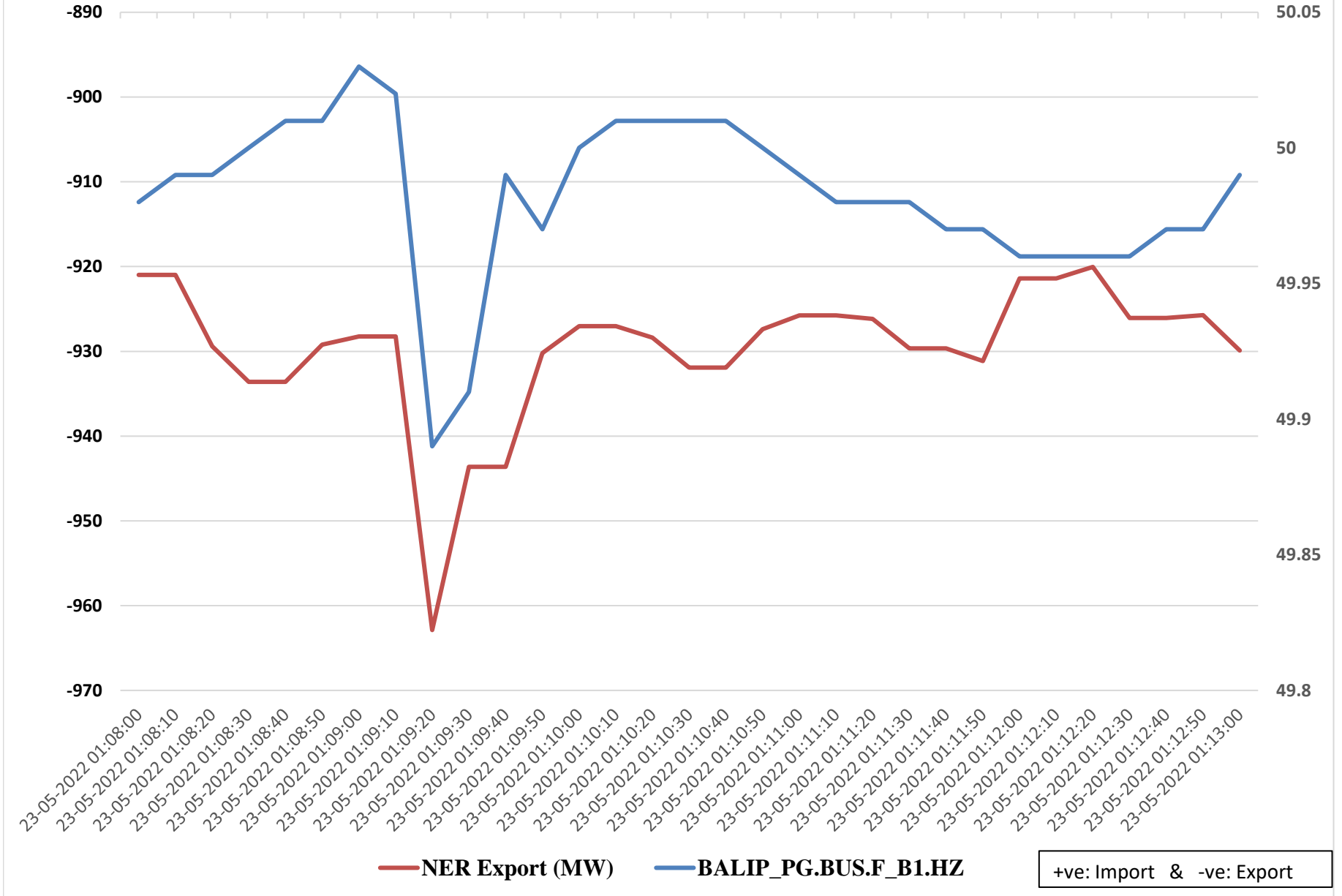


NER Export v/s Frequency



Frequency Response Characteristic in North-Eastern Region (Based on NERLDC SCADA data)

