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

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	19-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	109.81	400kV THP - Siliguri Line - I	210.66	
		Unit- II	185.22	400kV THP - Siliguri Line - II	210.66	
		Unit- III	168.72	400kV THP - Siliguri Line - IV	198.27	
		Unit- IV	184.14	400kV THP - Malbase Line - III	398.37	
		Unit- V	185.01	400kV Malbase - Siliguri Line	155.14	
		Unit- VI	184.19	-	-	
		<b>Total</b>	<b>1,017.09</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.09%</b>	
2	4 x 180MW MHP	Unit-I	158.16	400kV MHP - Jigmeling Line - I	230.14	400kV MHP-JLG Line II on Standby. 132kV MHP_Yurmoo Line-I not in Service. 400kV JLG_ALI Interim Line I on Standby.
		Unit-II	180.17	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	160.94	400kV MHP - Jigmeling Line - III	238.32	
		Unit-IV	155.58	400kV MHP - Jigmeling Line - IV	237.76	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	60.98	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	112.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	146.91	
		-	-	400kV Jigmeling - Alipurduar Line - I	220.36	
		-	-	400kV Jigmeling - Alipurduar Line - II	219.64	
		-	-	80MVA, 220/132kV ICT - I (HV)	35.94	
		-	-	80MVA, 220/132kV ICT - II (HV)	35.60	
		-	-	220kV Tsirang - Jigmeling Line	12.27	
		-	-	132kV Gelephu - Salakati Line	32.14	
<b>Total</b>	<b>654.85</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.28%</b>			
3	4 x 84MW CHP	Unit- I	91.85	220kV CHP - Birpara Line - I	35.86	
		Unit- II	91.19	220kV CHP - Birpara Line - II	35.32	
		Unit- III	91.00	220kV CHP - Gedu	59.39	
		Unit- IV	91.44	220kV CHP - Jamjee (old) - I	75.55	
		-	-	220kV CHP - Jamjee - II (new)	76.33	
		-	-	220kV CHP - Jamjee - III (new)	73.67	
		-	-	220kV Malbase - Birpara Line	34.96	
		-	-	66kV CHP - Gedu Line	8.94	
<b>Total</b>	<b>365.48</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.03%</b>			
4	2 x 12MW BHP (U/S)	Unit- I	9.37	220kV BHP - Semtokha Line	87.43	
		Unit- II	8.79	66kV BHP - Lobeyasa Line	23.17	
		<b>Total</b>	<b>18.16</b>	220kV BHP - Tsirang Line	-56.74	
5	2 x 20MW BHP (L/S)	Unit- I	18.39	5MVA, 66/11kV TFR	0.36	
		Unit- II	17.72	30MVA ICT, 220/66kV (HV)	6.04	
		<b>Total</b>	<b>36.11</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.09%</b>	
6	2 x 63MW DHP	Unit-I	36.33	220kV DHP - Tsirang Line	71.88	220kV DHP_Dagapela Line on Standby.
		Unit-II	35.99	220kV DHP - Dagapela Line	0.31	
		-	-	220kV Jigmeling - Dagapela Line	53.37	
		-	-	5MVA, 220/33kV TFR	0.02	
<b>Total</b>	<b>72.32</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.15%</b>			
7	4 x 15MW KHP	Unit- I	16.57	132kV KHP - Nangkor Line	42.49	
		Unit-II	16.53	132kV KHP - Kilikhar Line	22.61	
		Unit- III	16.65	5MVA, 132/11kV TFR	0.33	
		Unit- IV	16.57	132kV Motanga - Rangia Line	60.52	
		<b>Total</b>	<b>66.32</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.34%</b>	
8	2 x 59MW NHP	Unit-I	58.92	132kV NHP-MHP-I	58.59	
		Unit-II	56.01	132kV NHP-MHP-II	55.58	
		<b>Total</b>	<b>114.93</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.66%</b>	

Note: Generation-Load Summary (MW) for 19-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	1,509.16	616.02	616.53	880.87	-0.51
2	Eastern Grid	836.10	168.80	165.33	679.57	3.47
<b>Total</b>		<b>2,345.26</b>	<b>784.82</b>	<b>781.86</b>	<b>1,560.44</b>	<b>2.96</b>

Note: Generation-Load Summary for 19-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	1,067.62	594.21	585.55	472.42	8.66
2	Eastern Grid	522.94	191.67	189.01	322.26	2.66
<b>Total</b>		<b>1,590.56</b>	<b>785.88</b>	<b>774.56</b>	<b>794.68</b>	<b>11.32</b>

