

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>April 26, 2020</b>
<b>Hours:</b>	<b>19:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
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	139.19	400kV THP - Siliguri Fdr- I	0.00	+	Unit- II,IV & V standby. 400kV THP-SIL I Maintenance ,Unit III PTW
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	45.41	+	
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	42.87	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	106.14	+	
		Unit- V	0.00	400kV Malbase - Siliguri	30.18	+	
		Unit- VI	60.92	-	-	-	
		<b>Total</b>	<b>200.11</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>5.69</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	82.18	+	Unit- II Standby & Unit I AMP(11 to 30.4.2020). 400kV MHP-JLG II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	85.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	80.00	400kV MHP - Jigmeling Fdr - IV	82.54	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		<b>Total</b>	<b>165.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.28</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	37.83	+	Unit-I under shutdown till 30th April and Unit III standby. 220kV CHP-Mal under shutdown till 30.4.2020.
		Unit- II	70.37	220kV CHP - Birpara Fdr- II	37.66	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	69.61	220kV CHP - Semtokha Fdr- IV	44.82	+	
		-	-	220kV Malbase - Birpara Fdr.	-69.15	-	
		-	-	66kV CHP - Chumdo Fdr.	11.71	+	
		-	-	66kV CHP - Gedu Fdr.	4.98	+	
		<b>Total</b>	<b>139.98</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.34</b>		
4	24MW BHP (U/S)	Unit- I	4.79	220kV BHP - Semtokha Fdr.	5.50	+	U/S & L/S Unit II standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.46	+	
		<b>Total</b>	<b>4.79</b>	220kV BHP - Tsirang Fdr.	-0.90	-	
	40MW BHP (L/S)	Unit- I	11.42	5MVA, 66/11kV TFR	0.76	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>11.42</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.61</b>		
5	126MW DHPC	Unit-I	17.17	220kV DHPC - Tsirang Fdr.	16.92	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.17</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.25</b>		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	17.80	+	Unit I standby.
		Unit-II	11.11	132kV KHP - Kilikhar Fdr- II	14.00	+	
		Unit- III	11.06	5MVA, 132/11kV TFR	0.35	+	
		Unit- IV	11.01	132kV Gelephu - Salakati Fdr.	-15.40	-	
		-	-	132kV Motanga - Rangia Fdr.	-1.00	-	
		-	-	220kV Tsirang - Jigmeling	13.70	+	
		<b>Total</b>	<b>33.18</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.03</b>		

**Note: Generation-Load Summary for April 26, 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	373.47	234.97	228.30	124.80	6.67
2	Eastern Grid	198.18	63.56	62.25	148.32	1.31
	<b>Total</b>	<b>571.65</b>	<b>298.53</b>	<b>290.55</b>	<b>273.12</b>	<b>7.98</b>

**Note: Generation-Load Summary for April 26, 2019 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	710.48	274.52	267.50	409.73	7.02
2	Eastern Grid	43.91	56.81	56.45	13.33	0.36
	<b>Total</b>	<b>754.39</b>	<b>331.33</b>	<b>323.95</b>	<b>423.06</b>	<b>7.38</b>

**NOTES:KHP, GEL, Motanga & MHEP 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**

<b>Date:</b>	<b>April 27, 2020</b>
<b>Hours:</b>	<b>09:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
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	139.26	400kV THP - Siliguri Fdr- I	0.00		Unit- II,III,IV & V standby. 400kV THP-SIL I Maintenance
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	47.75	+	
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	44.89	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	103.06	+	
		Unit- V	0.00	400kV Malbase - Siliguri	33.78	+	
		Unit- VI	61.22	-	-	-	
		<b>Total</b>	<b>200.48</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.78</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	103.92	+	Unit-IV Standby & Unit I AMP(11 to 30.4.2020). 400kV MHP-JLG II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	114.76	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	94.77	400kV MHP - Jigmeling Fdr - IV	104.80	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		<b>Total</b>	<b>209.53</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.81</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	31.41	+	Unit-I under shutdown till 30th April & Unit III under standby. 220kV CHP-MAL under shutdown till 25.4.2020.
		Unit- II	40.89	220kV CHP - Birpara Fdr- II	31.28	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	47.99	220kV CHP - Semtokha Fdr- IV	12.43	+	
		-	-	220kV Malbase - Birpara Fdr.	-74.23	-	
		-	-	66kV CHP - Chumdo Fdr.	6.73	+	
		-	-	66kV CHP - Gedu Fdr.	4.86	+	
		<b>Total</b>	<b>88.88</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.16</b>		
4	24MW BHP (U/S)	Unit- I	7.00	220kV BHP - Semtokha Fdr.	19.77	+	U/S Unit-II & L/S Unit II standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	10.61	+	
		<b>Total</b>	<b>7.00</b>	220kV BHP - Tsirang Fdr.	-10.94	-	
	40MW BHP (L/S)	Unit- I	12.84	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
<b>Total</b>	<b>12.84</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.50</b>				
5	126MW DHPC	Unit-I	16.64	220kV DHPC - Tsirang Fdr.	16.39	+	Unit II standby.
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>16.64</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.25</b>		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	30.53	+	Unit I standby.
		Unit-II	15.26	132kV KHP - Kilikhar Fdr- II	14.26	+	
		Unit- III	15.50	5MVA, 132/11kV TFR	0.44	+	
		Unit- IV	15.46	132kV Gelephu - Salakati Fdr.	-8.00	-	
		-	-	132kV Motanga - Rangia Fdr.	13.30	+	
		-	-	220kV Tsirang - Jigmeling	3.94	+	
		<b>Total</b>	<b>46.22</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.99</b>		

**Note: Generation-Load summary for April 27, 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	325.84	207.02	201.33	114.88	5.69
2	Eastern Grid	255.75	45.67	43.87	214.02	1.80
	<b>Total</b>	<b>581.59</b>	<b>252.69</b>	<b>245.20</b>	<b>328.90</b>	<b>7.49</b>

**Note: Generation-Load Summary for April 27, 2019 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	799.29	239.27	230.90	551.12	8.37
2	Eastern Grid	54.90	49.54	48.71	14.26	0.83
	<b>Total</b>	<b>854.19</b>	<b>288.81</b>	<b>279.61</b>	<b>565.38</b>	<b>9.20</b>

**NOTES: KHP,MHPA & GEL-SAL 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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