

**Frequency Response Characteristic Calculation in NorthEastern Region**

At 11:24 hrs of 06.04.2024 400kV Bhadla(RS)- Bikaner(RS) ckt 1 tripped due to R-Y fault and 400kV Bus 2 at Ayana also tripped at the same time. As per SCADA data, solar generation dip of around 4870 MW was observed in NR.

S No	Particulars	Dimension	Assam GBPS	Agartala GBPS	Bongaigaon TPP	Palatana	Doyang HEP	Kameng HEP	Khandong HEP	Khandong Stg-2	Kopili HEP	Loktak HEP	Panyor HEP	Pare HEP	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura*	NER Region*
1	Actual Net Interchange before the Event ( 06-04-2024 11:23:59)	MW	-168	-49	-569	-486	0	-125	0	-25	0	-35	0	0	120	1104	101	233	35	70	304	642
2	Actual Net Interchange after the Event ( 06-04-2024 11:24:44)	MW	-167	-53	-588	-506	0	-125	0	-25	0	-35	0	0	116	1088	101	250	35	67	308	551
3	Change in Net Interchange (2 - 1)	MW	0.1	-4.5	-19.1	-19.7	0.0	-0.4	0.0	-0.3	0.0	-0.4	0.0	0.0	-3.6	-15.5	-0.4	17.3	0.6	-3.1	3.6	-90.9
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Control Area Response (3 - 4)	MW	0.1	-4.5	-19.1	-19.7	0.0	-0.4	0.0	-0.3	0.0	-0.4	0.0	0.0	-3.6	-15.5	-0.4	17.3	0.6	-3.1	3.6	-90.9
6	Frequency before the Event	Hz	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033	50.033
7	Frequency after the Event	Hz	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766	49.766
8	Change in Frequency (7 - 6)	Hz	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27
9	Frequency Response Characteristic (5 / 8)	MW/Hz	0	17	72	74	0	2	0	1	0	2	0	0	13	58	2	-65	-2	12	-14	341
10	Frequency Response Obligation (FRO) of control area	MW/Hz	0	0	35	35	3	20	0	2	6	3	16	6	7	108	0	22	6	7	30	275
11	Frequency Response Performance (FRP) (9/10)		NA	NA	2.05	2.11	No Gen	0.08	No Gen	0.79	No Gen	0.58	No Gen	No Gen	1.84	0.54	NA	-2.95	-0.38	1.61	-0.46	1.24

# PMU Frequency Plot

