

**08
JUNE
2023**



DECARBONISATION
SUSTAINABILITY
DAY

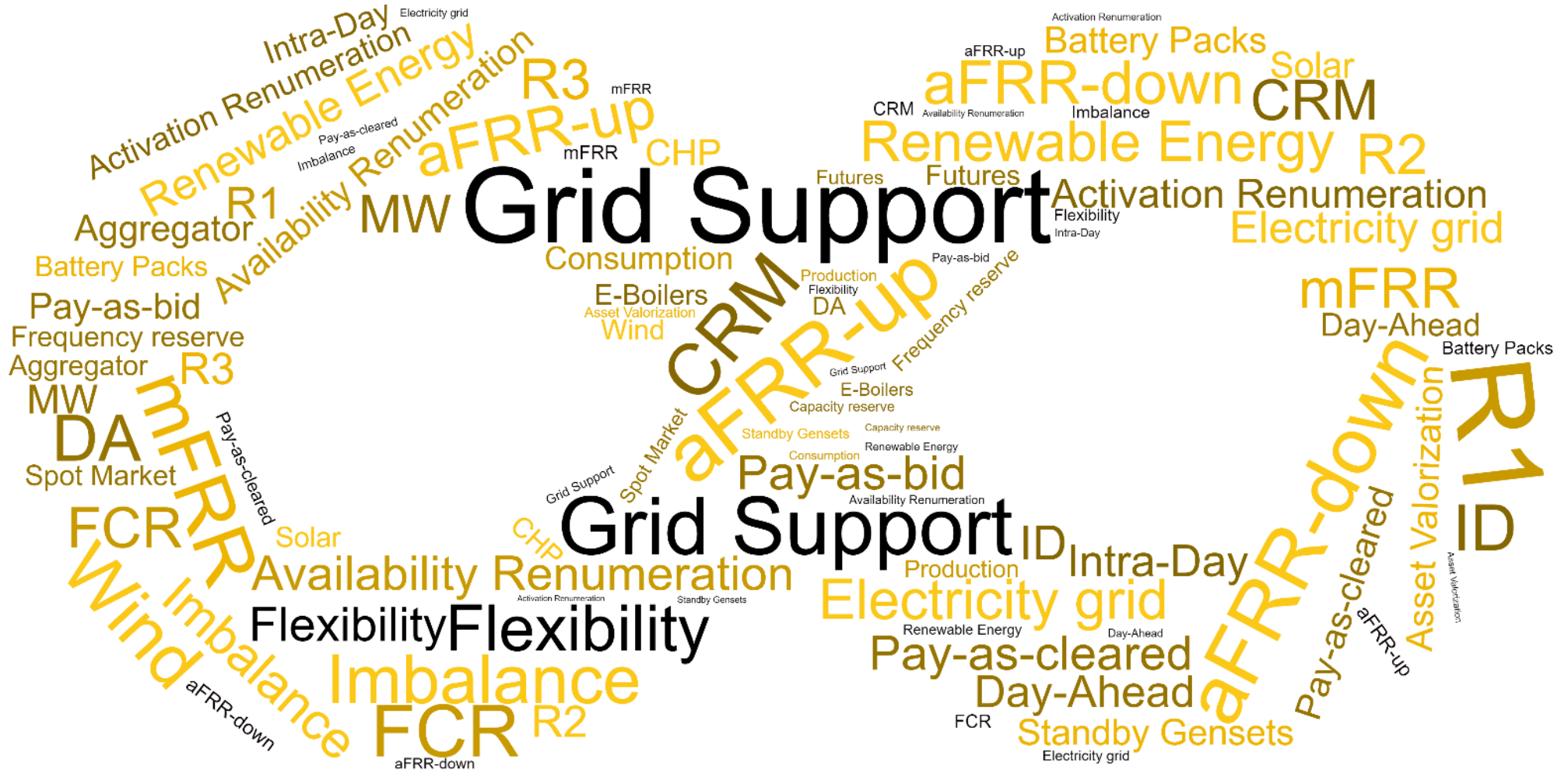
**Bergerat
Monnoyeur**



Eneria 

GRID SUPPORT & FLEXIBILITY

Curd Merlo



PRESENTATION PLANNING

So much info, so little time...



