

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	April 28, 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	0.00	400kV THP - Siliguri Fdr- I	0.00		Unit- II,IV & V standby. 400kV THP-SIL I Standby
		Unit- II	151.22	400kV THP - Siliguri Fdr- II	107.82	+	
		Unit- III	89.24	400kV THP - Siliguri Fdr- IV	100.74	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	168.47	+	
		Unit- V	0.00	400kV Malbase - Siliguri	85.39	+	
		Unit- VI	140.95	-	-	-	
		Total	381.41	Error at Station/Auxiliary Consumption/Losses		4.38	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	104.29	+	Unit- IV Standby & Unit I AMP(11 to 30.4.2020). 400kV MHP-JLG II & III Standby.
		Unit-II	110.19	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	100.10	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	104.99	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	210.29	Error at Station/Auxiliary Consumption/Losses		1.01	
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	60.20	+	Unit-I under shutdown till 30th April and Unit IV standby. 220kV CHP-Mal under shutdown till 30.4.2020.
		Unit- II	90.64	220kV CHP - Birpara Fdr- II	60.31	+	
		Unit- III	90.47	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	0.00	220kV CHP - Semtokha Fdr- IV	39.44	+	
		-	-	220kV Malbase - Birpara Fdr.	-63.46	-	
		-	-	66kV CHP - Chumdo Fdr.	11.27	+	
		-	-	66kV CHP - Gedu Fdr.	6.29	+	
		-	-	3x3MVA, 66/11kV TFR	1.66	+	
		Total	181.11	Error at Station/Auxiliary Consumption/Losses		1.94	
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	6.10	+	U/S Unit-I & L/S Unit II standby
		Unit- II	6.68	66kV BHP - Lobeysa Fdr.	11.85	+	
		Total	6.68	220kV BHP - Tsirang Fdr.	-0.90	-	
	40MW BHP (L/S)	Unit- I	13.73	5MVA, 66/11kV TFR	0.72	+	
		Unit- II	0.00	30MVA ICT, 220/66kV	0.00		
		Total	13.73	Error at Station/Auxiliary Consumption/Losses		2.64	
5	126MW DHPC	Unit-I	21.21	220kV DHPC - Tsirang Fdr.	20.95	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	0.00		
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	21.21	Error at Station/Auxiliary Consumption/Losses		0.26	
6	60MW KHP	Unit- I	16.00	132kV KHP - Nangkhon Fdr- I	35.09	+	
		Unit-II	15.00	132kV KHP - Kilihar Fdr- II	21.46	+	
		Unit- III	15.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	15.00	132kV Gelephu - Salakati Fdr.	-5.93	-	
		-	-	132kV Motanga - Rangia Fdr.	18.62	+	
		-	-	220kV Tsirang - Jigmeling	19.75	+	
		Total	61.00	Error at Station/Auxiliary Consumption/Losses		4.15	

Note: Generation-Load Summary for April 28, 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	604.14	233.39	224.17	351.00	9.22
2	Eastern Grid	271.29	69.07	63.91	221.97	5.16
	Total	875.43	302.46	288.08	572.97	14.38

Note: Generation-Load Summary for April 28, 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	832.58	256.20	251.32	558.43	4.88
2	Eastern Grid	51.14	60.69	60.03	8.40	0.66
	Total	883.72	316.89	311.35	566.83	5.54

NOTES:KHP & MHEP 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:	April 29, 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	0.00	400kV THP - Siliguri Fdr- I	0.00		Unit- II,IV & V standby. 400kV THP-SIL I under standby.
		Unit- II	89.91	400kV THP - Siliguri Fdr- II	91.11	+	
		Unit- III	89.82	400kV THP - Siliguri Fdr- IV	86.37		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	136.00	+	
		Unit- V	0.00	400kV Malbase - Siliguri	75.36	+	
		Unit- VI	139.68	-	-	-	
		Total	319.41	Error at Station/Auxiliary Consumption/Losses	5.93		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	124.11		Unit-IV Standby & Unit I AMP(11 to 30.4.2020). 400kV MHP-JLG II & III Standby.
		Unit-II	125.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	125.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	124.81	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	250.00	Error at Station/Auxiliary Consumption/Losses	1.08		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	71.92	-	Unit-I under shutdown till 30th April & Unit IV under standby. 220kV CHP-MAL under shutdown till 25.4.2020.
		Unit- II	82.39	220kV CHP - Birpara Fdr- II	71.87	-	
		Unit- III	79.60	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	0.00	220kV CHP - Semtokha Fdr- IV	3.76	+	
		-	-	220kV Malbase - Birpara Fdr.	-83.03	-	
		-	-	66kV CHP - Chumdo Fdr.	6.01	+	
		-	-	66kV CHP - Gedu Fdr.	7.28	+	
		-	-	3x3MVA, 66/11kV TFR	0.99	+	
		Total	161.99	Error at Station/Auxiliary Consumption/Losses	0.16		
4	24MW BHP (U/S)	Unit- I	8.34	220kV BHP - Semtokha Fdr.	24.60	+	U/S Unit-II & L/S Unit I standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	10.80	+	
		Total	8.34	220kV BHP - Tsirang Fdr.	-12.98	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.98	+	
		Unit- II	17.57	30MVA ICT, 220/66kV			
		Total	17.57	Error at Station/Auxiliary Consumption/Losses	2.51		
5	126MW DHPC	Unit-I	31.27	220kV DHPC - Tsirang Fdr.	31.00	+	Unit II standby.
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	31.27	Error at Station/Auxiliary Consumption/Losses	0.27		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	29.70	+	Unit I standby.
		Unit-II	15.06	132kV KHP - Kilikhar Fdr- II	13.84	+	
		Unit- III	15.02	5MVA, 132/11kV TFR	0.15	+	
		Unit- IV	15.02	132kV Gelephu - Salakati Fdr.	5.01	-	
		-	-	132kV Motanga - Rangia Fdr.	12.59	+	
		-	-	220kV Tsirang - Jigmeling	15.34	+	
		Total	45.10	Error at Station/Auxiliary Consumption/Losses	1.41		

Note: Generation-Load summary for April 29, 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	538.58	209.64	200.77	313.60	8.87
2	Eastern Grid	295.10	43.92	41.43	266.52	2.49
	Total	833.68	253.56	242.20	580.12	11.36

Note: Generation-Load Summary for April 29, 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	852.99	240.37	239.75	614.42	0.62
2	Eastern Grid	66.03	38.83	38.52	25.40	0.31
	Total	919.02	279.20	278.27	639.82	0.93

NOTES: KHP and MHP loads 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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