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 Ministry of Energy and Natural Resources
 Royal Government of Bhutan
Office of the Bhutan Power System Operator
 Thimphu: Bhutan



THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 24-Sep-2024(-ve:import, +ve:export)

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	23-Sep-24	09:00 hrs		30-Dec-23	18:00 hrs	955.51

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	6 x 170MW THP	Unit- I	185.27	400kV THP - Siliguri Line - I	205.88	
		Unit- II	186.20	400kV THP - Siliguri Line - II	203.27	
		Unit- III	84.23	400kV THP - Siliguri Line - IV	194.50	
		Unit- IV	185.92	400kV THP - Malbase Line - III	409.61	
		Unit- V	185.60	400kV Malbase - Siliguri Line	148.36	
		Unit- VI	185.69	-	-	
		Total	1,012.91	Auxiliary Consumption & Transformation Losses at Generator end	-0.03%	
2	4 x 180MW MHP	Unit-I	160.29	400kV MHP - Jigmeling Line - I	233.71	400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmoo Line-I not in Service. 400kV JLG_ALI Interim Line I on Standby.
		Unit-II	196.71	400kV MHP - Jigmeling Line - II	234.02	
		Unit-III	160.85	400kV MHP - Jigmeling Line - III	228.71	
		Unit-IV	145.53	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	60.98	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	133.82	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	139.25	
		-	-	400kV Jigmeling - Alipurduar Line - I	209.39	
		-	-	400kV Jigmeling - Alipurduar Line - II	208.03	
		-	-	80MVA, 220/132kV ICT - I (HV)	35.15	
		-	-	80MVA, 220/132kV ICT - II (HV)	34.85	
		-	-	220kV Tsirang - Jigmeling Line	-10.71	
		-	-	132kV Gelephu - Salakati Line	22.20	
Total	663.38	Auxiliary Consumption & Transformation Losses at Generator end	0.77%			
3	4 x 84MW CHP	Unit- I	91.84	220kV CHP - Birpara Line - I	22.21	
		Unit- II	91.29	220kV CHP - Birpara Line - II	22.60	
		Unit- III	91.33	220kV CHP - Gedu	79.71	
		Unit- IV	91.41	220kV CHP - Jamjee (old) - I	78.21	
		-	-	220kV CHP - Jamjee - II (new)	78.87	
		-	-	220kV CHP - Jamjee - III (new)	76.20	
		-	-	220kV Malbase - Birpara Line	17.91	
		-	-	66kV CHP - Gedu Line	7.75	
Total	365.87	Auxiliary Consumption & Transformation Losses at Generator end	-0.16%			
4	2 x 12MW BHP (U/S)	Unit- I	8.01	220kV BHP - Semtokha Line	85.14	
		Unit- II	7.81	66kV BHP - Lobeyasa Line	26.88	
		Total	15.82	220kV BHP - Tsirang Line	-69.31	
5	2 x 20MW BHP (L/S)	Unit- I	13.84	5MVA, 66/11kV TFR	0.48	
		Unit- II	13.33	30MVA ICT, 220/66kV (HV)	11.94	
		Total	27.17	Auxiliary Consumption & Transformation Losses at Generator end	-0.47%	
6	2 x 63MW DHP	Unit-I	30.82	220kV DHP - Tsirang Line	61.89	220kV DHP_Dagapela Line on Standby.
		Unit-II	31.51	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	53.30	
		-	-	5MVA, 220/33kV TFR	0.43	
Total	62.33	Auxiliary Consumption & Transformation Losses at Generator end	0.02%			
7	4 x 15MW KHP	Unit- I	16.55	132kV KHP - Nangkor Line	41.03	
		Unit-II	16.53	132kV KHP - Kilikhar Line	24.09	
		Unit- III	16.61	5MVA, 132/11kV TFR	0.32	
		Unit- IV	16.57	132kV Motanga - Rangia Line	53.94	
		Total	66.26	Auxiliary Consumption & Transformation Losses at Generator end	1.24%	
8	2 x 59MW NHP	Unit-I	50.00	132kV NHP-MHP-I	49.55	
		Unit-II	49.86	132kV NHP-MHP-II	49.59	
		Total	99.86	Auxiliary Consumption & Transformation Losses at Generator end	0.72%	

Note: Generation-Load Summary (MW) for 23-Sep-24 at 09:00 hrs

Sl. No.	Region	Total Generation	Total Load (Gen. - Exp.)	Total Load (Feeder Summation)	Total Export/Import	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,484.10	680.08	681.21	814.73	-1.13
2	Eastern Grid	829.50	185.98	179.34	632.81	6.64
Total		2,313.60	866.06	860.55	1,447.54	5.51

Note: Generation-Load Summary for 23-Sep-23 at 09:00 hrs

Sl. No.	Region	Total Generation	Total Load (Gen. - Exp.)	Total Load (Feeder Summation)	Total Export/Import	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,651.57	635.73	625.38	996.64	10.35
2	Eastern Grid	678.02	191.67	188.49	505.55	3.18
Total		2,329.59	827.40	813.87	1,502.19	13.53

