

# ELECTRICAL-ENGINEERING.ACADEMY

## Blackout in Europe? - Not this time!

What happened?



**WELCOME** dear friends of electrical engineering. On January 10th, 2019, according to ENTSO-E, a "frozen" reading caused a drastic frequency deviation. We reported in our article "[European Blackout Risk Due To "Frozen" Measurement](#)".

Almost two years later it was that time again. With a new negative record. The time had come on January 8, 2021 at around 1:04 p.m. (CET). The line frequency dropped to a value of 49.742 Hz (see figure).

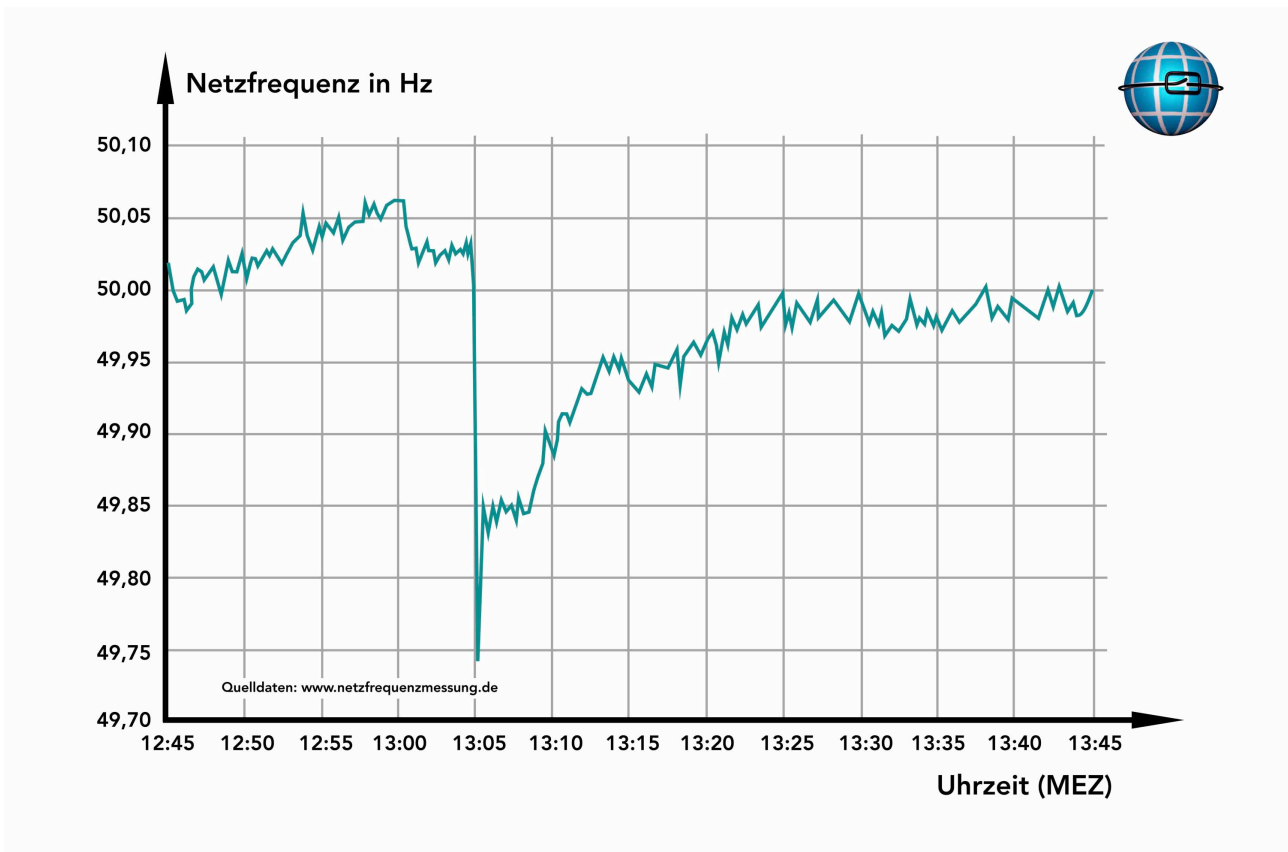


Figure 1: Frequency (Source datas from [www.netzfrequenzmessung.de](http://www.netzfrequenzmessung.de))

The lower limit of the "healthy" control range was left and the continental European network was divided into two network areas. The grid separation border ran through the countries of Croatia, Serbia and Romania.