01

Grid Support & Flexibility

What? / Why? / How?

02

Asset Valorisation

Mechanisms / Operating principals / Revenue models

03

Masters @ Work

Who does what?

PRESENTATION PLANNING

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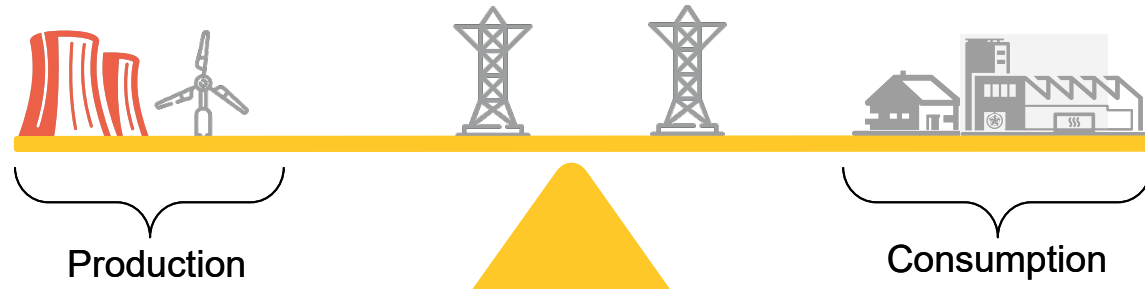
03

Masters @ Work

Who does what?

WHAT?

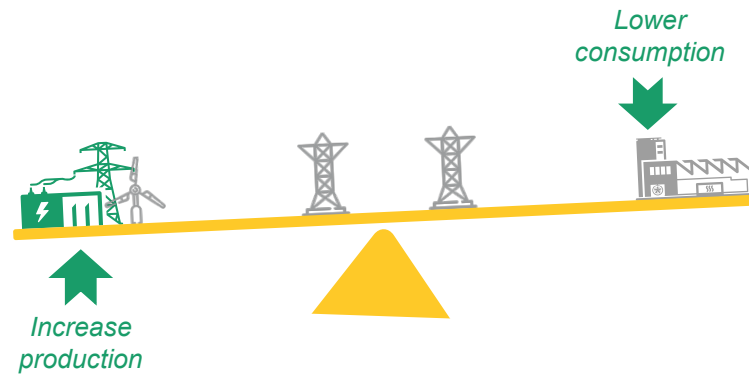
THE POWER GRID SHOULD ALWAYS BE IN BALANCE



