

The Greek power market evolution

Omiros Vlachos

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Agenda

Overview

Market Developments

Spot Market

Forward Market

Regulatory Framework

Overview

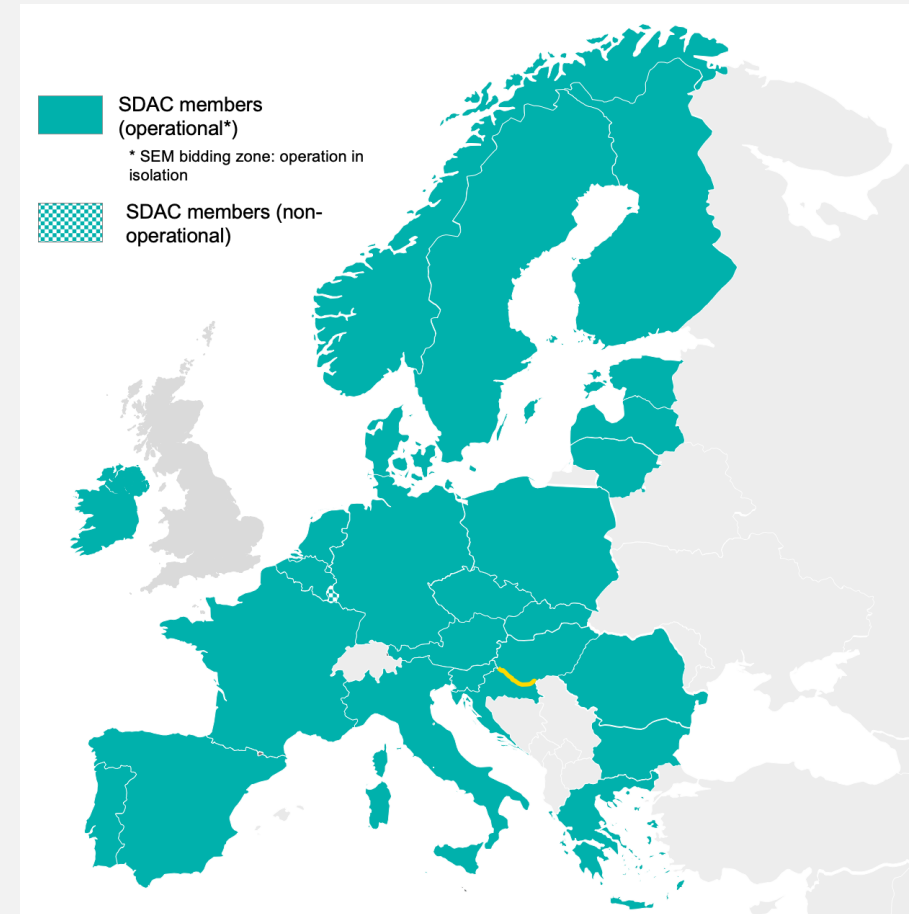
December 2020

- Greece coupled with SDAC

May 2021

- Bulgaria coupled with SDAC

Interconnection
with Albania,
North Macedonia,
Turkey



Source: ENTSO-E

DAM: Greece Vs other EU countries

Greece

- Mandatory participation
- Unit based bidding
- Coupling only with Italy and Bulgaria
- Single NEMO (HENEX)



Other EU countries

- Optional participation
- Portfolio bidding
- Strong coupling with multiple countries
- Multiple NEMOs (e.g Nordpool & EPEX)

