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

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	22-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	185.21	400kV THP - Siliguri Line - I	229.50	
		Unit- II	185.56	400kV THP - Siliguri Line - II	229.50	
		Unit- III	185.70	400kV THP - Siliguri Line - IV	216.10	
		Unit- IV	185.82	400kV THP - Malbase Line - III	437.60	
		Unit- V	185.16	400kV Malbase - Siliguri Line	169.40	
		Unit- VI	185.19	-	-	
		<b>Total</b>	<b>1,112.64</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.01%</b>	
2	4 x 180MW MHP	Unit-I	175.11	400kV MHP - Jigmeling Line - I	254.49	400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmoo Line-I not in Service. 400kV JLG_ALI Interim Line I on Standby.
		Unit-II	197.77	400kV MHP - Jigmeling Line - II	255.12	
		Unit-III	180.89	400kV MHP - Jigmeling Line - III	249.16	
		Unit-IV	169.17	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)	132.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	155.64	
		-	-	400kV Jigmeling - Alipurduar Line - I	232.00	
		-	-	400kV Jigmeling - Alipurduar Line - II	232.73	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.15	
		-	-	80MVA, 220/132kV ICT - II (HV)	35.80	
		-	-	220kV Tsirang - Jigmeling Line	-4.95	
		-	-	132kV Gelephu - Salakati Line	24.32	
<b>Total</b>	<b>722.94</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.34%</b>			
3	4 x 84MW CHP	Unit- I	90.91	220kV CHP - Birpara Line - I	28.46	
		Unit- II	91.41	220kV CHP - Birpara Line - II	28.04	
		Unit- III	91.33	220kV CHP - Gedu	80.04	
		Unit- IV	91.25	220kV CHP - Jamjee (old) - I	73.78	
		-	-	220kV CHP - Jamjee - II (new)	74.52	
		-	-	220kV CHP - Jamjee - III (new)	71.88	
		-	-	220kV Malbase - Birpara Line	26.00	
		-	-	66kV CHP - Gedu Line	7.60	
		-	-	3x3MVA, 66/11kV TFR	0.79	
<b>Total</b>	<b>364.90</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.06%</b>			
4	2 x 12MW BHP (U/S)	Unit- I	8.00	220kV BHP - Semtokha Line	85.00	
		Unit- II	7.90	66kV BHP - Lobeyasa Line	25.20	
		<b>Total</b>	<b>15.90</b>	220kV BHP - Tsirang Line	-65.65	
5	2 x 20MW BHP (L/S)	Unit- I	14.86	5MVA, 66/11kV TFR	0.42	
		Unit- II	14.31	30MVA ICT, 220/66kV (HV)	9.87	
		<b>Total</b>	<b>29.17</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.22%</b>	
6	2 x 63MW DHP	Unit-I	32.30	220kV DHP - Tsirang Line	63.83	220kV DHP_Dagapela Line on Standby.
		Unit-II	32.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	52.58	
		-	-	5MVA, 220/33kV TFR	0.22	
<b>Total</b>	<b>64.30</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.39%</b>			
7	4 x 15MW KHP	Unit- I	16.53	132kV KHP - Nangkor Line	42.93	
		Unit-II	16.56	132kV KHP - Kilikhar Line	22.36	
		Unit- III	16.71	5MVA, 132/11kV TFR	0.30	
		Unit- IV	16.53	132kV Motanga - Rangia Line	65.96	
		<b>Total</b>	<b>66.33</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.12%</b>	
8	2 x 59MW NHP	Unit-I	49.95	132kV NHP-MHP-I	49.58	
		Unit-II	50.05	132kV NHP-MHP-II	49.66	
		<b>Total</b>	<b>100.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.76%</b>	

Note: Generation-Load Summary (MW) for 22-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	1,586.91	664.86	664.78	927.00	0.08
2	Eastern Grid	889.27	173.67	169.74	710.65	3.93
	<b>Total</b>	<b>2,476.18</b>	<b>838.53</b>	<b>834.52</b>	<b>1,637.65</b>	<b>4.01</b>

Note: Generation-Load Summary for 22-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	1,516.66	328.58	319.68	1,173.91	8.90
2	Eastern Grid	761.39	93.02	89.92	682.54	3.10
	<b>Total</b>	<b>2,278.05</b>	<b>421.60</b>	<b>409.60</b>	<b>1,856.45</b>	<b>12.00</b>

**THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 23-Sep-2024(-ve:import, +ve:export)**

Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	22-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	185.09	400kV THP - Siliguri Line - I	223.45	
		Unit-II	185.64	400kV THP - Siliguri Line - II	222.30	
		Unit-III	185.85	400kV THP - Siliguri Line - IV	213.84	
		Unit-IV	185.68	400kV THP - Malbase Line - III	455.96	
		Unit-V	186.41	400kV Malbase - Siliguri Line	156.54	
		Unit-VI	185.29	-	-	
		<b>Total</b>	<b>1,113.96</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.14%</b>	
2	4 x 180MW MHP	Unit-I	140.22	400kV MHP - Jigmeling Line - I	224.39	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	197.71	400kV MHP - Jigmeling Line - II	224.78	
		Unit-III	150.84	400kV MHP - Jigmeling Line - III	219.86	
		Unit-IV	145.68	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)	146.75	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	129.46	
		-	-	400kV Jigmeling - Alipurduar Line - I	192.73	
		-	-	400kV Jigmeling - Alipurduar Line - II	193.46	
		-	-	80MVA, 220/132kV ICT - I (HV)	42.22	
		-	-	80MVA, 220/132kV ICT - II (HV)	41.91	
		-	-	220kV Tsirang - Jigmeling Line	-8.24	
		-	-	132kV Gelephu - Salakati Line	20.61	
<b>Total</b>	<b>634.45</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.59%</b>			
3	4 x 84MW CHP	Unit-I	91.73	220kV CHP - Birpara Line - I	32.85	
		Unit-II	91.22	220kV CHP - Birpara Line - II	32.54	
		Unit-III	91.89	220kV CHP - Gedu	61.93	
		Unit-IV	91.39	220kV CHP - Jamjee (old) - I	77.30	
		-	-	220kV CHP - Jamjee - II (new)	77.83	
		-	-	220kV CHP - Jamjee - III (new)	75.39	
		-	-	220kV Malbase - Birpara Line	48.42	
		-	-	66kV CHP - Gedu Line	7.57	
		-	-	3x3MVA, 66/11kV TFR	1.00	
<b>Total</b>	<b>366.23</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.05%</b>			
4	2 x 12MW BHP (U/S)	Unit-I	7.80	220kV BHP - Sento Kha Line	83.50	
		Unit-II	8.00	66kV BHP - Lobeyssa Line	26.68	
		<b>Total</b>	<b>15.80</b>	220kV BHP - Tsirang Line	-66.18	
5	2 x 20MW BHP (L/S)	Unit-I	14.81	5MVA, 66/11kV TFR	0.72	
		Unit-II	14.24	30MVA ICT, 220/66kV (HV)	11.93	
		<b>Total</b>	<b>29.05</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.29%</b>	
6	2 x 63MW DHP	Unit-I	30.28	220kV DHP - Tsirang Line	61.79	220kV DHP_Dagapela Line on Standby.
		Unit-II	32.02	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	54.21	
		-	-	5MVA, 220/33kV TFR	0.30	
<b>Total</b>	<b>62.30</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.34%</b>			
7	4 x 15MW KHP	Unit-I	16.50	132kV KHP - Nangkor Line	39.64	
		Unit-II	16.50	132kV KHP - Kilikhar Line	25.39	
		Unit-III	16.53	5MVA, 132/11kV TFR	0.35	
		Unit-IV	16.48	132kV Motanga - Rangia Line	55.69	
<b>Total</b>	<b>66.01</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.95%</b>			
8	2 x 59MW NHP	Unit-I	50.06	132kV NHP-MHP-I	49.61	
		Unit-II	50.17	132kV NHP-MHP-II	49.69	
		<b>Total</b>	<b>100.23</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.93%</b>	

**Note: Generation-Load Summary (MW) for 22-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	1,587.34	665.64	667.07	929.94	-1.43
2	Eastern Grid	800.69	200.50	195.20	591.95	5.30
	<b>Total</b>	<b>2,388.03</b>	<b>866.14</b>	<b>862.27</b>	<b>1,521.89</b>	<b>3.87</b>

**Note: Generation-Load Summary (MW) for 22-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	1,662.33	628.97	621.78	1016.26	7.19
2	Eastern Grid	786.77	201.9	197.50	601.97	4.40
	<b>Total</b>	<b>2,449.10</b>	<b>830.87</b>	<b>819.28</b>	<b>1,618.23</b>	<b>11.59</b>

**Note: Daily Energy (MUs) and Power(MW) Statistics for 22-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	37.87	0.00	19.73	56.88	1,769.78	1.30

- 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.