

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	January 25, 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 & IV under Shutdown. Unit III & V on Standby. 400kV THP- Siliguri Line I & IV on Standby.
		Unit- II	129.74	400kV THP - Siliguri Line - II	87.75	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	173.43	
		Unit- V	0.00	400kV Malbase - Siliguri Line	62.50	
		Unit- VI	133.92	-	-	
		Total	263.66	Auxiliary Consumption & Transformation Losses at Generator end	0.94%	
2	720MW MHP	Unit-I	75.65	400kV MHP - Jigmeling Line - I	0.00	Unit-II on standby. 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	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	76.10	400kV MHP - Jigmeling Line - IV	71.52	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	78.25	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	124.37	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-21.09	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-31.86	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	3.20	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.24	
		-	-	220kV Tsirang - Jigmeling Line	-51.20	
-	-	132kV Gelephu - Salakati Line	-15.69			
Total	151.75	Auxiliary Consumption & Transformation Losses at Generator end	1.30%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-10.36	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	64.11	220kV CHP - Malbase Line- III	27.58	
		Unit- IV	64.80	220kV CHP - Semtokha Line- IV	79.57	
		-	-	220kV Malbase - Birpara Line	-38.49	
		-	-	66kV CHP - Chumdo Line	22.61	
		-	-	66kV CHP - Gedu Line	6.92	
		-	-	3x3MVA, 66/11kV TFR	0.97	
Total	128.91	Auxiliary Consumption & Transformation Losses at Generator end	1.26%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	61.80	L/S & U/S Unit-I on Standby.
		Unit- II	6.20	66kV BHP - Lobeyasa Line	25.89	
		Total	6.20	220kV BHP - Tsirang Line	-68.67	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.75	L/S & U/S Unit-I on Standby.
		Unit- II	13.30	30MVA ICT, 220/66kV (HV)	20.50	
		Total	13.30	Auxiliary Consumption & Transformation Losses at Generator end	-1.38%	
6	126MW DHP	Unit-I	20.90	220kV DHP - Tsirang Line	20.67	Unit-II under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	66.72	
		-	-	5MVA, 220/33kV TFR	0.22	
Total	20.90	Auxiliary Consumption & Transformation Losses at Gen. end	0.05%			
7	60MW KHP	Unit- I	15.07	132kV KHP - Nangkhon Line	11.40	Unit-II & IV on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	17.64	
		Unit- III	15.09	5MVA, 132/11kV TFR	0.89	
		Unit- IV	0.00	132kV Motanga - Rangia Line	4.34	
		Total	30.16	Auxiliary Consumption & Transformation Losses at Generator end	0.76%	

Note: Generation-Load Summary (MW) for January 25, 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	432.97	382.77	378.93	101.40	3.84
2	Eastern Grid	181.91	195.01	192.80	-64.30	2.21
Total		614.88	577.78	571.73	37.10	6.05

Note: Generation-Load Summary for January 25, 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	214.35	364.87	365.03	-89.83	-0.16
2	Eastern Grid	275.56	99.35	98.30	115.52	1.05
Total		489.91	464.22	463.33	25.69	0.89

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 26, 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 & IV under Shutdown. Unit-III & V on Standby. 400kV THP- Siliguri Line I & IV on Standby..
		Unit- II	138.37	400kV THP - Siliguri Line - II	76.15	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	160.51	
		Unit- V	0.00	400kV Malbase - Siliguri Line	50.60	
		Unit- VI	100.15	-	-	
		Total	238.52	Auxiliary Consumption & Transformation Losses at Generator end	0.78%	
2	720MW MHP	Unit-I	155.15	400kV MHP - Jigmeling Line - I	0.00	Unit-II on standby. Unit-III & IV 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	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	80.51	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	73.85	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	117.84	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-14.54	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-22.54	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	2.46	
		-	-	80MVA, 220/132kV ICT - II (HV)	2.59	
		-	-	220kV Tsirang - Jigmeling Line	-45.95	
-	-	132kV Gelephu - Salakati Line	-11.52			
Total	155.15	Auxiliary Consumption & Transformation Losses at Generator end	0.51%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-9.32	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	65.14	220kV CHP - Malbase Line- III	34.44	
		Unit- IV	65.37	220kV CHP - Semtokha Line- IV	74.81	
		-	-	220kV Malbase - Birpara Line	-40.95	
		-	-	66kV CHP - Chumdo Line	20.18	
		-	-	66kV CHP - Gedu Line	8.35	
		-	-	3x3MVA, 66/11kV TFR	0.77	
Total	130.51	Auxiliary Consumption & Transformation Losses at Generator end	0.98%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	58.47	L/S & U/S unit-I on Standby
		Unit- II	6.20	66kV BHP - Lobeyasa Line	24.15	
		Total	6.20	220kV BHP - Tsirang Line	-63.34	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.75	L/S & U/S unit-I on Standby
		Unit- II	13.40	30MVA ICT, 220/66kV (HV)	18.61	
		Total	13.40	Auxiliary Consumption & Transformation Losses at Generator end	-2.19%	
6	126MW DHP	Unit-I	20.64	220kV DHP - Tsirang Line	20.46	Unit-II under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	66.53	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	20.64	Auxiliary Consumption & Transformation Losses at Generator end	-0.10%			
7	60MW KHP	Unit- I	12.79	132kV KHP - Nangkhoh Line	10.46	Unit-II & IV on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	14.20	
		Unit- III	12.80	5MVA, 132/11kV TFR	0.70	
		Unit- IV	0.00	132kV Motanga - Rangia Line	0.00	
		Total	25.59	Auxiliary Consumption & Transformation Losses at Generator end	0.90%	

Note: Generation-Load Summary (MW) for January 26, 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	409.27	378.74	376.05	76.48	2.69
2	Eastern Grid	180.74	183.39	182.37	-48.60	1.02
Total		590.01	562.13	558.42	27.88	3.71

Note: Generation-Load Summary for January 26, 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	214.16	340.13	340.19	-82.98	-0.06
2	Eastern Grid	234.13	76.49	74.87	114.65	1.62
Total		448.29	416.62	415.06	31.67	1.56

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.