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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-Nov-2024(-ve:import, +ve:export)

Report Details	Date	Time	National Coincidental Peak Load (MW)	Date	Time	Load
	22-Nov-24	09:00 hrs		19-Nov-24	18:17:32 hrs	967.89

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	6 x 170MW THP	Unit-I	155.20	400kV THP - Siliguri Line - I	0.00	Unit-II & Unit III on Standby. Unit-V under AMP. 400kV THP-MAL line under Shutdown. 400kV THP_SIL Line I on Standby.
		Unit-II	0.00	400kV THP - Siliguri Line - II	195.62	
		Unit-III	0.00	400kV THP - Siliguri Line - IV	187.88	
		Unit-IV	104.83	400kV THP - Malbase Line - III	0.00	
		Unit-V	0.00	400kV Malbase - Siliguri Line	-227.02	
		Unit-VI	120.29		-	
		Total	380.32	Auxiliary Consumption & Transformation Losses at Generator end	-0.84%	
2	4 x 180MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	113.61	Unit-I under AMP. Unit-II on Standby. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo Line- I not in Service. 400kV JLG_ALI Interim Line I & 400kV JLG_ALI Direct Line I on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	101.23	400kV MHP - Jigmeling Line - III	113.98	
		Unit-IV	150.42	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	63.44	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	146.91	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	32.00	
		-	-	400kV Jigmeling - Alipurduar Line - I	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II	48.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	18.04	
		-	-	80MVA, 220/132kV ICT - II (HV)	17.70	
		-	-	220kV Tsirang - Jigmeling Line	-95.52	
-	-	132kV Gelephu - Salakati Line	2.60			
Total	251.65	Auxiliary Consumption & Transformation Losses at Generator end	0.12%			
3	4 x 84MW CHP	Unit-I	0.00	220kV CHP - Birpara Line - I	-56.15	Unit_I under AMP.
		Unit-II	74.41	220kV CHP - Birpara Line - II	-55.61	
		Unit-III	53.67	220kV CHP - Gedu	40.81	
		Unit-IV	51.64	220kV CHP - Jamjee (old) - I	83.40	
				220kV CHP - Jamjee - II (new)	83.63	
				220kV CHP - Jamjee - III (new)	81.01	
		-	-	220kV Malbase - Birpara Line	-80.02	
		-	-	66kV CHP - Gedu Line	2.38	
		-	-	3x3MVA, 66/11kV TFR	1.48	
Total	179.72	Auxiliary Consumption & Transformation Losses at Generator end	-0.68%			
4	2 x 12MW BHP (U/S)	Unit-I	10.34	220kV BHP - Semtokha Line	96.99	U/S Unit-II & L/S Unit-I on Standby.
		Unit-II	0.00	66kV BHP - Lobeyasa Line	25.75	
Total	10.34	220kV BHP - Tsirang Line	-92.83			
5	2 x 20MW BHP (L/S)	Unit-I	0.00	5MVA, 66/11kV TFR	0.40	U/S Unit-II & L/S Unit-I on Standby.
		Unit-II	19.58	30MVA ICT, 220/66kV (HV)	16.23	
Total	19.58	Auxiliary Consumption & Transformation Losses at Generator end	-1.30%			
6	2 x 63MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	0.00	Unit I on Standby. 220kV DHP_Tsirang line on Standby.
		Unit-II	35.61	220kV DHP - Dagapela Line	35.77	
		-	-	220kV Jigmeling - Dagapela Line	16.09	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	35.61	Auxiliary Consumption & Transformation Losses at Generator end	-1.01%			
7	4 x 15MW KHP	Unit-I	15.16	132kV KHP - Nangkhor Line	16.18	Unit-II on Standby. Unit-III under AMP.
		Unit-II	0.00	132kV KHP - Kilikhar Line	13.67	
		Unit-III	0.00	5MVA, 132/11kV TFR	0.25	
		Unit-IV	15.20	132kV Motanga - Rangia Line	8.00	
		Total	30.36	Auxiliary Consumption & Transformation Losses at Generator end	0.86%	
8	2 x 59MW NHP	Unit-I	0.00	132kV NHP-MHP-I	0.00	Unit-I under AMP. 132kV NHP-MHP line-I under Shutdown.
		Unit-II	39.96	132kV NHP-MHP-II	39.68	
		Total	39.96	Auxiliary Consumption & Transformation Losses at Generator end	0.70%	

Note: Generation-Load Summary (MW) for 22-Nov-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	625.57	756.39	761.55	-35.30	-5.16
2	Eastern Grid	321.97	135.85	135.01	90.60	0.84
Total		947.54	892.24	896.56	55.30	-4.32

Note: Generation-Load Summary for 22-Nov-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	664.50	691.18	687.03	98.51	4.15
2	Eastern Grid	242.04	168.77	162.27	-51.92	6.50
Total		906.54	859.95	849.30	46.59	10.65

