BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	November 4, 2022
Hours:	18:00 Hours

Date	Time	Load(MW)
3-Nov-22	18:18hrs	600.914

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	229.70	Unit-I & 400kV Tala-Malbase line under Shutdown. Unit-IV on Standby. 400kV THP- Siliguri Line- II on Standby.
		Unit- II	118.10	400kV THP - Siliguri Line - II	0.00	
		Unit- III	108.55	400kV THP - Siliguri Line- IV	221.69	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	98.44	400kV Malbase - Siliguri Line	-76.90	
		Unit- VI	129.07	-	-	
		Total	**454.16**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.61%**	
2	720MW MHP	Unit-I	120.23	400kV MHP - Jigmeling Line - I	0.00	Unit-II on standby. Unit-III under shutdown. 400kV MHP-JLG Line I under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	162.00	
		Unit-IV	135.56	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	92.22	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	92.93	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	25.84	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	40.64	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.09	
		-	-	80MVA, 220/132kV ICT - II (HV)	15.44	
		-	-	220kV Tsirang - Jigmeling Line	0.55	
		-	-	132kV Gelephu - Salakati Line	8.89	
		Total	**255.79**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.61%**	
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	18.35	Unit-I on Shutdown.
		Unit- II	75.70	220kV CHP - Birpara Line- II	18.22	
		Unit- III	73.70	220kV CHP - Malbase Line- III	72.44	
		Unit- IV	70.38	220kV CHP - Semtokha Line- IV	81.22	
		-	-	220kV Malbase - Birpara Line	-25.39	
		-	-	66kV CHP - Chumdo Line	21.48	
		-	-	66kV CHP - Gedu Line	5.99	
		-	-	3x3MVA, 66/11kV TFR	1.73	
		Total	**219.78**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.16%**	
4	24MW BHP (U/S)	Unit- I	7.11	220kV BHP - Semtokha Line	60.35	
		Unit- II	7.11	66kV BHP - Lobeysa Line	28.05	
		Total	**14.22**	220kV BHP - Tsirang Line	-44.42	
5	40MW BHP (L/S)	Unit- I	15.09	5MVA, 66/11kV TFR	0.68	
		Unit- II	14.77	30MVA ICT, 220/66kV (HV)	14.50	
		Total	**29.86**	**Auxiliary Consumption & Transformation Losses at Generator end**	**-1.32%**	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	48.71	Unit-I on Standby 220kV DHP-Dagapela Line on Standby.
		Unit-II	48.99	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.36	
		-	-	5MVA, 220/33kV TFR	0.20	
		Total	**48.99**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.16%**	
7	60MW KHP	Unit- I	14.43	132kV KHP - Nangkhor Line	19.04	Unit-IV under standby.
		Unit-II	14.51	132kV KHP - Kilikhar Line	23.22	
		Unit- III	14.41	5MVA, 132/11kV TFR	0.63	
		Unit- IV	0.00	132kV Motanga - Rangia Line	25.22	
		Total	**43.35**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.06%**	

Note: Generation-Load Summary (MW) for November 04, 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	767.01	380.79	378.17	385.67	2.62
2	Eastern Grid	299.14	199.10	197.07	100.59	2.03
Total		**1,066.15**	**579.89**	**575.24**	**486.26**	**4.65**

Note: Generation-Load Summary for November 04, 2021 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	1,019.13	325.42	328.01	653.93	-2.59
2	Eastern Grid	296.14	77.38	76.17	258.54	1.21
Total		**1,315.27**	**402.80**	**404.18**	**912.47**	**-1.38**

NOTE- Motanga data collected from site.

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:	November 5, 2022
Hours:	09:00 Hours

Date	Time	Load(MW)
3-Nov-22	18:18hrs	600.914

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	224.33	Unit-I & 400kV Tala-Malbase line under Shutdown. Unit-IV on Standby. 400kV THP- Siliguri Line- II on Standby.
		Unit- II	119.27	400kV THP - Siliguri Line - II	0.00	
		Unit- III	118.26	400kV THP - Siliguri Line- IV	213.70	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	98.75	400kV Malbase - Siliguri Line	-57.61	
		Unit- VI	109.42	-	-	
		Total	**445.70**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.72%**	
2	720MW MHP	Unit-I	120.10	400kV MHP - Jigmeling Line - I	0.00	Unit-II on standby. Unit-III under shutdown. 400kV MHP-JLG Line I under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	166.83	
		Unit-IV	125.43	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	77.33	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	73.85	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	38.17	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	56.80	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	9.37	
		-	-	80MVA, 220/132kV ICT - II (HV)	9.60	
		-	-	220kV Tsirang - Jigmeling Line	8.23	
		-	-	132kV Gelephu - Salakati Line	5.68	
		Total	**245.53**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.56%**	
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	19.51	Unit-I under shutdown.
		Unit- II	70.65	220kV CHP - Birpara Line- II	19.33	
		Unit- III	75.39	220kV CHP - Malbase Line- III	85.46	
		Unit- IV	75.58	220kV CHP - Semtokha Line- IV	70.89	
		-	-	220kV Malbase - Birpara Line	-33.55	
		-	-	66kV CHP - Chumdo Line	19.43	
		-	-	66kV CHP - Gedu Line	5.17	
		-	-	3x3MVA, 66/11kV TFR	1.47	
		Total	**221.62**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.16%**	
4	24MW BHP (U/S)	Unit- I	7.30	220kV BHP - Semtokha Line	52.60	
		Unit- II	7.00	66kV BHP - Lobeysa Line	24.48	
		Total	**14.30**	220kV BHP - Tsirang Line	-34.22	
5	40MW BHP (L/S)	Unit- I	14.50	5MVA, 66/11kV TFR	0.40	
		Unit- II	14.50	30MVA ICT, 220/66kV (HV)	10.82	
		Total	**29.00**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.09%**	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	49.74	Unit-I on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	50.04	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.52	
		-	-	5MVA, 220/33kV TFR	0.20	
		Total	**50.04**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.20%**	
7	60MW KHP	Unit- I	14.36	132kV KHP - Nangkhor Line	21.73	Unit-IV on Standby.
		Unit-II	14.41	132kV KHP - Kilikhar Line	20.44	
		Unit- III	14.30	5MVA, 132/11kV TFR	0.40	
		Unit- IV	0.00	132kV Motanga - Rangia Line	23.10	
		Total	**43.07**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.16%**	

Note: Generation-Load Summary (MW) for November 05, 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	760.66	366.72	358.55	385.71	8.17
2	Eastern Grid	288.60	173.08	171.21	123.75	1.87
Total		**1,049.26**	**539.80**	**529.76**	**509.46**	**10.04**

Note: Generation-Load Summary for November 05, 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)
1	Western Grid	941.37	314.26	313.53	591.09	0.73
2	Eastern Grid	300.22	70.42	69.92	265.82	0.50
Total		**1,241.59**	**384.68**	**383.45**	**856.91**	**1.23**

NOTE-Motanga data collected from Site.

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.