

AMPRION-WEBINAR

MARKET REPORT 2022

PRESENTATION OF KEY FINDINGS

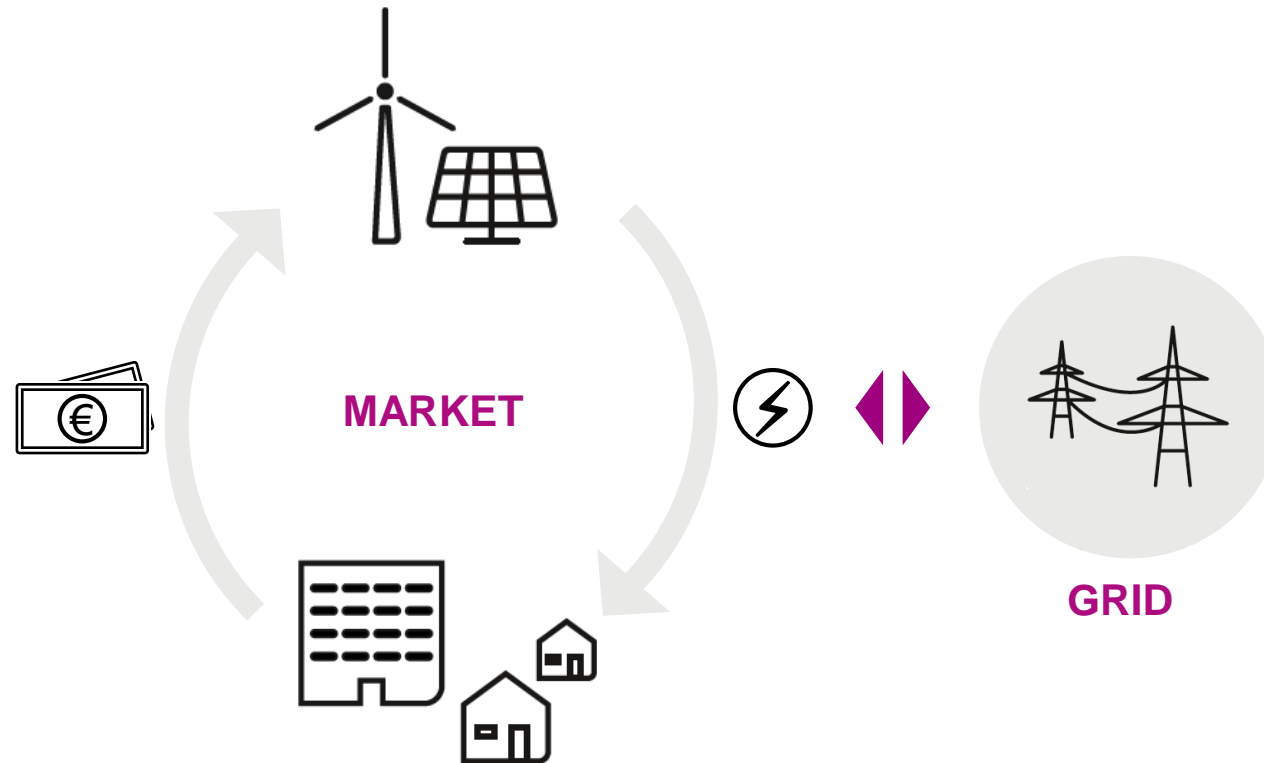


NEED-ORIENTED GRID EXPANSION AND THE FUTURE OF THE EUROPEAN ELECTRICITY MARKET

DR PETER LOPION
PROJECT MANAGER SYSTEMMARKT

GRID EXPANSION & ELECTRICITY MARKET

CURRENT CHALLENGES



► Market and grid have to work together more closely in the future

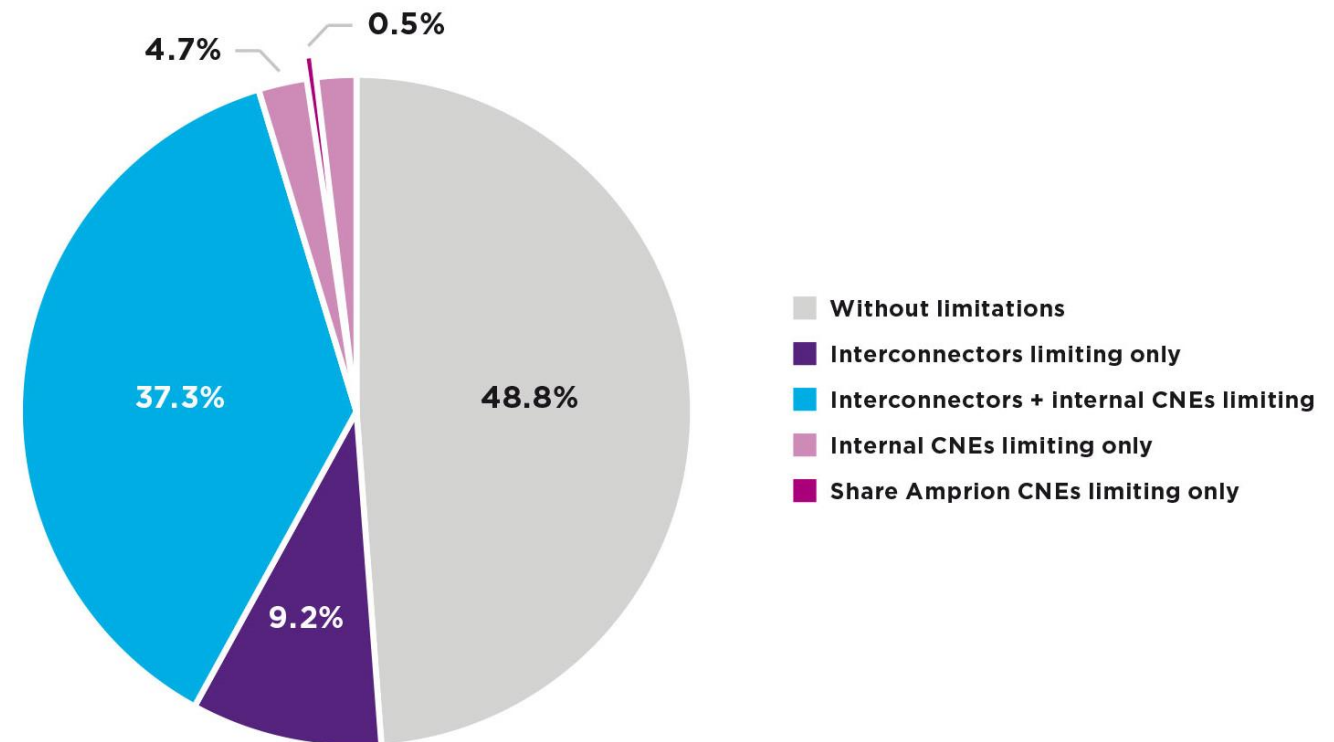
GRID EXPANSION & ELECTRICITY MARKET

LIMITING NETWORK ELEMENTS

Trade limiting network elements in around half of the hours in 2021:

- ▶ In about **800 hours (9,2 %)** due to **cross-border lines only**
- ▶ In about **3300 hours (37,3 %)** due to a combination of **cross-border lines and internal network elements**
- ▶ In about **400 hours (4,7 %)** due to **internal network elements only** (in ~ **0,5 %** due to **Amprion network elements only**)

