

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 22, 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	185.18	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	184.32	400kV THP - Siliguri Line - II	358.30	+	
		Unit- III	186.15	400kV THP - Siliguri Line- IV	342.12	+	
		Unit- IV	185.14	400kV THP - Malbase Line - III	403.66	+	
		Unit- V	184.64	400kV Malbase - Siliguri Line	322.56	+	
		Unit- VI	186.64	-	-	-	
		Total	1,112.07	Auxiliary Consumption & Transformation Losses at Gen. end	0.718%		
2	720MW MHP	Unit-I	139.86	400kV MHP - Jigmeling Line - I	206.08	+	MHP Unit IV under Standby. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby.
		Unit-II	135.10	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	140.87	400kV MHP - Jigmeling Line - III	207.20	+	
		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)	-37.90	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	109.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	168.44	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	167.11	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	27.90	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	28.40	+	
		-	-	220kV Tsirang - Jigmeling Line	98.67	+	
-	-	132kV Gelephu - Salakati Line	25.80	+			
Total	415.83	Auxiliary Consumption & Transformation Losses at Gen. end	0.613%				
3	336MW CHP	Unit- I	91.47	220kV CHP - Birpara Line- I	96.19	+	66kV CHP_Gedu line opened at 10:01hrs (08/10/2021) to regulate 66kV voltage.
		Unit- II	91.16	220kV CHP - Birpara Line- II	96.48	+	
		Unit- III	91.53	220kV CHP - Malbase Line- III	121.22	+	
		Unit- IV	91.56	220kV CHP - Semtokha Line- IV	23.79	+	
		-	-	220kV Malbase - Birpara Line	63.52	+	
		-	-	66kV CHP - Chumdo Line	25.83	+	
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	365.72	Auxiliary Consumption & Transformation Losses at Gen. end	0.167%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	58.20	+	
		Unit- II	12.20	66kV BHP - Lobeyssa Line	30.43	+	
		Total	24.50	220kV BHP - Tsirang Line	-23.73	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.60	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	7.11	+	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Gen. end	1.057%		
6	126MW DHP	Unit-I	63.65	220kV DHP - Tsirang Line	126.24	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	3.70	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	126.68	Auxiliary Consumption & Transformation Losses at Gen. end	0.111%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Line	39.44	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	25.78	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.41	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	38.61	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.561%		

Note: Generation-Load Summary (MW) for October 22, 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	1,670.67	292.83	287.09	1,279.17	5.74
2	Eastern Grid	481.83	70.74	67.82	509.76	2.92
	Total	2,152.50	363.57	354.91	1,788.93	8.66

Note: Generation-Load Summary for October 22, 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	874.02	196.52	189.34	630.06	7.18
2	Eastern Grid	372.14	29.21	25.55	390.37	3.66
	Total	1,246.16	225.73	214.89	1,020.43	10.84

NOTE-BHP, KHP, MHPA and Rangia 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:	October 23, 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	185.17	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	184.64	400kV THP - Siliguri Line - II	364.66	+	
		Unit- III	185.79	400kV THP - Siliguri Line- IV	348.54	+	
		Unit- IV	185.55	400kV THP - Malbase Line - III	390.42	+	
		Unit- V	185.51	400kV Malbase - Siliguri Line	333.10	+	
		Unit- VI	185.60	-	-	-	
		Total	1,112.26	Auxiliary Consumption & Transformation Losses at Generator end	0.777%		
2	720MW MHP	Unit-I	144.98	400kV MHP - Jigmeling Line - I	215.68	+	MHP Unit IV under Standby. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby.
		Unit-II	144.87	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	145.49	400kV MHP - Jigmeling Line - III	217.14	+	
		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)	-71.12	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	119.99	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	184.13	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	183.36	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	20.16	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	20.45	+	
		-	-	220kV Tsirang - Jigmeling Line	104.93	+	
-	-	132kV Gelephu - Salakati Line	20.32	+			
Total	435.34	Auxiliary Consumption & Transformation Losses at Generator end	0.579%				
3	336MW CHP	Unit- I	91.12	220kV CHP - Birpara Line- I	93.37	+	66kV CHP_Gedu line opened at 10:01hrs (08/10/2021) to regulate 66kV voltage.
		Unit- II	91.00	220kV CHP - Birpara Line- II	93.17	+	
		Unit- III	91.39	220kV CHP - Malbase Line- III	136.64	+	
		Unit- IV	91.49	220kV CHP - Semtokha Line- IV	21.02	-	
		-	-	220kV Malbase - Birpara Line	46.41	+	
		-	-	66kV CHP - Chumdo Line	18.92	+	
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	1.03	+	
Total	365.00	Auxiliary Consumption & Transformation Losses at Generator end	0.233%				
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	54.30	+	
		Unit- II	12.20	66kV BHP - Lobeyssa Line	28.72	+	
		Total	24.50	220kV BHP - Tsirang Line	-17.95	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.38	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	5.21	+	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	1.133%		
6	126MW DHP	Unit-I	63.63	220kV DHP - Tsirang Line	126.14	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.13	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.22	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	126.76	Auxiliary Consumption & Transformation Losses at Generator end	0.252%		
7	60MW KHP	Unit- I	16.63	132kV KHP - Nangkhoh Line	43.31	+	
		Unit-II	16.57	132kV KHP - Kilikhar Line	22.14	+	
		Unit- III	16.58	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	32.20	+	
		Total	66.28	Auxiliary Consumption & Transformation Losses at Generator end	0.837%		

Note: Generation-Load Summary (MW) for October 23, 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	1,670.22	286.04	276.70	1,279.25	9.34
2	Eastern Grid	501.62	66.55	63.48	540.00	3.07
	Total	2,171.84	352.59	340.18	1,819.25	12.41

Note: Generation-Load Summary for October 23, 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	910.60	169.59	161.46	687.01	8.13
2	Eastern Grid	386.31	45.03	41.40	379.72	3.63
	Total	1,296.91	214.62	202.86	1,066.73	11.76

NOTE-BHP, MHPA, JLG & Rangia 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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