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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 14-Oct-2024(-ve:import, +ve:export)**

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	13-Oct-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	55.26	400kV THP - Siliguri Line - I	185.20	
		Unit- II	186.15	400kV THP - Siliguri Line - II	185.47	
		Unit- III	93.97	400kV THP - Siliguri Line - IV	178.86	
		Unit- IV	186.60	400kV THP - Malbase Line - III	345.47	
		Unit- V	186.50	400kV Malbase - Siliguri Line	139.36	
		Unit- VI	187.33	-	-	
		<b>Total</b>	<b>895.81</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.09%</b>	
2	4 x 180MW MHP	Unit-I	144.81	400kV MHP - Jigmeling Line - I	0.00	400kV MHP-JLG Line I under Breakdown. 132kV MHP_Yurmoo Line- I not in Service. 400kV JLG_ALI Interim Line II on Standby. 80MVA transformer II under Breakdown.
		Unit-II	197.81	400kV MHP - Jigmeling Line - II	225.05	
		Unit-III	145.93	400kV MHP - Jigmeling Line - III	233.68	
		Unit-IV	145.28	400kV MHP - Jigmeling Line - IV	232.04	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	60.46	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	64.36	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	154.91	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I	232.00	
		-	-	400kV Jigmeling - Alipurduar Line - II	232.73	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.35	
		-	-	80MVA, 220/132kV ICT - II (HV)	0.00	
		-	-	220kV Tsirang - Jigmeling Line	23.68	
		-	-	132kV Gelephu - Salakati Line	12.52	
<b>Total</b>	<b>633.83</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.07%</b>			
3	4 x 84MW CHP	Unit- I	91.48	220kV CHP - Birpara Line - I	20.18	
		Unit- II	91.26	220kV CHP - Birpara Line - II	20.21	
		Unit- III	91.29	220kV CHP - Gedu	115.16	
		Unit- IV	91.33	220kV CHP - Jamjee (old) - I	66.33	
		-	-	220kV CHP - Jamjee - II (new)	66.94	
		-	-	220kV CHP - Jamjee - III (new)	64.62	
		-	-	220kV Malbase - Birpara Line	-13.18	
		-	-	66kV CHP - Gedu Line	9.47	
		-	-	3x3MVA, 66/11kV TFR	0.85	
<b>Total</b>	<b>365.36</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.44%</b>			
4	2 x 12MW BHP (U/S)	Unit- I	10.50	220kV BHP - Semtokha Line	111.00	
		Unit- II	11.20	66kV BHP - Lobeyasa Line	27.06	
		<b>Total</b>	<b>21.70</b>	220kV BHP - Tsirang Line	-79.72	
5	2 x 20MW BHP (L/S)	Unit- I	18.60	5MVA, 66/11kV TFR	0.40	
		Unit- II	18.80	30MVA ICT, 220/66kV (HV)	6.11	
		<b>Total</b>	<b>37.40</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.61%</b>	
6	2 x 63MW DHP	Unit-I	56.36	220kV DHP - Tsirang Line	107.86	220kV DHP_Dagapela Line on Standby.
		Unit-II	52.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	52.61	
		-	-	5MVA, 220/33kV TFR	0.20	
<b>Total</b>	<b>108.36</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.28%</b>			
7	4 x 15MW KHP	Unit- I	16.47	132kV KHP - Nangkor Line	43.90	
		Unit-II	16.53	132kV KHP - Kilikhar Line	21.30	
		Unit- III	16.54	5MVA, 132/11kV TFR	0.23	
		Unit- IV	16.45	132kV Motanga - Rangia Line	32.71	
		<b>Total</b>	<b>65.99</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.85%</b>	
8	2 x 59MW NHP	Unit-I	60.81	132kV NHP-MHP-I	60.10	
		Unit-II	58.96	132kV NHP-MHP-II	57.72	
		<b>Total</b>	<b>119.77</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.63%</b>	

Note: Generation-Load Summary (MW) for 13-Oct-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	1,428.63	688.85	685.78	716.10	3.07
2	Eastern Grid	819.59	178.40	175.47	664.87	2.93
	<b>Total</b>	<b>2,248.22</b>	<b>867.25</b>	<b>861.25</b>	<b>1,380.97</b>	<b>6.00</b>

Note: Generation-Load Summary for 13-Oct-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	1,216.11	601.00	592.86	611.23	8.14
2	Eastern Grid	502.41	159.27	157.57	347.02	1.70
	<b>Total</b>	<b>1,718.52</b>	<b>760.27</b>	<b>750.43</b>	<b>958.25</b>	<b>9.84</b>

