

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	January 30, 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	148.00	400kV THP - Siliguri Line - II	85.87	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	182.57	
		Unit- V	0.00	400kV Malbase - Siliguri Line	59.14	
		Unit- VI	124.21	-	-	
		Total	272.21	Auxiliary Consumption & Transformation Losses at Generator end	1.38%	
2	720MW MHP	Unit-I	59.77	400kV MHP - Jigmeling Line - I	0.00	Unit-II under AMP. 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 & II (Interim) under Shutdown.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	60.29	400kV MHP - Jigmeling Line - IV	41.87	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	76.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	109.58	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-69.79	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	6.02	
		-	-	80MVA, 220/132kV ICT - II (HV)	6.18	
		-	-	220kV Tsirang - Jigmeling Line	-30.97	
-	-	132kV Gelephu - Salakati Line	-12.51			
Total	120.06	Auxiliary Consumption & Transformation Losses at Generator end	1.82%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-12.93	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	64.27	220kV CHP - Malbase Line- III	16.59	
		Unit- IV	60.49	220kV CHP - Semtokha Line- IV	89.76	
		-	-	220kV Malbase - Birpara Line	-33.45	
		-	-	66kV CHP - Chumdo Line	22.36	
		-	-	66kV CHP - Gedu Line	6.60	
		-	-	3x3MVA, 66/11kV TFR	0.87	
Total	124.76	Auxiliary Consumption & Transformation Losses at Generator end	1.21%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	42.18	L/S & U/S Unit-I on Standby.
		Unit- II	6.04	66kV BHP - Lobeyasa Line	23.53	
		Total	6.04	220kV BHP - Tsirang Line	-47.47	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	1.01	L/S & U/S Unit-I on Standby.
		Unit- II	12.99	30MVA ICT, 220/66kV (HV)	18.47	
		Total	12.99	Auxiliary Consumption & Transformation Losses at Generator end	-1.16%	
6	126MW DHP	Unit-I	19.96	220kV DHP - Tsirang Line	19.76	Unit-II under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	67.00	
		-	-	5MVA, 220/33kV TFR	0.17	
Total	19.96	Auxiliary Consumption & Transformation Losses at Gen. end	0.15%			
7	60MW KHP	Unit- I	14.98	132kV KHP - Nangkhon Line	11.47	Unit-II on Standby. Unit-IV under AMP
		Unit-II	0.00	132kV KHP - Kilikhar Line	17.49	
		Unit- III	14.99	5MVA, 132/11kV TFR	0.70	
		Unit- IV	0.00	132kV Motanga - Rangia Line	7.45	
		Total	29.97	Auxiliary Consumption & Transformation Losses at Generator end	1.03%	

Note: Generation-Load Summary (MW) for January 30, 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	435.96	368.30	363.21	98.63	5.09
2	Eastern Grid	150.03	193.91	191.41	-74.85	2.50
Total		585.99	562.21	554.62	23.78	7.59

Note: Generation-Load Summary for January 30, 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	209.81	352.95	350.13	-80.43	2.82
2	Eastern Grid	311.43	89.98	88.55	158.74	1.43
Total		521.24	442.93	438.68	78.31	4.25

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 31, 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	126.39	400kV THP - Siliguri Line - II	77.18	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	160.93	
		Unit- V	0.00	400kV Malbase - Siliguri Line	53.83	
		Unit- VI	114.42	-	-	
		Total	240.81	Auxiliary Consumption & Transformation Losses at Generator end	1.12%	
2	720MW MHP	Unit-I	70.12	400kV MHP - Jigmeling Line - I	0.00	Unit-II under AMP. 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 & II (Interim) under Shutdown.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	70.29	400kV MHP - Jigmeling Line - IV	66.33	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	72.12	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	112.70	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-46.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	3.16	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.27	
		-	-	220kV Tsirang - Jigmeling Line	-40.77	
-	-	132kV Gelephu - Salakati Line	-13.88			
Total	140.41	Auxiliary Consumption & Transformation Losses at Generator end	1.40%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-9.10	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	60.50	220kV CHP - Malbase Line- III	29.48	
		Unit- IV	61.49	220kV CHP - Semtokha Line- IV	71.94	
		-	-	220kV Malbase - Birpara Line	-36.82	
		-	-	66kV CHP - Chumdo Line	19.76	
		-	-	66kV CHP - Gedu Line	7.90	
		-	-	3x3MVA, 66/11kV TFR	0.84	
Total	121.99	Auxiliary Consumption & Transformation Losses at Generator end	0.96%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	52.40	L/S & U/S unit-I on Standby
		Unit- II	6.30	66kV BHP - Lobeyasa Line	23.37	
		Total	6.30	220kV BHP - Tsirang Line	-56.98	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.54	L/S & U/S unit-I on Standby
		Unit- II	13.00	30MVA ICT, 220/66kV (HV)	17.83	
		Total	13.00	Auxiliary Consumption & Transformation Losses at Generator end	-0.16%	
6	126MW DHP	Unit-I	20.18	220kV DHP - Tsirang Line	19.93	Unit-II under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	66.91	
		-	-	5MVA, 220/33kV TFR	0.24	
Total	20.18	Auxiliary Consumption & Transformation Losses at Generator end	0.05%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	12.94	Unit-I on Standby. Unit-IV under AMP.
		Unit-II	15.03	132kV KHP - Kilikhar Line	16.21	
		Unit- III	15.03	5MVA, 132/11kV TFR	0.66	
		Unit- IV	0.00	132kV Motanga - Rangia Line	5.98	
		Total	30.06	Auxiliary Consumption & Transformation Losses at Generator end	0.83%	

Note: Generation-Load Summary (MW) for January 31, 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	402.28	357.96	354.11	85.09	3.85
2	Eastern Grid	170.47	183.60	181.39	-53.90	2.21
Total		572.75	541.56	535.50	31.19	6.06

Note: Generation-Load Summary for January 31, 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	221.35	331.45	329.93	-75.04	1.52
2	Eastern Grid	214.96	82.04	81.27	97.86	0.77
Total		436.31	413.49	411.20	22.82	2.29

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