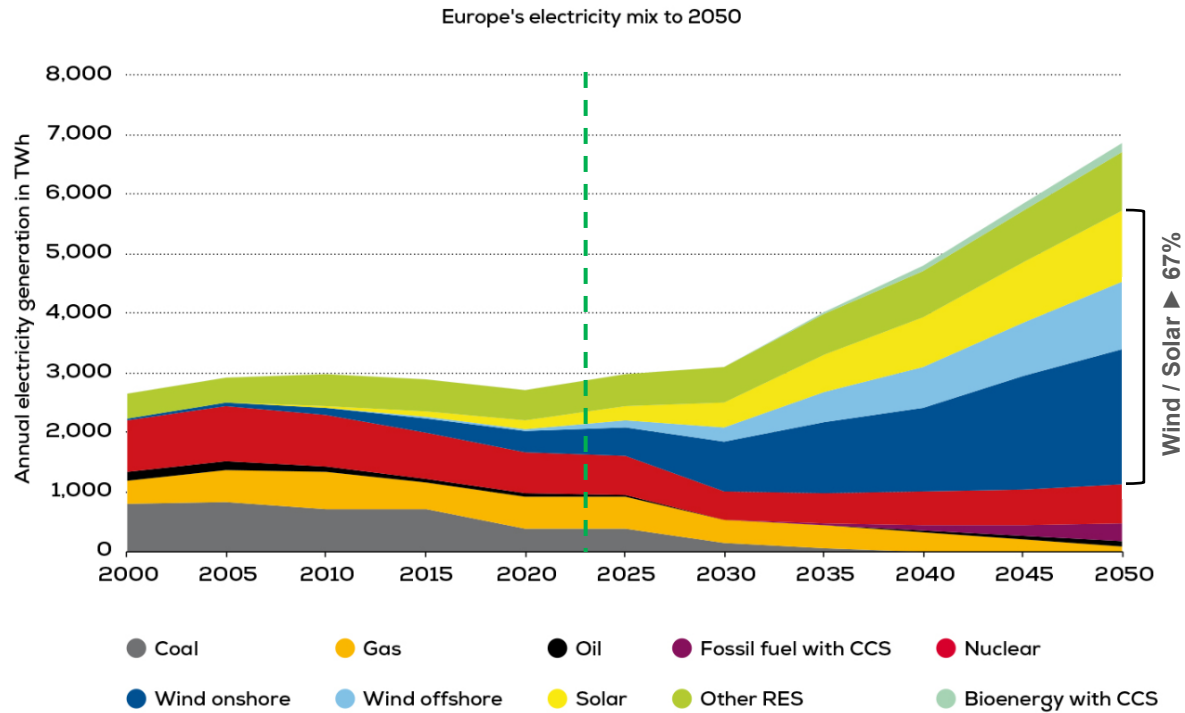
Imbalance between production & consumption



Flexibility services supporting the grid



WHY?



Source: WindEurope based on European Commission Impact assessment, COVID MIX scenario, 2020

Support growth of Renewable Energy Sources



Additional Revenue streams



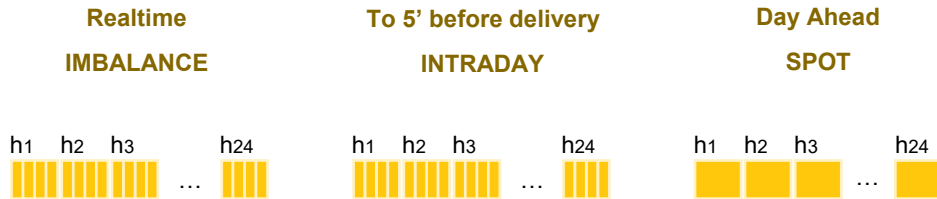
Social Responsibility

ENERGY MARKETS & GRID SUPPORT



ENERGY MARKETS
ELECTRICITY

SHORT TERM

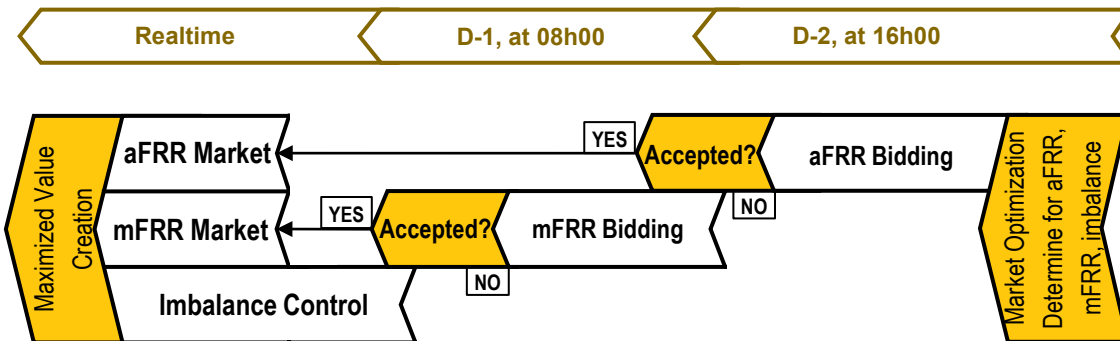


LONG TERM

FUTURES



GRID
SUPPORT



CRM

Capacity Remuneration Mechanism

CRM ensures the availability of new and existing capacities in case of important imbalances on the grid in the future.