Interconnection of Crete

Non interconnected

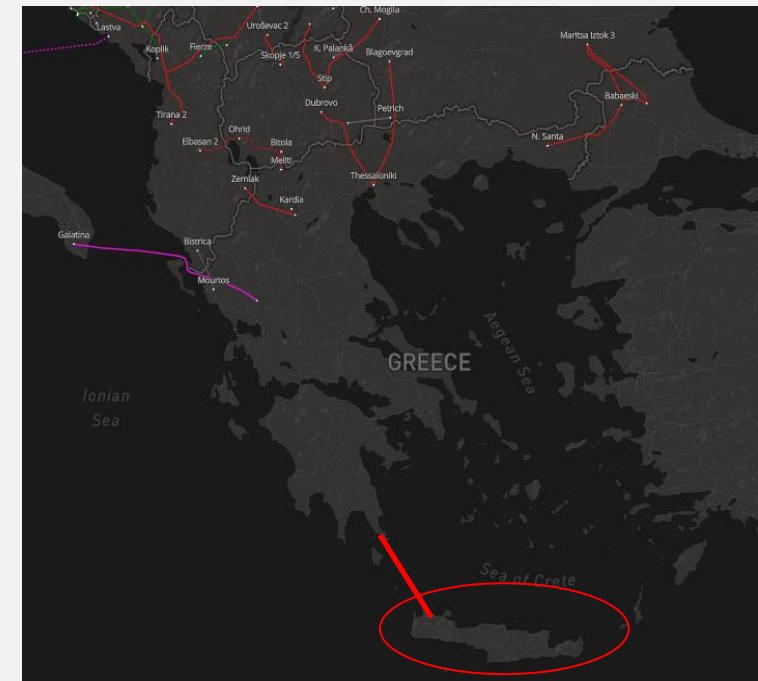
1st Phase

- Hybrid model of operation

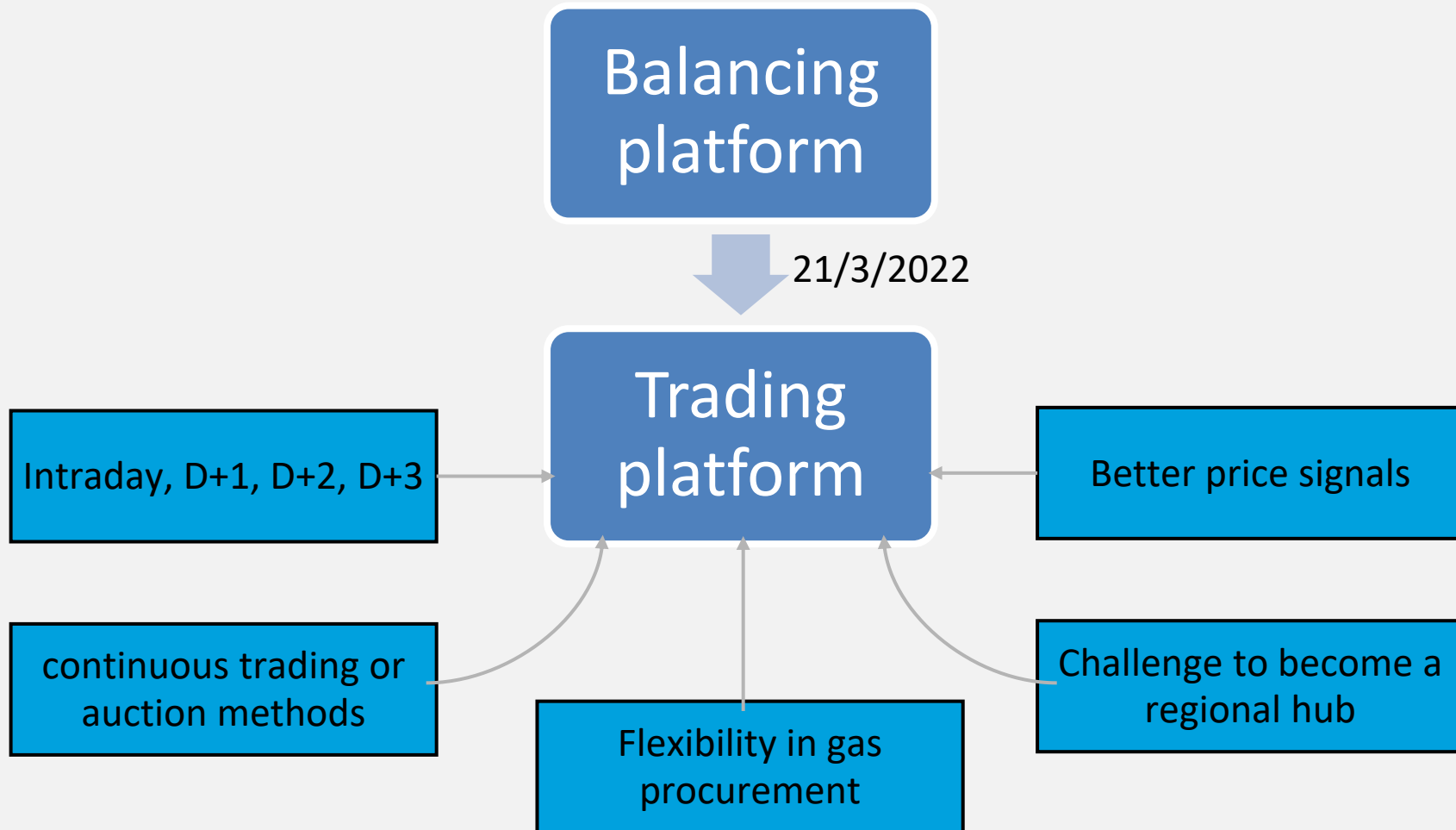
2nd Phase

- Full implementation

- 1st phase implementation on 1/11/2021, covering 35% of load
- Security of supply
- Reduction of public service obligations for non-interconnected islands

