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

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	04-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	186.32	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri Line -I under breakdown.
		Unit- II	185.65	400kV THP - Siliguri Line - II	312.09	
		Unit- III	185.38	400kV THP - Siliguri Line- IV	295.14	
		Unit- IV	185.27	400kV THP - Malbase Line - III	510.29	
		Unit- V	185.09	400kV Malbase - Siliguri Line	240.41	
		Unit- VI	185.90	-	-	
		Total	1,113.61	Auxiliary Consumption & Transformation Losses at Generator end	-0.35%	
2	4 x 180MW MHP	Unit-I	197.89	400kV MHP - Jigmeling Line - I	283.47	400kV MHP-JLG Line III on Standby. 132kV MHP_Yurmoo Line- I not in Service. 400kV JLG_ALI Direct Line I & 400kV JLG_ALI Interim Line I on Standby.
		Unit-II	197.83	400kV MHP - Jigmeling Line - II	282.57	
		Unit-III	192.82	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	196.80	400kV MHP - Jigmeling Line - IV	276.31	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	60.98	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	141.09	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	277.82	
		-	-	400kV Jigmeling - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II	416.73	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.18	
		-	-	80MVA, 220/132kV ICT - II (HV)	35.91	
		-	-	220kV Tsirang - Jigmeling Line	8.16	
		-	-	132kV Gelephu - Salakati Line	32.04	
Total	785.34	Auxiliary Consumption & Transformation Losses at Generator end	0.53%			
3	4 x 84MW CHP	Unit- I	91.39	220kV CHP - Birpara Line - I	33.42	
		Unit- II	91.18	220kV CHP - Birpara Line - II	33.22	
		Unit- III	91.43	220kV CHP - Gedu	96.57	
		Unit- IV	90.75	220kV CHP - Jamjee (old) - I	64.04	
		-	-	220kV CHP - Jamjee - II (new)	64.71	
		-	-	220kV CHP - Jamjee - III (new)	62.64	
		-	-	220kV Malbase - Birpara Line	22.18	
		-	-	66kV CHP - Gedu Line	8.78	
-	-	3x3MVA, 66/11kV TFR	0.69			
Total	364.75	Auxiliary Consumption & Transformation Losses at Generator end	0.19%			
4	2 x 12MW BHP (U/S)	Unit- I	8.89	220kV BHP - Semtokha Line	109.00	
		Unit- II	10.74	66kV BHP - Lobeyasa Line	24.50	
		Total	19.63	220kV BHP - Tsirang Line	-80.08	
5	2 x 20MW BHP (L/S)	Unit- I	16.97	5MVA, 66/11kV TFR	0.51	
		Unit- II	17.35	30MVA ICT, 220/66kV (HV)	6.21	
		Total	34.32	Auxiliary Consumption & Transformation Losses at Generator end	0.04%	
6	2 x 63MW DHP	Unit-I	35.24	220kV DHP - Tsirang Line	73.77	220kV DHP_Dagapela Line on Standby.
		Unit-II	38.98	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	53.79	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	74.22	Auxiliary Consumption & Transformation Losses at Generator end	0.34%			
7	4 x 15MW KHP	Unit- I	16.60	132kV KHP - Nangkor Line	42.62	
		Unit-II	16.55	132kV KHP - Kilikhar Line	22.63	
		Unit- III	16.65	5MVA, 132/11kV TFR	0.31	
		Unit- IV	16.62	132kV Motanga - Rangia Line	51.87	
		Total	66.42	Auxiliary Consumption & Transformation Losses at Generator end	1.29%	
8	2 x 59MW NHP	Unit-I	58.99	132kV NHP-MHP-I	58.63	
		Unit-II	64.08	132kV NHP-MHP-II	63.55	
		Total	123.07	Auxiliary Consumption & Transformation Losses at Generator end	0.72%	

Note: Generation-Load Summary (MW) for 04-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	1,606.53	661.91	664.87	936.46	-2.96
2	Eastern Grid	974.83	204.53	198.59	778.46	5.94
	Total	2,581.36	866.44	863.46	1,714.92	2.98

Note: Generation-Load Summary for 04-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	1,670.39	596.71	587.57	1,043.92	9.14
2	Eastern Grid	634.23	194.08	192.55	469.91	1.53
	Total	2,304.62	790.79	780.12	1,513.83	10.67