Example: your electric flexibility is offered in 2022 to Elia but it will be used in 2026 only.

HOW?

3 MECHANISM TO SELL FLEXIBILITY TO ELIA

FCR (R1)

30 seconds response time
Daily calls



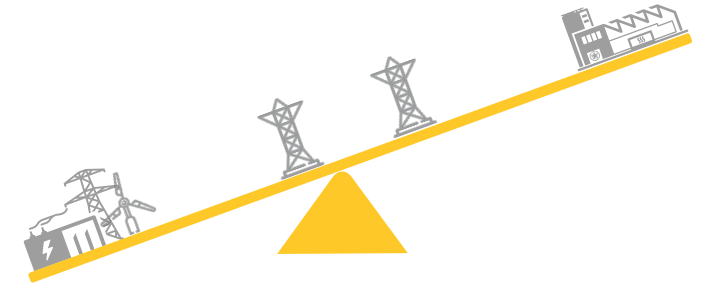
aFRR (R2)

7,5 minutes response time
Daily calls



mFRR (R3)

15 minutes response time
Rare and punctual calls



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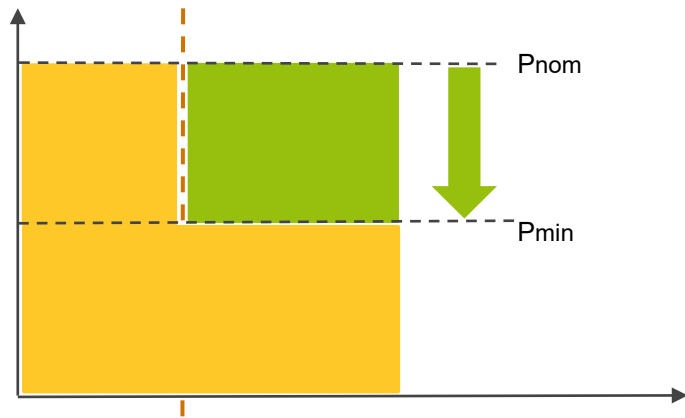
Masters @ Work

Who does what?