Share of trade limitations in 2021

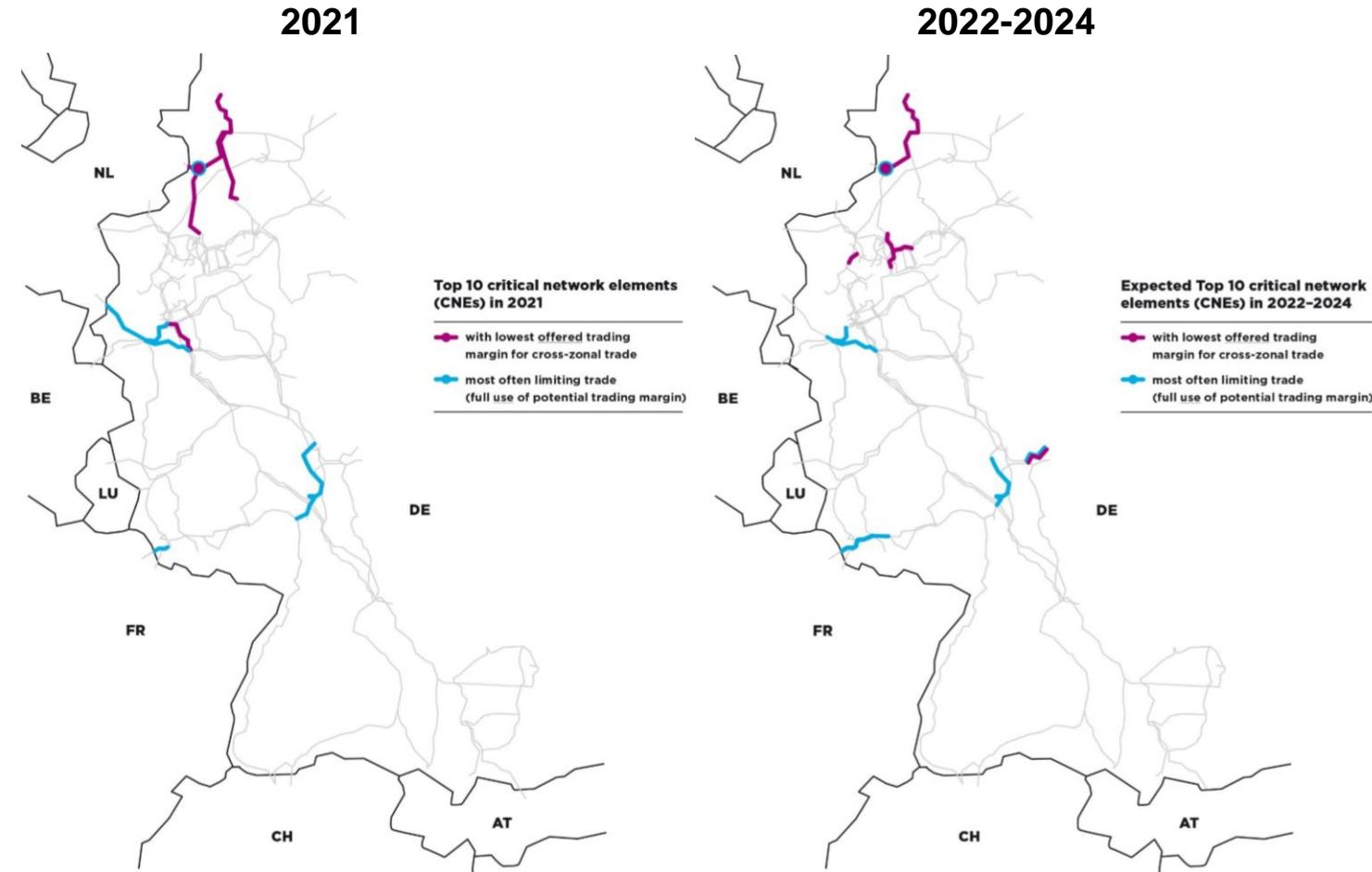


- ▶ Increased imports & exports are accompanied by a high utilization of the transmission grid as well as complex situations with many different network elements limiting trade

GRID EXPANSION & ELECTRICITY MARKET

MARGIN FOR CROSS-ZONAL TRADE

- ▶ 10 critical network elements with **lowest average offered margin for cross-zonal trade** (fuchsia) and 10 **network elements limiting trade most often** (blue) in 2021
- ▶ The comparison shows the differences between the requirements on offering a predefined margin (fuchsia) and the real capacity demand of the market (blue)
- ▶ **An internal assessment** for the years **2022-2024** shows a similar trend
- ▶ North-western grid area of Amprion remains particularly critical



