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

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	15-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	50.21	400kV THP - Siliguri Line - I	170.35	
		Unit- II	184.23	400kV THP - Siliguri Line - II	168.26	
		Unit- III	59.40	400kV THP - Siliguri Line - IV	161.66	
		Unit- IV	185.38	400kV THP - Malbase Line - III	350.62	
		Unit- V	185.60	400kV Malbase - Siliguri Line	119.63	
		Unit- VI	186.25	-	-	
		<b>Total</b>	<b>851.07</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.02%</b>	
2	4 x 180MW MHP	Unit-I	139.89	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	197.89	400kV MHP - Jigmeling Line - II	214.79	
		Unit-III	139.54	400kV MHP - Jigmeling Line - III	223.29	
		Unit-IV	135.16	400kV MHP - Jigmeling Line - IV	221.33	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	60.92	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	73.82	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	145.46	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I	216.73	
		-	-	400kV Jigmeling - Alipurduar Line - II	217.46	
		-	-	80MVA, 220/132kV ICT - I (HV)	46.67	
		-	-	80MVA, 220/132kV ICT - II (HV)	0.00	
		-	-	220kV Tsirang - Jigmeling Line	24.25	
-	-	132kV Gelephu - Salakati Line	15.42			
<b>Total</b>	<b>612.48</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.26%</b>			
3	4 x 84MW CHP	Unit- I	91.48	220kV CHP - Birpara Line - I	22.43	66kV CHP-Gedu line under shutdown.
		Unit- II	91.26	220kV CHP - Birpara Line - II	22.35	
		Unit- III	91.29	220kV CHP - Gedu	111.10	
		Unit- IV	91.33	220kV CHP - Jamjee (old) - I	70.11	
		-	-	220kV CHP - Jamjee - II (new)	70.44	
		-	-	220kV CHP - Jamjee - III (new)	67.81	
		-	-	220kV Malbase - Birpara Line	-5.30	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	0.90	
<b>Total</b>	<b>365.36</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.06%</b>			
4	2 x 12MW BHP (U/S)	Unit- I	10.60	220kV BHP - Semtokha Line	102.82	
		Unit- II	10.00	66kV BHP - Lobeyasa Line	26.13	
		<b>Total</b>	<b>20.60</b>	220kV BHP - Tsirang Line	-70.76	
5	2 x 20MW BHP (L/S)	Unit- I	19.40	5MVA, 66/11kV TFR	0.36	
		Unit- II	18.40	30MVA ICT, 220/66kV (HV)	6.26	
		<b>Total</b>	<b>37.80</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.26%</b>	
6	2 x 63MW DHP	Unit-I	49.30	220kV DHP - Tsirang Line	98.79	220kV DHP_Dagapela Line on Standby.
		Unit-II	50.01	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	52.33	
		-	-	5MVA, 220/33kV TFR	0.30	
<b>Total</b>	<b>99.31</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.22%</b>			
7	4 x 15MW KHP	Unit- I	16.51	132kV KHP - Nangkor Line	43.40	
		Unit-II	16.51	132kV KHP - Kilikhar Line	21.85	
		Unit- III	16.57	5MVA, 132/11kV TFR	0.21	
		Unit- IV	16.55	132kV Motanga - Rangia Line	43.27	
		<b>Total</b>	<b>66.14</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.03%</b>	
8	2 x 59MW NHP	Unit-I	54.97	132kV NHP-MHP-I	54.72	
		Unit-II	54.99	132kV NHP-MHP-II	54.72	
		<b>Total</b>	<b>109.96</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.47%</b>	

Note: Generation-Load Summary (MW) for 15-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	1,374.14	690.51	690.04	659.38	0.47
2	Eastern Grid	788.58	174.49	171.70	638.34	2.79
<b>Total</b>		<b>2,162.72</b>	<b>865.00</b>	<b>861.74</b>	<b>1,297.72</b>	<b>3.26</b>

Note: Generation-Load Summary for 15-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	1,051.98	605.98	597.74	435.72	8.24
2	Eastern Grid	472.52	213.37	212.30	269.23	1.07
<b>Total</b>		<b>1,524.50</b>	<b>819.35</b>	<b>810.04</b>	<b>704.95</b>	<b>9.31</b>