VALORISATION BY ASSET OPTIMALISATION



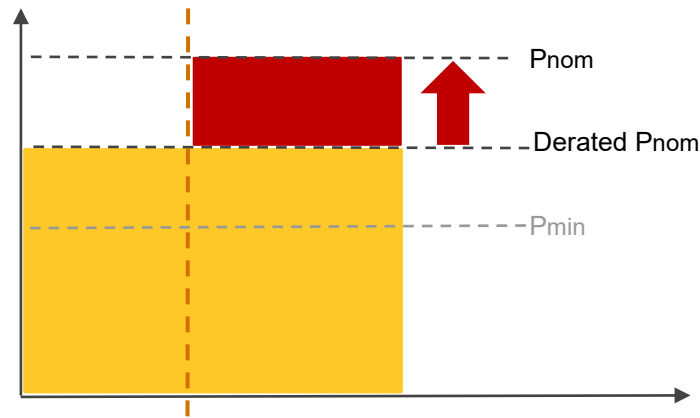
aFRR (R2) DOWN



Activation

Reduce production
Increase consumption

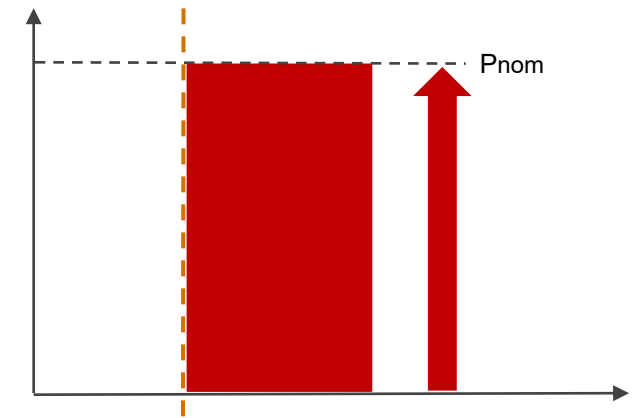
aFRR (R2) UP



Activation

Increase production
Reduce consumption

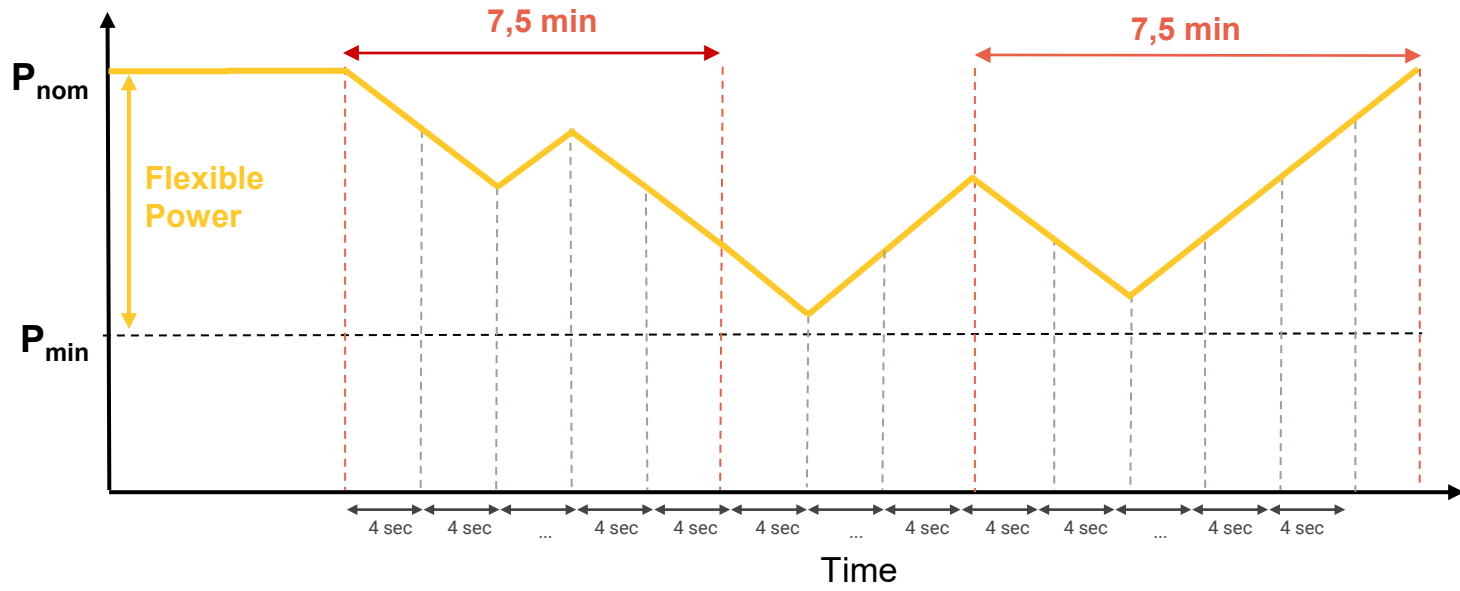
mFRR (R3)



