

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	January 29, 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	128.97	400kV THP - Siliguri Line - II	79.08	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	162.94	
		Unit- V	0.00	400kV Malbase - Siliguri Line	56.45	
		Unit- VI	118.83	-	-	
		Total	247.80	Auxiliary Consumption & Transformation Losses at Generator end	2.33%	
2	720MW MHP	Unit-I	84.84	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 (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	100.46	400kV MHP - Jigmeling Line - IV	105.79	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	80.75	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	120.65	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-5.09	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-9.07	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	2.08	
		-	-	80MVA, 220/132kV ICT - II (HV)	2.18	
		-	-	220kV Tsirang - Jigmeling Line	-49.17	
-	-	132kV Gelephu - Salakati Line	-12.52			
Total	185.30	Auxiliary Consumption & Transformation Losses at Generator end	-0.67%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-13.25	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	59.78	220kV CHP - Malbase Line- III	30.33	
		Unit- IV	59.70	220kV CHP - Semtokha Line- IV	71.60	
		-	-	220kV Malbase - Birpara Line	-45.04	
		-	-	66kV CHP - Chumdo Line	20.70	
		-	-	66kV CHP - Gedu Line	8.00	
		-	-	3x3MVA, 66/11kV TFR	0.88	
Total	119.48	Auxiliary Consumption & Transformation Losses at Generator end	1.02%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	59.69	L/S & U/S Unit-I on Standby.
		Unit- II	6.05	66kV BHP - Lobeysa Line	24.13	
		Total	6.05	220kV BHP - Tsirang Line	-65.33	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.66	L/S & U/S Unit-I on Standby.
		Unit- II	12.90	30MVA ICT, 220/66kV (HV)	18.73	
		Total	12.90	Auxiliary Consumption & Transformation Losses at Generator end	-1.06%	
6	126MW DHP	Unit-I	20.38	220kV DHP - Tsirang Line	20.17	Unit-II under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	67.06	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	20.38	Auxiliary Consumption & Transformation Losses at Gen. end	0.05%			
7	60MW KHP	Unit- I	14.92	132kV KHP - Nangkhon Line	12.93	Unit-II on Standby. Unit-IV under AMP
		Unit-II	0.00	132kV KHP - Kilikhar Line	16.48	
		Unit- III	15.49	5MVA, 132/11kV TFR	0.65	
		Unit- IV	0.00	132kV Motanga - Rangia Line	9.24	
		Total	30.41	Auxiliary Consumption & Transformation Losses at Generator end	1.15%	

Note: Generation-Load Summary (MW) for January 29, 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	406.61	378.54	371.73	77.24	6.81
2	Eastern Grid	215.71	183.98	184.87	-17.44	-0.89
Total		622.32	562.52	556.60	59.80	5.92

Note: Generation-Load Summary for January 29, 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	187.38	367.62	365.35	-119.07	2.27
2	Eastern Grid	210.34	88.82	88.14	60.35	0.68
Total		397.72	456.44	453.49	-58.72	2.95

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 30, 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	132.55	400kV THP - Siliguri Line - II	82.13	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	168.32	
		Unit- V	0.00	400kV Malbase - Siliguri Line	56.30	
		Unit- VI	119.30	-	-	
		Total	251.85	Auxiliary Consumption & Transformation Losses at Generator end	0.56%	
2	720MW MHP	Unit-I	70.14	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	65.31	400kV MHP - Jigmeling Line - IV	60.94	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	72.30	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	117.62	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-21.82	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-33.80	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	2.96	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.06	
		-	-	220kV Tsirang - Jigmeling Line	-44.76	
-	-	132kV Gelephu - Salakati Line	-12.90			
Total	135.45	Auxiliary Consumption & Transformation Losses at Generator end	1.63%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	-12.48	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	57.64	220kV CHP - Malbase Line- III	21.73	
		Unit- IV	51.89	220kV CHP - Semtokha Line- IV	70.96	
		-	-	220kV Malbase - Birpara Line	-37.21	
		-	-	66kV CHP - Chumdo Line	20.34	
		-	-	66kV CHP - Gedu Line	7.39	
		-	-	3x3MVA, 66/11kV TFR	0.69	
Total	109.53	Auxiliary Consumption & Transformation Losses at Generator end	0.82%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	57.30	L/S & U/S unit-I on Standby
		Unit- II	6.30	66kV BHP - Lobeyasa Line	24.06	
		Total	6.30	220kV BHP - Tsirang Line	-61.46	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.51	
		Unit- II	14.00	30MVA ICT, 220/66kV (HV)	18.42	
		Total	14.00	Auxiliary Consumption & Transformation Losses at Generator end	-0.54%	
6	126MW DHP	Unit-I	19.96	220kV DHP - Tsirang Line	19.74	Unit-II under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	66.59	
		-	-	5MVA, 220/33kV TFR	0.21	
Total	19.96	Auxiliary Consumption & Transformation Losses at Generator end	0.05%			
7	60MW KHP	Unit- I	15.06	132kV KHP - Nangkhoh Line	13.53	Unit-II on Standby. Unit-IV under AMP.
		Unit-II	0.00	132kV KHP - Kilikhar Line	15.42	
		Unit- III	15.06	5MVA, 132/11kV TFR	0.66	
		Unit- IV	0.00	132kV Motanga - Rangia Line	6.07	
		Total	30.12	Auxiliary Consumption & Transformation Losses at Generator end	1.69%	

Note: Generation-Load Summary (MW) for January 30, 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	401.64	357.66	355.46	88.74	2.20
2	Eastern Grid	165.57	183.26	180.54	-62.45	2.72
Total		567.21	540.92	536.00	26.29	4.92

Note: Generation-Load Summary for January 30, 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	222.32	340.95	338.79	-82.51	2.16
2	Eastern Grid	219.06	77.58	77.01	105.36	0.57
Total		441.38	418.53	415.80	22.85	2.73

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- 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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