

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	April 29, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	118.64	400kV THP - Siliguri Line - I	53.04	+	Unit- III & IV under AMP. Unit-II & VI on standby. 400kV THP-SIL Line II & 400kV THP-SIL Line IV on Standby.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Line - III	142.07	+	
		Unit- V	80.13	400kV Malbase - Siliguri Line	30.08	+	
		Unit- VI	0.00	-	-	-	
		Total	198.77	Error at Station/Auxiliary Consumption/Losses		1.841%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00		Unit I under AMP Unit-III under breakdown. 400kV MHP_JLG Line I, II & III Standby. 132kV MHP_Yurmoo line I & II are not in service. 400/220kV ICT at JLG not in service 400kV JIG-ALI Line-II under standby.
		Unit-II	65.13	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	90.40	400kV MHP - Jigmeling Line - IV	154.70	+	
		-	-	132kV MHP - Yurmoo Line - I	0.00		
		-	-	132kV MHP - Yurmoo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	153.70		
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.10	+	
		-	-	220kV Tsirang - Jigmeling Line	12.10	+	
		-	-	132kV Gelephu - Salakati Line	-31.73	-	
Total	155.53	Error at Station/Auxiliary Consumption/Losses		0.534%			
3	336MW CHP	Unit- I	47.66	220kV CHP - Birpara Line- I	9.90	+	Unit-II Standby. Unit-IV under AMP. 220kV CHP_BIR line II standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00		
		Unit- III	50.45	220kV CHP - Malbase Line- III	27.20	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	44.70	+	
		-	-	220kV Malbase - Birpara Line	-4.62	-	
		-	-	66kV CHP - Chumdo Line	12.62	+	
		-	-	66kV CHP - Gedu Line	3.28	+	
		-	-	3x3MVA, 66/11kV TFR	1.50	+	
Total	98.11	Error at Station/Auxiliary Consumption/Losses		-1.111%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	0.92	+	U/S Unit-I & L/S Unit-II Standby 220kV BHP-Tsirang line under shutdown
		Unit- II	4.20	66kV BHP - Lobeyasa Line	11.30	+	
		Total	4.20	220kV BHP - Tsirang Line	0.00		
	40MW BHP (L/S)	Unit- I	8.70	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	8.02	+	
Total	8.70	Error at Station/Auxiliary Consumption/Losses		-1.705%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	14.76	+	Unit-I Standby.
		Unit-II	14.97	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.70	+	
		-	-	5MVA, 220/33kV TFR	0.08	+	
		Total	14.97	Error at Station/Auxiliary Consumption/Losses		0.868%	
6	60MW KHP	Unit- I	14.10	132kV KHP - Nangkhor Line	11.66	+	Unit-III and unit-IV Standby.
		Unit-II	14.10	132kV KHP - Kilikhar Line	15.68	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.46	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	4.82	+	
		Total	28.20	Error at Station/Auxiliary Consumption/Losses		1.418%	

Note: Generation-Load Summary (MW) for April 29, 2021 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	324.75	224.25	223.47	88.40	0.78
2	Eastern Grid	183.73	69.04	67.81	126.79	1.23
Total		508.48	293.29	291.28	215.19	2.01

Note: Generation-Load Summary for April 29, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	516.83	194.36	187.61	302.84	6.75
2	Eastern Grid	293.34	48.89	45.24	264.08	3.65
Total		810.17	243.25	232.85	566.92	10.40

NOTE-BHP & MHP data collected from site

1. 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:

- i) 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.
- ii) The clocks of all the locations are not synchronized.

2. 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 30, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	119.92	400kV THP - Siliguri Line - I	68.27	+	Unit III & IV under AMP. Unit II & VI on standby. 400kV THP-SIL Line II & 400kV THP-SIL Line IV on Standby.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Line - III	127.22	+	
		Unit- V	79.74	400kV Malbase - Siliguri Line	51.00	+	
		Unit- VI	0.00		-	-	
		Total	199.66	Error at Station/Auxiliary Consumption/Losses		2.089%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00		Unit-I under AMP. Unit -III under breakdown. 400kV MHP-JLG Line I, II & III on standby. 400kV JLG_ALI line II under standby. 132kV MHP_Yurmo line I & II not in service. 400/220kV ICT at JLG not in service
		Unit-II	65.09	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	115.37	400kV MHP - Jigmeling Line - IV	180.01	+	
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	178.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	5.80	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.80	+	
		-	-	220kV Tsirang - Jigmeling Line	12.63	+	
		-	-	132kV Gelephu - Salakati Line	-12.19	-	
Total	180.46	Error at Station/Auxiliary Consumption/Losses		0.249%			
3	336MW CHP	Unit- I	52.21	220kV CHP - Birpara Line- I	13.65	+	Unit-II standby. Unit-IV under AMP. 220kV CHP-BIR line II standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00		
		Unit- III	55.76	220kV CHP - Malbase Line- III	49.13	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	31.33	+	
		-	-	220kV Malbase - Birpara Line	-15.21	-	
		-	-	66kV CHP - Chumdo Line	8.08	+	
		-	-	66kV CHP - Gedu Line	4.19	+	
		-	-	3x3MVA, 66/11kV TFR	0.84	+	
Total	107.97	Error at Station/Auxiliary Consumption/Losses		0.695%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	3.48	+	U/S Unit-I & L/S Unit-II Standby 220kV BHP-Tsirang line under shutdown
		Unit- II	4.20	66kV BHP - Lobeyasa Line	9.50	+	
		Total	4.20	220kV BHP - Tsirang Line	0.00		
	40MW BHP (L/S)	Unit- I	9.30	5MVA, 66/11kV TFR	0.82	+	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	6.60	+	
Total	9.30	Error at Station/Auxiliary Consumption/Losses		-2.222%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	14.01	+	Unit-I standby.
		Unit-II	14.22	220kV DHP - Dagapela Line	0.00	+	
		-	-	220kV Jigmeling - Dagapela Line	0.90	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		Total	14.22	Error at Station/Auxiliary Consumption/Losses		0.070%	
6	60MW KHP	Unit- I	13.50	132kV KHP - Nangkhor Line	24.47	+	Unit-IV standby.
		Unit-II	13.50	132kV KHP - Kilikhar Line	15.19	+	
		Unit- III	13.50	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	11.86	+	
		Total	40.50	Error at Station/Auxiliary Consumption/Losses		1.360%	

Note: Generation-Load Summary (MW) for April 30, 2021 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	335.35	205.01	201.28	117.71	3.73
2	Eastern Grid	220.96	55.42	54.42	178.17	1.00
Total		556.31	260.43	255.70	295.88	4.73

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