

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	April 11, 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	0.00	400kV THP - Siliguri Line - I	48.89	+	Unit I & II Standby. Unit III & IV AMP 400kV THP-SIL Line II & 400kV THP-SIL-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	146.62	+	
		Unit- V	89.29	400kV Malbase - Siliguri Line	24.21	+	
		Unit- VI	110.29	-	-	-	
		Total	199.58	Error at Station/Auxiliary Consumption/Losses		2.039%	
2	720MW MHP	Unit-I	169.88	400kV MHP - Jigmeling Line - I	0.00		Unit II on Standby. Unit-III under breakdown. Unit-IV under AMP. 400kV MHP-JLG Line I ,II & III on standby. 400kV JLG_ALI line II on Standby. 132kV MHP_Yurmo lines not in service.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	168.72	+	
		-	-	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	167.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	9.20	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	9.30	+	
		-	-	220kV Tsirang - Jigmeling Line	22.65	+	
		-	-	132kV Gelephu - Salakati Line	-25.77	-	
Total	169.88	Error at Station/Auxiliary Consumption/Losses		0.683%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-2.38	-	Unit I on standby. Unit IV under AMP. 220kV CHP-BIR line II on Standby.
		Unit- II	64.15	220kV CHP - Birpara Line- II	0.00		
		Unit- III	41.20	220kV CHP - Malbase Line- III	23.78	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	63.72	+	
		-	-	220kV Malbase - Birpara Line	-21.63	-	
		-	-	66kV CHP - Chumdo Line	13.47	+	
		-	-	66kV CHP - Gedu Line	3.31	+	
		-	-	3x3MVA, 66/11kV TFR	1.80	+	
Total	105.35	Error at Station/Auxiliary Consumption/Losses		1.566%			
4	24MW BHP (U/S)	Unit- I	4.90	220kV BHP - Semtokha Line	-9.80	-	U/S Unit-II on standby. L/S Unit-II on standby.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	11.90	+	
		Total	4.90	220kV BHP - Tsirang Line	10.68	+	
	40MW BHP (L/S)	Unit- I	9.00	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)			
Total	9.00	Error at Station/Auxiliary Consumption/Losses		1.583%			
5	126MW DHP	Unit-I	15.15	220kV DHP - Tsirang Line	14.95	+	Unit-II AMP
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.10	+	
		-	-	5MVA, 220/33kV TFR	0.13	+	
		Total	15.15	Error at Station/Auxiliary Consumption/Losses		0.462%	
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	11.85	+	Unit- I & III standby.
		Unit-II	14.39	132kV KHP - Kilikhar Line	16.51	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.43	+	
		Unit- IV	14.83	132kV Motanga - Rangia Line	2.18	+	
		Total	29.22	Error at Station/Auxiliary Consumption/Losses		1.472%	

Note: Generation-Load Summary (MW) for April 11, 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	333.98	262.24	258.33	49.09	3.91
2	Eastern Grid	199.10	77.44	75.85	144.31	1.59
Total		533.08	339.68	334.18	193.40	5.50

Note: Generation-Load Summary for April 11, 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	483.20	240.29	232.39	242.91	7.90
2	Eastern Grid	169.54	48.26	45.31	121.28	2.95
Total		652.74	288.55	277.70	364.19	10.85

NOTE-BHP & MHP data collected 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 12, 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	0.00	400kV THP - Siliguri Line - I	57.73	+	Unit-I under breakdown. Unit II on standby. Unit III & IV under AMP. 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	137.94	+	
		Unit- V	89.89	400kV Malbase - Siliguri Line	36.13	+	
		Unit- VI	110.08	-	-	-	
		Total	199.97	Error at Station/Auxiliary Consumption/Losses		2.150%	
2	720MW MHP	Unit-I	149.77	400kV MHP - Jigmeling Line - I	0.00		Unit-II on standby Unit III under Restoration. Unit-IV under AMP. 400kV MHP-JLG Line I ,II & III on standby. 400kV JLG_ALI line II on Standby. 132kV MHP_Yurmoo lines not in service. 132kV GEL-SAL line opened
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	149.00	+	
		-	-	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	147.45	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	4.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	4.50	+	
		-	-	220kV Tsirang - Jigmeling Line	22.67	+	
		-	-	132kV Gelephu - Salakati Line	0.00	+	
Total	149.77	Error at Station/Auxiliary Consumption/Losses		0.514%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-7.37	+	Unit-I on Standby. Unit IV under AMP. 220kV CHP-BIR line II on Standby.
		Unit- II	40.67	220kV CHP - Birpara Line- II	0.00	+	
		Unit- III	41.86	220kV CHP - Malbase Line- III	30.78	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	44.76	-	
		-	-	220kV Malbase - Birpara Line	-35.24	-	
		-	-	66kV CHP - Chumdo Line	8.86	+	
		-	-	66kV CHP - Gedu Line	3.60	+	
		-	-	3x3MVA, 66/11kV TFR	1.00	+	
Total	82.53	Error at Station/Auxiliary Consumption/Losses		1.091%			
4	24MW BHP (U/S)	Unit- I	4.49	220kV BHP - Semtokha Line	-4.30	-	U/S & L/S Unit-II on standby
		Unit- II	0.00	66kV BHP - Lobeyasa Line	7.38	+	
		Total	4.49	220kV BHP - Tsirang Line	9.50	+	
	40MW BHP (L/S)	Unit- I	9.00	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)			
Total	9.00	Error at Station/Auxiliary Consumption/Losses		0.074%			
5	126MW DHP	Unit-I	14.67	220kV DHP - Tsirang Line	14.46	+	Unit-II under AMP
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.88	+	
		-	-	5MVA, 220/33kV TFR	0.12	+	
		Total	14.67	Error at Station/Auxiliary Consumption/Losses		0.613%	
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	15.55	+	Unit-I & III standby.
		Unit-II	14.12	132kV KHP - Kilikhar Line	11.88	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	14.09	132kV Motanga - Rangia Line	3.47	+	
		Total	28.21	Error at Station/Auxiliary Consumption/Losses		1.631%	

Note: Generation-Load Summary (MW) for April 12, 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	310.66	236.74	232.32	51.25	4.42
2	Eastern Grid	177.98	49.73	48.50	150.92	1.23
Total		488.64	286.47	280.82	202.17	5.65

Note: Generation-Load Summary for April 12, 2020 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	333.69	205.87	200.05	127.82	5.82
2	Eastern Grid	212.34	37.32	34.75	175.02	2.57
Total		546.03	243.19	234.80	302.84	8.39

NOTE- BHP & MHP data 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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