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	4 x 150	2 x 55
2	No of Units on Bar	MW	2	0	0	1	3	3	3	4	2
3	Installed Capacity (MCR) of Units on Bar	MW	726.6	0.0	0.0	25.0	405.0	105.0	750.0	600.0	110.0
4	Declared capacity (DC)	MW	534.0	0	0	17.0	360.0	103	683	540	118
5	105 % of MCR	MW	762.9	0.0	0.0	26.3	425.3	110.3	787.5	630.0	115.5
6	Whether on ramping (Yes/No)		No	NA	NA	No	No	No	Yes	Yes	No
7	Margin Available	MW	229.7	0.0	0.0	8.8	55.4	5.5	388.1	89.4	-4.4
8	Actual Net Interchange before the Event (01:09:00)	MW	533.2	0.00	0.0	17.5	369.9	104.8	399.5	540.6	119.9
9	Actual Net Interchange after the Event (01:09:40)	MW	546.2	0.00	0.0	17.4	369.8	104.6	401.5	543.1	119.9
10	Change in Net Interchange (9 - 8)	MW	13.0	0.0	0.0	-0.1	0.0	-0.2	2.1	2.5	0.0
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	-13.0	0.0	0.0	0.1	0.0	0.2	-2.1	-2.5	0.0
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	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99
15	Change in Frequency (14-13)	Hz	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
16	Frequency Response Characteristic (12 / 15)	MW/Hz	325.0	0.0	0.0	-1.8	-0.8	-5.0	51.5	61.5	0.0
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	533	0.00	0	18	370	105	399.5	540.6	120
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	213.3	0.0	0.0	7.0	147.9	41.9	159.8	216.2	48.0
21	Composite ideal response (19 + 20)	MW/Hz	213.3	0.0	0.0	7.0	147.9	41.9	159.8	216.2	48.0
22	Percentage ideal response (16/21)	%	152.38%			-25.00%	-0.51%	-11.93%	32.23%	28.44%	0.00%

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 (Based on NERLDC SCADA data)

Event	At 01:09 Hrs on Dated 23rd-May-2022, At 01:09 hrs while test charging of 765 kV Bhuj-Banaskatha line 1, 765 kV Bhuj Banaskatha line 2 also tripped due to over voltage. Due to extended planned outage of 400 kV CGPL Bhuj DC lines and tripping of both circuits of 765 kV Bhuj-Banaskantha lines, Bhuj substation got isolated from the grid which resulted loss of evacuation path for Bhuj RE generators leading to loss of around 1673 MW RE generation. and same has been considered for FRC Calculation.	
Date and Time of Event	23.05.2022, 01:09:00 Hrs	

Serial No.	Particulars	Dimension	AP	Assam	Meghalaya	Manipur	Mizoram	Nagaland	Tripura*	NER*
1	Actual Net Interchange before the Event (01:09:00)	MW	83.09	922.59	18.24	69.82	45.74	67.44	191.06	-928.23
2	Actual Net Interchange after the Event (01:09:40)	MW	81.74	922.26	22.08	69.86	45.81	68.49	188.85	-943.62
3	Change in Net Interchange (2 - 1)	MW	-1.4	-0.3	3.8	0.0	0.1	1.1	-2.2	-15.4
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	-1.4	-0.3	3.8	0.0	0.1	1.1	-2.2	-15.4
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	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99
8	Change in Frequency (7-6)	HZ	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
9	Frequency Response Characteristic (5 / 8)	MW/HZ	34	8	-96	-1	-1.8	-26.3	55	385
10	Net System Demand met before the Event	MW	93.09	1170.65	220.96	69.82	45.74	79.44	342.23	1905.29
11	Internal Generation before the Event (10 - 1)	MW	10.0	248.1	202.7	0.0	0.0	12.0	151.2	2833.5
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	3.7	46.8	8.8	2.8	1.8	3.2	13.7	76.2
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	4	99.2	81.1	0.0	0	5	60.5	1133.4
14	Composite ideal response (12 + 13)	MW/Hz	8	146	90	3	2	8	74	1210
15	Percentage ideal response (9/14)	%	436.97%	5.6%	-106.8%	-35.8%	-95.6%	-329.0%	74.5%	31.81%

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

* Tripura Demand Met also includes Bangladesh.

*NER Demand Met excludes Bangladesh