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 16-Oct-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	15-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	50.00	400kV THP - Siliguri Line - I	163.60		
		Unit-II	185.52	400kV THP - Siliguri Line - II	163.12		
		Unit-III	49.32	400kV THP - Siliguri Line- IV	157.31		
		Unit-IV	186.16	400kV THP - Malbase Line - III	358.97		
		Unit-V	185.88	400kV Malbase - Siliguri Line	111.44		
		Unit-VI	186.12	-	-		
		<b>Total</b>	<b>843.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.00%</b>		
2	4 x 180MW MHP	Unit-I	179.83	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	197.84	400kV MHP - Jigmeling Line - II	250.57		
		Unit-III	180.59	400kV MHP - Jigmeling Line - III	260.52		
		Unit-IV	166.53	400kV MHP - Jigmeling Line - IV	258.76		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	62.30		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	105.62		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	164.36		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	245.09		
		-	-	400kV Jigmeling - Alipurduar Line - II	247.27		
		-	-	80MVA, 220/132kV ICT - I (HV)	53.73		
		-	-	80MVA, 220/132kV ICT - II (HV)	0.00		
		-	-	220kV Tsirang - Jigmeling Line	1.54		
-	-	132kV Gelephu - Salakati Line	11.24				
<b>Total</b>	<b>724.79</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.06%</b>				
3	4 x 84MW CHP	Unit-I	91.48	220kV CHP - Birpara Line - I	25.45	66kV CHP-Gedu Line under shutdown.	
		Unit-II	91.26	220kV CHP - Birpara Line - II	25.17		
		Unit-III	91.29	220kV CHP - Gedu	99.45		
		Unit-IV	91.33	220kV CHP - Jamjee (old) - I	71.66		
		-	-	220kV CHP - Jamjee - II (new)	72.14		
		-	-	220kV CHP - Jamjee - III (new)	69.79		
		-	-	220kV Malbase - Birpara Line	8.20		
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	1.07		
<b>Total</b>	<b>365.36</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.17%</b>				
4	2 x 12MW BHP (U/S)	Unit-I	10.37	220kV BHP - Sentsokha Line	117.00		
		Unit-II	10.34	66kV BHP - Lobeyasa Line	29.33		
		<b>Total</b>	<b>20.71</b>	220kV BHP - Tsirang Line	-90.68		
5	2 x 20MW BHP (L/S)	Unit-I	18.24	5MVA, 66/11kV TFR	0.51		
		Unit-II	17.56	30MVA ICT, 220/66kV (HV)	9.81		
		<b>Total</b>	<b>35.80</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.62%</b>		
6	2 x 63MW DHP	Unit-I	48.60	220kV DHP - Tsirang Line	96.10	220kV DHP_Dagapela Line on Standby.	
		Unit-II	48.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	53.07		
		-	-	5MVA, 220/33kV TFR	0.20		
<b>Total</b>	<b>96.60</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.31%</b>				
7	4 x 15MW KHP	Unit-I	16.50	132kV KHP - Nangkor Line	41.08		
		Unit-II	16.49	132kV KHP - Kilikhar Line	23.95		
		Unit-III	16.63	5MVA, 132/11kV TFR	0.35		
		Unit-IV	16.48	132kV Motanga - Rangia Line	46.30		
<b>Total</b>	<b>66.10</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.09%</b>				
8	2 x 59MW NHP	Unit-I	54.60	132kV NHP-MHP-I	53.98		
		Unit-II	54.63	132kV NHP-MHP-II	53.79		
		<b>Total</b>	<b>109.23</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.34%</b>		

Note: Generation-Load Summary (MW) for 15-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	1,361.47	705.64	704.36	654.29	1.28
2	Eastern Grid	900.12	187.40	184.81	714.26	2.59
	<b>Total</b>	<b>2,261.59</b>	<b>893.04</b>	<b>889.17</b>	<b>1,368.55</b>	<b>3.87</b>

Note: Generation-Load Summary (MW) for 15-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	1,154.39	611.99	603.69	532.12	8.30
2	Eastern Grid	507.16	229.27	227.10	288.17	2.17
	<b>Total</b>	<b>1,661.55</b>	<b>841.26</b>	<b>830.79</b>	<b>820.29</b>	<b>10.47</b>

Note: Daily Energy (MUs) and Power(MW) Statistics for 15-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	30.62	0.00	20.44	50.72	1,430.40	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.