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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 25-Sep-2024(-ve:import, +ve:export)**

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	24-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	186.20	400kV THP - Siliguri Line - I	185.25	THP Unit VI under Maintenance
		Unit- II	185.66	400kV THP - Siliguri Line - II	185.67	
		Unit- III	185.22	400kV THP - Siliguri Line - IV	179.29	
		Unit- IV	182.70	400kV THP - Malbase Line - III	374.15	
		Unit- V	185.30	400kV Malbase - Siliguri Line	144.00	
		Unit- VI	0.00	-	-	
		<b>Total</b>	<b>925.08</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.08%</b>	
2	4 x 180MW MHP	Unit-I	197.78	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 I on Standby.
		Unit-II	197.78	400kV MHP - Jigmeling Line - II	277.55	
		Unit-III	194.37	400kV MHP - Jigmeling Line - III	287.47	
		Unit-IV	198.26	400kV MHP - Jigmeling Line - IV	285.66	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	60.98	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	137.04	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	176.73	
		-	-	400kV Jigmeling - Alipurduar Line - I	264.73	
		-	-	400kV Jigmeling - Alipurduar Line - II	263.79	
		-	-	80MVA, 220/132kV ICT - I (HV)	33.00	
		-	-	80MVA, 220/132kV ICT - II (HV)	32.68	
		-	-	220kV Tsirang - Jigmeling Line	-17.45	
		-	-	132kV Gelephu - Salakati Line	20.80	
<b>Total</b>	<b>788.19</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.46%</b>			
3	4 x 84MW CHP	Unit- I	91.61	220kV CHP - Birpara Line - I	27.70	
		Unit- II	91.27	220kV CHP - Birpara Line - II	27.20	
		Unit- III	91.36	220kV CHP - Gedu	102.67	
		Unit- IV	91.52	220kV CHP - Jamjee (old) - I	66.29	
		-	-	220kV CHP - Jamjee - II (new)	67.18	
		-	-	220kV CHP - Jamjee - III (new)	64.96	
		-	-	220kV Malbase - Birpara Line	10.00	
		-	-	66kV CHP - Gedu Line	8.64	
		-	-	3x3MVA, 66/11kV TFR	0.68	
<b>Total</b>	<b>365.76</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.12%</b>			
4	2 x 12MW BHP (U/S)	Unit- I	9.85	220kV BHP - Semtokha Line	98.69	
		Unit- II	8.77	66kV BHP - Lobeyasa Line	26.43	
		<b>Total</b>	<b>18.62</b>	220kV BHP - Tsirang Line	-74.60	
5	2 x 20MW BHP (L/S)	Unit- I	16.37	5MVA, 66/11kV TFR	0.43	
		Unit- II	15.75	30MVA ICT, 220/66kV (HV)	8.75	
		<b>Total</b>	<b>32.12</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.41%</b>	
6	2 x 63MW DHP	Unit-I	60.41	220kV DHP - Tsirang Line	60.15	220kV DHP_Dagapela Line on Standby. DHP Unit II on standby
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	53.21	
		-	-	5MVA, 220/33kV TFR	0.20	
<b>Total</b>	<b>60.41</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.10%</b>			
7	4 x 15MW KHP	Unit- I	16.56	132kV KHP - Nangkor Line	42.56	
		Unit-II	16.58	132kV KHP - Kilikhar Line	22.70	
		Unit- III	16.62	5MVA, 132/11kV TFR	0.30	
		Unit- IV	16.48	132kV Motanga - Rangia Line	55.00	
		<b>Total</b>	<b>66.24</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.03%</b>	
8	2 x 59MW NHP	Unit-I	63.92	132kV NHP-MHP-I	63.52	
		Unit-II	63.93	132kV NHP-MHP-II	63.60	
		<b>Total</b>	<b>127.85</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.57%</b>	

Note: Generation-Load Summary (MW) for 24-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	1,401.99	660.33	659.32	759.11	1.01
2	Eastern Grid	982.28	183.78	178.72	781.05	5.06
	<b>Total</b>	<b>2,384.27</b>	<b>844.11</b>	<b>838.04</b>	<b>1,540.16</b>	<b>6.07</b>

Note: Generation-Load Summary for 24-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	1,669.47	643.66	635.43	1,004.56	8.23
2	Eastern Grid	738.17	196.78	192.94	562.64	3.84
	<b>Total</b>	<b>2,407.64</b>	<b>840.44</b>	<b>828.37</b>	<b>1,567.20</b>	<b>12.07</b>

