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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
	26-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	185.78	400kV THP - Siliguri Line - I	235.14	
		Unit- II	185.65	400kV THP - Siliguri Line - II	233.08	
		Unit- III	185.67	400kV THP - Siliguri Line- IV	224.67	
		Unit- IV	185.19	400kV THP - Malbase Line - III	421.39	
		Unit- V	185.42	400kV Malbase - Siliguri Line	178.73	
		Unit- VI	185.59	-	-	
		<b>Total</b>	<b>1,113.30</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.09%</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_Yurmoo Line- I not in Service. 400kV JLG_ALI Interim Line II on Standby.
		Unit-II	197.95	400kV MHP - Jigmeling Line - II	277.53	
		Unit-III	194.55	400kV MHP - Jigmeling Line - III	287.64	
		Unit-IV	197.35	400kV MHP - Jigmeling Line - IV	285.68	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	60.98	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	75.27	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	191.62	
		-	-	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)	28.43	
		-	-	80MVA, 220/132kV ICT - II (HV)	28.19	
		-	-	220kV Tsirang - Jigmeling Line	33.96	
		-	-	132kV Gelephu - Salakati Line	28.93	
<b>Total</b>	<b>787.66</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.38%</b>			
3	4 x 84MW CHP	Unit- I	90.84	220kV CHP - Birpara Line - I	34.28	
		Unit- II	91.34	220kV CHP - Birpara Line - II	33.91	
		Unit- III	91.49	220kV CHP - Gedu	108.15	
		Unit- IV	91.45	220kV CHP - Jamjee (old) - I	59.63	
		-	-	220kV CHP - Jamjee - II (new)	60.33	
		-	-	220kV CHP - Jamjee - III (new)	58.00	
		-	-	220kV Malbase - Birpara Line	15.47	
		-	-	66kV CHP - Gedu Line	9.15	
		-	-	3x3MVA, 66/11kV TFR	0.76	
<b>Total</b>	<b>365.12</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.25%</b>			
4	2 x 12MW BHP (U/S)	Unit- I	11.99	220kV BHP - Semtokha Line	125.09	
		Unit- II	12.00	66kV BHP - Lobeyasa Line	27.81	
		<b>Total</b>	<b>23.99</b>	220kV BHP - Tsirang Line	-87.61	
5	2 x 20MW BHP (L/S)	Unit- I	21.04	5MVA, 66/11kV TFR	0.40	
		Unit- II	20.25	30MVA ICT, 220/66kV (HV)	4.70	
		<b>Total</b>	<b>41.29</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.63%</b>	
6	2 x 63MW DHP	Unit-I	63.66	220kV DHP - Tsirang Line	126.35	220kV DHP_Dagapela Line on Standby.
		Unit-II	63.18	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	52.66	
		-	-	5MVA, 220/33kV TFR	0.30	
<b>Total</b>	<b>126.84</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.15%</b>			
7	4 x 15MW KHP	Unit- I	16.59	132kV KHP - Nangkor Line	41.87	
		Unit-II	16.53	132kV KHP - Kilikhar Line	21.84	
		Unit- III	15.64	5MVA, 132/11kV TFR	0.28	
		Unit- IV	15.90	132kV Motanga - Rangia Line	38.63	
		<b>Total</b>	<b>64.66</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.04%</b>	
8	2 x 59MW NHP	Unit-I	64.01	132kV NHP-MHP-I	63.61	
		Unit-II	64.03	132kV NHP-MHP-II	63.58	
		<b>Total</b>	<b>128.04</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.66%</b>	

Note: Generation-Load Summary (MW) for 26-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	1,670.54	681.30	681.59	955.28	-0.29
2	Eastern Grid	980.36	182.77	178.23	831.55	4.54
	<b>Total</b>	<b>2,650.90</b>	<b>864.07</b>	<b>859.82</b>	<b>1,786.83</b>	<b>4.25</b>

Note: Generation-Load Summary for 26-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	1,648.60	650.06	636.52	982.98	13.54
2	Eastern Grid	608.29	192.55	189.89	431.30	2.66
	<b>Total</b>	<b>2,256.89</b>	<b>842.61</b>	<b>826.41</b>	<b>1,414.28</b>	<b>16.20</b>

