

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

Maximum Load/Demand till Date

Date:	March 10, 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	149.49	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	59.33	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	156.10	+	
		Unit- V	0.00	400kV Malbase - Siliguri	38.00	+	
		Unit- VI	70.85	-	-	-	
		<b>Total</b>	<b>220.34</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.91</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II under shutdown & Unit-IV underbreak down 400kV MHP-JLG I,II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	98.44	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	96.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>98.44</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.44</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. 220kV CHP-Malbase Fdr III under AMP.
		Unit- II	51.57	220kV CHP - Birpara Fdr- II	2.63	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	53.83	220kV CHP - Sementokha Fdr- IV	78.94	+	
		-	-	220kV Malbase - Birpara Fdr.	-37.00	-	
		-	-	66kV CHP - Chumdo Fdr.	16.03	+	
		-	-	66kV CHP - Gedu Fdr.	4.23	+	
		-	-	3x3MVA, 66/11kV TFR	2.11	+	
<b>Total</b>	<b>105.40</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.46</b>				
4	24MW BHP (U/S)	Unit- I	4.86	220kV BHP - Sementokha Fdr.	-18.78	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.66	+	
		<b>Total</b>	<b>4.86</b>	220kV BHP - Tsirang Fdr.	20.15	+	
	40MW BHP (L/S)	Unit- I	10.47	5MVA, 66/11kV TFR	0.81	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
<b>Total</b>	<b>10.47</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.49</b>				
5	126MW DHPC	Unit-I	16.25	220kV DHPC - Tsirang Fdr.	16.04	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>16.25</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.21</b>		
6	60MW KHP	Unit- I	11.12	132kV KHP - Nangkhon Fdr- I	7.10	+	Unit- III & IV Annual Maintenance
		Unit-II	11.10	132kV KHP - Kilikhar Fdr- II	12.23	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-11.29	-	
		-	-	132kV Motanga - Rangia Fdr.	-4.40	-	
		-	-	220kV Tsirang - Jigmeling	32.90	+	
		<b>Total</b>	<b>22.22</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.59</b>		

**Note: Load summary on March 10, 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	357.32	261.46	254.39	62.96	7.07
2	Eastern Grid	120.66	73.25	68.22	80.31	5.03
	<b>Total</b>	477.98	334.71	322.61	143.27	12.10

**Note: Load Summary on March 10, 2019 at 19:00hrs**

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	260.76	268.62	286.38
2	Eastern Grid	56.62	62.16	62.64
	<b>National</b>	<b>317.38</b>	<b>330.78</b>	<b>349.02</b>

**NOTES: KHP 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.
  - 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 11, 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	60.37	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	16.68	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	110.36	+	
		Unit- V	0.00	400kV Malbase - Siliguri	-2.00	-	
		Unit- VI	70.86	-	-	-	
		<b>Total</b>	<b>131.23</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.19</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	98.44	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	96.90	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>98.44</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.54</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. 220kV CHP-Malbase Fdr III under AMP.
		Unit- II	32.00	220kV CHP - Birpara Fdr- II	-6.94	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	32.00	220kV CHP - Sementokha Fdr- IV	53.67	+	
		-	-	220kV Malbase - Birpara Fdr.	-40.00	-	
		-	-	66kV CHP - Chumdo Fdr.	10.96	+	
		-	-	66kV CHP - Gedu Fdr.	3.89	+	
		-	-	3x3MVA, 66/11kV TFR	0.60	+	
<b>Total</b>	<b>64.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.82</b>				
4	24MW BHP (U/S)	Unit- I	4.93	220kV BHP - Sementokha Fdr.	-9.23	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	10.57	+	
		<b>Total</b>	<b>4.93</b>	220kV BHP - Tsirang Fdr.	13.20	+	
	40MW BHP (L/S)	Unit- I	10.27	5MVA, 66/11kV TFR	0.44	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
<b>Total</b>	<b>10.27</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.22</b>				
5	126MW DHPC	Unit-I	17.25	220kV DHPC - Tsirang Fdr.	17.04	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.25</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.21</b>		
6	60MW KHP	Unit- I	10.53	132kV KHP - Nangkhor Fdr- I	10.74	+	Unit-II standby & Unit-III & IV AMP
		Unit-II	10.09	132kV KHP - Kilikhar Fdr- II	9.38	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.20	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-9.32	-	
		-	-	132kV Motanga - Rangia Fdr.	-13.60	-	
		-	-	220kV Tsirang - Jigmeling	29.47	+	
		<b>Total</b>	<b>20.62</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.30</b>		

**Note: Load summary on March 11, 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	227.68	230.47	224.03	-32.26	6.44
2	Eastern Grid	119.06	74.55	72.71	73.98	1.84
	<b>Total</b>	346.74	305.02	296.74	41.72	8.28

**Note: Load Summary on March 11, 2019 at 09:00hrs**

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	230.19	264.43	286.38
2	Eastern Grid	41.26	51.40	62.64
	<b>National</b>	<b>271.45</b>	<b>315.83</b>	<b>349.02</b>

**NOTES: KHP ,JLG 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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