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Report Details	Date	Time	National Coincidental Peak Load (MW)		Date	Time	Load
	22-Nov-2024	18:00 hrs			19-Nov-2024	18:17:32 hrs	967.89
Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks	
1	6 x 170MW THP	Unit-I	152.17	400kV THP - Siliguri Line - I	0.00	Unit-II & Unit III on Standby. Unit-V under AMP. 400kV THP-MAL line under Shutdown. 400kV THP-SIL Line I on Standby.	
		Unit-II	0.00	400kV THP - Siliguri Line - II	222.05		
		Unit-III	0.00	400kV THP - Siliguri Line - IV	209.61		
		Unit-IV	138.08	400kV THP - Malbase Line - III	0.00		
		Unit-V	0.00	400kV Malbase - Siliguri Line	-266.18		
		Unit-VI	139.90		-		
		Total	430.15	Auxiliary Consumption & Transformation Losses at Generator end	-0.35%		
2	4 x 180MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	107.92	Unit-I under AMP. Unit-II on Standby. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmo Line-I not in Service. 400kV JLG_ALI Interim Line I & 400kV JLG_ALI Direct Line I on Standby.	
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	77.27	400kV MHP - Jigmeling Line - III	108.31		
		Unit-IV	165.35	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	64.70		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	172.00		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - I	0.00		
		-	-	400kV Jigmeling - Puna - Alipurduar Line - II	16.67		
		-	-	400kV Jigmeling - Alipurduar Line - I	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II	25.33		
		-	-	80MVA, 220/132kV ICT - I (HV)	26.46		
		-	-	80MVA, 220/132kV ICT - II (HV)	26.20		
		-	-	220kV Tsirang - Jigmeling Line	-65.32		
		-	-	132kV Gelephu - Salakati Line	5.80		
Total	242.62	Auxiliary Consumption & Transformation Losses at Generator end	0.59%				
3	4 x 84MW CHP	Unit-I	0.00	220kV CHP - Birpara Line - I	-55.38	Unit-I under AMP	
		Unit-II	70.33	220kV CHP - Birpara Line - II	-54.84		
		Unit-III	60.34	220kV CHP - Gedu	31.94		
		Unit-IV	60.63	220kV CHP - Jamjee (old) - I	89.83		
				220kV CHP - Jamjee - II (new)	90.28		
				220kV CHP - Jamjee - III (new)	86.94		
		-	-	220kV Malbase - Birpara Line	-71.68		
		-	-	66kV CHP - Gedu Line	3.54		
		-	-	3x3MVA, 66/11kV TFR	1.76		
		Total	191.30	Auxiliary Consumption & Transformation Losses at Generator end	-1.45%		
4	2 x 12MW BHP (U/S)	Unit-I	10.40	220kV BHP - Semtokha Line	102.30	L/S Unit-I & U/S unit-II on Standby.	
		Unit-II	0.00	66kV BHP - Lobeyasa Line	28.47		
		Total	10.40	220kV BHP - Tsirang Line	-101.15		
5	2 x 20MW BHP (L/S)	Unit-I	0.00	5MVA, 66/11kV TFR	0.68	L/S Unit-I & U/S unit-II on Standby.	
		Unit-II	20.20	30MVA ICT, 220/66kV (HV)	19.17		
		Total	20.20	Auxiliary Consumption & Transformation Losses at Generator end	0.98%		
6	2 x 63MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	40.12	Unit I on Standby. 220kV DHP_Dagapela line under Shutdown.	
		Unit-II	40.37	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	54.28		
		-	-	5MVA, 220/33kV TFR	0.22		
Total	40.37	Auxiliary Consumption & Transformation Losses at Generator end	0.07%				
7	4 x 15MW KHP	Unit-I	16.41	132kV KHP - Nangkor Line	15.76	Unit-II on Standby. Unit-III under AMP	
		Unit-II	0.00	132kV KHP - Kilikhar Line	16.41		
		Unit-III	0.00	5MVA, 132/11kV TFR	0.35		
		Unit-IV	16.39	132kV Motanga - Rangia Line	14.44		
		Total	32.80	Auxiliary Consumption & Transformation Losses at Generator end	0.85%		
8	2 x 59MW NHP	Unit-I	0.00	132kV NHP-MHP-I	0.00	Unit-I under AMP 132kV NHP-MHP line-I under Shutdown.	
		Unit-II	40.02	132kV NHP-MHP-II	39.74		
		Total	40.02	Auxiliary Consumption & Transformation Losses at Generator end	0.70%		
Note: Generation-Load Summary (MW) for 22-Nov-2024 at 18:00 hrs							
Sl. No.	Region	Total Generation	Total Load (Gen. - Exp.)	Total Load (Feeder Summation)	Total Export/Import	Auxiliary Consumption & Transformation Losses	
1	Western Grid	692.42	774.16	778.11	-16.42	-3.95	
2	Eastern Grid	315.44	187.88	185.89	62.24	1.99	
	Total	1,007.86	962.04	964.00	45.82	-1.96	
Note: Generation-Load Summary (MW) for 22-Nov-2023, at 18:00 hrs							
Sl. No.	Region	Total Generation	Total Load (Gen. - Exp.)	Total Load (Feeder Summation)	Total Export/Import	Auxiliary Consumption & Transformation Losses	
1	Western Grid	490.18	715.7	709.57	-106.4	6.13	
2	Eastern Grid	208.09	188.26	187.10	-99.29	1.16	
	Total	698.27	903.96	896.67	-205.69	7.29	
Note: Daily Energy (MUs) and Power(MW) Statistics for 22-Nov-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	0.62	0.00	21.19	21.37	-102.10	-0.51	

1. 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:

- i) Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 900hrs) due to many meter to be read manually. ii) The clocks of all the locations are not synchronized.
2. 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.
3. When SCADA data are unavailable for certain stations due to technical issues, required data are collected from the site.