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

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	28-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	185.70	400kV THP - Siliguri Line - I	221.23	
		Unit- II	184.94	400kV THP - Siliguri Line - II	218.61	
		Unit- III	185.50	400kV THP - Siliguri Line - IV	210.53	
		Unit- IV	185.35	400kV THP - Malbase Line - III	464.45	
		Unit- V	186.70	400kV Malbase - Siliguri Line	154.18	
		Unit- VI	186.30	-	-	
		<b>Total</b>	<b>1,114.49</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.03%</b>	
2	4 x 180MW MHP	Unit-I	197.77	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	197.82	400kV MHP - Jigmeling Line - II	277.63	
		Unit-III	194.46	400kV MHP - Jigmeling Line - III	287.39	
		Unit-IV	198.09	400kV MHP - Jigmeling Line - IV	285.66	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	61.59	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	104.73	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	184.40	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I	274.85	
		-	-	400kV Jigmeling - Alipurduar Line - II	273.49	
		-	-	80MVA, 220/132kV ICT - I (HV)	29.07	
		-	-	80MVA, 220/132kV ICT - II (HV)	28.85	
		-	-	220kV Tsirang - Jigmeling Line	6.47	
		-	-	132kV Gelephu - Salakati Line	28.59	
		<b>Total</b>	<b>788.14</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.37%</b>	
3	4 x 84MW CHP	Unit- I	90.47	220kV CHP - Birpara Line - I	-8.72	CHP Unit II and Unit IV Under shutdown due to intake choking.
		Unit- II	0.00	220kV CHP - Birpara Line - II	-8.65	
		Unit- III	91.80	220kV CHP - Gedu	32.55	
		Unit- IV	0.00	220kV CHP - Jamjee (old) - I	54.12	
		-	-	220kV CHP - Jamjee - II (new)	55.03	
		-	-	220kV CHP - Jamjee - III (new)	53.12	
		-	-	220kV Malbase - Birpara Line	4.64	
		-	-	66kV CHP - Gedu Line	4.76	
		-	-	3x3MVA, 66/11kV TFR	0.97	
<b>Total</b>	<b>182.27</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.50%</b>			
4	2 x 12MW BHP (U/S)	Unit- I	11.97	220kV BHP - Semtokha Line	149.01	
		Unit- II	12.19	66kV BHP - Lobeyasa Line	30.51	
		<b>Total</b>	<b>24.16</b>	220kV BHP - Tsirang Line	-113.78	
5	2 x 20MW BHP (L/S)	Unit- I	21.14	5MVA, 66/11kV TFR	0.42	
		Unit- II	20.37	30MVA ICT, 220/66kV (HV)	7.37	
		<b>Total</b>	<b>41.51</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.75%</b>	
6	2 x 63MW DHP	Unit-I	63.63	220kV DHP - Tsirang Line	126.23	220kV DHP_Dagapela Line on Standby.
		Unit-II	63.20	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	53.26	
		-	-	5MVA, 220/33kV TFR	0.59	
<b>Total</b>	<b>126.83</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.01%</b>			
7	4 x 15MW KHP	Unit- I	16.58	132kV KHP - Nangkor Line	42.93	
		Unit-II	16.53	132kV KHP - Kilikhar Line	22.29	
		Unit- III	16.59	5MVA, 132/11kV TFR	0.26	
		Unit- IV	16.51	132kV Motanga - Rangia Line	43.14	
		<b>Total</b>	<b>66.21</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.10%</b>	
8	2 x 59MW NHP	Unit-I	63.97	132kV NHP-MHP-I	63.54	
		Unit-II	64.05	132kV NHP-MHP-II	63.52	
		<b>Total</b>	<b>128.02</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.75%</b>	

Note: Generation-Load Summary (MW) for 28-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	1,489.26	690.97	692.69	791.82	-1.72
2	Eastern Grid	982.37	184.37	179.75	804.47	4.62
<b>Total</b>		<b>2,471.63</b>	<b>875.34</b>	<b>872.44</b>	<b>1,596.29</b>	<b>2.90</b>

Note: Generation-Load Summary for 28-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	1,383.63	656.95	638.56	739.34	18.39
2	Eastern Grid	537.68	165.72	163.57	359.30	2.15
<b>Total</b>		<b>1,921.31</b>	<b>822.67</b>	<b>802.13</b>	<b>1,098.64</b>	<b>20.54</b>

