

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 21, 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	0.00		All Units, 400kV THP-Siliguri Line I & II under breakdown. 400kV THP-Siliguri Line IV & 400kV THP-Malbase Line III opened.
		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	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	2.65		
		Unit- VI	0.00	-	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.000%		
2	720MW MHP	Unit-I	197.96	400kV MHP - Jigmeling Line - I	293.88	+	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	197.97	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.82	+	
		Unit-IV	197.43	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)	-29.70	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	150.83	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	237.35	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	236.15	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	33.20	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	33.30	+	
		-	-	220kV Tsirang - Jigmeling Line	98.35	+	
-	-	132kV Gelephu - Salakati Line	24.75	+			
		Total	593.36	Auxiliary Consumption & Transformation Losses at Gen. end	0.617%		
3	336MW CHP	Unit- I	91.89	220kV CHP - Birpara Line- I	90.78	+	
		Unit- II	90.81	220kV CHP - Birpara Line- II	91.00	+	
		Unit- III	91.91	220kV CHP - Malbase Line- III	170.31	+	
		Unit- IV	91.56	220kV CHP - Semtokha Line- IV	-2.54	-	
		-	-	220kV Malbase - Birpara Line	17.44	+	
		-	-	66kV CHP - Chumdo Line	7.79	+	
		-	-	66kV CHP - Gedu Line	6.20	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		Total	366.17	Auxiliary Consumption & Transformation Losses at Gen. end	0.391%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	62.64	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	23.50	+	
		Total	24.40	220kV BHP - Tsirang Line	-22.30	-	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	3.47	+	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Gen. end	1.760%		
6	126MW DHP	Unit-I	63.66	220kV DHP - Tsirang Line	126.19	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.23	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.60	+	
		-	-	5MVA, 220/33kV TFR	0.70	+	
		Total	126.89	Auxiliary Consumption & Transformation Losses at Gen. end	0.000%		
7	60MW KHP	Unit- I	16.57	132kV KHP - Nangkhon Line	38.31	+	
		Unit-II	16.58	132kV KHP - Kilikhar Line	26.60	+	
		Unit- III	16.46	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	16.42	132kV Motanga - Rangia Line	47.79	+	
		Total	66.03	Auxiliary Consumption & Transformation Losses at Gen. end	1.257%		

Note: Generation-Load Summary (MW) for July 21, 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	558.96	258.74	257.75	201.87	0.99
2	Eastern Grid	659.39	60.87	56.38	696.87	4.49
	Total	1,218.35	319.61	314.13	898.74	5.48

Note: Generation-Load Summary for July 21, 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	1,679.36	226.24	209.80	1,365.95	16.44
2	Eastern Grid	843.20	47.18	45.05	883.19	2.13
	Total	2,522.56	273.42	254.85	2,249.14	18.57

NOTE-BHP,JLG and 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 22, 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	0.00		All Units, 400kV THP-Siliguri Line I & II under breakdown. 400kV THP-Siliguri Line IV & 400kV THP-Malbase Line III opened.
		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	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	5.23	+	
		Unit- VI	0.00	-	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.000%		
2	720MW MHP	Unit-I	197.80	400kV MHP - Jigmeling Line - I	294.39	+	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	197.75	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.66	+	
		Unit-IV	197.46	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)	-43.00	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	156.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	233.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	233.80	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	27.90	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	28.00	+	
		-	-	220kV Tsirang - Jigmeling Line	100.47	+	
-	-	132kV Gelephu - Salakati Line	21.63	+			
		Total	593.01	Auxiliary Consumption & Transformation Losses at Generator end	0.499%		
3	336MW CHP	Unit- I	92.38	220kV CHP - Birpara Line- I	90.01	+	
		Unit- II	90.96	220kV CHP - Birpara Line- II	89.68	+	
		Unit- III	91.90	220kV CHP - Malbase Line- III	180.47	+	
		Unit- IV	91.71	220kV CHP - Semtokha Line- IV	-7.99	-	
		-	-	220kV Malbase - Birpara Line	7.35	+	
		-	-	66kV CHP - Chumdo Line	5.60	+	
		-	-	66kV CHP - Gedu Line	6.45	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
		Total	366.95	Auxiliary Consumption & Transformation Losses at Generator end	0.553%		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	62.34	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	25.20	+	
		Total	24.30	220kV BHP - Tsirang Line	-22.95	-	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.91	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	-2.33	-	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Generator end	0.456%		
6	126MW DHP	Unit-I	63.67	220kV DHP - Tsirang Line	126.38	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.20	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.10	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	126.87	Auxiliary Consumption & Transformation Losses at Generator end	0.150%		
7	60MW KHP	Unit- I	16.46	132kV KHP - Nangkhon Line	39.85	+	
		Unit-II	16.58	132kV KHP - Kilikhar Line	25.31	+	
		Unit- III	16.47	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	46.08	+	
		Total	66.01	Auxiliary Consumption & Transformation Losses at Generator end	0.879%		

Note: Generation-Load Summary (MW) for July 22, 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	559.62	266.88	265.46	192.27	1.42
2	Eastern Grid	659.02	67.68	64.14	691.81	3.54
	Total	1,218.64	334.56	329.60	884.08	4.96

Note: Generation-Load Summary for July 22, 2020 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
1	Western Grid	1,680.28	219.04	201.93	1,384.97	17.11
2	Eastern Grid	659.69	42.21	39.62	693.75	2.59
	Total	2,339.97	261.25	241.55	2,078.72	19.70

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.
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