Activation

Increase production
Reduce consumption

aFRR (R2) OPERATING PRINCIPALS



COGENERATION



BESS



Notification



Duration of activation



Technology

aFRR (R2) REVENUE MODEL

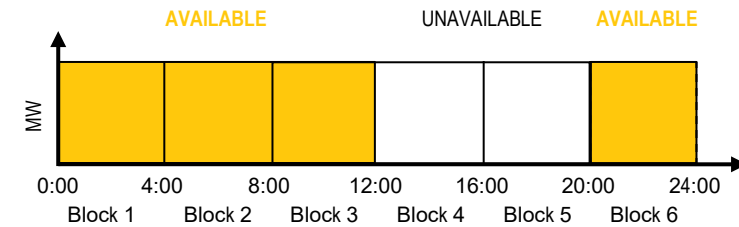


01

Availability Remuneration

- Per 4-hour block
- Remuneration: pay-as-bid
 - Covers opportunity cost + profit margin
 - Avg. price 2022* aFRR-UP: 60,00 €/MWh
 - Avg. price 2022* aFRR-Down: 30,00 €/MWh

* Not an average reference year, energy market went through extremes



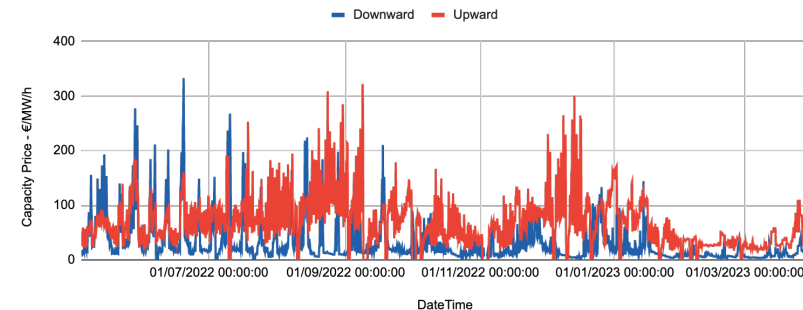
02

Activation Remuneration

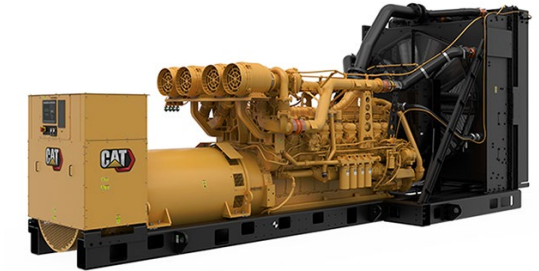
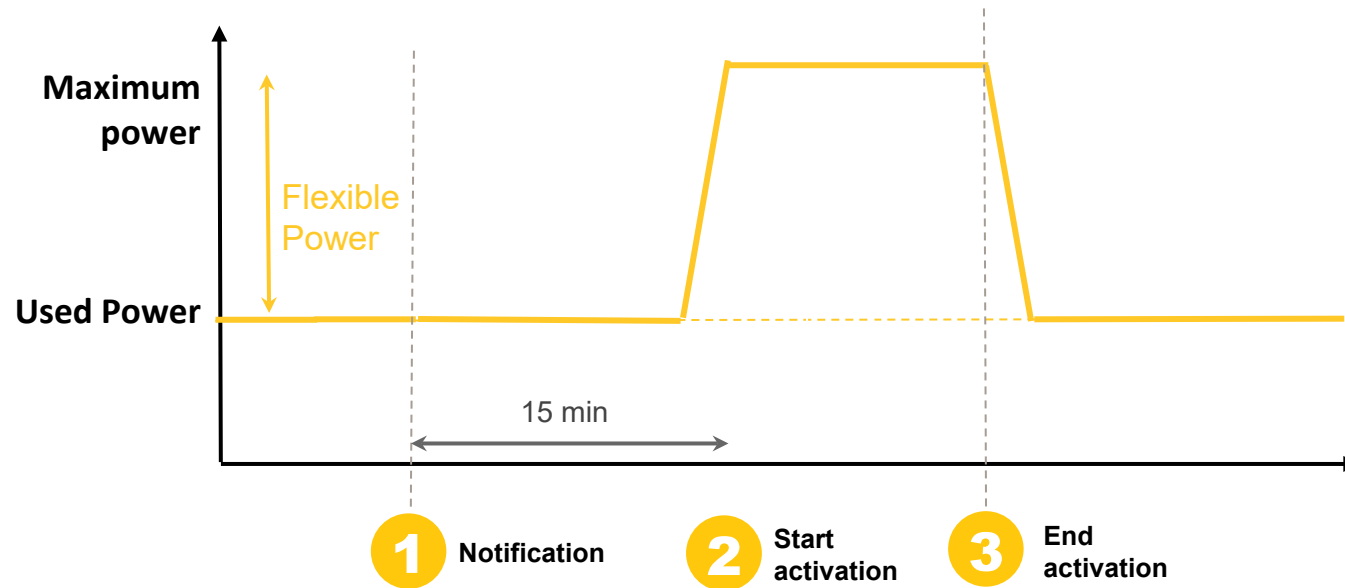
- Remuneration: pay-as-bid
 - Covers activation cost + profit margin
 - Intraday adjustments

