit-I under shutdown till 30th June & Unit II Standby.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	19.89	+	
		Unit- III	78.90	220kV CHP - Malbase Fdr- III	77.58	+	
		Unit- IV	71.68	220kV CHP - Semtokha Fdr- IV	19.74	+	
		-	-	220kV Malbase - Birpara Fdr.	-27.77	-	
		-	-	66kV CHP - Chumdo Fdr.	5.96	+	
		-	-	66kV CHP - Gedu Fdr.	4.05	+	
		Total	150.58	Error at Station/Auxiliary Consumption/Losses	2.02		
4	24MW BHP (U/S)	Unit- I	5.46	220kV BHP - Semtokha Fdr.	7.95	+	L/S Unit-II Standby U/S Unit II standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	8.65	+	
		Total	5.46	220kV BHP - Tsirang Fdr.	1.18	-	
	40MW BHP (L/S)	Unit- I	12.81	5MVA, 66/11kV TFR	0.43	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
		Total	12.81	Error at Station/Auxiliary Consumption/Losses	0.06		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	18.93	+	Unit I standby.
		Unit-II	19.19	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	19.19	Error at Station/Auxiliary Consumption/Losses	0.26		
6	60MW KHP	Unit- I	13.25	132kV KHP - Nangkhon Fdr- I	33.07	+	
		Unit-II	12.21	132kV KHP - Kilikhar Fdr- II	16.04	+	
		Unit- III	13.01	5MVA, 132/11kV TFR	0.10	+	
		Unit- IV	12.17	132kV Gelephu - Salakati Fdr.	-0.22	-	
		-	-	132kV Motanga - Rangia Fdr.	22.79	+	
		-	-	220kV Tsirang - Jigmeling	20.25	+	
		Total	50.64	Error at Station/Auxiliary Consumption/Losses	1.43		

Note: Generation-Load summary for May 15, 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	488.33	199.92	191.32	268.16	8.60
2	Eastern Grid	380.64	48.53	46.89	352.36	1.64
	Total	868.97	248.45	238.21	620.52	10.24

Note: Generation-Load Summary for May 15, 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	458.70	222.67	217.06	228.62	5.61
2	Eastern Grid	62.32	39.81	39.34	29.92	0.47
	Total	521.02	262.48	256.40	258.54	6.08

NOTES: KHP & Motanga 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.
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