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

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	30-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	186.19	400kV THP - Siliguri Line - I	230.39	
		Unit- II	186.13	400kV THP - Siliguri Line - II	230.39	
		Unit- III	185.34	400kV THP - Siliguri Line - IV	220.39	
		Unit- IV	186.96	400kV THP - Malbase Line - III	425.29	
		Unit- V	185.93	400kV Malbase - Siliguri Line	175.01	
		Unit- VI	185.89	-	-	
		<b>Total</b>	<b>1,116.44</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.89%</b>	
2	4 x 180MW MHP	Unit-I	197.76	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	197.76	400kV MHP - Jigmeling Line - II	277.54	
		Unit-III	194.42	400kV MHP - Jigmeling Line - III	287.48	
		Unit-IV	198.00	400kV MHP - Jigmeling Line - IV	285.72	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	61.77	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	81.51	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	189.82	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I	283.64	
		-	-	400kV Jigmeling - Alipurduar Line - II	284.36	
		-	-	80MVA, 220/132kV ICT - I (HV)	32.17	
		-	-	80MVA, 220/132kV ICT - II (HV)	31.91	
		-	-	220kV Tsirang - Jigmeling Line	34.88	
		-	-	132kV Gelephu - Salakati Line	30.38	
<b>Total</b>	<b>787.94</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.33%</b>			
3	4 x 84MW CHP	Unit- I	91.82	220kV CHP - Birpara Line - I	33.29	
		Unit- II	91.36	220kV CHP - Birpara Line - II	33.20	
		Unit- III	91.22	220kV CHP - Gedu	111.40	
		Unit- IV	91.40	220kV CHP - Jamjee (old) - I	59.37	
		-	-	220kV CHP - Jamjee - II (new)	60.07	
		-	-	220kV CHP - Jamjee - III (new)	58.03	
		-	-	220kV Malbase - Birpara Line	11.28	
		-	-	66kV CHP - Gedu Line	9.68	
		-	-	3x3MVA, 66/11kV TFR	0.80	
<b>Total</b>	<b>365.80</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.01%</b>			
4	2 x 12MW BHP (U/S)	Unit- I	11.94	220kV BHP - Semtokha Line	124.36	
		Unit- II	12.05	66kV BHP - Lobeyasa Line	28.20	
		<b>Total</b>	<b>23.99</b>	220kV BHP - Tsirang Line	-87.31	
5	2 x 20MW BHP (L/S)	Unit- I	21.16	5MVA, 66/11kV TFR	0.47	
		Unit- II	20.36	30MVA ICT, 220/66kV (HV)	5.22	
		<b>Total</b>	<b>41.52</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.32%</b>	
6	2 x 63MW DHP	Unit-I	63.55	220kV DHP - Tsirang Line	125.92	220kV DHP_Dagapela Line on Standby.
		Unit-II	63.25	220kV DHP - Dagapela Line	0.31	
		-	-	220kV Jigmeling - Dagapela Line	53.10	
		-	-	5MVA, 220/33kV TFR	0.20	
<b>Total</b>	<b>126.80</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.29%</b>			
7	4 x 15MW KHP	Unit- I	16.57	132kV KHP - Nangkor Line	43.09	
		Unit-II	16.45	132kV KHP - Kilikhar Line	22.10	
		Unit- III	16.52	5MVA, 132/11kV TFR	0.26	
		Unit- IV	16.60	132kV Motanga - Rangia Line	47.71	
		<b>Total</b>	<b>66.14</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.04%</b>	
8	2 x 59MW NHP	Unit-I	63.96	132kV NHP-MHP-I	63.61	
		Unit-II	64.01	132kV NHP-MHP-II	63.57	
		<b>Total</b>	<b>127.97</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.62%</b>	

Note: Generation-Load Summary (MW) for 30-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	1,674.55	705.72	695.31	933.95	10.41
2	Eastern Grid	982.05	181.02	176.93	835.91	4.09
	<b>Total</b>	<b>2,656.60</b>	<b>886.74</b>	<b>872.24</b>	<b>1,769.86</b>	<b>14.50</b>

Note: Generation-Load Summary for 30-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	1,285.41	636.43	628.66	637.45	7.77
2	Eastern Grid	507.23	195.17	199.63	323.59	-4.46
	<b>Total</b>	<b>1,792.64</b>	<b>831.60</b>	<b>828.29</b>	<b>961.04</b>	<b>3.31</b>

