

# Revenues for the future by engie



BESS cross market optimization  
wholesale + ancillary + guaranteed revenues

# ENGIE - accelerating the transition towards a carbon-neutral economy.



## ENGIE Global

- **170.000** employees
- **57,9 Mrd. €** turnover
- **190 Mio. €** R&D budget
- **3 GW** additional installed renewables in 2021
- **2,1 GW** signed green PPAs

## ENGIE Germany - GEMS

### Green Power Upstream

~ **1,8** GW (Top 3)

*Upstream PPA Wind & PV*

~ **2** GW (Top 4)

*Direct Marketing Wind & PV*

### Asset services

> **1** GW

*prequalified ancillaries*

activ in **3** grid zones (of 4)

*prequalified for FCR, aFRR, mFRR*

### Downstream

~ **8,0** TWh (2023)

*Full supply, Power, Green Power and Gas (share of Green Power: 47%)*

> **4,0** TWh (2023)

*Downstream PPA (cPPA)*

~ **40** TWh traded in 2022

*Market access; Gas, Power, Emission trading with municipal utilities and regional suppliers*

## Global Energy Management and Sales (GEMS)



### Renewables energies

Long/short term Upstream and Downstream PPAs

Direct marketing

Green Certificates (Guarantees of Origin, VER, CER, Biogas)



### Market access and energy supply

Full supply Power & Gas  
Market access Power & Gas

Portfolio management & risk management services

Structured products and longbows



### Asset management and services

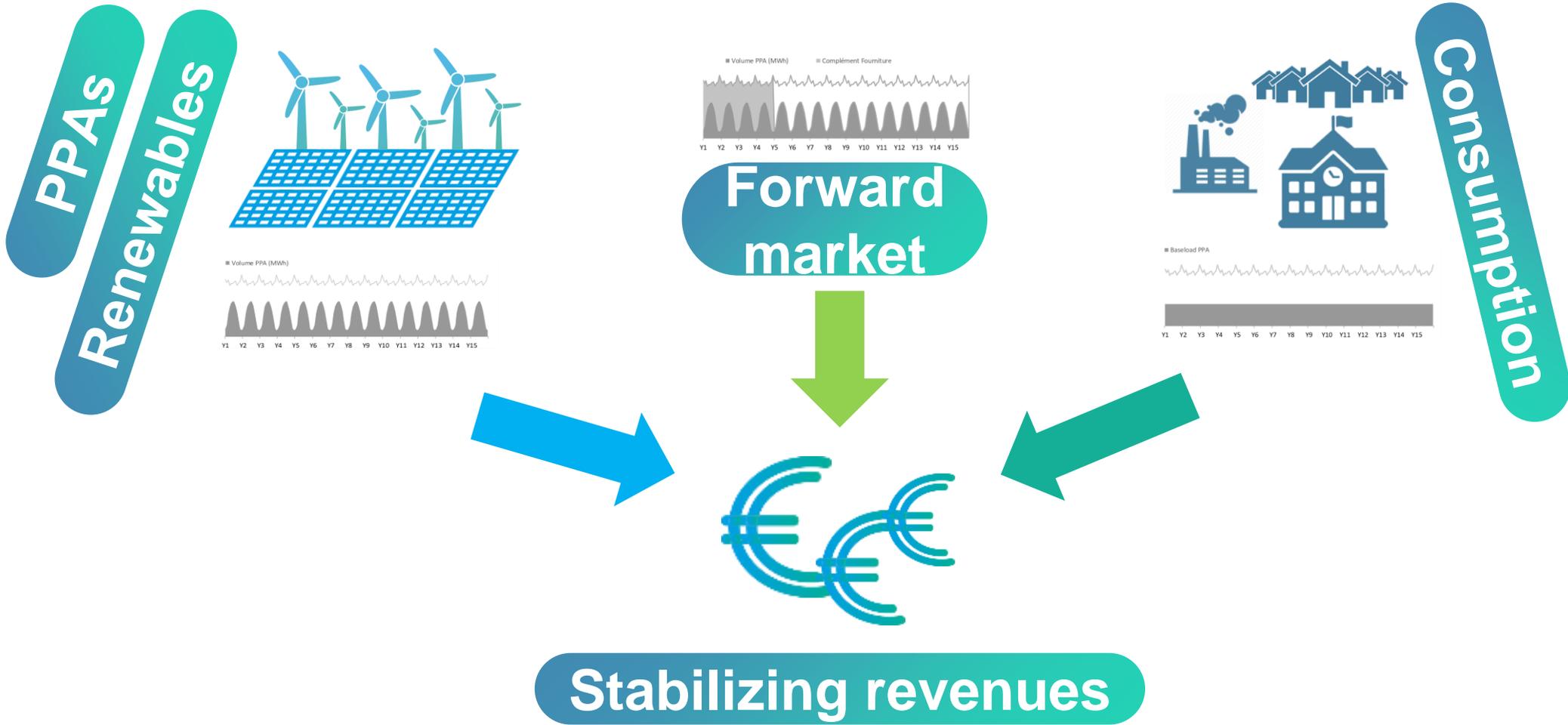
Ancillary services and intraday-optimization

