

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: January 19, 2023
Hours: 18:00 Hours

Date **Time** **Load(MW)**
 28-Dec-22 18:03:26hrs 629.23

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00	Unit-I, & II under Shutdown. Unit-III & V on Standby. 400kV THP - Siliguri Line I on Standby.400kV Tala-Siliguri line IV under s/d.
		Unit- II	0.00	400kV THP - Siliguri Line - II	73.71	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	138.69	400kV THP - Malbase Line - III	161.89	
		Unit- V	0.00	400kV Malbase - Siliguri Line	49.73	
		Unit- VI	99.48	-	-	
		Total	238.17	Auxiliary Consumption & Transformation Losses at Generator end	1.08%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit-I under Breakdown. Unit-III under Shutdown. 400kV MHP-JLG Line I,II & III on Standby. 132kV MHP_Yurmo Line- I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	80.12	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	85.02	400kV MHP - Jigmeling Line - IV	79.90	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	84.19	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	128.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-18.91	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-29.47	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	5.86	
		-	-	80MVA, 220/132kV ICT - II (HV)	5.93	
		-	-	220kV Tsirang - Jigmeling Line	-53.58	
-	-	132kV Gelephu - Salakati Line	-11.40			
Total	165.14	Auxiliary Consumption & Transformation Losses at Generator end	0.64%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-9.17	Unit-I on Standby. Unit-II under Shutdown. 220kV CHP_Birpara Line II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00	
		Unit- III	68.17	220kV CHP - Malbase Line- III	18.41	
		Unit- IV	61.37	220kV CHP - Semtokha Line- IV	87.74	
		-	-	220kV Malbase - Birpara Line	-29.65	
		-	-	66kV CHP - Chumdo Line	25.28	
		-	-	66kV CHP - Gedu Line	4.73	
		-	-	3x3MVA, 66/11kV TFR	1.08	
Total	129.54	Auxiliary Consumption & Transformation Losses at Generator end	1.13%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	63.20	L/S & U/S Unit-I on Standby.
		Unit- II	6.60	66kV BHP - Lobeyasa Line	27.56	
		Total	6.60	220kV BHP - Tsirang Line	-71.49	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	1.32	L/S & U/S Unit-I on Standby.
		Unit- II	13.40	30MVA ICT, 220/66kV (HV)	22.05	
		Total	13.40	Auxiliary Consumption & Transformation Losses at Generator end	-2.95%	
6	126MW DHP	Unit-I	21.99	220kV DHP - Tsirang Line	21.76	Unit-II under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.51	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	21.99	Auxiliary Consumption & Transformation Losses at Gen. end	0.14%			
7	60MW KHP	Unit- I	10.07	132kV KHP - Nangkhor Line	2.59	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	10.06	132kV KHP - Kilikhar Line	16.53	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.68	
		Unit- IV	0.00	132kV Motanga - Rangia Line	0.10	
		Total	20.13	Auxiliary Consumption & Transformation Losses at Generator end	1.64%	

Note: Generation-Load Summary (MW) for January 19, 2023 at 18:00hrs.

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)
1	Western Grid	409.70	378.66	375.18	84.62	3.48
2	Eastern Grid	185.27	191.37	189.99	-59.68	1.38
Total		594.97	570.03	565.17	24.94	4.86

Note: Generation-Load Summary for January 19, 2022 at 18:00hrs.

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)
1	Western Grid	217.08	376.23	375.65	-99.53	0.58
2	Eastern Grid	275.48	94.62	92.41	121.24	2.21
Total		492.56	470.85	468.06	21.71	2.79

1. The Instantaneous load balance,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

Coincidental Maximum Load

Date:	January 20, 2023
Hours:	09:00 Hours

Date	Time	Load(MW)
28-Dec-22	18:03:26hrs	629.23

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00	Unit-I, II under Shutdown. Unit- III & V on Standby. 400kV THP- Siliguri Line I on Standby 400kV Tala-Siliguri line IV under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	75.35	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	138.83	400kV THP - Malbase Line - III	160.78	
		Unit- V	0.00	400kV Malbase - Siliguri Line	50.94	
		Unit- VI	99.90	-	-	
		Total	238.73	Auxiliary Consumption & Transformation Losses at Generator end	1.09%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit-I under Breakdown. Unit-III under Shutdown. 400kV MHP-JLG Line I,II & III on Standby. 132kV MHP_Yurmo Line- I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	77.67	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	80.01	400kV MHP - Jigmeling Line - IV	81.30	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	75.56	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	117.02	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-14.54	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-22.05	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	3.36	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.46	
		-	-	220kV Tsirang - Jigmeling Line	-48.41	
-	-	132kV Gelephu - Salakati Line	-12.74			
Total	157.68	Auxiliary Consumption & Transformation Losses at Generator end	0.52%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-10.32	Unit-I on Standby. Unit-II under Shutdown. 220kV CHP_Birpara Line II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	0.00	
		Unit- III	66.96	220kV CHP - Malbase Line- III	34.37	
		Unit- IV	62.83	220kV CHP - Semtokha Line- IV	74.55	
		-	-	220kV Malbase - Birpara Line	-43.45	
		-	-	66kV CHP - Chumdo Line	20.88	
		-	-	66kV CHP - Gedu Line	8.32	
		-	-	3x3MVA, 66/11kV TFR	0.79	
Total	129.79	Auxiliary Consumption & Transformation Losses at Generator end	0.92%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	60.92	L/S & U/S unit-I on Standby
		Unit- II	6.43	66kV BHP - Lobeyasa Line	24.77	
		Total	6.43	220kV BHP - Tsirang Line	-66.28	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.60	L/S & U/S unit-I on Standby
		Unit- II	13.29	30MVA ICT, 220/66kV (HV)	19.00	
		Total	13.29	Auxiliary Consumption & Transformation Losses at Generator end	-1.47%	
6	126MW DHP	Unit-I	21.38	220kV DHP - Tsirang Line	21.15	Unit-II under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.77	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	21.38	Auxiliary Consumption & Transformation Losses at Generator end	0.14%			
7	60MW KHP	Unit- I	12.55	132kV KHP - Nangkhoh Line	8.95	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	12.57	132kV KHP - Kilikhar Line	15.21	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.71	
		Unit- IV	0.00	132kV Motanga - Rangia Line	0.00	
		Total	25.12	Auxiliary Consumption & Transformation Losses at Generator end	1.00%	

Note: Generation-Load Summary (MW) for January 20, 2023 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)
1	Western Grid	409.62	385.51	381.97	72.52	3.54
2	Eastern Grid	182.80	183.72	182.65	-49.33	1.07
Total		592.42	569.23	564.62	23.19	4.61

Note: Generation-Load Summary for January 20, 2022 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)
1	Western Grid	214.26	341.01	340.80	-86.47	0.21
2	Eastern Grid	235.52	85.99	84.73	109.25	1.26
Total		449.78	427.00	425.53	22.78	1.47

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