

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 29, 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	138.63	400kV THP - Siliguri Fdr- I	142.24	+	
		Unit- II	100.12	400kV THP - Siliguri Fdr- II	139.09	+	
		Unit- III	109.76	400kV THP - Siliguri Fdr- IV	134.66	+	
		Unit- IV	69.92	400kV THP - Malbase Fdr- III	180.02	+	
		Unit- V	120.43	400kV Malbase - Siliguri	125.39	+	
		Unit- VI	70.17	-	-	-	
		Total	609.03	Error at Station/Auxiliary Consumption/Losses	13.02		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	124.00	+	Unit-I & II & 400kV MHP- JLG IV Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	124.72	+	
		Unit-III	185.06	400kV MHP - Jigmeling Fdr - III	121.04	+	
		Unit-IV	184.90	400kV MHP - Jigmeling Fdr - IV	0.00	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	369.96	Error at Station/Auxiliary Consumption/Losses	0.20		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	63.01	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	90.84	220kV CHP - Birpara Fdr- II	62.45	+	
		Unit- III	91.42	220kV CHP - Malbase Fdr- III	108.65	+	
		Unit- IV	91.61	220kV CHP - Semtokha Fdr- IV	23.07	+	
		-	-	220kV Malbase - Birpara Fdr.	18.18	+	
		-	-	66kV CHP - Chumdo Fdr.	8.63	+	
		-	-	66kV CHP - Gedu Fdr.	3.93	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		Total	273.87	Error at Station/Auxiliary Consumption/Losses	2.93		
4	24MW BHP (U/S)	Unit- I	10.00	220kV BHP - Semtokha Fdr.	11.31	+	U/S unit II standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.25	+	
		Total	10.00	220kV BHP - Tsirang Fdr.	7.10	+	
	40MW BHP (L/S)	Unit- I	10.88	5MVA, 66/11kV TFR	0.65	+	
		Unit- II	10.43	30MVA ICT, 220/66kV	0.00		
		Total	21.31	Error at Station/Auxiliary Consumption/Losses	0.00		
5	126MW DHPC	Unit-I	42.27	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.	42.03		
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	42.27	Error at Station/Auxiliary Consumption/Losses	0.24		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	56.95	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	7.86	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	19.76	+	
		-	-	132kV Motanga - Rangia Fdr.	44.49	+	
		-	-	220kV Tsirang - Jigmeling	4.69	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.94		

Note: Generation-Load Summary for May 29, 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	956.48	224.50	208.55	685.02	15.95
2	Eastern Grid	435.96	48.67	47.53	434.01	1.14
	Total	1,392.44	273.17	256.08	1,119.03	17.09

Note: Generation-Load Summary for May 29, 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	656.71	282.06	271.74	339.10	10.32
2	Eastern Grid	64.76	61.61	61.29	38.70	0.32
	Total	721.47	343.67	333.03	377.80	10.64

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 30, 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	139.46	400kV THP - Siliguri Fdr- I	171.00	+	
		Unit- II	140.47	400kV THP - Siliguri Fdr- II	168.50	+	
		Unit- III	110.35	400kV THP - Siliguri Fdr- IV	166.03	+	
		Unit- IV	101.94	400kV THP - Malbase Fdr- III	193.98	+	
		Unit- V	118.85	400kV Malbase - Siliguri	155.36	+	
		Unit- VI	100.35	-	-	-	
		Total	711.42	Error at Station/Auxiliary Consumption/Losses	11.91		
2	720MW MHP	Unit-I	140.32	400kV MHP - Jigmeling Fdr - I	139.60	+	MHP unit-II & 400kV MHP- JLG IV Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	139.60	+	
		Unit-III	140.34	400kV MHP - Jigmeling Fdr - III	135.30	+	
		Unit-IV	140.90	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	421.56	Error at Station/Auxiliary Consumption/Losses	7.06		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	70.90	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	91.56	220kV CHP - Birpara Fdr- II	70.58	+	
		Unit- III	91.43	220kV CHP - Malbase Fdr- III	127.76	+	
		Unit- IV	91.84	220kV CHP - Semtokha Fdr- IV	-6.70	-	
		-	-	220kV Malbase - Birpara Fdr.	16.19	+	
		-	-	66kV CHP - Chumdo Fdr.	4.85	+	
		-	-	66kV CHP - Gedu Fdr.	4.34	+	
		-	-	3x3MVA, 66/11kV TFR	0.87	+	
		Total	274.83	Error at Station/Auxiliary Consumption/Losses	2.23		
4	24MW BHP (U/S)	Unit- I	9.88	220kV BHP - Semtokha Fdr.	30.53	+	U/S Unit-II Standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	9.75	+	
		Total	9.88	220kV BHP - Tsirang Fdr.	-9.58	-	
	40MW BHP (L/S)	Unit- I	10.70	5MVA, 66/11kV TFR	0.38	+	
		Unit- II	10.30	30MVA ICT, 220/66kV			
		Total	21.00	Error at Station/Auxiliary Consumption/Losses	-0.20		
5	126MW DHPC	Unit-I	47.27	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.	47.07		
		-	-	5MVA, 220/33kV TFR			
		Total	47.27	Error at Station/Auxiliary Consumption/Losses	0.20		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	60.06	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	4.50	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.21	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	21.68	+	
		-	-	132kV Motanga - Rangia Fdr.	42.30	+	
		-	-	220kV Tsirang - Jigmeling	-11.09	-	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.23		

Note: Generation-Load summary for May 30, 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	1,064.40	209.66	195.72	818.56	13.94
2	Eastern Grid	487.56	45.06	36.77	478.48	8.29
	Total	1,551.96	254.72	232.49	1,297.04	22.23

Note: Generation-Load Summary for May 30, 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	523.84	253.69	244.85	256.42	8.84
2	Eastern Grid	64.84	50.58	52.46	27.99	-1.88
	Total	588.68	304.27	297.31	284.41	6.96

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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