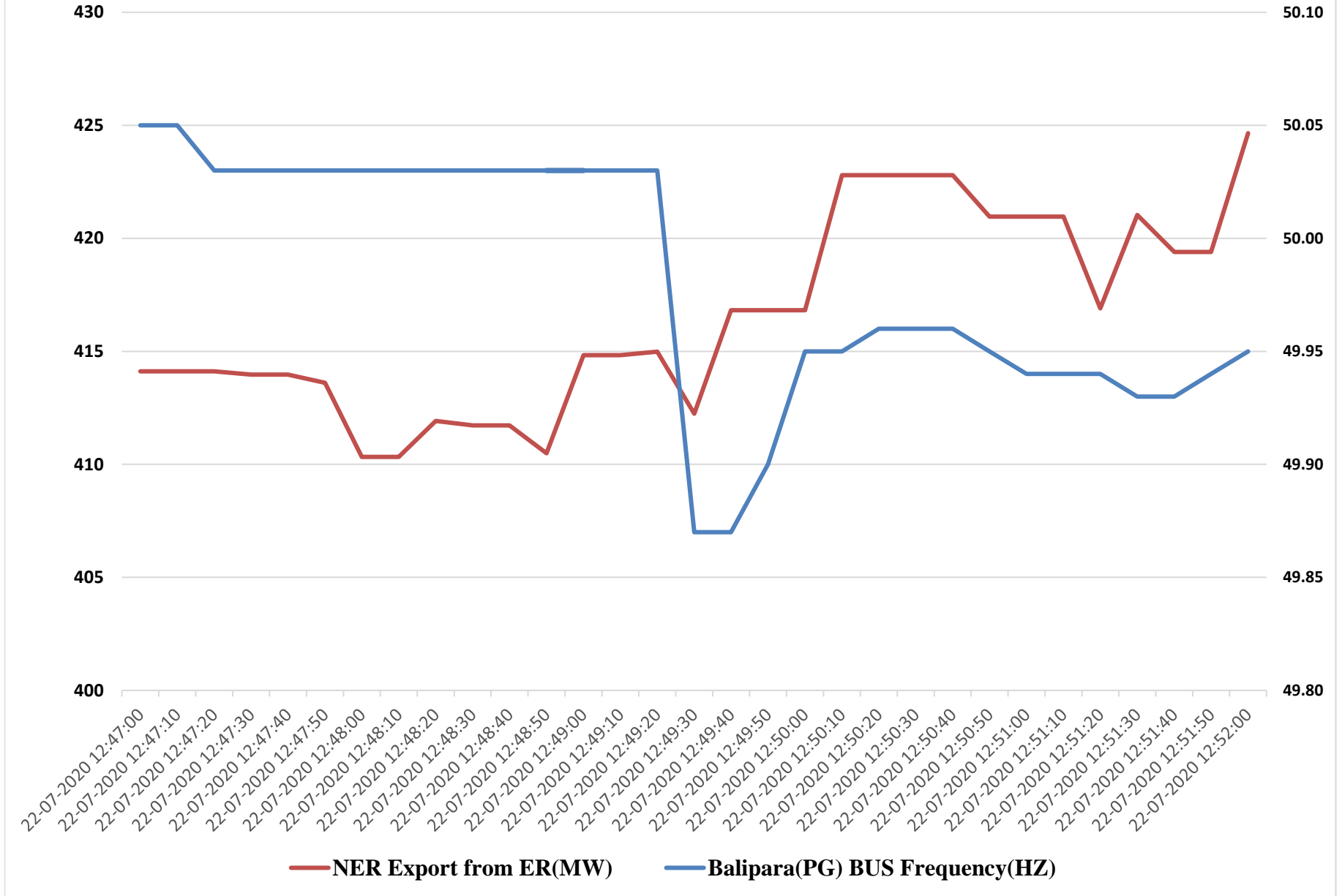


NER Export v/s Frequency



Frequency Response Characteristic in North-Eastern Region											
Event	On 22nd of July 2020 at 12:49 hrs, As reported 400/220 KV 500MVA ICT-1 & ICT-3 at Bhadla Rajasthan tripped due on overcurrent. 400/220 KV 500MVA ICT-2 was already under outage due to PRD operation. During the event Solar generation loss at Bhadla Rajasthan 1402 MW (as observed from NLDC SCADA data).										
Date and Time of Event	22.07.2020, 12:49:00 Hrs										
NER ISGS GENERATION											
SI No.	Particulars	Dimension	Palatana	Khandong + stg II	Kopili	Doyang	RHEP	Loktak	BgTPP	Kameng	Pare
1	Installed Capacity	MW	2 x 363.3	2 x 25 +1 x 25	4 x 50	3 x 25	3 x 135	3 x 35	3 x 250	2 x 150	2 x 55
2	No of Units on Bar	MW	2	0	0	3	3	3	1	2	2
3	Installed Capacity (MCR) of Units on Bar	MW	726.6	0.0	0.0	75.0	405.0	105.0	250.0	300.0	110.0
4	Declared capacity (DC)	MW	668.0	0	0	48.0	410.0	103	250	300	118
5	105 % of MCR	MW	762.9	0.0	0.0	78.8	425.3	110.3	262.5	315.0	115.5
6	Whether on ramping (Yes/No)		No	NA	NA	No	No	No	No	No	No
7	Margin Available	MW	97.1	0.0	0.0	30.8	21.9	6.0	132.7	9.3	-2.3
8	Actual Net Interchange before the Event (12:49:20)	MW	665.8	0.00	0.0	48.0	403.4	104.2	129.8	305.8	117.8
9	Actual Net Interchange after the Event (20:50:10)	MW	667.9	0.00	0.0	47.8	402.8	104.3	129.8	305.7	118.7
10	Change in Net Interchange (9 - 8)	MW	2.1	0.0	0.0	-0.2	-0.6	0.1	0.0	-0.1	1.0
11	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Control Area Response 11-10)	MW	-2.1	0.0	0.0	0.2	0.6	-0.1	0.0	0.1	-1.0
13	Frequency before the Event	Hz	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03
14	Frequency after the Event	Hz	49.95	49.95	49.95	49.95	49.95	49.95	49.95	49.95	49.95
15	Change in Frequency (14-13)	Hz	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08
16	Frequency Response Characteristic (12 / 15)	MW/Hz	26.3	0.0	0.0	-2.0	-6.9	0.6	0.4	-0.6	12.3
17	Net System Demand met before the Event	MW	0	0.0	0	0	0	0	0	0	0
18	Internal Generation before the Event (8)	MW	666	0.00	0	48	403	104	129.8	305.8	118
19	Ideal load response assuming 4% per Hz (0.04*Row 17)	MW/Hz	0	0.0	0	0	0	0	0	0	0
20	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 18)	MW/Hz	266.3	0.0	0.0	19.2	161.3	41.7	51.9	122.3	47.1