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 25-Sep-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	24-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	185.88	400kV THP - Siliguri Line - I	230.31		
		Unit- II	184.87	400kV THP - Siliguri Line - II	231.45		
		Unit- III	185.31	400kV THP - Siliguri Line - IV	221.98		
		Unit- IV	184.83	400kV THP - Malbase Line - III	419.47		
		Unit- V	185.28	400kV Malbase - Siliguri Line	171.00		
		Unit- VI	187.06	-	-		
		<b>Total</b>	<b>1,113.15</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.89%</b>		
2	4 x 180MW MHP	Unit-I	197.81	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 I on Standby.	
		Unit-II	197.93	400kV MHP - Jigmeling Line - II	278.24		
		Unit-III	195.45	400kV MHP - Jigmeling Line - III	288.09		
		Unit-IV	196.91	400kV MHP - Jigmeling Line - IV	286.30		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	60.98		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	154.91		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	172.36		
		-	-	400kV Jigmeling - Alipurduar Line - I	257.46		
		-	-	400kV Jigmeling - Alipurduar Line - II	257.46		
		-	-	80MVA, 220/132kV ICT - I (HV)	41.25		
		-	-	80MVA, 220/132kV ICT - II (HV)	40.91		
		-	-	220kV Tsirang - Jigmeling Line	-19.69		
		-	-	132kV Gelephu - Salakati Line	19.30		
<b>Total</b>	<b>788.10</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.20%</b>				
3	4 x 84MW CHP	Unit- I	91.23	220kV CHP - Birpara Line - I	33.46		
		Unit- II	91.47	220kV CHP - Birpara Line - II	33.07		
		Unit- III	91.39	220kV CHP - Gedu	75.90		
		Unit- IV	91.72	220kV CHP - Jamjee (old) - I	72.04		
		-	-	220kV CHP - Jamjee - II (new)	72.77		
		-	-	220kV CHP - Jamjee - III (new)	70.53		
		-	-	220kV Malbase - Birpara Line	35.00		
		-	-	66kV CHP - Gedu Line	7.45		
		-	-	3x3MVA, 66/11kV TFR	1.21		
<b>Total</b>	<b>365.81</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.17%</b>				
4	2 x 12MW BHP (U/S)	Unit- I	11.35	220kV BHP - Sento Kha Line	103.58		
		Unit- II	11.39	66kV BHP - Lobeyssa Line	29.97		
		<b>Total</b>	<b>22.74</b>	220kV BHP - Tsirang Line	-77.50		
5	2 x 20MW BHP (L/S)	Unit- I	17.30	5MVA, 66/11kV TFR	0.63		
		Unit- II	16.67	30MVA ICT, 220/66kV (HV)	8.48		
		<b>Total</b>	<b>33.97</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.05%</b>		
6	2 x 63MW DHP	Unit-I	62.41	220kV DHP - Tsirang Line	62.11	220kV DHP_Dagapela Line on Standby. Unit II on standby	
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	52.72		
		-	-	5MVA, 220/33kV TFR	0.29		
<b>Total</b>	<b>62.41</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.02%</b>				
7	4 x 15MW KHP	Unit- I	16.52	132kV KHP - Nangkor Line	40.58		
		Unit-II	16.54	132kV KHP - Kilikhar Line	24.55		
		Unit- III	16.61	5MVA, 132/11kV TFR	0.35		
		Unit- IV	16.52	132kV Motanga - Rangia Line	57.24		
		<b>Total</b>	<b>66.19</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.07%</b>		
8	2 x 59MW NHP	Unit-I	63.95	132kV NHP-MHP-I	63.51		
		Unit-II	63.99	132kV NHP-MHP-II	63.54		
		<b>Total</b>	<b>127.94</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.70%</b>		

Note: Generation-Load Summary (MW) for 24-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	1,598.08	661.50	652.14	956.27	9.36
2	Eastern Grid	982.23	198.72	195.58	763.82	3.14
	<b>Total</b>	<b>2,580.31</b>	<b>860.22</b>	<b>847.72</b>	<b>1,720.09</b>	<b>12.50</b>

Note: Generation-Load Summary (MW) for 24-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	1,672.04	645.1	633.15	1009.75	11.95
2	Eastern Grid	853.62	201.36	197.49	669.45	3.87
	<b>Total</b>	<b>2,525.66</b>	<b>846.46</b>	<b>830.64</b>	<b>1,679.20</b>	<b>15.82</b>

Note: Daily Energy (MUs) and Power(MW) Statistics for 24-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	38.69	0.00	19.79	59.94	1,808.81	1.57

- 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.