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 20-Sep-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	19-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	189.45	400kV THP - Siliguri Line - I	196.78		
		Unit-II	185.61	400kV THP - Siliguri Line - II	195.27		
		Unit-III	165.38	400kV THP - Siliguri Line- IV	186.99		
		Unit-IV	186.20	400kV THP - Malbase Line - III	439.47		
		Unit-V	185.75	400kV Malbase - Siliguri Line	134.55		
		Unit-VI	185.97	-	-		
		<b>Total</b>	<b>1,018.36</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.01%</b>		
2	4 x 180MW MHP	Unit-I	157.67	400kV MHP - Jigmeling Line - I	235.88	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	160.07	400kV MHP - Jigmeling Line - II	236.58		
		Unit-III	180.65	400kV MHP - Jigmeling Line - III	231.02		
		Unit-IV	155.57	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)	119.50		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	137.82		
		-	-	400kV Jigmeling - Alipurduar Line - I	205.75		
		-	-	400kV Jigmeling - Alipurduar Line - II	204.91		
		-	-	80MVA, 220/132kV ICT - I (HV)	39.18		
		-	-	80MVA, 220/132kV ICT - II (HV)	38.81		
		-	-	220kV Tsirang - Jigmeling Line	-2.97		
		-	-	132kV Gelephu - Salakati Line	29.30		
		<b>Total</b>	<b>653.96</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.57%</b>		
		3	4 x 84MW CHP	Unit-I	91.33		
Unit-II	91.41			220kV CHP - Birpara Line - II	32.70		
Unit-III	91.03			220kV CHP - Gedu	65.94		
Unit-IV	91.43			220kV CHP - Jamjee (old) - I	76.16		
-	-			220kV CHP - Jamjee - II (new)	77.04		
-	-			220kV CHP - Jamjee - III (new)	73.98		
-	-			220kV Malbase - Birpara Line	46.24		
-	-			66kV CHP - Gedu Line	8.26		
-	-			3x3MVA, 66/11kV TFR	0.95		
<b>Total</b>	<b>365.20</b>			<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.86%</b>		
4	2 x 12MW BHP (U/S)	Unit-I	9.26	220kV BHP - Sento Kha Line	89.15		
		Unit-II	8.23	66kV BHP - Lobeyasa Line	26.83		
		<b>Total</b>	<b>17.49</b>	220kV BHP - Tsirang Line	-68.32		
5	2 x 20MW BHP (L/S)	Unit-I	15.28	5MVA, 66/11kV TFR	0.76		
		Unit-II	14.71	30MVA ICT, 220/66kV (HV)	10.60		
		<b>Total</b>	<b>29.99</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-1.98%</b>		
6	2 x 63MW DHP	Unit-I	34.82	220kV DHP - Tsirang Line	69.36	220kV DHP_Dagapela Line on Standby.	
		Unit-II	35.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	53.34		
		-	-	5MVA, 220/33kV TFR	0.46		
<b>Total</b>	<b>69.82</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.00%</b>				
7	4 x 15MW KHP	Unit-I	16.48	132kV KHP - Nangkor Line	38.95		
		Unit-II	16.58	132kV KHP - Kilikhar Line	26.08		
		Unit-III	16.68	5MVA, 132/11kV TFR	0.45		
		Unit-IV	16.43	132kV Motanga - Rangia Line	65.20		
		<b>Total</b>	<b>66.17</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.04%</b>		
8	2 x 59MW NHP	Unit-I	58.99	132kV NHP-MHP-I	58.59		
		Unit-II	56.04	132kV NHP-MHP-II	55.66		
		<b>Total</b>	<b>115.03</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.68%</b>		

Note: Generation-Load Summary (MW) for 19-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	1,500.86	678.00	682.22	825.83	-4.22
2	Eastern Grid	835.16	189.21	183.99	642.98	5.22
	<b>Total</b>	<b>2,336.02</b>	<b>867.21</b>	<b>866.21</b>	<b>1,468.81</b>	<b>1.00</b>

Note: Generation-Load Summary (MW) for 19-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	1,060.81	642.14	637.11	438.7	5.03
2	Eastern Grid	522.93	196.15	193.22	306.75	2.93
	<b>Total</b>	<b>1,583.74</b>	<b>838.29</b>	<b>830.33</b>	<b>745.45</b>	<b>7.96</b>

Note: Daily Energy (MUs) and Power(MW) Statistics for 19-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	34.15	0.00	19.19	53.32	1,635.64	2.00

- 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.