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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 30-Sep-2024(-ve:import, +ve:export)

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	29-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	185.29	400kV THP - Siliguri Line - I	236.12	
		Unit- II	185.84	400kV THP - Siliguri Line - II	233.82	
		Unit- III	184.74	400kV THP - Siliguri Line- IV	225.58	
		Unit- IV	186.16	400kV THP - Malbase Line - III	422.32	
		Unit- V	186.09	400kV Malbase - Siliguri Line	180.20	
		Unit- VI	185.76	-	-	
		Total	1,113.88	Auxiliary Consumption & Transformation Losses at Generator end	-0.36%	
2	4 x 180MW MHP	Unit-I	197.76	400kV MHP - Jigmeling Line - I	0.00	400kV MHP-JLG Line I under Shutdown. 132kV MHP_Yurmoo Line- I not in Service. 400kV JLG_ALI Interim Line II on Standby.
		Unit-II	197.76	400kV MHP - Jigmeling Line - II	277.54	
		Unit-III	194.42	400kV MHP - Jigmeling Line - III	287.48	
		Unit-IV	198.00	400kV MHP - Jigmeling Line - IV	285.72	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	61.89	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	79.64	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	190.55	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I	285.82	
		-	-	400kV Jigmeling - Alipurduar Line - II	286.55	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.27	
		-	-	80MVA, 220/132kV ICT - II (HV)	30.03	
		-	-	220kV Tsirang - Jigmeling Line	33.84	
		-	-	132kV Gelephu - Salakati Line	30.49	
Total	787.94	Auxiliary Consumption & Transformation Losses at Generator end	0.31%			
3	4 x 84MW CHP	Unit- I	91.84	220kV CHP - Birpara Line - I	32.78	
		Unit- II	91.42	220kV CHP - Birpara Line - II	32.49	
		Unit- III	92.52	220kV CHP - Gedu	107.78	
		Unit- IV	91.52	220kV CHP - Jamjee (old) - I	61.64	
		-	-	220kV CHP - Jamjee - II (new)	62.37	
		-	-	220kV CHP - Jamjee - III (new)	60.20	
		-	-	220kV Malbase - Birpara Line	12.46	
		-	-	66kV CHP - Gedu Line	8.75	
		-	-	3x3MVA, 66/11kV TFR	0.73	
Total	367.30	Auxiliary Consumption & Transformation Losses at Generator end	0.15%			
4	2 x 12MW BHP (U/S)	Unit- I	11.94	220kV BHP - Semtokha Line	124.50	
		Unit- II	12.12	66kV BHP - Lobeyasa Line	29.24	
		Total	24.06	220kV BHP - Tsirang Line	-88.62	
5	2 x 20MW BHP (L/S)	Unit- I	21.19	5MVA, 66/11kV TFR	0.39	
		Unit- II	20.39	30MVA ICT, 220/66kV (HV)	6.16	
		Total	41.58	Auxiliary Consumption & Transformation Losses at Generator end	0.20%	
6	2 x 63MW DHP	Unit-I	63.67	220kV DHP - Tsirang Line	126.32	220kV DHP_Dagapela Line on Standby.
		Unit-II	63.23	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	53.19	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	126.90	Auxiliary Consumption & Transformation Losses at Generator end	0.22%			
7	4 x 15MW KHP	Unit- I	16.54	132kV KHP - Nangkor Line	42.99	
		Unit-II	16.57	132kV KHP - Kilikhar Line	22.37	
		Unit- III	16.54	5MVA, 132/11kV TFR	0.26	
		Unit- IV	16.49	132kV Motanga - Rangia Line	53.13	
		Total	66.14	Auxiliary Consumption & Transformation Losses at Generator end	0.79%	
8	2 x 59MW NHP	Unit-I	64.06	132kV NHP-MHP-I	63.59	
		Unit-II	64.02	132kV NHP-MHP-II	63.58	
		Total	128.08	Auxiliary Consumption & Transformation Losses at Generator end	0.71%	

Note: Generation-Load Summary (MW) for 29-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	1,673.72	686.43	689.42	953.45	-2.99
2	Eastern Grid	982.16	169.46	165.55	846.54	3.91
	Total	2,655.88	855.89	854.97	1,799.99	0.92

Note: Generation-Load Summary for 29-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	1,320.64	636.51	630.30	676.29	6.21
2	Eastern Grid	507.78	193.58	196.96	322.04	-3.38
	Total	1,828.42	830.09	827.26	998.33	2.83