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
	26-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	185.12	400kV THP - Siliguri Line - I	228.58		
		Unit-II	185.45	400kV THP - Siliguri Line - II	227.52		
		Unit-III	185.37	400kV THP - Siliguri Line- IV	219.70		
		Unit-IV	185.86	400kV THP - Malbase Line - III	437.26		
		Unit-V	186.20	400kV Malbase - Siliguri Line	169.63		
		Unit-VI	185.73	-	-		
		<b>Total</b>	<b>1,113.73</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.06%</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_Yurmo Line- I not in Service. 400kV JLG_ALI Interim Line II on Standby.	
		Unit-II	197.90	400kV MHP - Jigmeling Line - II	277.11		
		Unit-III	194.40	400kV MHP - Jigmeling Line - III	286.96		
		Unit-IV	198.19	400kV MHP - Jigmeling Line - IV	285.46		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	60.98		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	106.18		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	183.27		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	273.46		
		-	-	400kV Jigmeling - Alipurduar Line - II	274.91		
		-	-	80MVA, 220/132kV ICT - I (HV)	40.61		
		-	-	80MVA, 220/132kV ICT - II (HV)	40.31		
		-	-	220kV Tsirang - Jigmeling Line	27.79		
		-	-	132kV Gelephu - Salakati Line	22.22		
<b>Total</b>	<b>788.27</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.61%</b>				
3	4 x 84MW CHP	Unit-I	91.73	220kV CHP - Birpara Line - I	34.41		
		Unit-II	91.34	220kV CHP - Birpara Line - II	34.21		
		Unit-III	91.44	220kV CHP - Gedu	90.78		
		Unit-IV	91.67	220kV CHP - Jamjee (old) - I	66.10		
		-	-	220kV CHP - Jamjee - II (new)	67.09		
		-	-	220kV CHP - Jamjee - III (new)	64.38		
		-	-	220kV Malbase - Birpara Line	29.57		
		-	-	66kV CHP - Gedu Line	8.11		
		-	-	3x3MVA, 66/11kV TFR	0.95		
<b>Total</b>	<b>366.18</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.04%</b>				
4	2 x 12MW BHP (U/S)	Unit-I	12.00	220kV BHP - Sentsokha Line	127.50		
		Unit-II	12.01	66kV BHP - Lobeyasa Line	31.44		
		<b>Total</b>	<b>24.01</b>	220kV BHP - Tsirang Line	-93.72		
5	2 x 20MW BHP (L/S)	Unit-I	21.09	5MVA, 66/11kV TFR	0.56		
		Unit-II	20.32	30MVA ICT, 220/66kV (HV)	8.50		
		<b>Total</b>	<b>41.41</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.55%</b>		
6	2 x 63MW DHP	Unit-I	63.65	220kV DHP - Tsirang Line	126.10	220kV DHP_Dagapela Line on Standby.	
		Unit-II	63.02	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	53.45		
		-	-	5MVA, 220/33kV TFR	0.26		
<b>Total</b>	<b>126.67</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.24%</b>				
7	4 x 15MW KHP	Unit-I	16.51	132kV KHP - Nangkor Line	39.94		
		Unit-II	16.57	132kV KHP - Kilikhar Line	25.12		
		Unit-III	16.50	5MVA, 132/11kV TFR	0.39		
		Unit-IV	16.62	132kV Motanga - Rangia Line	58.16		
		<b>Total</b>	<b>66.20</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.13%</b>		
8	2 x 59MW NHP	Unit-I	64.05	132kV NHP-MHP-I	63.55		
		Unit-II	64.06	132kV NHP-MHP-II	63.53		
		<b>Total</b>	<b>128.11</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.80%</b>		

Note: Generation-Load Summary (MW) for 26-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	1,672.00	700.59	699.82	943.62	0.77
2	Eastern Grid	982.58	198.35	191.73	812.02	6.62
	<b>Total</b>	<b>2,654.58</b>	<b>898.94</b>	<b>891.55</b>	<b>1,755.64</b>	<b>7.39</b>

Note: Generation-Load Summary (MW) for 26-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	1,636.68	644.1	632.65	973.26	11.45
2	Eastern Grid	576.36	218.62	215.45	377.06	3.17
	<b>Total</b>	<b>2,213.04</b>	<b>862.72</b>	<b>848.10</b>	<b>1,350.32</b>	<b>14.62</b>

Note: Daily Energy (MUs) and Power(MW) Statistics for 26-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	41.88	0.00	20.28	62.59	1,916.90	1.25

- 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.