

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 30, 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	138.85	400kV THP - Siliguri Fdr- I	151.12	+	
		Unit- II	89.69	400kV THP - Siliguri Fdr- II	151.61	+	
		Unit- III	110.68	400kV THP - Siliguri Fdr- IV	144.24	+	
		Unit- IV	101.10	400kV THP - Malbase Fdr- III	188.41	+	
		Unit- V	99.58	400kV Malbase - Siliguri	134.71	+	
		Unit- VI	100.01	-	-	-	
		Total	639.91	Error at Station/Auxiliary Consumption/Losses	4.53		
2	720MW MHP	Unit-I	140.24	400kV MHP - Jigmeling Fdr - I	145.40	+	Unit-II & 400kV MHP-JLG IV Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	145.40	+	
		Unit-III	159.66	400kV MHP - Jigmeling Fdr - III	145.10	+	
		Unit-IV	141.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	440.90	Error at Station/Auxiliary Consumption/Losses	5.00		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	67.33	+	Unit-I under shutdown till 30th June, 2020. 220kV Mal-BIR under shutdown (30.05-13.06.20)
		Unit- II	91.48	220kV CHP - Birpara Fdr- II	67.38	+	
		Unit- III	91.32	220kV CHP - Malbase Fdr- III	98.39	+	
		Unit- IV	91.68	220kV CHP - Semtokha Fdr- IV	25.31	+	
		-	-	220kV Malbase - Birpara Fdr.	0.00		
		-	-	66kV CHP - Chumdo Fdr.	8.53	+	
		-	-	66kV CHP - Gedu Fdr.	4.06	+	
		Total	274.48	Error at Station/Auxiliary Consumption/Losses	2.25		
4	24MW BHP (U/S)	Unit- I	9.02	220kV BHP - Semtokha Fdr.	7.96	+	Upper Unit II standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.13	+	
		Total	9.02	220kV BHP - Tsirang Fdr.	7.05	+	
	40MW BHP (L/S)	Unit- I	9.53	5MVA, 66/11kV TFR	0.61	+	
		Unit- II	9.25	30MVA ICT, 220/66kV	0.00		
		Total	18.78	Error at Station/Auxiliary Consumption/Losses	0.05		
5	126MW DHPC	Unit-I	40.28	220kV DHPC - Tsirang Fdr.	0.00		DHP Unit-II standby. 220kV DHP-TSI line under idle charged.
		Unit-II	0.00	220kV DHP - Dagapela Fdr.	40.02	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	40.28	Error at Station/Auxiliary Consumption/Losses	0.26		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	56.47	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	8.02	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	17.64	+	
		-	-	132kV Motanga - Rangia Fdr.	43.85	+	
		-	-	220kV Tsirang - Jigmeling	5.24	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.28		

Note: Generation-Load Summary for May 30, 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	982.47	220.56	213.73	716.39	6.83
2	Eastern Grid	506.90	54.77	48.49	497.39	6.28
	Total	1,489.37	275.33	262.22	1,213.78	13.11

Note: Generation-Load Summary for May 30, 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	626.11	276.28	266.09	319.28	10.19
2	Eastern Grid	65.75	65.14	67.45	31.16	-2.31
	Total	691.86	341.42	333.54	350.44	7.88

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 31, 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	140.00	400kV THP - Siliguri Fdr- I	132.66	+	
		Unit- II	90.00	400kV THP - Siliguri Fdr- II	130.35	+	
		Unit- III	80.00	400kV THP - Siliguri Fdr- IV	127.35	+	
		Unit- IV	60.00	400kV THP - Malbase Fdr- III	142.83	+	
		Unit- V	70.00	400kV Malbase - Siliguri	122.01	+	
		Unit- VI	100.00	-	-	-	
		Total	540.00	Error at Station/Auxiliary Consumption/Losses	6.81		
2	720MW MHP	Unit-I	149.97	400kV MHP - Jigmeling Fdr - I	153.81	+	MHP unit-II & 400kV MHP- JLG IV Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	154.90	+	
		Unit-III	159.75	400kV MHP - Jigmeling Fdr - III	149.45	+	
		Unit-IV	149.71	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	459.43	Error at Station/Auxiliary Consumption/Losses	1.27		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	77.20	+	Unit-I under shutdown till 30th June, 2020. 220kV Mal-BIR under shutdown (30.05-13.06.20)
		Unit- II	91.52	220kV CHP - Birpara Fdr- II	77.05	+	
		Unit- III	92.00	220kV CHP - Malbase Fdr- III	111.84	+	
		Unit- IV	91.36	220kV CHP - Semtokha Fdr- IV	-2.14	-	
		-	-	220kV Malbase - Birpara Fdr.	0.00	+	
		-	-	66kV CHP - Chumdo Fdr.	4.74	+	
		-	-	66kV CHP - Gedu Fdr.	4.00	+	
		-	-	3x3MVA, 66/11kV TFR	0.94	+	
		Total	274.88	Error at Station/Auxiliary Consumption/Losses	1.25		
4	24MW BHP (U/S)	Unit- I	5.58	220kV BHP - Semtokha Fdr.	26.78	+	
		Unit- II	5.58	66kV BHP - Lobeysa Fdr.	10.31	+	
		Total	11.16	220kV BHP - Tsirang Fdr.	-3.53	-	
	40MW BHP (L/S)	Unit- I	11.49	5MVA, 66/11kV TFR	0.41	+	
		Unit- II	11.04	30MVA ICT, 220/66kV			
		Total	22.53	Error at Station/Auxiliary Consumption/Losses	-0.28		
5	126MW DHPC	Unit-I	41.27	220kV DHPC - Tsirang Fdr.	0.00	+	DHP Unit-II standby. 220kV DHP-TSI line under idle charge.
		Unit-II	0.00	220kV DHP - Dagapela Fdr.	41.02		
		-	-	5MVA, 220/33kV TFR			
		Total	41.27	Error at Station/Auxiliary Consumption/Losses	0.25		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	60.50	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	3.85	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.21	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	22.31	+	
		-	-	132kV Motanga - Rangia Fdr.	41.98	+	
		-	-	220kV Tsirang - Jigmeling	5.55	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.44		

Note: Generation-Load summary for May 31, 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	889.84	176.40	168.62	666.62	7.78
2	Eastern Grid	525.43	49.55	46.84	522.45	2.71
	Total	1,415.27	225.95	215.46	1,189.07	10.49

Note: Generation-Load Summary for May 31, 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	592.10	239.08	230.24	334.10	8.84
2	Eastern Grid	66.30	53.85	53.67	31.37	0.18
	Total	658.40	292.93	283.91	365.47	9.02

NOTES: KHP,MHEP & 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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