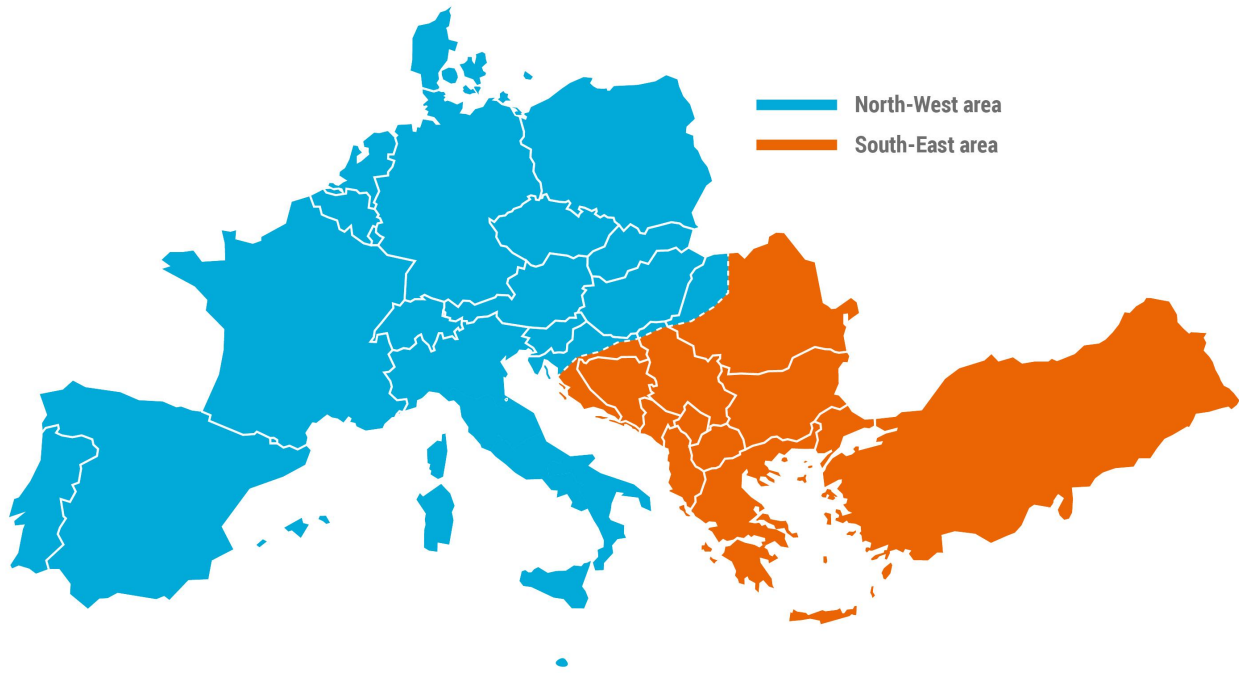


Figure 2: Network areas after disconnection (Source: APG AG)

Generation surpluses led to a frequency increase of up to 50.6 Hz in the south-eastern European area. The lack of generation capacities of the Eastern European participants led to performance deficits in the north-west of the network and resulted in the already mentioned frequency drop of up to 49.74 Hz.

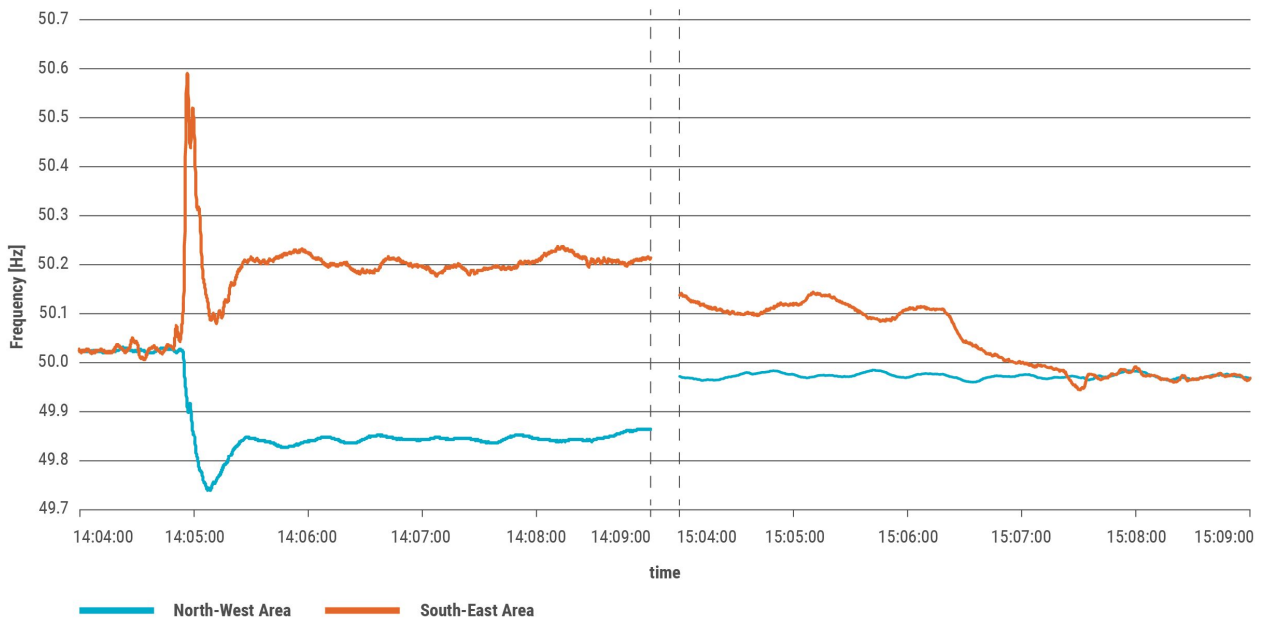


Figure 3: Frequency after disconnection (Source: APG AG)

There was no serious risk of blackout, the use of positive control energy was able to restore safe conditions within a few seconds. Nevertheless, the event was the worst frequency drop since November 2006.

Many details are currently buzzing through the web, in fact no official causes for the event have yet been announced. The evaluation of European protection and SCADA systems is now the subject of the determination of European expert bodies and promises the prompt clarification of the actual causes. We will report.

### **Can such a scenario become problematic?**

We looked in detail at the probability and the effects of a blackout for Germany in our article "[Blackout in Germany?](#)" from November 11th, 2020.

Best regards,

**your EEA-Team**