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 05-Sep-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	4-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	224.37		
		Unit-II	187.00	400kV THP - Siliguri Line - II	222.86		
		Unit-III	187.00	400kV THP - Siliguri Line - IV	214.69		
		Unit-IV	187.00	400kV THP - Malbase Line - III	452.28		
		Unit-V	187.00	400kV Malbase - Siliguri Line	161.10		
		Unit-VI	187.00	-	-		
		Total	1,122.00	Auxiliary Consumption & Transformation Losses at Generator end	0.70%		
2	4 x 180MW MHP	Unit-I	165.26	400kV MHP - Jigmeling Line - I	231.16	400kV MHP-JLG Line III on Standby. 132kV MHP_Yurmo Line-I not in Service. 400kV JLG_ALI Interim Line I & 400kV JLG_ALI Direct line I on Standby.	
		Unit-II	163.08	400kV MHP - Jigmeling Line - II	231.09		
		Unit-III	160.90	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	165.57	400kV MHP - Jigmeling Line - IV	225.62		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	63.87		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	152.00		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	211.35		
		-	-	400kV Jigmeling - Alipurduar Line - I	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II	316.58		
		-	-	80MVA, 220/132kV ICT - I (HV)	-44.02		
		-	-	80MVA, 220/132kV ICT - II (HV)	-43.65		
		-	-	220kV Tsirang - Jigmeling Line	-10.19		
		-	-	132kV Gelephu - Salakati Line	34.36		
		Total	654.81	Auxiliary Consumption & Transformation Losses at Generator end	0.38%		
		3	4 x 84MW CHP	Unit-I	92.08		
Unit-II	92.10			220kV CHP - Birpara Line - II	30.70		
Unit-III	91.97			220kV CHP - Gedu	79.24		
Unit-IV	91.90			220kV CHP - Jamjee (old) - I	72.64		
-	-			220kV CHP - Jamjee - II (new)	73.38		
-	-			220kV CHP - Jamjee - III (new)	70.62		
-	-			220kV Malbase - Birpara Line	32.48		
-	-			66kV CHP - Gedu Line	7.82		
-	-			3x3MVA, 66/11kV TFR	1.22		
Total	368.05			Auxiliary Consumption & Transformation Losses at Generator end	0.33%		
4	2 x 12MW BHP (U/S)	Unit-I	8.50	220kV BHP - Sento Kha Line	106.00		
		Unit-II	10.40	66kV BHP - Lobeyasa Line	27.91		
		Total	18.90	220kV BHP - Tsirang Line	-77.83		
5	2 x 20MW BHP (L/S)	Unit-I	18.90	5MVA, 66/11kV TFR	0.66		
		Unit-II	19.00	30MVA ICT, 220/66kV (HV)	10.01		
		Total	37.90	Auxiliary Consumption & Transformation Losses at Generator end	0.11%		
6	2 x 63MW DHP	Unit-I	36.38	220kV DHP - Tsirang Line	71.26	220kV DHP_Dagapela Line on Standby.	
		Unit-II	36.01	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	54.64		
		-	-	5MVA, 220/33kV TFR	0.20		
Total	72.39	Auxiliary Consumption & Transformation Losses at Generator end	1.28%				
7	4 x 15MW KHP	Unit-I	16.50	132kV KHP - Nangkor Line	38.94		
		Unit-II	16.48	132kV KHP - Kilikhar Line	25.91		
		Unit-III	16.52	5MVA, 132/11kV TFR	0.34		
		Unit-IV	16.72	132kV Motanga - Rangia Line	59.74		
		Total	66.22	Auxiliary Consumption & Transformation Losses at Generator end	1.56%		
8	2 x 59MW NHP	Unit-I	50.02	132kV NHP-MHP-I	49.77		
		Unit-II	50.14	132kV NHP-MHP-II	49.68		
		Total	100.16	Auxiliary Consumption & Transformation Losses at Generator end	0.71%		

Note: Generation-Load Summary (MW) for 04-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	1,619.24	712.03	702.01	917.40	10.02
2	Eastern Grid	821.19	188.97	184.71	622.03	4.26
	Total	2,440.43	901.00	886.72	1,539.43	14.28

Note: Generation-Load Summary (MW) for 04-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	1,567.86	628.76	622.57	956.58	6.19
2	Eastern Grid	808.21	187.43	183.52	603.3	3.91
	Total	2,376.07	816.19	806.09	1,559.88	10.10

Note: Daily Energy (MUs) and Power(MW) Statistics for 04-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	37.57	0.00	20.63	57.88	1,766.79	1.58

- 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.