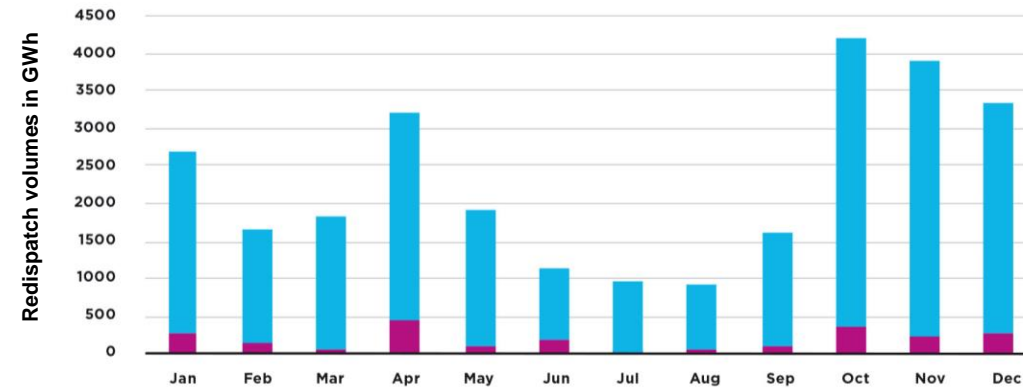
- ▶ Grid expansion remains top priority and must be needs-oriented

GRID EXPANSION & ELECTRICITY MARKET

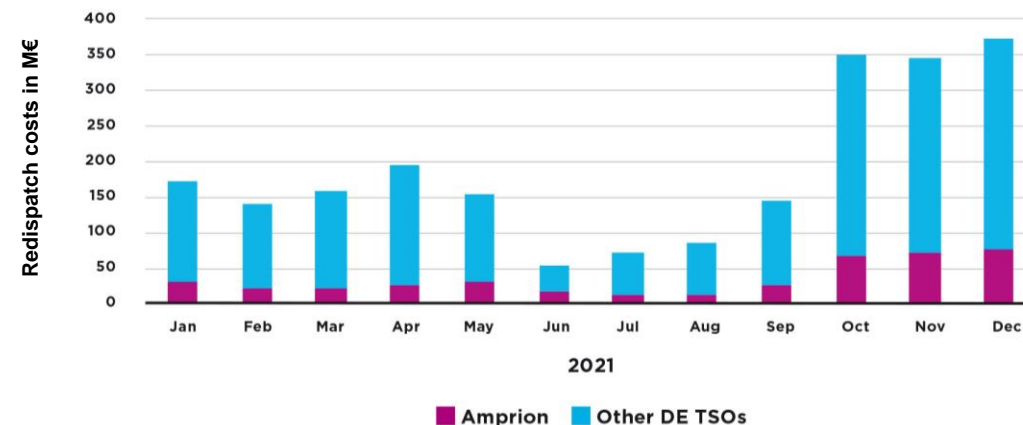
GRID ANALYSIS - REDISPATCH

- At the end of 2021, redispatch costs have increased significantly compared to the previous year's values
- Volumes also show an increase (but much lower than costs); partly due to weather conditions
- The main reasons for the sharp rise in costs are increased fuel costs