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 30-Sep-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	29-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	187.00	400kV THP - Siliguri Line - I	229.81		
		Unit-II	186.00	400kV THP - Siliguri Line - II	228.31		
		Unit-III	186.00	400kV THP - Siliguri Line - IV	219.57		
		Unit-IV	186.00	400kV THP - Malbase Line - III	438.30		
		Unit-V	186.00	400kV Malbase - Siliguri Line	168.00		
		Unit-VI	184.00	-	-		
		Total	1,115.00	Auxiliary Consumption & Transformation Losses at Generator end	-0.09%		
2	4 x 180MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Line - I	0.00	400kV MHP-JLG Line I under Shutdown. 132kV MHP_Yurmo Line-I not in Service. 400kV JLG_ALI Interim Line II on Standby.	
		Unit-II	197.73	400kV MHP - Jigmeling Line - II	277.51		
		Unit-III	194.76	400kV MHP - Jigmeling Line - III	287.23		
		Unit-IV	198.31	400kV MHP - Jigmeling Line - IV	285.59		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	62.51		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	105.78		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	184.20		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	275.78		
		-	-	400kV Jigmeling - Alipurduar Line - II	274.49		
		-	-	80MVA, 220/132kV ICT - I (HV)	38.35		
		-	-	80MVA, 220/132kV ICT - II (HV)	38.08		
		-	-	220kV Tsirang - Jigmeling Line	24.46		
		-	-	132kV Gelephu - Salakati Line	26.06		
Total	788.65	Auxiliary Consumption & Transformation Losses at Generator end	0.17%				
3	4 x 84MW CHP	Unit-I	92.30	220kV CHP - Birpara Line - I	34.38		
		Unit-II	92.09	220kV CHP - Birpara Line - II	33.90		
		Unit-III	92.40	220kV CHP - Gedu	95.45		
		Unit-IV	92.10	220kV CHP - Jamjee (old) - I	64.09		
		-	-	220kV CHP - Jamjee - II (new)	64.90		
		-	-	220kV CHP - Jamjee - III (new)	62.74		
		-	-	220kV Malbase - Birpara Line	24.80		
		-	-	66kV CHP - Gedu Line	8.80		
		-	-	3x3MVA, 66/11kV TFR	1.57		
Total	368.89	Auxiliary Consumption & Transformation Losses at Generator end	0.83%				
4	2 x 12MW BHP (U/S)	Unit-I	12.00	220kV BHP - Sentsokha Line	131.00		
		Unit-II	12.00	66kV BHP - Lobeyasa Line	30.00		
		Total	24.00	220kV BHP - Tsirang Line	-96.62		
5	2 x 20MW BHP (L/S)	Unit-I	21.00	5MVA, 66/11kV TFR	0.67		
		Unit-II	20.30	30MVA ICT, 220/66kV (HV)	7.75		
		Total	41.30	Auxiliary Consumption & Transformation Losses at Generator end	0.38%		
6	2 x 63MW DHP	Unit-I	63.57	220kV DHP - Tsirang Line	126.25	220kV DHP_Dagapela Line on Standby.	
		Unit-II	63.19	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	53.90		
		-	-	5MVA, 220/33kV TFR	0.20		
Total	126.76	Auxiliary Consumption & Transformation Losses at Generator end	0.24%				
7	4 x 15MW KHP	Unit-I	16.50	132kV KHP - Nangkor Line	40.05		
		Unit-II	16.50	132kV KHP - Kilikhar Line	25.07		
		Unit-III	16.50	5MVA, 132/11kV TFR	0.27		
		Unit-IV	16.50	132kV Motanga - Rangia Line	57.34		
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.92%		
8	2 x 59MW NHP	Unit-I	64.00	132kV NHP-MHP-I	63.00		
		Unit-II	63.99	132kV NHP-MHP-II	62.52		
		Total	127.99	Auxiliary Consumption & Transformation Losses at Generator end	1.93%		

Note: Generation-Load Summary (MW) for 29-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	1,675.95	712.72	710.09	938.77	2.63
2	Eastern Grid	982.64	189.23	184.82	817.87	4.41
	Total	2,658.59	901.95	894.91	1,756.64	7.04

Note: Generation-Load Summary (MW) for 29-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	1,256.14	631.45	625.93	624.19	5.52
2	Eastern Grid	497.67	197.95	199.67	299.92	-1.72
	Total	1,753.81	829.40	825.60	924.11	3.80

Note: Daily Energy (MUs) and Power(MW) Statistics for 29-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	41.44	0.00	20.64	63.39	1,838.75	1.67

- 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.