

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 9, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	137.60	400kV THP - Siliguri Line - I	0.00		Unit-II on Standby. 400kV THP-Siliguri line I under breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	195.11	+	
		Unit- III	118.98	400kV THP - Siliguri Line- IV	186.69	+	
		Unit- IV	136.94	400kV THP - Malbase Line - III	282.47	+	
		Unit- V	137.37	400kV Malbase - Siliguri Line	163.91	+	
		Unit- VI	139.22	-	-	-	
		Total	670.11	Auxiliary Consumption & Transformation Losses at Gen. end	0.871%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	189.56	+	Unit-I on Standby. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo lineI & II not in service. 400kV JLG_ALI Line I (Interim) on standby. 132kV Gelephu_Salakati line under shutdown.
		Unit-II	130.17	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	120.81	400kV MHP - Jigmeling Line - III	190.66	+	
		Unit-IV	131.10	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-4.67	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	90.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	139.83	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	139.83	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	25.73	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	26.07	+	
		-	-	220kV Tsirang - Jigmeling Line	50.00	+	
-	-	132kV Gelephu - Salakati Line	0.00				
Total	382.08	Auxiliary Consumption & Transformation Losses at Gen. end	0.487%				
3	336MW CHP	Unit- I	79.90	220kV CHP - Birpara Line- I	75.78	+	66kV CHP_Gedu line opened at 10:01hrs to regulate 66kV voltage.
		Unit- II	84.29	220kV CHP - Birpara Line- II	75.88	+	
		Unit- III	85.68	220kV CHP - Malbase Line- III	97.94	+	
		Unit- IV	80.32	220kV CHP - Semtokha Line- IV	52.29	+	
		-	-	220kV Malbase - Birpara Line	48.04	+	
		-	-	66kV CHP - Chumdo Line	26.01	+	
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	1.32	+	
		Total	330.19	Auxiliary Consumption & Transformation Losses at Gen. end	0.294%		
4	24MW BHP (U/S)	Unit- I	10.20	220kV BHP - Semtokha Line	31.50	+	
		Unit- II	10.00	66kV BHP - Lobeyssa Line	30.52	+	
		Total	20.20	220kV BHP - Tsirang Line	-6.75	-	
5	40MW BHP (L/S)	Unit- I	17.50	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	17.80	30MVA ICT, 220/66kV (HV)	10.32	+	
		Total	35.30	Auxiliary Consumption & Transformation Losses at Gen. end	-1.207%		
6	126MW DHP	Unit-I	60.38	220kV DHP - Tsirang Line	60.09	+	DHP Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.55	+	
		-	-	5MVA, 220/33kV TFR	0.27	+	
		Total	60.38	Auxiliary Consumption & Transformation Losses at Gen. end	0.033%		
7	60MW KHP	Unit- I	16.53	132kV KHP - Nangkhoh Line	37.31	+	
		Unit-II	16.48	132kV KHP - Kilikhar Line	27.66	+	
		Unit- III	16.62	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.51	132kV Motanga - Rangia Line	44.64	+	
		Total	66.14	Auxiliary Consumption & Transformation Losses at Gen. end	1.164%		

Note: Generation-Load Summary (MW) for October 09, 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) at Generator end.
1	Western Grid	1,116.18	320.77	317.16	745.41	3.61
2	Eastern Grid	448.22	83.02	80.39	415.20	2.63
	Total	1,564.40	403.79	397.55	1,160.61	6.24

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Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,368.23	230.22	214.63	1,045.18	15.59
2	Eastern Grid	521.23	50.32	47.68	563.74	2.64
	Total	1,889.46	280.54	262.31	1,608.92	18.23

NOTE-BHP and MHPA data collected from site

- The Instantaneous load balance is calculated as (Total generation - (Total export-Import) - Total domestic load) do not tend towards zero. This could be due to the following reasons:
 - 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.
 - The clocks of all the locations are not synchronized.
- 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

Maximum Load/Demand till Date

Date:	October 10, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	138.49	400kV THP - Siliguri Line - I	0.00		Unit-II on standby. 400kV THP-Siliguri line I under breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	210.81	+	
		Unit- III	118.44	400kV THP - Siliguri Line- IV	201.48	+	
		Unit- IV	138.93	400kV THP - Malbase Line - III	255.31	+	
		Unit- V	137.39	400kV Malbase - Siliguri Line	185.07	+	
		Unit- VI	139.46	-	-	-	
		Total	672.71	Auxiliary Consumption & Transformation Losses at Generator end	0.760%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	194.55	+	MHP Unit I on stnsdby. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby. 132kV Gelephu_Salakati line under shutdown.
		Unit-II	130.02	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	130.39	400kV MHP - Jigmeling Line - III	195.62	+	
		Unit-IV	131.12	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-28.89	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	102.54	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	155.52	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	155.52	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	11.78	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	11.95	+	
		-	-	220kV Tsirang - Jigmeling Line	56.67	+	
-	-	132kV Gelephu - Salakati Line	0.00				
		Total	391.53	Auxiliary Consumption & Transformation Losses at Generator end	0.347%		
3	336MW CHP	Unit- I	85.01	220kV CHP - Birpara Line- I	72.59	+	66kV CHP_Gedu line opened at 10:01hrs to regulate 66kV voltage.
		Unit- II	86.74	220kV CHP - Birpara Line- II	72.28	+	
		Unit- III	87.47	220kV CHP - Malbase Line- III	123.05	+	
		Unit- IV	87.43	220kV CHP - Semtokha Line- IV	56.16	+	
		-	-	220kV Malbase - Birpara Line	22.58	+	
		-	-	66kV CHP - Chumdo Line	20.74	+	
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	0.79	+	
		Total	346.65	Auxiliary Consumption & Transformation Losses at Generator end	0.300%		
4	24MW BHP (U/S)	Unit- I	9.80	220kV BHP - Semtokha Line	24.60	+	
		Unit- II	9.70	66kV BHP - Lobeysa Line	27.65	+	
		Total	19.50	220kV BHP - Tsirang Line	-0.44	-	
5	40MW BHP (L/S)	Unit- I	16.70	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	16.50	30MVA ICT, 220/66kV (HV)	8.76	+	
		Total	33.20	Auxiliary Consumption & Transformation Losses at Generator end	0.019%		
6	126MW DHP	Unit-I	59.41	220kV DHP - Tsirang Line	59.13	+	DHP Unit II on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.92	+	
		-	-	5MVA, 220/33kV TFR	0.27	+	
		Total	59.41	Auxiliary Consumption & Transformation Losses at Generator end	0.017%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Line	42.21	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	23.04	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	51.27	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.652%		

Note: Generation-Load Summary (MW) for October 10, 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) at Generator end.
1	Western Grid	1,131.47	309.99	305.74	764.81	4.25
2	Eastern Grid	457.53	49.35	47.56	464.85	1.79
	Total	1,589.00	359.34	353.30	1,229.66	6.04

Note: Generation-Load Summary for October 10, 2020 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
1	Western Grid	1,279.76	197.51	182.33	1,011.16	15.18
2	Eastern Grid	521.47	40.26	37.32	552.30	2.94
	Total	1,801.23	237.77	219.65	1,563.46	18.12

NOTE-BHP & MHPA data collected from site

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