Redispatch Volumes



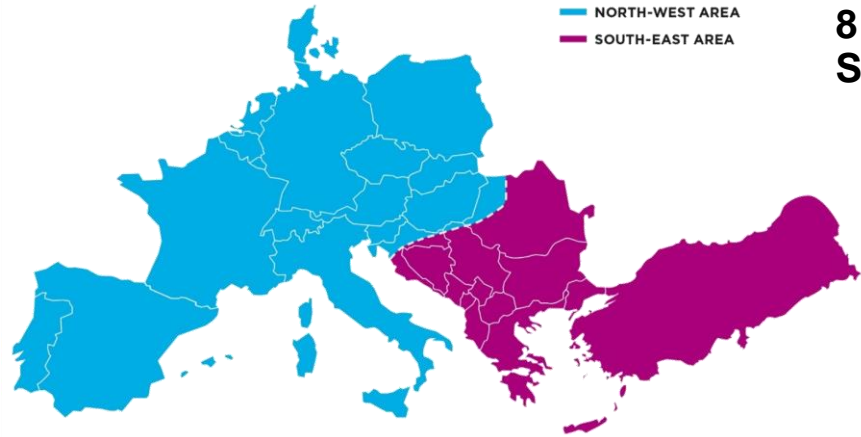
Redispatch Costs



► Strong increase in commodity costs has a significant impact on redispatch costs in 2021

GRID EXPANSION & ELECTRICITY MARKET

EXCURSUS: SYSTEM SPLITS IN 2021



8 January 2021

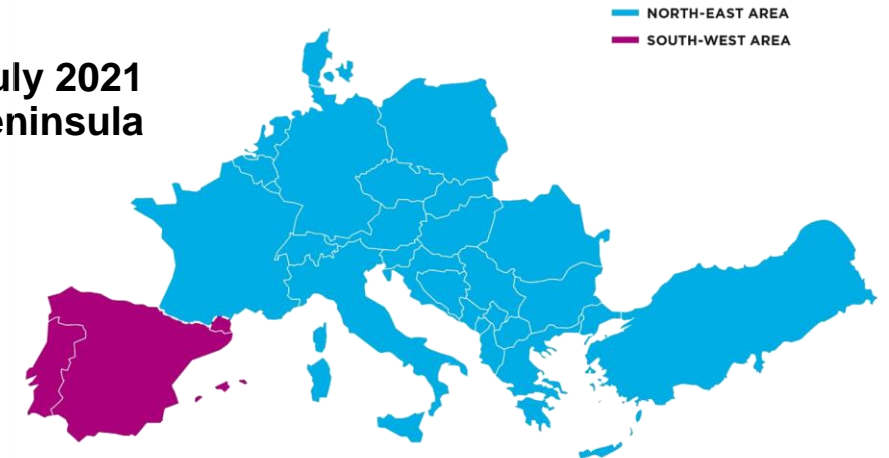
System Split: Balkan Peninsula

- ▶ Separation due to failures of several network elements within a short period of time
- ▶ Frequency drops for about 15 s in the northwestern subarea to 49.74 Hz and rises in the southeastern subarea to 50.6 Hz

- ▶ Forest fires in the south of France led to the failure of two cross-border 400 kV transmission lines in the direction of Spain
- ▶ The frequency on the Iberian Peninsula dropped to a minimum of 48.68 Hz

