

**BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT**

Maximum Load/Demand till Date

Date:	March 8, 2020
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Fdr- I	0.00		Unit-III & V at standby. Unit- I, IV & 400kV Feeder I under AMP. 400kV THP_SILI II Standby
		Unit- II	157.76	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	58.80	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	164.72	+	
		Unit- V	0.00	400kV Malbase - Siliguri	39.00	+	
		Unit- VI	70.19	-	-	-	
		<b>Total</b>	<b>227.95</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.43</b>		
2	720MW MHP	Unit-I	90.16	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II,III standby & Unit-IV underbreak down 400kV MHP-JLG I,II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	91.20	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>90.16</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-1.04</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I & III under shutdown. 220kV CHP-Birpara Fdr I standby.
		Unit- II	64.73	220kV CHP - Birpara Fdr- II	-14.70	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	12.08	+	
		Unit- IV	43.68	220kV CHP - Sementokha Fdr- IV	86.38	+	
		-	-	220kV Malbase - Birpara Fdr.	-35.00	-	
		-	-	66kV CHP - Chumdo Fdr.	16.99	+	
		-	-	66kV CHP - Gedu Fdr.	3.49	+	
		<b>Total</b>	<b>108.41</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.83</b>		
4	24MW BHP (U/S)	Unit- I	5.05	220kV BHP - Sementokha Fdr.	-23.03	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	14.30	+	
		<b>Total</b>	<b>5.05</b>	220kV BHP - Tsirang Fdr.	22.87	+	
	40MW BHP (L/S)	Unit- I	11.35	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
<b>Total</b>	<b>11.35</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.37</b>				
5	126MW DHPC	Unit-I	17.85	220kV DHPC - Tsirang Fdr.	17.62	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.85</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.23</b>		
6	60MW KHP	Unit- I	10.30	132kV KHP - Nangkhon Fdr- I	6.03	+	Unit- III & IV Annual Maintenance
		Unit-II	10.18	132kV KHP - Kilikhar Fdr- II	13.41	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-16.18	-	
		-	-	132kV Motanga - Rangia Fdr.	-15.43	-	
		-	-	220kV Tsirang - Jigmeling	38.19	+	
		<b>Total</b>	<b>20.48</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.74</b>		

**Note: Load summary on March 08, 2020 at 19:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	370.61	284.32	276.46	48.10	7.86
2	Eastern Grid	110.64	89.24	89.54	59.59	-0.30
	<b>Total</b>	<b>481.25</b>	<b>373.56</b>	<b>366.00</b>	<b>107.69</b>	<b>7.56</b>

**Note: Load Summary on March 08, 2019 at 19:00hrs**

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	278.64	278.64	286.38
2	Eastern Grid	54.32	59.57	62.64
	<b>National</b>	<b>332.96</b>	<b>338.21</b>	<b>349.02</b>

**NOTES: EAST & Malbase loads collected from site.**

- The Instantaneous load balance is 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.
  - The clocks of all the locations are not synchronized.
- This report is generated to give an idea of the generation & load flow for the system at a particular instant.

**BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT**

Maximum Load/Demand till Date

Date:	March 9, 2020
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Fdr- I	0.00		Unit- III,IV & V standby. Unit-I under shutdown. 400kV THP_SILI-I under AMP 400kV THP-SIL II Standby
		Unit- II	59.12	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	14.42	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	111.19	+	
		Unit- V	0.00	400kV Malbase - Siliguri	2.00	-	
		Unit- VI	71.05	-	-	-	
		<b>Total</b>	<b>130.17</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.56</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II under standby, Unit-IV under breakdown. 400kV MHP-JLG I,II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	99.97	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	98.97	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>99.97</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.00</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00	+	Unit-I & III under shutdown. 220kV CHP-Birpara Fdr I under standby
		Unit- II	30.71	220kV CHP - Birpara Fdr- II	-22.30	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	10.40	+	
		Unit- IV	31.32	220kV CHP - Sementokha Fdr- IV	57.06	+	
		-	-	220kV Malbase - Birpara Fdr.	-44.00	-	
		-	-	66kV CHP - Chumdo Fdr.	11.82	+	
		-	-	66kV CHP - Gedu Fdr.	3.01	-	
		-	-	3x3MVA, 66/11kV TFR	1.35	+	
<b>Total</b>	<b>62.03</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.69</b>				
4	24MW BHP (U/S)	Unit- I	5.03	220kV BHP - Sementokha Fdr.	-9.57	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.43	+	
		<b>Total</b>	<b>5.03</b>	220kV BHP - Tsirang Fdr.	13.70	+	
	40MW BHP (L/S)	Unit- I	10.42	5MVA, 66/11kV TFR	0.53	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
<b>Total</b>	<b>10.42</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.64</b>				
5	126MW DHPC	Unit-I	16.23	220kV DHPC - Tsirang Fdr.	15.70	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>16.23</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.53</b>		
6	60MW KHP	Unit- I	16.49	132kV KHP - Nangkhon Fdr- I	6.52	+	Unit-II standby & Unit-III & IV AMP
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	9.02	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.20	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.00	-	
		-	-	132kV Motanga - Rangia Fdr.	-14.14	-	
		-	-	220kV Tsirang - Jigmeling	27.10	+	
		<b>Total</b>	<b>16.49</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.75</b>		

**Note: Load summary on March 09, 2020 at 09:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	223.88	246.66	241.52	-49.88	5.14
2	Eastern Grid	116.46	73.73	71.98	69.83	1.75
	<b>Total</b>	<b>340.34</b>	<b>320.39</b>	<b>313.50</b>	<b>19.95</b>	<b>6.89</b>

**Note: Load Summary on March 09, 2019 at 09:00hrs**

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	252.92	278.64	286.38
2	Eastern Grid	44.55	52.36	62.64
	<b>National</b>	<b>297.47</b>	<b>331.00</b>	<b>349.02</b>

**NOTES: East and Malbase loads collected from site.**

- The Instantaneous load balance is 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.
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