Volatile prices -in function of market- inherent to capacity market

aFRR capacity prices since opening new market design (01/05/2022) - todate



mFRR (R3) OPERATING PRINCIPALS



STAND-BY GENERATORS



Notification



Activation rate



Technology

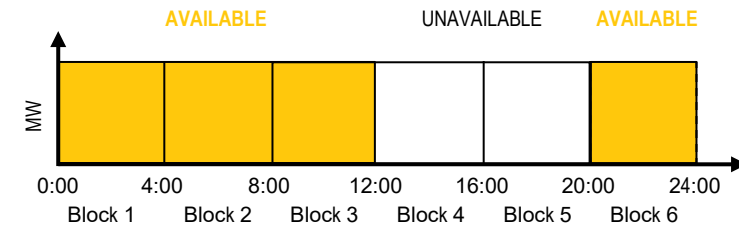
mFRR (R3) REVENUE MODEL



01

Availability Remuneration

- Per 4-hour block
- Remuneration: pay-as-bid
 - Avg. price UP: 10,00 €/MWh
 - Down → not applicable



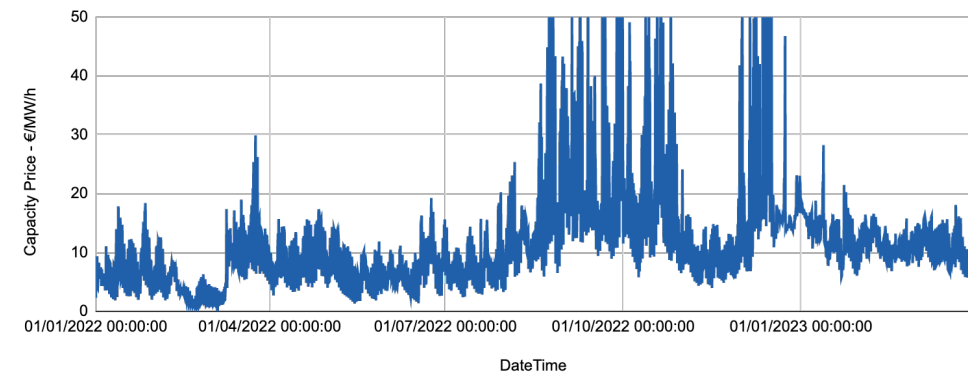
02

Activation Remuneration

- Remuneration: **pay-as-cleared (!)**
 - Based on minimum activation price
 - Payout at imbalance price

