

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 29, 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	188.42	400kV THP - Siliguri Line - I	266.73	+	
		Unit- II	186.04	400kV THP - Siliguri Line - II	264.80	+	
		Unit- III	187.53	400kV THP - Siliguri Line- IV	257.28	+	
		Unit- IV	187.53	400kV THP - Malbase Line - III	316.76	+	
		Unit- V	187.15	400kV Malbase - Siliguri Line	243.00	+	
		Unit- VI	186.99	-	-	-	
		Total	1,123.66	Error at Station/Auxiliary Consumption/Losses		1.610%	
2	720MW MHP	Unit-I	180.13	400kV MHP - Jigmeling Line - I	0.00		Unit -III under breakdown. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmoo line I & II not in service. 400/220kV ICT at JLG ideal charge.
		Unit-II	140.18	400kV MHP - Jigmeling Line - II	248.81	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	180.59	400kV MHP - Jigmeling Line - IV	249.40	+	
		-	-	132kV MHP - Yurmoo Line - I	0.00		
		-	-	132kV MHP - Yurmoo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	245.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	246.10	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	29.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.50	+	
		-	-	220kV Tsirang - Jigmeling Line	60.74	+	
		-	-	132kV Gelephu - Salakati Line	20.96	+	
		Total	500.90	Error at Station/Auxiliary Consumption/Losses		0.537%	
3	336MW CHP	Unit- I	91.88	220kV CHP - Birpara Line- I	92.20	+	
		Unit- II	91.47	220kV CHP - Birpara Line- II	92.13	+	
		Unit- III	91.87	220kV CHP - Malbase Line- III	118.67	+	
		Unit- IV	92.07	220kV CHP - Semtokha Line- IV	46.58	+	
		-	-	220kV Malbase - Birpara Line	59.00	+	
		-	-	66kV CHP - Chumdo Line	7.83	+	
		-	-	66kV CHP - Gedu Line	6.65	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
Total	367.29	Error at Station/Auxiliary Consumption/Losses		0.553%			
4	24MW BHP (U/S)	Unit- I	5.00	220kV BHP - Semtokha Line	-18.45	-	
		Unit- II	4.80	66kV BHP - Lobeyasa Line	27.40	+	
		Total	9.80	220kV BHP - Tsirang Line	20.40	+	
	40MW BHP (L/S)	Unit- I	10.10	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	10.20	30MVA ICT, 220/66kV (HV)	18.30	+	
Total	20.30	Error at Station/Auxiliary Consumption/Losses		-0.498%			
5	126MW DHP	Unit-I	43.31	220kV DHP - Tsirang Line	42.96	+	220kV DHP_Dagapela Line on standby. Unit-II on standby
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.60	+	
		-	-	5MVA, 220/33kV TFR	0.22	+	
		Total	43.31	Error at Station/Auxiliary Consumption/Losses		0.300%	
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	38.12	+	
		Unit-II	16.38	132kV KHP - Kilikhar Line	26.82	+	
		Unit- III	16.54	5MVA, 132/11kV TFR	0.19	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	42.73	+	
		Total	65.92	Error at Station/Auxiliary Consumption/Losses		1.198%	

Note: Generation-Load Summary (MW) for May 29, 2021 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	1,564.36	228.48	209.98	1,275.14	18.50
2	Eastern Grid	566.82	71.97	68.49	555.59	3.48
Total		2,131.18	300.45	278.47	1,830.73	21.98

Note: Generation-Load Summary for May 29, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	956.48	224.50	208.55	685.02	15.95
2	Eastern Grid	435.96	48.67	47.53	434.01	1.14
Total		1,392.44	273.17	256.08	1,119.03	17.09

NOTE-BHP & MHP data collected 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:	May 30, 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	186.87	400kV THP - Siliguri Line - I	221.93	+	Unit-IV under shutdown.
		Unit- II	183.73	400kV THP - Siliguri Line - II	220.74	+	
		Unit- III	184.44	400kV THP - Siliguri Line- IV	213.84	+	
		Unit- IV	0.00	400kV THP - Malbase Line - III	258.35	+	
		Unit- V	187.07	400kV Malbase - Siliguri Line	204.00	+	
		Unit- VI	184.81	-	-	-	
		Total	926.92	Error at Station/Auxiliary Consumption/Losses		1.301%	
2	720MW MHP	Unit-I	170.10	400kV MHP - Jigmeling Line - I	0.00		Unit-III under breakdown. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmo line I & II not in service.
		Unit-II	170.19	400kV MHP - Jigmeling Line - II	253.78	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	170.42	400kV MHP - Jigmeling Line - IV	254.11	+	
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - I	250.20	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	251.50	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	24.00	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	24.00	+	
		-	-	220kV Tsirang - Jigmeling Line	47.84	+	
		-	-	132kV Gelephu - Salakati Line	18.00	+	
		Total	510.71	Error at Station/Auxiliary Consumption/Losses		0.552%	
3	336MW CHP	Unit- I	91.60	220kV CHP - Birpara Line- I	85.95	+	
		Unit- II	91.04	220kV CHP - Birpara Line- II	85.90	+	
		Unit- III	91.86	220kV CHP - Malbase Line- III	128.83	+	
		Unit- IV	91.72	220kV CHP - Semtokha Line- IV	50.77	+	
		-	-	220kV Malbase - Birpara Line	38.00	+	
		-	-	66kV CHP - Chumdo Line	6.80		
		-	-	66kV CHP - Gedu Line	5.89	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
Total	366.22	Error at Station/Auxiliary Consumption/Losses		0.377%			
4	24MW BHP (U/S)	Unit- I	4.60	220kV BHP - Semtokha Line	-23.35	-	
		Unit- II	4.40	66kV BHP - Lobeyasa Line	29.40	+	
		Total	9.00	220kV BHP - Tsirang Line	19.96	+	
	40MW BHP (L/S)	Unit- I	8.70	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	8.90	30MVA ICT, 220/66kV (HV)	21.39	+	
Total	17.60	Error at Station/Auxiliary Consumption/Losses		-1.128%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	29.77	+	Unit-I under shutdown..220kV DHP_Dagapela Line on standby.
		Unit-II	29.99	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.23	+	
		Total	29.99	Error at Station/Auxiliary Consumption/Losses		-0.033%	
6	60MW KHP	Unit- I	15.92	132kV KHP - Nangkhor Line	39.91	+	
		Unit-II	15.80	132kV KHP - Kilikhar Line	23.88	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	40.09	+	
		Total	64.72	Error at Station/Auxiliary Consumption/Losses		1.004%	

Note: Generation-Load Summary (MW) for May 30, 2021 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	1,349.73	231.53	219.40	1,070.36	12.13
2	Eastern Grid	575.43	63.48	60.01	559.79	3.47
Total		1,925.16	295.01	279.41	1,630.15	15.60

Note: Generation-Load Summary for May 30, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	1,064.40	209.66	195.72	818.56	13.94
2	Eastern Grid	487.56	45.06	36.77	478.48	8.29
Total		1,551.96	254.72	232.49	1,297.04	22.23

NOTE-BHP & All Eastern data collected site

1. 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:

- 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.