

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 28, 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	187.55	400kV THP - Siliguri Line - I	226.67	+	Unit-IV under shutdown.
		Unit- II	187.81	400kV THP - Siliguri Line - II	225.62	+	
		Unit- III	188.35	400kV THP - Siliguri Line- IV	219.85	+	
		Unit- IV	0.00	400kV THP - Malbase Line - III	251.21	+	
		Unit- V	186.55	400kV Malbase - Siliguri Line	207.82	+	
		Unit- VI	186.82	-	-	-	
		Total	937.08	Error at Station/Auxiliary Consumption/Losses		1.465%	
2	720MW MHP	Unit-I	197.87	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	196.88	400kV MHP - Jigmeling Line - II	294.36	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	198.22	400kV MHP - Jigmeling Line - IV	294.99	+	
		-	-	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	290.20	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	290.90	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	37.20	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	37.20	+	
		-	-	220kV Tsirang - Jigmeling Line	76.39	+	
		-	-	132kV Gelephu - Salakati Line	32.93	+	
Total	592.97	Error at Station/Auxiliary Consumption/Losses		0.610%			
3	336MW CHP	Unit- I	91.34	220kV CHP - Birpara Line- I	102.02	+	
		Unit- II	91.00	220kV CHP - Birpara Line- II	101.85	+	
		Unit- III	92.19	220kV CHP - Malbase Line- III	146.50	+	
		Unit- IV	91.67	220kV CHP - Semtokha Line- IV	-1.67	-	
		-	-	220kV Malbase - Birpara Line	54.16	+	
		-	-	66kV CHP - Chumdo Line	7.90	+	
		-	-	66kV CHP - Gedu Line	6.86	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
Total	366.20	Error at Station/Auxiliary Consumption/Losses		0.421%			
4	24MW BHP (U/S)	Unit- I	9.10	220kV BHP - Semtokha Line	40.96	+	
		Unit- II	8.80	66kV BHP - Lobeyasa Line	28.35	+	
		Total	17.90	220kV BHP - Tsirang Line	-21.50	-	
	40MW BHP (L/S)	Unit- I	16.20	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	16.10	30MVA ICT, 220/66kV (HV)	13.17	+	
Total	32.30	Error at Station/Auxiliary Consumption/Losses		2.968%			
5	126MW DHP	Unit-I	50.33	220kV DHP - Tsirang Line	100.88	+	220kV DHP_Dagapela Line on standby.
		Unit-II	50.99	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.70	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		Total	101.32	Error at Station/Auxiliary Consumption/Losses		0.237%	
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	37.10	+	
		Unit-II	16.69	132kV KHP - Kilikhar Line	28.12	+	
		Unit- III	16.54	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	16.56	132kV Motanga - Rangia Line	48.53	+	
		Total	66.29	Error at Station/Auxiliary Consumption/Losses		1.177%	

Note: Generation-Load Summary (MW) for May 28, 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	1,454.80	240.42	225.12	1,137.99	15.30
2	Eastern Grid	659.26	73.09	68.69	662.56	4.40
Total		2,114.06	313.51	293.81	1,800.55	19.70

Note: Generation-Load Summary for May 28, 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	1,144.15	222.19	211.21	871.98	10.98
2	Eastern Grid	540.98	48.89	46.54	538.76	2.35
Total		1,685.13	271.08	257.75	1,410.74	13.33

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 29, 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	223.94	+	Unit-IV under shutdown.
		Unit- II	183.73	400kV THP - Siliguri Line - II	222.25	+	
		Unit- III	184.44	400kV THP - Siliguri Line- IV	216.58	+	
		Unit- IV	0.00	400kV THP - Malbase Line - III	250.94	+	
		Unit- V	187.07	400kV Malbase - Siliguri Line	206.00	+	
		Unit- VI	184.81	-	-	-	
		Total	926.92	Error at Station/Auxiliary Consumption/Losses		1.425%	
2	720MW MHP	Unit-I	197.84	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	196.12	400kV MHP - Jigmeling Line - II	293.76	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	198.44	400kV MHP - Jigmeling Line - IV	294.72	+	
		-	-	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	291.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	290.15	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	27.11	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	27.20	+	
		-	-	220kV Tsirang - Jigmeling Line	55.28	+	
		-	-	132kV Gelephu - Salakati Line	32.00	+	
		Total	592.40	Error at Station/Auxiliary Consumption/Losses		0.662%	
3	336MW CHP	Unit- I	91.54	220kV CHP - Birpara Line- I	94.32	+	
		Unit- II	91.01	220kV CHP - Birpara Line- II	94.37	+	
		Unit- III	91.00	220kV CHP - Malbase Line- III	137.71	+	
		Unit- IV	91.52	220kV CHP - Semtokha Line- IV	23.99	+	
		-	-	220kV Malbase - Birpara Line	48.00	+	
		-	-	66kV CHP - Chumdo Line	6.32		
		-	-	66kV CHP - Gedu Line	6.05	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
Total	365.07	Error at Station/Auxiliary Consumption/Losses		0.441%			
4	24MW BHP (U/S)	Unit- I	6.10	220kV BHP - Semtokha Line	4.46	+	
		Unit- II	5.80	66kV BHP - Lobeyasa Line	28.10	+	
		Total	11.90	220kV BHP - Tsirang Line	1.40	+	
	40MW BHP (L/S)	Unit- I	11.00	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	11.40	30MVA ICT, 220/66kV (HV)	17.11	+	
Total	22.40	Error at Station/Auxiliary Consumption/Losses		-1.633%			
5	126MW DHP	Unit-I	28.26	220kV DHP - Tsirang Line	55.79	+	220kV DHP_Dagapela Line on standby.
		Unit-II	28.02	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.92	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	56.28	Error at Station/Auxiliary Consumption/Losses		0.338%	
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	40.59	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	24.66	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.21	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	45.76	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses		0.818%	

Note: Generation-Load Summary (MW) for May 29, 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	1,382.57	221.83	208.30	1,105.46	13.53
2	Eastern Grid	658.40	54.77	50.31	658.91	4.46
Total		2,040.97	276.60	258.61	1,764.37	17.99

Note: Generation-Load Summary for May 29, 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	1,046.51	208.15	197.80	800.62	10.35
2	Eastern Grid	386.83	41.08	39.83	382.25	1.25
Total		1,433.34	249.23	237.63	1,182.87	11.60

NOTE-BHP & All Eastern 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.
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