

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 22, 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	184.94	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance. 400kV THP-Siliguri Line II tripped.
		Unit- II	181.28	400kV THP - Siliguri Line - II	0.00		
		Unit- III	185.68	400kV THP - Siliguri Line- IV	504.51	+	
		Unit- IV	187.41	400kV THP - Malbase Line - III	600.50	+	
		Unit- V	186.87	400kV Malbase - Siliguri Line	471.28	+	
		Unit- VI	185.52	-	-	-	
		Total	1,111.70	Auxiliary Consumption & Transformation Losses at Gen. end	0.602%		
2	720MW MHP	Unit-I	197.30	400kV MHP - Jigmeling Line - I	294.14	+	Unit-III under breakdown 400kV MHP-JLGI Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I(Interim) under shutdown
		Unit-II	197.74	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.85	+	
		Unit-IV	197.60	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)	3.70	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	146.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	222.01	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	221.32	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	34.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	34.50	+	
		-	-	220kV Tsirang - Jigmeling Line	73.90	+	
-	-	132kV Gelephu - Salakati Line	30.02	+			
Total	592.64	Auxiliary Consumption & Transformation Losses at Gen. end	0.447%				
3	336MW CHP	Unit- I	91.52	220kV CHP - Birpara Line- I	96.66	+	
		Unit- II	91.15	220kV CHP - Birpara Line- II	96.36	+	
		Unit- III	91.60	220kV CHP - Malbase Line- III	130.23	+	
		Unit- IV	91.47	220kV CHP - Semtokha Line- IV	25.92	+	
		-	-	220kV Malbase - Birpara Line	56.63	+	
		-	-	66kV CHP - Chumdo Line	9.39	+	
		-	-	66kV CHP - Gedu Line	4.93	+	
		-	-	3x3MVA, 66/11kV TFR	1.05	+	
		Total	365.74	Auxiliary Consumption & Transformation Losses at Gen. end	0.328%		
4	24MW BHP (U/S)	Unit- I	7.60	220kV BHP - Semtokha Line	30.55	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	7.50	66kV BHP - Lobeysa Line	14.40	+	
		Total	15.10	220kV BHP - Tsirang Line	-1.03	-	
5	40MW BHP (L/S)	Unit- I	15.00	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	15.00	30MVA ICT, 220/66kV (HV)	0.00		
		Total	30.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.643%		
6	126MW DHP	Unit-I	49.39	220kV DHP - Tsirang Line	78.92	+	220kV DHP_Dagapela Line on standby.
		Unit-II	30.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.10	+	
		-	-	5MVA, 220/33kV TFR	0.49	+	
		Total	79.42	Auxiliary Consumption & Transformation Losses at Gen. end	0.013%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Line	38.52	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	26.58	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	44.37	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Gen. end	0.939%		

Note: Generation-Load Summary (MW) for June 22, 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	1,601.96	302.62	296.53	1,225.44	6.09
2	Eastern Grid	658.64	67.92	64.65	664.62	3.27
Total		2,260.60	370.54	361.18	1,890.06	9.36

Note: Generation-Load Summary for June 22, 2020 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
1	Western Grid	1,557.77	222.46	204.68	1,259.51	17.78
2	Eastern Grid	659.23	68.19	65.14	666.84	3.05
Total		2,217.00	290.65	269.82	1,926.35	20.83

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:	June 23, 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	186.42	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	184.51	400kV THP - Siliguri Line - II	361.27	+	
		Unit- III	186.48	400kV THP - Siliguri Line- IV	344.26	+	
		Unit- IV	184.38	400kV THP - Malbase Line - III	401.08	+	
		Unit- V	185.40	400kV Malbase - Siliguri Line	324.39	+	
		Unit- VI	185.73	-	-	-	
		Total	1,112.92	Auxiliary Consumption & Transformation Losses at Generator end	0.567%		
2	720MW MHP	Unit-I	197.28	400kV MHP - Jigmeling Line - I	294.20	+	Unit-III on breakdown 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I(Interim) under shutdown.
		Unit-II	197.75	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.75	+	
		Unit-IV	197.86	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)	43.60	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	155.62	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	235.02	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	234.33	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	27.60	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	27.60	+	
		-	-	220kV Tsirang - Jigmeling Line	100.32	+	
-	-	132kV Gelephu - Salakati Line	24.26	+			
Total	592.89	Auxiliary Consumption & Transformation Losses at Generator end	0.496%				
3	336MW CHP	Unit- I	91.61	220kV CHP - Birpara Line- I	102.37	+	
		Unit- II	90.74	220kV CHP - Birpara Line- II	101.95	+	
		Unit- III	91.67	220kV CHP - Malbase Line- III	138.67	+	
		Unit- IV	91.56	220kV CHP - Semtokha Line- IV	11.71	+	
		-	-	220kV Malbase - Birpara Line	59.23	+	
		-	-	66kV CHP - Chumdo Line	5.96	+	
		-	-	66kV CHP - Gedu Line	4.93	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
		Total	365.58	Auxiliary Consumption & Transformation Losses at Generator end	-0.194%		
4	24MW BHP (U/S)	Unit- I	8.40	220kV BHP - Semtokha Line	39.92	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	8.50	66kV BHP - Lobeysa Line	15.60	+	
		Total	16.90	220kV BHP - Tsirang Line	-9.36	-	
5	40MW BHP (L/S)	Unit- I	15.00	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	14.90	30MVA ICT, 220/66kV (HV)	0.00		
		Total	29.90	Auxiliary Consumption & Transformation Losses at Generator end	-0.534%		
6	126MW DHP	Unit-I	63.41	220kV DHP - Tsirang Line	113.04	+	220kV DHP_Dagapela Line on standby.
		Unit-II	50.06	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.20	+	
		-	-	5MVA, 220/33kV TFR	0.40		
		Total	113.47	Auxiliary Consumption & Transformation Losses at Generator end	0.026%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Line	39.68	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	25.16	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.38	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	46.48	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	1.182%		

Note: Generation-Load Summary (MW) for June 23, 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	1,638.77	244.98	240.80	1,293.47	4.18
2	Eastern Grid	658.89	63.50	59.78	695.71	3.72
Total		2,297.66	308.48	300.58	1,989.18	7.90

Note: Generation-Load Summary for June 23, 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	1,469.18	229.36	211.70	1,178.47	17.66
2	Eastern Grid	657.31	52.02	46.74	666.64	5.28
Total		2,126.49	281.38	258.44	1,845.11	22.94

NOTE-BHP, KHP, JLG and MHPA data collected from site

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 - 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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