

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	April 12, 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	23.74	+	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	143.18	+	
		Unit- V	70.38	400kV Malbase - Siliguri Line	-2.82	-	
		Unit- VI	100.19		-	-	
		Total	170.57	Error at Station/Auxiliary Consumption/Losses		2.140%	
2	720MW MHP	Unit-I	128.34	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	127.26	+	
		-	-	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	125.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	21.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	21.30	+	
		-	-	220kV Tsirang - Jigmeling Line	45.00	+	
		-	-	132kV Gelephu - Salakati Line	0.00	-	
Total	128.34	Error at Station/Auxiliary Consumption/Losses		0.842%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-21.87	-	Unit I on standby. Unit IV under AMP. 220kV CHP-BIR line II on Standby.
		Unit- II	42.36	220kV CHP - Birpara Line- II	0.00		
		Unit- III	41.77	220kV CHP - Malbase Line- III	-3.49	-	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	87.64	+	
		-	-	220kV Malbase - Birpara Line	-32.73	-	
		-	-	66kV CHP - Chumdo Line	14.27	+	
		-	-	66kV CHP - Gedu Line	4.21	+	
		-	-	3x3MVA, 66/11kV TFR	1.50	+	
Total	84.13	Error at Station/Auxiliary Consumption/Losses		2.223%			
4	24MW BHP (U/S)	Unit- I	4.20	220kV BHP - Semtokha Line	-36.00	-	U/S Unit-II on standby. L/S Unit-II AMP
		Unit- II	0.00	66kV BHP - Lobeyasa Line	12.90	+	
		Total	4.20	220kV BHP - Tsirang Line	35.00	+	
	40MW BHP (L/S)	Unit- I	8.90	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)			
Total	8.90	Error at Station/Auxiliary Consumption/Losses		2.443%			
5	126MW DHP	Unit-I	14.98	220kV DHP - Tsirang Line	14.65	+	Unit-II AMP
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.00	+	
		-	-	5MVA, 220/33kV TFR	0.13	+	
		Total	14.98	Error at Station/Auxiliary Consumption/Losses		1.335%	
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	9.70	+	Unit- I & III standby.
		Unit-II	13.10	132kV KHP - Kilikhar Line	15.60	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.43	+	
		Unit- IV	13.10	132kV Motanga - Rangia Line	5.32	+	
		Total	26.20	Error at Station/Auxiliary Consumption/Losses		1.786%	

Note: Generation-Load Summary (MW) for April 12, 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	282.78	271.46	267.42	-33.68	4.04
2	Eastern Grid	154.54	68.32	66.77	131.22	1.55
Total		437.32	339.78	334.19	97.54	5.59

Note: Generation-Load Summary for April 12, 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	495.24	235.17	224.65	260.07	10.52
2	Eastern Grid	180.05	52.73	50.90	127.32	1.83
Total		675.29	287.90	275.55	387.39	12.35

NOTE-BHP, MAT & MHP data collected 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 13, 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	44.34	+	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	123.43	+	
		Unit- V	70.73	400kV Malbase - Siliguri Line	24.75	+	
		Unit- VI	100.60	-	-	-	
		Total	171.33	Error at Station/Auxiliary Consumption/Losses	2.078%		
2	720MW MHP	Unit-I	149.82	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.
		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	149.01	+	
		-	-	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	147.70	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	5.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.30	+	
		-	-	220kV Tsirang - Jigmeling Line	11.55	+	
		-	-	132kV Gelephu - Salakati Line	-18.92	-	
		Total	149.82	Error at Station/Auxiliary Consumption/Losses	0.541%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-5.79	-	Unit-I on Standby. Unit IV under AMP. 220kV CHP-BIR line II on Standby.
		Unit- II	40.22	220kV CHP - Birpara Line- II	0.00	+	
		Unit- III	40.09	220kV CHP - Malbase Line- III	37.93	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	34.14	+	
		-	-	220kV Malbase - Birpara Line	-38.51	-	
		-	-	66kV CHP - Chumdo Line	7.37	+	
		-	-	66kV CHP - Gedu Line	4.44	+	
		-	-	3x3MVA, 66/11kV TFR	0.80	+	
Total	80.31	Error at Station/Auxiliary Consumption/Losses	1.768%				
4	24MW BHP (U/S)	Unit- I	4.10	220kV BHP - Semtokha Line	3.10	+	U/S & L/S Unit-II on standby
		Unit- II	0.00	66kV BHP - Lobeysa Line	10.40	+	
		Total	4.10	220kV BHP - Tsirang Line	-1.38	-	
	40MW BHP (L/S)	Unit- I	9.10	5MVA, 66/11kV TFR	0.81	+	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)			
Total	9.10	Error at Station/Auxiliary Consumption/Losses	2.045%				
5	126MW DHP	Unit-I	14.46	220kV DHP - Tsirang Line	14.22	+	Unit-II under AMP
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.90	+	
		-	-	5MVA, 220/33kV TFR	0.19	+	
		Total	14.46	Error at Station/Auxiliary Consumption/Losses	0.346%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	18.92	+	Unit-I & III standby.
		Unit-II	16.09	132kV KHP - Kilikhar Line	12.62	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	16.13	132kV Motanga - Rangia Line	5.38	+	
		Total	32.22	Error at Station/Auxiliary Consumption/Losses	1.063%		

Note: Generation-Load Summary (MW) for April 13, 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	279.30	242.96	238.56	24.79	4.40
2	Eastern Grid	182.04	59.43	58.28	134.16	1.15
Total		461.34	302.39	296.84	158.95	5.55

Note: Generation-Load Summary for April 13, 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	333.53	200.00	193.12	133.53	6.88
2	Eastern Grid	192.92	41.78	40.06	151.14	1.72
Total		526.45	241.78	233.18	284.67	8.60

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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