BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	May 11, 2022
Hours:	19:00 Hours

Date	Time	Load(MW)
12-Jan-22	18:00hrs	492.25

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-II & V under annual maintenance Unit-I on standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	98.51	400kV THP - Siliguri Line- IV	118.56	
		Unit- IV	100.79	400kV THP - Malbase Line - III	206.41	
		Unit- V	0.00	400kV Malbase - Siliguri Line	101.82	
		Unit- VI	130.05	-	-	
		Total	**329.35**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.33%**	
2	720MW MHP	Unit-I	109.19	400kV MHP - Jigmeling Line - I	0.00	Unit- III under Shutdown. Unit- II on Standby. 400kV MHP-JLG Line I & 400kV MHP-JLG Line III on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby. 400kV JLG_ALI Line II (Direct) on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	103.87	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	100.49	400kV MHP - Jigmeling Line - IV	104.09	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	77.25	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	43.65	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	64.73	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	22.86	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.45	
		-	-	220kV Tsirang - Jigmeling Line	-42.63	
		-	-	132kV Gelephu - Salakati Line	0.60	
		Total	**209.68**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.82%**	
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	21.97	Unit-I & IV on Standby.
		Unit- II	69.87	220kV CHP - Birpara Line- II	21.94	
		Unit- III	91.17	220kV CHP - Malbase Line- III	45.54	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	52.91	
		-	-	220kV Malbase - Birpara Line	0.80	
		-	-	66kV CHP - Chumdo Line	13.23	
		-	-	66kV CHP - Gedu Line	3.99	
		-	-	3x3MVA, 66/11kV TFR	1.29	
		Total	**161.04**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.11%**	
4	24MW BHP (U/S)	Unit- I	5.60	220kV BHP - Semtokha Line	51.00	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	66kV BHP - Lobeysa Line	20.37	
		Total	**5.60**	220kV BHP - Tsirang Line	-54.68	
5	40MW BHP (L/S)	Unit- I	11.50	5MVA, 66/11kV TFR	0.58	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	15.50	
		Total	**11.50**	**Auxiliary Consumption & Transformation Losses at Generator end**	**-0.99%**	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	21.71	Unit-I on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	21.94	220kV DHP - Dagapela Line	0.00	
		-		220kV Jigmeling - Dagapela Line	8.29	
		-	-	5MVA, 220/33kV TFR	0.20	
		Total	**21.94**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.14%**	
7	60MW KHP	Unit- I	15.60	132kV KHP - Nangkhor Line	42.64	Unit-III on Standby.
		Unit-II	15.54	132kV KHP - Kilikhar Line	3.14	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.56	
		Unit- IV	15.57	132kV Motanga - Rangia Line	25.27	
		Total	**46.71**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.80%**	

Note: Generation-Load Summary (MW) for May 11, 2022 at 19:00hrs.

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	529.43	306.97	302.56	265.09	4.41
2	Eastern Grid	256.39	79.51	77.42	134.25	2.09
Total		**785.82**	**386.48**	**379.98**	**399.34**	**6.50**

Note: Generation-Load Summary for May 11, 2021 at 19:00hrs.

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	378.74	229.52	226.94	130.73	2.58
2	Eastern Grid	384.67	68.06	66.33	235.10	1.73
Total		**763.41**	**297.58**	**293.27**	**365.83**	**4.31**

NOTE- MHP, KHP, JLG & BHP 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	Time	Load(MW)
12-Jan-22	18:00hrs	492.25

Date:	May 12, 2022
Hours:	09:00 Hours

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-II & V under annual maintenance Unit-I on standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	80.09	400kV THP - Siliguri Line- IV	117.32	
		Unit- IV	80.96	400kV THP - Malbase Line - III	169.53	
		Unit- V	0.00	400kV Malbase - Siliguri Line	107.64	
		Unit- VI	130.34	-	-	
		Total	**291.39**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.56%**	
2	720MW MHP	Unit-I	160.21	400kV MHP - Jigmeling Line - I	0.00	Unit- III under Shutdown. 400kV MHP-JLG Line I & 400kV MHP-JLG Line III on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby. 400kV JLG_ALI Line II (Direct) on standby.
		Unit-II	160.45	400kV MHP - Jigmeling Line - II	239.27	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	160.10	400kV MHP - Jigmeling Line - IV	238.90	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	93.89	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	225.82	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	150.99	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	19.54	
		-	-	80MVA, 220/132kV ICT - II (HV)	19.90	
		-	-	220kV Tsirang - Jigmeling Line	-49.05	
		-	-	132kV Gelephu - Salakati Line	15.40	
		Total	**480.76**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.54%**	
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	30.54	Unit-I on Standby.
		Unit- II	62.90	220kV CHP - Birpara Line- II	30.36	
		Unit- III	58.06	220kV CHP - Malbase Line- III	63.39	
		Unit- IV	55.65	220kV CHP - Semtokha Line- IV	36.46	
		-	-	220kV Malbase - Birpara Line	6.08	
		-	-	66kV CHP - Chumdo Line	10.60	
		-	-	66kV CHP - Gedu Line	4.08	
		-	-	3x3MVA, 66/11kV TFR	0.75	
		Total	**176.61**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.24%**	
4	24MW BHP (U/S)	Unit- I	5.50	220kV BHP - Semtokha Line	59.50	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	66kV BHP - Lobeysa Line	18.90	
		Total	**5.50**	220kV BHP - Tsirang Line	-61.61	
5	40MW BHP (L/S)	Unit- I	11.40	5MVA, 66/11kV TFR	0.37	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	13.87	
		Total	**11.40**	**Auxiliary Consumption & Transformation Losses at Generator end**	**-1.54%**	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	20.43	Unit-I under Annual Maintenance. 220kV DHP_Dagapela Line on Standby.
		Unit-II	20.66	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	7.66	
		-	-	5MVA, 220/33kV TFR	0.15	
		Total	**20.66**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.39%**	
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	63.25	
		Unit-II	16.50	132kV KHP - Kilikhar Line	1.98	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.54	
		Unit- IV	16.50	132kV Motanga - Rangia Line	29.01	
		Total	**66.00**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.35%**	

Note: Generation-Load Summary (MW) for May 12, 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	505.56	262.67	257.88	291.94	4.79
2	Eastern Grid	546.76	76.49	73.67	421.22	2.82
Total		**1,052.32**	**339.16**	**331.55**	**713.16**	**7.61**

Note: Generation-Load Summary for May 12, 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	443.04	214.58	211.22	219.62	3.36
2	Eastern Grid	431.60	54.15	53.48	386.29	0.67
Total		**874.64**	**268.73**	**264.70**	**605.91**	**4.03**

NOTE-BHP, KHP, JLG & MHP data collected from Site.

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