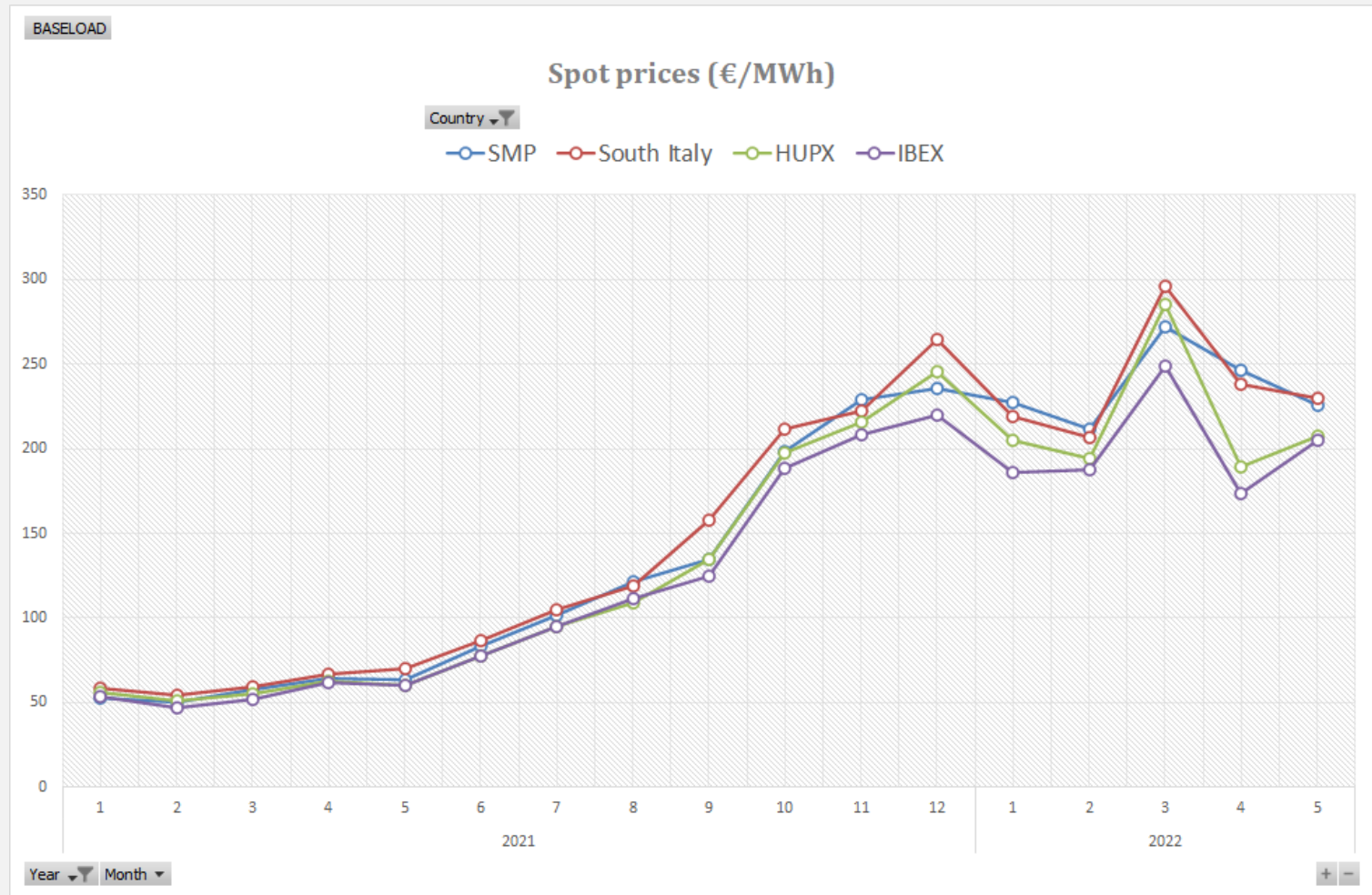


Natural gas trading platform

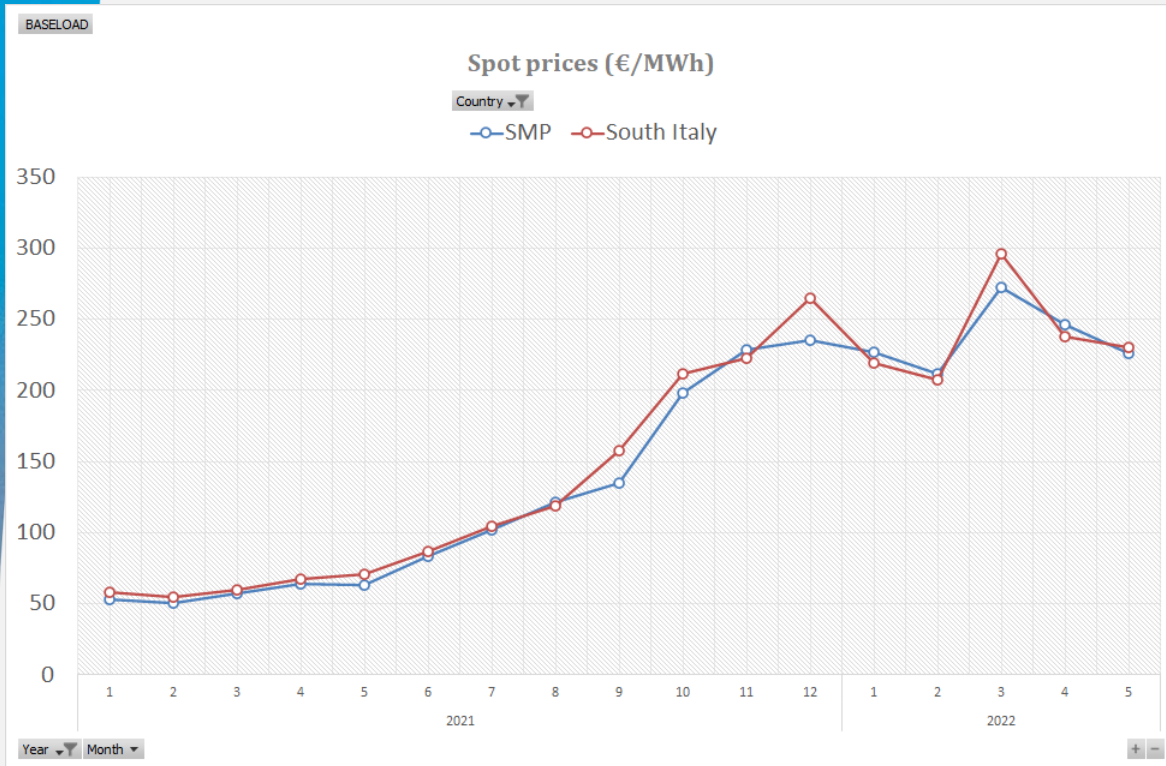


Evolution of spot prices in SEE

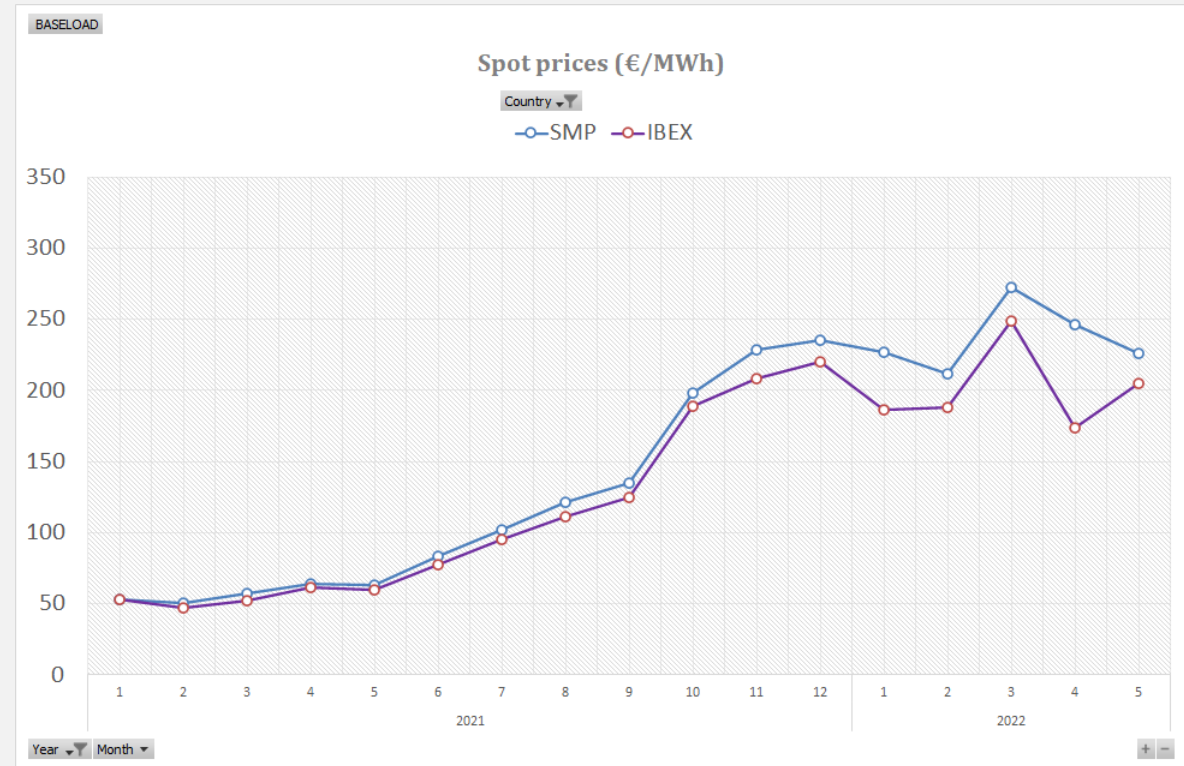
- Prices increased by ~500% in 1 year
- Very high correlation between countries
- Spreads increased in absolute values
- Extreme volatility



Coupling



- Net flows from GR to IT
- Frequent interchanges
- Coupled 37,3%



- Net flows from BG to GR
- Coupled 53,4%
- Big spread

GR coupled 2/3 of dispatch hours

Challenge for 2021: Markets experienced the biggest moves of the last decade

Natural Gas

TTF Front Month Contract €/MWh



- Post pandemic increase of demand
 - Low storages
 - Low LNG flows
 - Low supply from Russia

