

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>May 18, 2021</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	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit-I	0.00	400kV THP - Siliguri Line - I	119.31	+	Unit-I,IV & V on standby. 400kV THP_SIL Line II & IV on Standby.
		Unit-II	99.71	400kV THP - Siliguri Line - II	0.00		
		Unit-III	121.43	400kV THP - Siliguri Line - IV	0.00		
		Unit-IV	0.00	400kV THP - Malbase Line - III	191.37	+	
		Unit-V	0.00	400kV Malbase - Siliguri Line	95.03	+	
		Unit-VI	100.38	-	-	-	
		<b>Total</b>	<b>321.52</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>3.371%</b>	
2	720MW MHP	Unit-I	155.26	400kV MHP - Jigmeling Line - I	0.00		Unit-II on standby Unit-III under breakdown. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmoo line I & II not in service. 400/220kV ICT at JLG not in service. 400kV JLG_ALI line II on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	154.43	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	158.07	400kV MHP - Jigmeling Line - IV	154.71	+	
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	306.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	8.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	8.30	+	
		-	-	220kV Tsirang - Jigmeling Line	18.59	+	
		-	-	132kV Gelephu - Salakati Line	-13.43	-	
<b>Total</b>	<b>313.33</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>1.337%</b>			
3	336MW CHP	Unit-I	53.79	220kV CHP - Birpara Line - I	42.89	+	Unit-II on standby. 220kV CHP-MAL line under shutdown.
		Unit-II	0.00	220kV CHP - Birpara Line - II	43.15	+	
		Unit-III	54.33	220kV CHP - Malbase Line - III	0.00		
		Unit-IV	53.51	220kV CHP - Semtokha Line - IV	55.13	+	
		-	-	220kV Malbase - Birpara Line	-35.31	-	
		-	-	66kV CHP - Chumdo Line	9.62	+	
		-	-	66kV CHP - Gedu Line	6.78	+	
		-	-	3x3MVA, 66/11kV TFR	1.40	+	
<b>Total</b>	<b>161.63</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>1.646%</b>			
4	24MW BHP (U/S)	Unit-I	0.00	220kV BHP - Semtokha Line	-16.68	-	U/S Unit-I & L/S Unit I on standby.
		Unit-II	5.20	66kV BHP - Lobeyasa Line	22.50	+	
		<b>Total</b>	<b>5.20</b>	220kV BHP - Tsirang Line	8.78	+	
	40MW BHP (L/S)	Unit-I	0.00	5MVA, 66/11kV TFR	0.87	+	
		Unit-II	10.30	30MVA ICT, 220/66kV (HV)	18.20	+	
<b>Total</b>	<b>10.30</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.194%</b>			
5	126MW DHP	Unit-I	15.40	220kV DHP - Tsirang Line	15.20	+	Unit-II on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.90	+	
		-	-	5MVA, 220/33kV TFR	0.09	+	
		<b>Total</b>	<b>15.40</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.714%</b>	
6	60MW KHP	Unit-I	13.60	132kV KHP - Nangkhor Line	30.77	+	Unit-I on standby.
		Unit-II	13.60	132kV KHP - Kilikhar Line	22.36	+	
		Unit-III	13.57	5MVA, 132/11kV TFR	0.33	+	
		Unit-IV	13.57	132kV Motanga - Rangia Line	20.77	+	
		<b>Total</b>	<b>54.34</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>1.619%</b>	

**Note: Generation-Load Summary (MW) for May 18, 2021 at 19:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	514.05	230.39	218.65	265.07	11.74
2	Eastern Grid	367.67	72.92	67.85	313.34	5.07
<b>Total</b>		<b>881.72</b>	<b>303.31</b>	<b>286.50</b>	<b>578.41</b>	<b>16.81</b>

**Note: Generation-Load Summary for May 18, 2020 at 19:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	733.22	225.83	215.15	470.13	10.68
2	Eastern Grid	411.12	55.75	53.57	392.63	2.18
<b>Total</b>		<b>1,144.34</b>	<b>281.58</b>	<b>268.72</b>	<b>862.76</b>	<b>12.86</b>

**NOTE-BHP & MHP data collected 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.

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<b>Date:</b>	<b>May 19, 2021</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	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	125.99	+	Unit-I, IV & V on standby. 400kV THP_SIL Line II & IV on Standby.
		Unit- II	101.12	400kV THP - Siliguri Line - II	0.00		
		Unit- III	121.28	400kV THP - Siliguri Line- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Line - III	189.26	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	102.36	+	
		Unit- VI	100.05	-	-	-	
		<b>Total</b>	<b>322.45</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>2.233%</b>	
2	720MW MHP	Unit-I	184.79	400kV MHP - Jigmeling Line - I	0.00		Unit-III under breakdown. Unit-II on standby. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmo line I & II not in service. 400/220kV ICT at JLG not in service. 400kV JLG_ALI line II on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	183.40	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	185.31	400kV MHP - Jigmeling Line - IV	184.00	+	
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	364.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	3.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	3.80	+	
		-	-	220kV Tsirang - Jigmeling Line	8.47	+	
		-	-	132kV Gelephu - Salakati Line	-5.12	-	
<b>Total</b>	<b>370.10</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.730%</b>			
3	336MW CHP	Unit- I	52.91	220kV CHP - Birpara Line- I	57.29	+	Unit- II on standby. 220kV CHP_MAL under shutdown(17.05.2021 to 21.05.2021)
		Unit- II	0.00	220kV CHP - Birpara Line- II	57.00	+	
		Unit- III	53.33	220kV CHP - Malbase Line- III	0.00		
		Unit- IV	55.02	220kV CHP - Semtokha Line- IV	31.91	+	
		-	-	220kV Malbase - Birpara Line	-57.96	-	
		-	-	66kV CHP - Chumdo Line	5.55	+	
		-	-	66kV CHP - Gedu Line	7.66	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
<b>Total</b>	<b>161.26</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.713%</b>			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	-5.30	-	U/S Unit-I & L/S Unit-I on standby.
		Unit- II	4.90	66kV BHP - Lobeyasa Line	23.80	+	
		<b>Total</b>	<b>4.90</b>	220kV BHP - Tsirang Line	-4.64	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	9.90	30MVA ICT, 220/66kV (HV)	19.76	+	
		<b>Total</b>	<b>9.90</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.405%</b>	
5	126MW DHP	Unit-I	14.71	220kV DHP - Tsirang Line	14.47	+	Unit-II on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.90	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		<b>Total</b>	<b>14.71</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.272%</b>	
6	60MW KHP	Unit- I	16.45	132kV KHP - Nangkhor Line	41.72	+	
		Unit-II	16.36	132kV KHP - Kilikhar Line	21.25	+	
		Unit- III	16.45	5MVA, 132/11kV TFR	0.36	+	
		Unit- IV	16.45	132kV Motanga - Rangia Line	32.56	+	
		<b>Total</b>	<b>65.71</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>3.622%</b>	

**Note: Generation-Load Summary (MW) for May 19, 2021 at 09:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	513.22	220.07	212.52	284.68	7.55
2	Eastern Grid	435.81	52.84	47.76	391.44	5.08
<b>Total</b>		<b>949.03</b>	<b>272.91</b>	<b>260.28</b>	<b>676.12</b>	<b>12.63</b>

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Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	821.53	212.88	207.61	587.01	5.27
2	Eastern Grid	495.17	40.87	37.27	475.94	3.60
<b>Total</b>		<b>1,316.70</b>	<b>253.75</b>	<b>244.88</b>	<b>1,062.95</b>	<b>8.87</b>

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- i) 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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