

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 25, 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	97.74	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I & II under breakdown.
		Unit- II	98.65	400kV THP - Siliguri Line - II	0.00		
		Unit- III	108.19	400kV THP - Siliguri Line- IV	275.86	+	
		Unit- IV	100.08	400kV THP - Malbase Line - III	322.94	+	
		Unit- V	97.96	400kV Malbase - Siliguri Line	261.67	+	
		Unit- VI	98.42	-	-	-	
		Total	601.04	Auxiliary Consumption & Transformation Losses at Gen. end	0.373%		
2	720MW MHP	Unit-I	196.84	400kV MHP - Jigmeling Line - I	195.36	+	Unit-III under Restoration . Unit-IV tripped. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line II(Interim) under shutdown.
		Unit-II	196.83	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	196.55	+	
		Unit-IV	0.00	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)	-53.92	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	110.04	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	166.44	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	165.81	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	29.57	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.63	+	
		-	-	220kV Tsirang - Jigmeling Line	115.69	+	
-	-	132kV Gelephu - Salakati Line	22.30	+			
Total	393.67	Auxiliary Consumption & Transformation Losses at Gen. end	0.447%				
3	336MW CHP	Unit- I	91.95	220kV CHP - Birpara Line- I	101.01	+	
		Unit- II	90.55	220kV CHP - Birpara Line- II	100.87	+	
		Unit- III	91.59	220kV CHP - Malbase Line- III	107.43	+	
		Unit- IV	91.57	220kV CHP - Semtokha Line- IV	39.10	+	
		-	-	220kV Malbase - Birpara Line	81.68	+	
		-	-	66kV CHP - Chumdo Line	9.67	+	
		-	-	66kV CHP - Gedu Line	4.10	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		Total	365.66	Auxiliary Consumption & Transformation Losses at Gen. end	0.624%		
4	24MW BHP (U/S)	Unit- I	12.00	220kV BHP - Semtokha Line	18.04	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	25.40	+	
		Total	24.10	220kV BHP - Tsirang Line	21.00	+	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	2.27	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Gen. end	0.412%		
6	126MW DHP	Unit-I	49.39	220kV DHP - Tsirang Line	97.98	+	220kV DHP_Dagapela Line on standby.
		Unit-II	49.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.90	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	98.42	Auxiliary Consumption & Transformation Losses at Gen. end	0.142%		
7	60MW KHP	Unit- I	16.38	132kV KHP - Nangkor Line	40.00	+	
		Unit-II	16.44	132kV KHP - Kilikhar Line	25.41	+	
		Unit- III	16.43	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.71	132kV Motanga - Rangia Line	47.88	+	
		Total	65.96	Auxiliary Consumption & Transformation Losses at Gen. end	0.409%		

Note: Generation-Load Summary (MW) for July 25, 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	1,130.72	193.94	189.91	821.09	4.03
2	Eastern Grid	459.63	62.85	60.82	512.47	2.03
	Total	1,590.35	256.79	250.73	1,333.56	6.06

Note: Generation-Load Summary for July 25, 2020 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
1	Western Grid	1,678.91	222.58	204.75	1,364.03	17.83
2	Eastern Grid	659.97	55.80	52.85	696.47	2.95
	Total	2,338.88	278.38	257.60	2,060.50	20.78

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:	July 26, 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	97.82	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I & II under breakdown.
		Unit- II	99.14	400kV THP - Siliguri Line - II	0.00		
		Unit- III	108.43	400kV THP - Siliguri Line- IV	282.76	+	
		Unit- IV	98.87	400kV THP - Malbase Line - III	313.39	+	
		Unit- V	98.30	400kV Malbase - Siliguri Line	273.16	+	
		Unit- VI	98.24	-	-	-	
		Total	600.80	Auxiliary Consumption & Transformation Losses at Generator end	0.774%		
2	720MW MHP	Unit-I	197.89	400kV MHP - Jigmeling Line - I	294.83	+	Unit-III under 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	196.73	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	296.41	+	
		Unit-IV	197.68	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)	-38.20	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	155.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	233.10	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	233.10	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.80	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	30.90	+	
		-	-	220kV Tsirang - Jigmeling Line	100.90	+	
-	-	132kV Gelephu - Salakati Line	21.10	+			
Total	592.30	Auxiliary Consumption & Transformation Losses at Generator end	0.179%				
3	336MW CHP	Unit- I	91.82	220kV CHP - Birpara Line- I	101.49	+	
		Unit- II	90.63	220kV CHP - Birpara Line- II	101.65	+	
		Unit- III	91.59	220kV CHP - Malbase Line- III	131.73	+	
		Unit- IV	91.52	220kV CHP - Semtokha Line- IV	17.56	+	
		-	-	220kV Malbase - Birpara Line	64.42	+	
		-	-	66kV CHP - Chumdo Line	6.33	+	
		-	-	66kV CHP - Gedu Line	4.55	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
Total	365.56	Auxiliary Consumption & Transformation Losses at Generator end	0.424%				
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	34.36	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	25.00	+	
		Total	24.40	220kV BHP - Tsirang Line	5.39	+	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	1.75	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Generator end	0.395%		
6	126MW DHP	Unit-I	49.41	220kV DHP - Tsirang Line	97.90	+	220kV DHP_Dagapela Line on standby.
		Unit-II	49.02	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.10	+	
		-	-	5MVA, 220/33kV TFR	0.44	+	
		Total	98.43	Auxiliary Consumption & Transformation Losses at Generator end	0.091%		
7	60MW KHP	Unit- I	15.70	132kV KHP - Nangkhon Line	37.60	+	
		Unit-II	15.60	132kV KHP - Kilikhar Line	24.50	+	
		Unit- III	15.60	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.10	132kV Motanga - Rangia Line	43.40	+	
		Total	63.00	Auxiliary Consumption & Transformation Losses at Generator end	0.984%		

Note: Generation-Load Summary (MW) for July 26, 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	1,130.69	206.31	200.86	823.48	5.45
2	Eastern Grid	655.30	69.60	67.92	686.60	1.68
	Total	1,785.99	275.91	268.78	1,510.08	7.13

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1	Western Grid	1,678.91	222.58	204.75	1,364.03	17.83
2	Eastern Grid	659.97	55.80	52.85	696.47	2.95
	Total	2,338.88	278.38	257.60	2,060.50	20.78

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