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 24-Sep-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	23-Sep-2024	19:00 hrs			30-Dec-2023	18:00 hrs	955.51
Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks	
1	6 x 170MW THP	Unit-I	139.06	400kV THP - Siliguri Line - I	198.99		
		Unit-II	186.80	400kV THP - Siliguri Line - II	198.35		
		Unit-III	128.87	400kV THP - Siliguri Line - IV	188.72		
		Unit-IV	187.49	400kV THP - Malbase Line - III	425.90		
		Unit-V	185.54	400kV Malbase - Siliguri Line	138.91		
		Unit-VI	185.72	-	-		
		Total	1,013.48	Auxiliary Consumption & Transformation Losses at Generator end	0.15%		
2	4 x 180MW MHP	Unit-I	140.24	400kV MHP - Jigmeling Line - I	221.00	400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmo Line- I not in Service. 400kV JLG_ALI Interim Line I on Standby.	
		Unit-II	196.83	400kV MHP - Jigmeling Line - II	221.41		
		Unit-III	140.86	400kV MHP - Jigmeling Line - III	216.54		
		Unit-IV	145.54	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	61.91		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	139.34		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	128.73		
		-	-	400kV Jigmeling - Alipurduar Line - I	191.27		
		-	-	400kV Jigmeling - Alipurduar Line - II	193.46		
		-	-	80MVA, 220/132kV ICT - I (HV)	34.73		
		-	-	80MVA, 220/132kV ICT - II (HV)	35.01		
		-	-	220kV Tsirang - Jigmeling Line	-15.61		
		-	-	132kV Gelephu - Salakati Line	18.79		
		Total	623.47	Auxiliary Consumption & Transformation Losses at Generator end	0.30%		
		3	4 x 84MW CHP	Unit-I	91.34		
Unit-II	91.33			220kV CHP - Birpara Line - II	29.90		
Unit-III	91.75			220kV CHP - Gedu	73.77		
Unit-IV	91.34			220kV CHP - Jamjee (old) - I	74.77		
-	-			220kV CHP - Jamjee - II (new)	75.47		
-	-			220kV CHP - Jamjee - III (new)	72.75		
-	-			220kV Malbase - Birpara Line	35.40		
-	-			66kV CHP - Gedu Line	7.83		
-	-			3x3MVA, 66/11kV TFR	0.87		
Total	365.76	Auxiliary Consumption & Transformation Losses at Generator end	0.01%				
4	2 x 12MW BHP (U/S)	Unit-I	7.83	220kV BHP - Sento Kha Line	88.33		
		Unit-II	7.85	66kV BHP - Lobeyasa Line	26.27		
		Total	15.68	220kV BHP - Tsirang Line	-71.75		
5	2 x 20MW BHP (L/S)	Unit-I	14.09	5MVA, 66/11kV TFR	0.61		
		Unit-II	13.55	30MVA ICT, 220/66kV (HV)	11.62		
		Total	27.64	Auxiliary Consumption & Transformation Losses at Generator end	-0.32%		
6	2 x 63MW DHP	Unit-I	60.43	220kV DHP - Tsirang Line	60.11	220kV DHP_Dagapela Line on Standby.	
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	53.73		
		-	-	5MVA, 220/33kV TFR	0.20		
Total	60.43	Auxiliary Consumption & Transformation Losses at Generator end	0.20%				
7	4 x 15MW KHP	Unit-I	16.57	132kV KHP - Nangkor Line	40.90		
		Unit-II	16.47	132kV KHP - Kilikhar Line	23.94		
		Unit-III	16.61	5MVA, 132/11kV TFR	0.35		
		Unit-IV	16.53	132kV Motanga - Rangia Line	54.59		
		Total	66.18	Auxiliary Consumption & Transformation Losses at Generator end	1.50%		
8	2 x 59MW NHP	Unit-I	50.00	132kV NHP-MHP-I	49.64		
		Unit-II	50.02	132kV NHP-MHP-II	49.60		
		Total	100.02	Auxiliary Consumption & Transformation Losses at Generator end	0.78%		

Note: Generation-Load Summary (MW) for 23-Sep-2024 at 19:00 hrs

Sl. No.	Region	Total Generation	Total Load (Gen. - Exp.)	Total Load (Feeder Summation)	Total Export/Import	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,482.99	677.95	676.43	820.65	1.52
2	Eastern Grid	789.67	187.22	183.60	586.84	3.62
	Total	2,272.66	865.17	860.03	1,407.49	5.14

Note: Generation-Load Summary (MW) for 23-Sep-2023, at 19:00 hrs

Sl. No.	Region	Total Generation	Total Load (Gen. - Exp.)	Total Load (Feeder Summation)	Total Export/Import	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,670.66	634.59	629.15	1016.18	5.44
2	Eastern Grid	766.37	213.64	209.02	572.62	4.62
	Total	2,437.03	848.23	838.17	1,588.80	10.06

Note: Daily Energy (MUs) and Power(MW) Statistics for 23-Sep-2024

Sl. No.	Net Energy Export (Bilateral)	Net Energy Import (Bilateral)	Daily Energy Met	Total Energy Generation	Peak Cross-border (MW)	Imp./Exp. through Exchange (MUs)
1	34.02	0.00	20.14	55.63	1,666.67	1.53

- 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:
 - 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.
- This report, compiled using the SCADA data, is prepared to give an overall idea of the generation & load flow for the system at a particular instant. This report also gives energy and import/export figures.
- When SCADA data are unavailable for certain stations due to technical issues, required data are collected from the site.