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 14-Oct-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	13-Oct-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	94.98	400kV THP - Siliguri Line - I	189.71		
		Unit-II	185.73	400kV THP - Siliguri Line - II	187.72		
		Unit-III	94.01	400kV THP - Siliguri Line - IV	180.19		
		Unit-IV	185.80	400kV THP - Malbase Line - III	374.79		
		Unit-V	185.80	400kV Malbase - Siliguri Line	138.18		
		Unit-VI	186.47	-	-		
		<b>Total</b>	<b>932.71</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.03%</b>		
2	4 x 180MW MHP	Unit-I	135.21	400kV MHP - Jigmeling Line - I	0.00	400kV MHP-JLG Line I under Breakdown. 132kV MHP_Yurmo Line-I not in Service. 400kV JLG_ALI Interim Line II on Standby. 80MVA transformer II under Breakdown.	
		Unit-II	197.80	400kV MHP - Jigmeling Line - II	206.70		
		Unit-III	140.87	400kV MHP - Jigmeling Line - III	214.89		
		Unit-IV	110.50	400kV MHP - Jigmeling Line - IV	213.43		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	62.36		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-51.89		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	137.79		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	206.27		
		-	-	400kV Jigmeling - Alipurduar Line - II	206.02		
		-	-	80MVA, 220/132kV ICT - I (HV)	39.16		
		-	-	80MVA, 220/132kV ICT - II (HV)	0.00		
		-	-	220kV Tsirang - Jigmeling Line	12.71		
		-	-	132kV Gelephu - Salakati Line	5.20		
<b>Total</b>	<b>584.38</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.21%</b>				
3	4 x 84MW CHP	Unit-I	91.48	220kV CHP - Birpara Line - I	20.05		
		Unit-II	91.26	220kV CHP - Birpara Line - II	20.17		
		Unit-III	91.29	220kV CHP - Gedu	101.56		
		Unit-IV	91.33	220kV CHP - Jamjee (old) - I	71.31		
		-	-	220kV CHP - Jamjee - II (new)	71.72		
		-	-	220kV CHP - Jamjee - III (new)	69.18		
		-	-	220kV Malbase - Birpara Line	-2.87		
		-	-	66kV CHP - Gedu Line	9.76		
		-	-	3x3MVA, 66/11kV TFR	1.05		
<b>Total</b>	<b>365.36</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.15%</b>				
4	2 x 12MW BHP (U/S)	Unit-I	11.81	220kV BHP - Sento Kha Line	120.19		
		Unit-II	11.80	66kV BHP - Lobeyasa Line	27.27		
		<b>Total</b>	<b>23.61</b>	220kV BHP - Tsirang Line	-85.30		
5	2 x 20MW BHP (L/S)	Unit-I	20.18	5MVA, 66/11kV TFR	0.48		
		Unit-II	19.41	30MVA ICT, 220/66kV (HV)	5.52		
		<b>Total</b>	<b>39.59</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.89%</b>		
6	2 x 63MW DHP	Unit-I	52.85	220kV DHP - Tsirang Line	105.17	220kV DHP_Dagapela Line on Standby.	
		Unit-II	52.85	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	53.02		
		-	-	5MVA, 220/33kV TFR	0.52		
<b>Total</b>	<b>105.70</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.01%</b>				
7	4 x 15MW KHP	Unit-I	16.48	132kV KHP - Nangkor Line	42.06		
		Unit-II	16.56	132kV KHP - Kilikhar Line	23.05		
		Unit-III	16.57	5MVA, 132/11kV TFR	0.29		
		Unit-IV	16.56	132kV Motanga - Rangia Line	34.60		
		<b>Total</b>	<b>66.17</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.16%</b>		
8	2 x 59MW NHP	Unit-I	56.03	132kV NHP-MHP-I	55.64		
		Unit-II	58.95	132kV NHP-MHP-II	58.58		
		<b>Total</b>	<b>114.98</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.66%</b>		

Note: Generation-Load Summary (MW) for 13-Oct-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	1,466.97	721.11	719.68	733.15	1.43
2	Eastern Grid	765.53	188.36	185.61	589.88	2.75
	<b>Total</b>	<b>2,232.50</b>	<b>909.47</b>	<b>905.29</b>	<b>1,323.03</b>	<b>4.18</b>

Note: Generation-Load Summary (MW) for 13-Oct-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	1,282.35	547.63	540.11	724.44	7.52
2	Eastern Grid	457.60	202.48	198.54	265.4	3.94
	<b>Total</b>	<b>1,739.95</b>	<b>750.11</b>	<b>738.65</b>	<b>989.84</b>	<b>11.46</b>

Note: Daily Energy (MUs) and Power(MW) Statistics for 13-Oct-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	32.10	0.00	20.39	54.18	1,511.20	1.60

- 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.