

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 18, 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	186.18	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under breakdown.
		Unit- II	184.32	400kV THP - Siliguri Line - II	356.84	+	
		Unit- III	187.09	400kV THP - Siliguri Line- IV	340.07	+	
		Unit- IV	185.37	400kV THP - Malbase Line - III	409.81	+	
		Unit- V	185.91	400kV Malbase - Siliguri Line	318.89	+	
		Unit- VI	185.97	-	-	-	
		Total	1,114.84	Auxiliary Consumption & Transformation Losses at Gen. end	0.728%		
2	720MW MHP	Unit-I	197.92	400kV MHP - Jigmeling Line - I	294.05	+	Unit-III under Restoration 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) under shutdown.
		Unit-II	197.86	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.74	+	
		Unit-IV	197.91	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-45.90	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	157.40	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	235.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	235.50	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	35.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	35.70	+	
		-	-	220kV Tsirang - Jigmeling Line	119.89	+	
-	-	132kV Gelephu - Salakati Line	28.01	+			
Total	593.69	Auxiliary Consumption & Transformation Losses at Gen. end	0.657%				
3	336MW CHP	Unit- I	91.77	220kV CHP - Birpara Line- I	101.68	+	
		Unit- II	90.99	220kV CHP - Birpara Line- II	101.73	+	
		Unit- III	91.83	220kV CHP - Malbase Line- III	126.32	+	
		Unit- IV	91.53	220kV CHP - Semtokha Line- IV	19.25	+	
		-	-	220kV Malbase - Birpara Line	69.86	+	
		-	-	66kV CHP - Chumdo Line	9.15	+	
		-	-	66kV CHP - Gedu Line	5.29	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		Total	366.12	Auxiliary Consumption & Transformation Losses at Gen. end	0.410%		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	41.15	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	24.70	+	
		Total	24.30	220kV BHP - Tsirang Line	-2.17	-	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	2.52	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Gen. end	1.854%		
6	126MW DHP	Unit-I	63.66	220kV DHP - Tsirang Line	125.79	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.12	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.60	+	
		-	-	5MVA, 220/33kV TFR	0.40	+	
		Total	126.78	Auxiliary Consumption & Transformation Losses at Gen. end	0.465%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Line	37.41	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	27.94	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	46.36	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.545%		

Note: Generation-Load Summary (MW) for July 18, 2021 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	1,673.54	264.58	254.75	1,289.07	9.83
2	Eastern Grid	659.69	76.81	72.55	702.77	4.26
Total		2,333.23	341.39	327.30	1,991.84	14.09

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Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,681.78	218.69	197.04	1,368.07	21.65
2	Eastern Grid	856.73	56.60	55.47	895.15	1.13
Total		2,538.51	275.29	252.51	2,263.22	22.78

NOTE-BHP and 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.
 - 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

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Date:	July 19, 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	187.00	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under breakdown.
		Unit- II	187.00	400kV THP - Siliguri Line - II	362.00	+	
		Unit- III	187.00	400kV THP - Siliguri Line- IV	344.00	+	
		Unit- IV	187.00	400kV THP - Malbase Line - III	402.00	+	
		Unit- V	187.00	400kV Malbase - Siliguri Line	325.33	+	
		Unit- VI	187.00	-	-	-	
		Total	1,122.00	Auxiliary Consumption & Transformation Losses at Generator end	1.248%		
2	720MW MHP	Unit-I	138.39	400kV MHP - Jigmeling Line - I	263.69	+	Unit-III on Restoration. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line II (Interim) under standby.
		Unit-II	197.64	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	264.97	+	
		Unit-IV	197.92	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-66.20	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	148.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	223.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	223.00	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	26.60	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	26.70	+	
		-	-	220kV Tsirang - Jigmeling Line	121.37	+	
-	-	132kV Gelephu - Salakati Line	22.16	+			
Total	533.95	Auxiliary Consumption & Transformation Losses at Generator end	0.991%				
3	336MW CHP	Unit- I	92.32	220kV CHP - Birpara Line- I	98.90	+	
		Unit- II	91.56	220kV CHP - Birpara Line- II	98.70	+	
		Unit- III	92.16	220kV CHP - Malbase Line- III	146.80	+	
		Unit- IV	92.40	220kV CHP - Semtokha Line- IV	10.90	+	
		-	-	220kV Malbase - Birpara Line	47.69	+	
		-	-	66kV CHP - Chumdo Line	5.10	+	
		-	-	66kV CHP - Gedu Line	6.40	+	
		-	-	3x3MVA, 66/11kV TFR	0.87	+	
Total	368.44	Auxiliary Consumption & Transformation Losses at Generator end	0.209%				
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	40.69	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	25.10	+	
		Total	24.50	220kV BHP - Tsirang Line	1.00	+	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	1.78	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Generator end	-2.545%		
6	126MW DHP	Unit-I	63.43	220kV DHP - Tsirang Line	124.90	+	220kV DHP_Dagapela Line on standby.
		Unit-II	62.05	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.20	+	
		-	-	5MVA, 220/33kV TFR	0.40	+	
		Total	125.48	Auxiliary Consumption & Transformation Losses at Generator end	0.143%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Line	40.87	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	24.82	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	41.70	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.091%		

Note: Generation-Load Summary (MW) for July 19, 2021 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	1,681.92	283.93	271.86	1,276.62	12.07
2	Eastern Grid	599.95	62.56	57.21	658.76	5.35
	Total	2,281.87	346.49	329.07	1,935.38	17.42

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Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,674.95	209.20	196.55	1,390.66	12.65
2	Eastern Grid	856.91	42.36	39.05	889.64	3.31
	Total	2,531.86	251.56	235.60	2,280.30	15.96

NOTE- BHP,THP,CHP & MHP data 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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