Carbon Emissions

EUA Front December Contract €/ton



- Fit for 55 package
- Strong speculation
- Lack of offer

Greek Power

Baseload Front Month Contract €/MWh

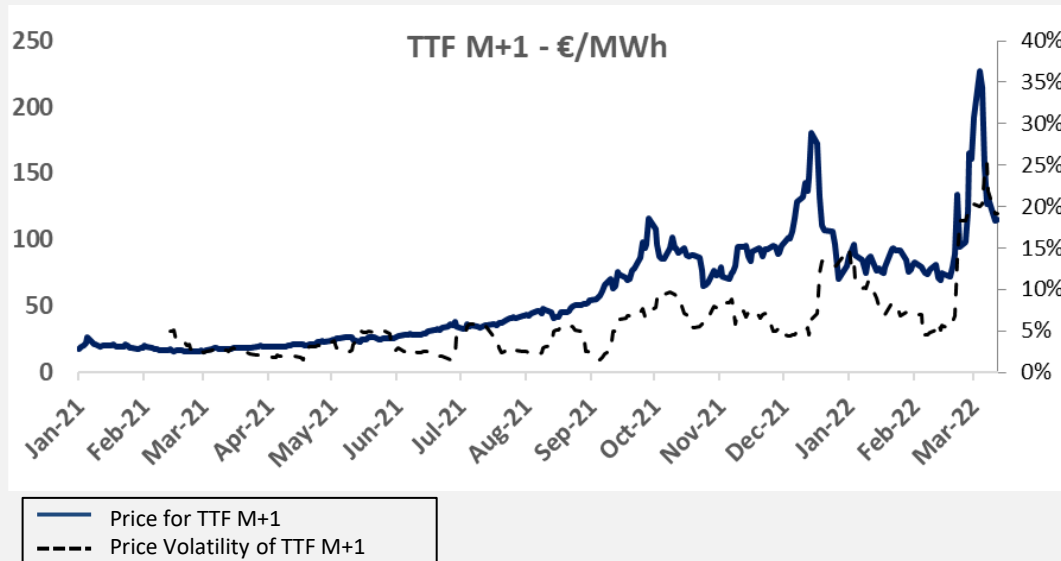


- Power has followed closely TTF movements, spiking

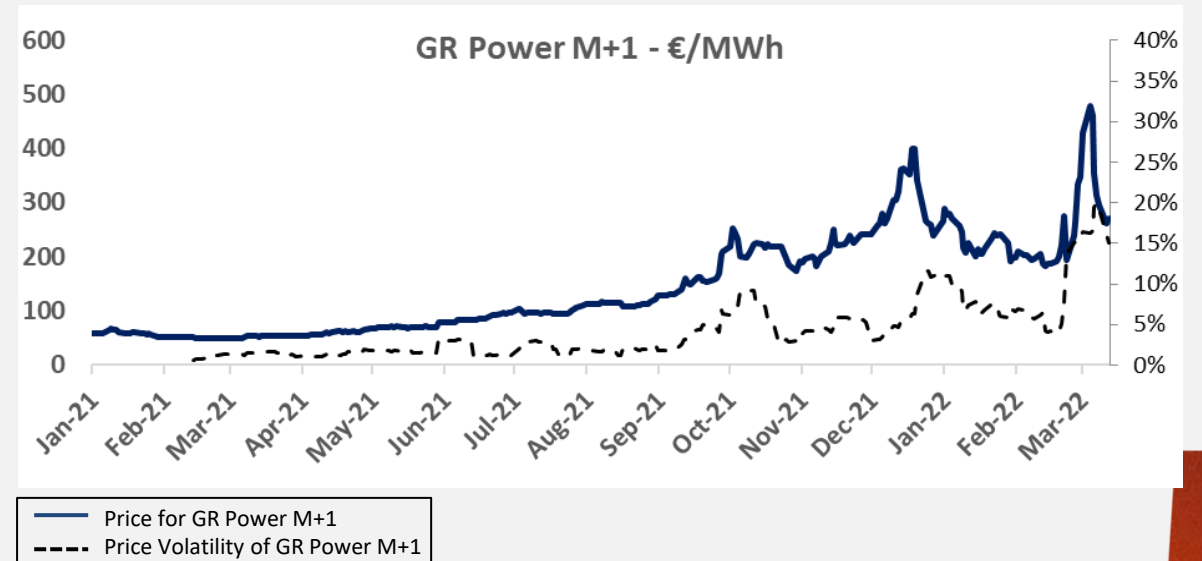