24 July 2021

System Split: Iberian Peninsula

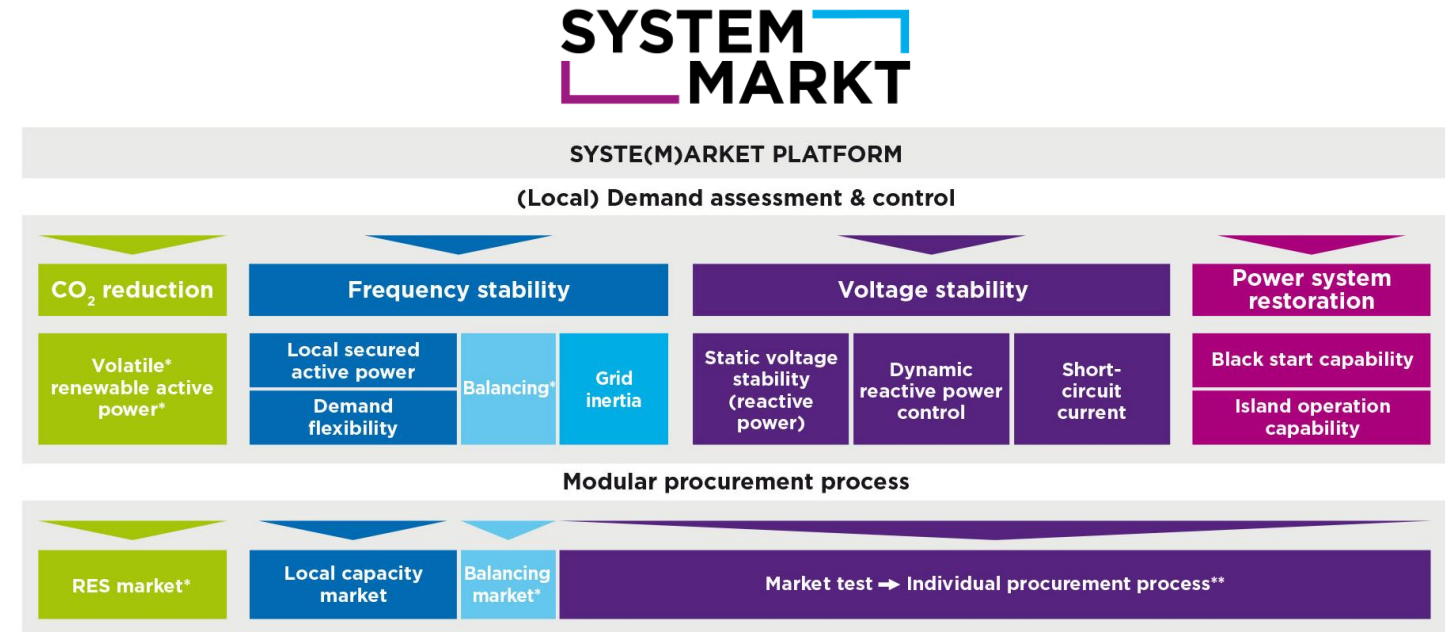


- ▶ As the responsible Synchronous Area Monitor for Continental Europe, Amprion coordinated the joint action of the European TSOs

GRID EXPANSION & ELECTRICITY MARKET FUTURE DEVELOPMENTS

The significant increase of energy prices and system splits shed new light on generation adequacy and system security

- ▶ First scenarios of the **ERAA** (European Resource Adequacy Assessment) report show difficulties in achieving security of supply standards
- ▶ A **holistic solution** is needed consisting of
 - European **market integration**,
 - accelerated **grid expansion**, and
 - new concepts for a future-proof **electricity market design**, e.g. the “**Syste(M)arket**”



* Currently not considered due to the existing market framework

** In line with the processes currently developed for market-based procurement of non-frequency ancillary services

- ▶ In the future, Amprion will continue to play a key role in grid expansion, European market integration and in providing concepts for a new electricity market design

GRID EXPANSION & ELECTRICITY MARKET

SUMMARY & OUTLOOK

**Covid pandemic – increasing energy prices – climate neutrality until 2045 –
Ukraine war – dependency on fossil fuels**

- ▶ The challenges in the current geopolitical context require timely and systemic solutions

MARKET INTEGRATION

- ▶ Progress in market integration could mitigate the negative impact of the massive energy price increases in 2021
- ▶ However, 2022 brings further challenges: on 04.04.2022, the DA price in FR almost reached the technical limit of 3000 €/MWh

GRID EXPANSION

- ▶ Grid expansion remains a top priority in Germany & Europe and must be needs-oriented
- ▶ Our analyses of the trade-limiting network elements in the context of compliance with the 70% requirements (CEP) show important demand indicators for the Amprion network

MARKET DESIGN

- ▶ The significant increase of energy prices and system splits shed new light on generation adequacy and system security
- ▶ With the “Syste(M)arket”, Amprion is introducing a new concept to shape a sustainable energy system



THANK YOU VERY MUCH FOR YOUR PARTICIPATION IN OUR WEBINAR!

In case you have any further questions, please do not hesitate to contact us at:

MarketReport@Amprion.net

We are looking forward to your message.

The report is available for download on our homepage:

<https://www.amprion.net/Market/Market-Report/Market-Report-2022/>