THE DAILY BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT & ENERGY FIGURES ISSUED ON 29-Sep-2024(-ve:import, +ve:export)							
Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	28-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	185.49	400kV THP - Siliguri Line - I	226.29		
		Unit-II	184.37	400kV THP - Siliguri Line - II	226.29		
		Unit-III	185.59	400kV THP - Siliguri Line - IV	226.29		
		Unit-IV	185.80	400kV THP - Malbase Line - III	434.73		
		Unit-V	185.14	400kV Malbase - Siliguri Line	169.78		
		Unit-VI	185.77	-	-		
		<b>Total</b>	<b>1,112.16</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.13%</b>		
2	4 x 180MW MHP	Unit-I	198.02	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	197.98	400kV MHP - Jigmeling Line - II	277.76		
		Unit-III	194.78	400kV MHP - Jigmeling Line - III	287.60		
		Unit-IV	198.40	400kV MHP - Jigmeling Line - IV	285.90		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	60.98		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.18		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	184.73		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	277.09		
		-	-	400kV Jigmeling - Alipurduar Line - II	277.09		
		-	-	80MVA, 220/132kV ICT - I (HV)	39.10		
		-	-	80MVA, 220/132kV ICT - II (HV)	38.78		
		-	-	220kV Tsirang - Jigmeling Line	26.61		
		-	-	132kV Gelephu - Salakati Line	26.76		
<b>Total</b>	<b>789.18</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.52%</b>				
3	4 x 84MW CHP	Unit-I	91.82	220kV CHP - Birpara Line - I	35.99		
		Unit-II	91.25	220kV CHP - Birpara Line - II	35.54		
		Unit-III	91.04	220kV CHP - Gedu	87.80		
		Unit-IV	91.57	220kV CHP - Jamjee (old) - I	66.56		
		-	-	220kV CHP - Jamjee - II (new)	67.44		
		-	-	220kV CHP - Jamjee - III (new)	64.73		
		-	-	220kV Malbase - Birpara Line	33.05		
		-	-	66kV CHP - Gedu Line	7.23		
		-	-	3x3MVA, 66/11kV TFR	1.00		
<b>Total</b>	<b>365.68</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.17%</b>				
4	2 x 12MW BHP (U/S)	Unit-I	11.97	220kV BHP - Sentokha Line	128.95		
		Unit-II	12.00	66kV BHP - Lobeyasa Line	31.07		
		<b>Total</b>	<b>23.97</b>	220kV BHP - Tsirang Line	-94.65		
5	2 x 20MW BHP (L/S)	Unit-I	21.15	5MVA, 66/11kV TFR	0.56		
		Unit-II	20.37	30MVA ICT, 220/66kV (HV)	8.17		
		<b>Total</b>	<b>41.52</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.67%</b>		
6	2 x 63MW DHP	Unit-I	63.62	220kV DHP - Tsirang Line	126.19	220kV DHP_Dagapela Line on Standby.	
		Unit-II	63.17	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	53.41		
		-	-	5MVA, 220/33kV TFR	0.20		
<b>Total</b>	<b>126.79</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.32%</b>				
7	4 x 15MW KHP	Unit-I	16.68	132kV KHP - Nangkor Line	40.64		
		Unit-II	16.60	132kV KHP - Kilikhar Line	24.95		
		Unit-III	16.72	5MVA, 132/11kV TFR	0.37		
		Unit-IV	16.50	132kV Motanga - Rangia Line	54.05		
		<b>Total</b>	<b>66.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.81%</b>		
8	2 x 59MW NHP	Unit-I	64.06	132kV NHP-MHP-I	63.61		
		Unit-II	63.98	132kV NHP-MHP-II	63.57		
		<b>Total</b>	<b>128.04</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.67%</b>		

Note: Generation-Load Summary (MW) for 28-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	1,670.12	690.28	692.37	953.23	-2.09
2	Eastern Grid	983.72	190.61	185.09	819.72	5.52
<b>Total</b>		<b>2,653.84</b>	<b>880.89</b>	<b>877.46</b>	<b>1,772.95</b>	<b>3.43</b>

Note: Generation-Load Summary (MW) for 28-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	1,319.04	663.29	656.79	660.05	6.50
2	Eastern Grid	517.59	206.84	203.42	306.45	3.42
<b>Total</b>		<b>1,836.63</b>	<b>870.13</b>	<b>860.21</b>	<b>966.50</b>	<b>9.92</b>

Note: Daily Energy (MUs) and Power(MW) Statistics for 28-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	36.83	0.00	20.34	59.34	1,834.98	2.29

- 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.