...until the next one

Additional challenge for 2022: price volatility

- The challenge of 2021 was to manage price increases
- The challenge of 2022 is to cope with extreme price volatility

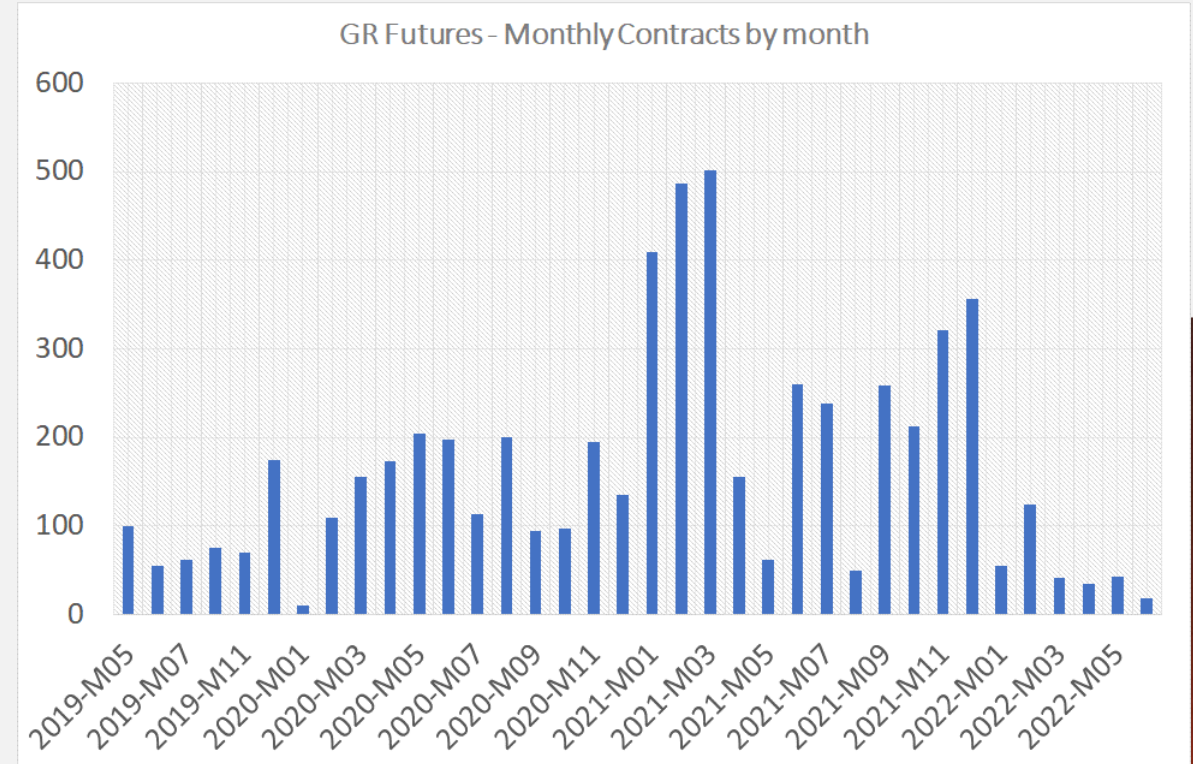
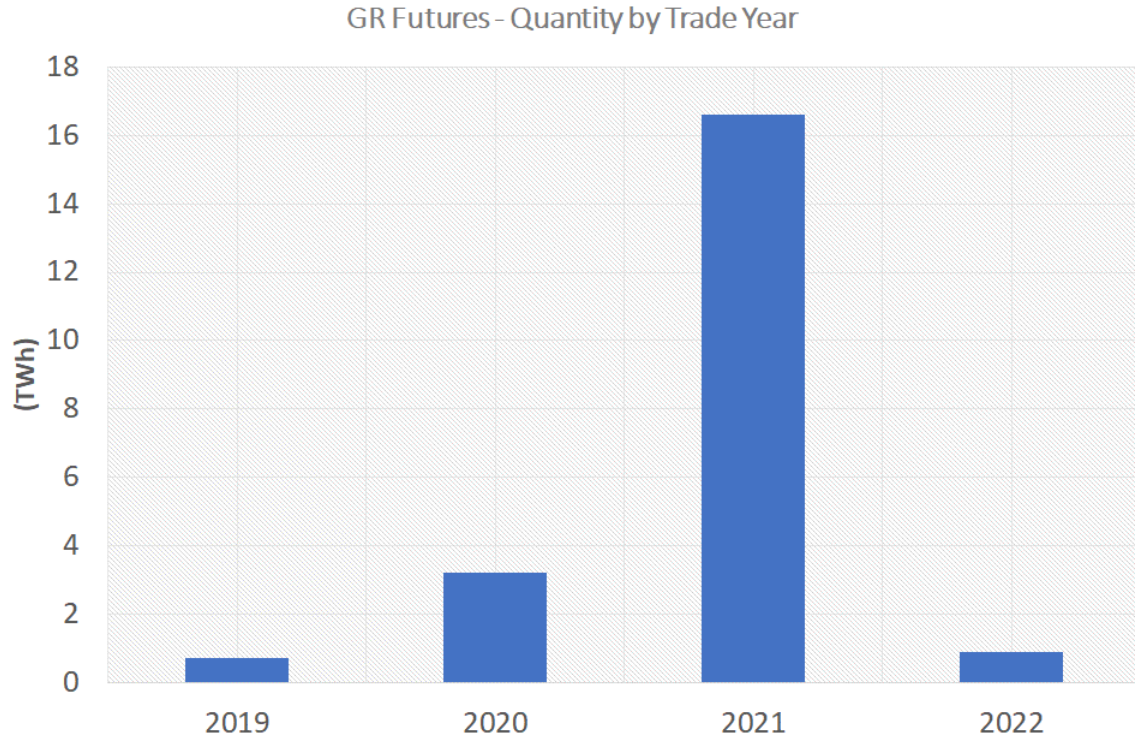