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 01-Oct-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	30-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	185.28	400kV THP - Siliguri Line - I	225.48		
		Unit-II	186.42	400kV THP - Siliguri Line - II	224.13		
		Unit-III	185.56	400kV THP - Siliguri Line - IV	215.83		
		Unit-IV	185.92	400kV THP - Malbase Line - III	453.05		
		Unit-V	185.70	400kV Malbase - Siliguri Line	160.33		
		Unit-VI	186.11	-	-		
		<b>Total</b>	<b>1,114.91</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.31%</b>		
2	4 x 180MW MHP	Unit-I	197.83	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	197.78	400kV MHP - Jigmeling Line - II	277.68		
		Unit-III	194.89	400kV MHP - Jigmeling Line - III	287.79		
		Unit-IV	198.13	400kV MHP - Jigmeling Line - IV	286.13		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	61.01		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	114.18		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	181.82		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	271.27		
		-	-	400kV Jigmeling - Alipurduar Line - II	272.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	44.87		
		-	-	80MVA, 220/132kV ICT - II (HV)	44.59		
		-	-	220kV Tsirang - Jigmeling Line	28.97		
		-	-	132kV Gelephu - Salakati Line	31.00		
		<b>Total</b>	<b>788.63</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.60%</b>		
3	4 x 84MW CHP	Unit-I	91.60	220kV CHP - Birpara Line - I	39.58		
		Unit-II	91.39	220kV CHP - Birpara Line - II	39.32		
		Unit-III	91.01	220kV CHP - Gedu	92.74		
		Unit-IV	91.63	220kV CHP - Jamjee (old) - I	61.43		
		-	-	220kV CHP - Jamjee - II (new)	62.12		
		-	-	220kV CHP - Jamjee - III (new)	60.00		
		-	-	220kV Malbase - Birpara Line	35.66		
		-	-	66kV CHP - Gedu Line	9.35		
		-	-	3x3MVA, 66/11kV TFR	1.03		
<b>Total</b>	<b>365.63</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.02%</b>				
4	2 x 12MW BHP (U/S)	Unit-I	11.93	220kV BHP - Sentsokha Line	126.05		
		Unit-II	12.01	66kV BHP - Lobeyasa Line	30.42		
		<b>Total</b>	<b>23.94</b>	220kV BHP - Tsirang Line	-90.93		
5	2 x 20MW BHP (L/S)	Unit-I	21.12	5MVA, 66/11kV TFR	0.63		
		Unit-II	20.32	30MVA ICT, 220/66kV (HV)	7.53		
		<b>Total</b>	<b>41.44</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-1.21%</b>		
6	2 x 63MW DHP	Unit-I	62.33	220kV DHP - Tsirang Line	124.88	220kV DHP_Dagapela Line on Standby.	
		Unit-II	63.17	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	53.95		
		-	-	5MVA, 220/33kV TFR	0.20		
<b>Total</b>	<b>125.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.33%</b>				
7	4 x 15MW KHP	Unit-I	16.52	132kV KHP - Nangkor Line	40.14		
		Unit-II	16.53	132kV KHP - Kilikhar Line	24.80		
		Unit-III	16.56	5MVA, 132/11kV TFR	0.42		
		Unit-IV	16.54	132kV Motanga - Rangia Line	55.93		
		<b>Total</b>	<b>66.15</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.19%</b>		
8	2 x 59MW NHP	Unit-I	64.83	132kV NHP-MHP-I	64.33		
		Unit-II	64.87	132kV NHP-MHP-II	64.40		
		<b>Total</b>	<b>129.70</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.75%</b>		

Note: Generation-Load Summary (MW) for 30-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	1,671.42	702.20	706.01	940.25	-3.81
2	Eastern Grid	984.48	201.43	194.92	812.02	6.51
	<b>Total</b>	<b>2,655.90</b>	<b>903.63</b>	<b>900.93</b>	<b>1,752.27</b>	<b>2.70</b>

Note: Generation-Load Summary (MW) for 30-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	1,282.91	642.06	633.24	631.52	8.82
2	Eastern Grid	482.53	208.65	210.47	283.21	-1.82
	<b>Total</b>	<b>1,765.44</b>	<b>850.71</b>	<b>843.71</b>	<b>914.73</b>	<b>7.00</b>

Note: Daily Energy (MUs) and Power(MW) Statistics for 30-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	40.19	0.00	20.76	63.19	1,837.12	2.30

- 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.