21	Composite ideal response (19 + 20)	MW/Hz	266.3	0.0	0.0	19.2	161.3	41.7	51.9	122.3	47.1
22	Percentage ideal response (16/21)	%	9.86%			-10.42%	-4.26%	1.50%	0.72%	-0.51%	26.01%

NER ISGS AGBPP and AGTCCPP are not mandated for FGMO/RGMO as unit wise IC is less than 50 MW.

Frequency Response Characteristic in North-Eastern Region

Event	On 22nd of July 2020 at 12:49 hrs, As reported 400/220 KV 500MVA ICT-1 & ICT-3 at Bhadla Rajasthan tripped due on overcurrent. 400/220 KV 500MVA ICT-2 was already under outage due to PRD operation. During the event Solar generation loss at Bhadla Rajasthan 1402 MW (as observed from NLDC SCADA data).	
Date and Time of Event	22.07.2020, 12:49:00 Hrs	

Serial No.	Particulars	Dimension	AP	Assam	Meghalaya	Manipur	Mizoram	Nagaland	Tripura*	NER*
1	Actual Net Interchange before the Event (12:49:20)	MW	38.51	1081.80	-18.26	88.43	46.14	87.90	149.37	-414.99
2	Actual Net Interchange after the Event (20:50:10)	MW	38.47	1082.12	-28.21	88.61	45.83	87.80	145.60	-422.79
3	Change in Net Interchange (2 - 1)	MW	0.0	0.3	-10.0	0.2	-0.3	-0.1	-3.8	-7.8
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Control Area Response (3-4)	MW	0.0	0.3	-10.0	0.2	-0.3	-0.1	-3.8	-7.8
6	Frequency before the Event	HZ	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03
7	Frequency after the Event	HZ	49.95	49.95	49.95	49.95	49.95	49.95	49.95	49.95
8	Change in Frequency (7-6)	HZ	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08
9	Frequency Response Characteristic (5 / 8)	MW/HZ	1	-4	124	-2	3.9	1.3	47	98
10	Net System Demand met before the Event	MW	38.51	1231.80	215.48	88.43	62.14	95.90	231.87	1891.72
11	Internal Generation before the Event (10 - 1)	MW	0.0	150.0	233.7	0.0	16.0	8.0	82.5	2306.7
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	1.5	49.3	8.6	3.5	2.5	3.8	9.3	75.7
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	0	60.0	93.5	0.0	6	3	33.0	922.7
14	Composite ideal response (12 + 13)	MW/Hz	2	109	102	4	9	7	42	998
15	Percentage ideal response (9/14)	%	32.46%	-3.7%	121.8%	-63.6%	43.6%	17.8%	111.5%	9.77%

Note: +ve exchange=> import ; (-)ve exchange => export

* Tripura Demand Met also includes Bangladesh.

*NER Demand Met excludes Bangladesh