TTF futures changed by 141% in two weeks



GR power futures changed by 197% in two weeks

Forward Market - Activity



Results and future trend

Forward market volumes in a steep uptrend over the last few years

Trend reversed due to circumstances (?)

- Higher volatility
- Higher collateral requirements
- Companies' - Traders' risk limits

Forward Market - Market Making

What has been done so far?

PPC acts with the capacity of Market Maker in the forward market operated by HENEX since March 2020:

- M+1, M+2, Quarter +1, Cal+1 → base load
- M+1, Quarter+1, Cal+1 → peak load

Benefits

Offering hedging solutions to suppliers and generators in an environment with limited options

Giving price signals to the market

Market Maker continues to provide liquidity to the market, even under adverse conditions of high volatility

Results and future trend

Henex forward market remains illiquid.

- Is there limited need for hedging (?)

Next challenge?

Italy has proposed that EU member states cap the price of gas imports from Russia

(GR) Ministry to suspend wholesale adjustment clauses in bills

Spain approves cap on gas price to curb power bills

the Commission proposes to provide Member States with €20 billion raised from auctioning allowances from the EU ETS held in the Market Stability Reserve (MSR)

(GR) Remuneration cap for electricity producers

...coping with Regulatory Risk

Thank you for your attention.

Any questions