Volatile prices -in function of market- inherent to capacity market

mFRR capacity prices of 2022 - todate



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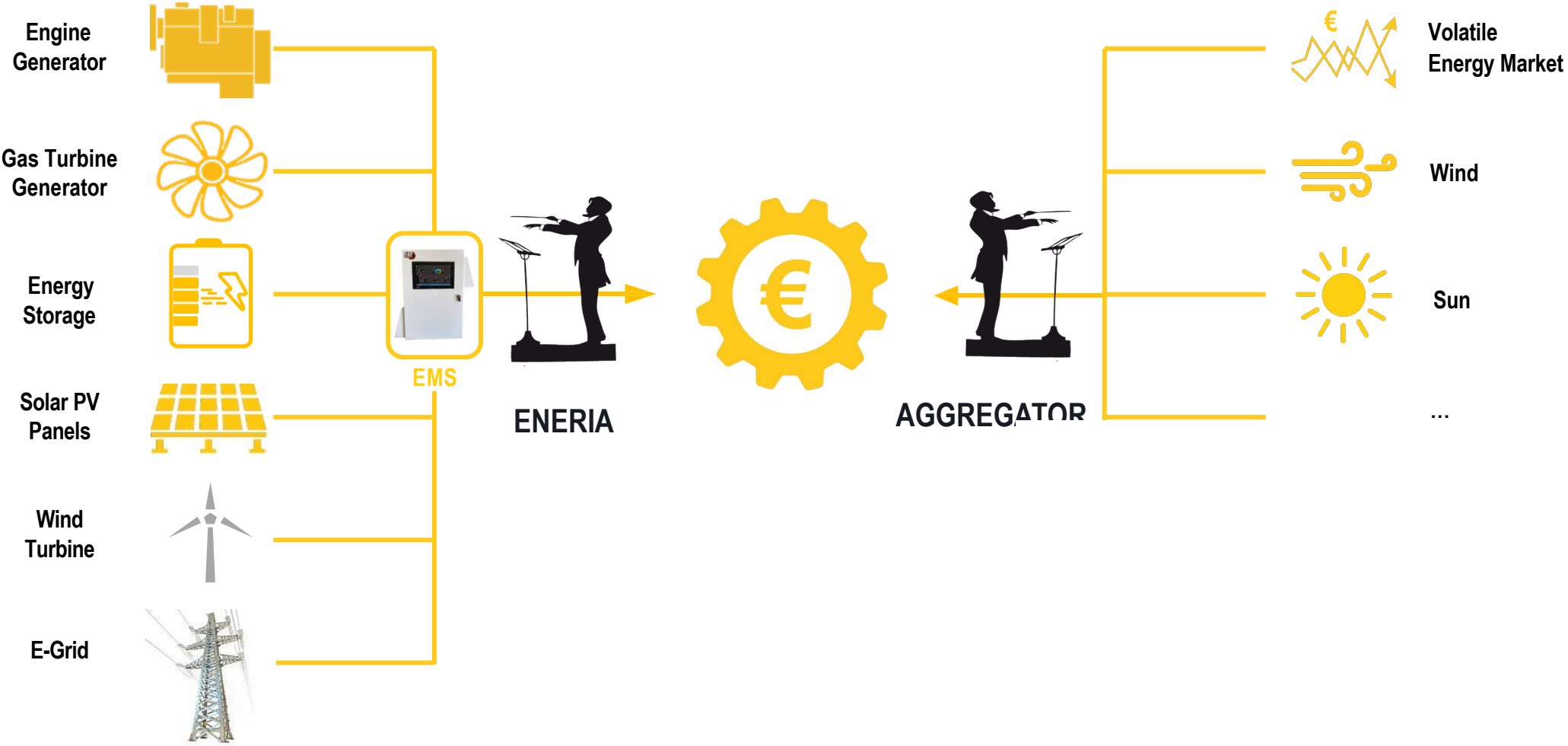
Mechanisms / Operating principals / Revenue models

03

Masters @ Work

Who does what?

MASTERS @ WORK



KEY TAKEAWAYS

01 Support growth of Renewable Energy Sources

Additional Revenue Streams **02**

03 Multiple mechanisms to support the Power Grid

Complexity of asset integration
→ quality is key! **04**