Asset management of internal and external assets

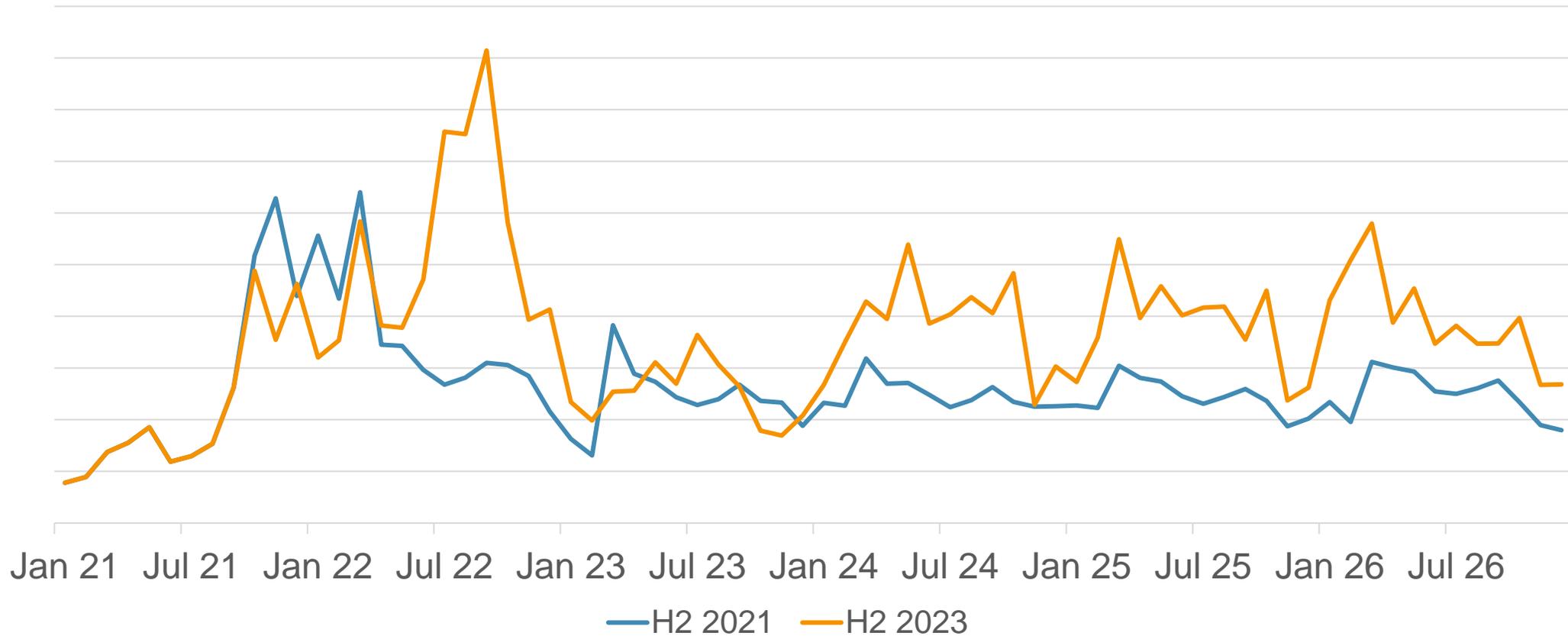
Modelling and contract management

Regulation- and grid services

# Structuring tomorrow – in a green way

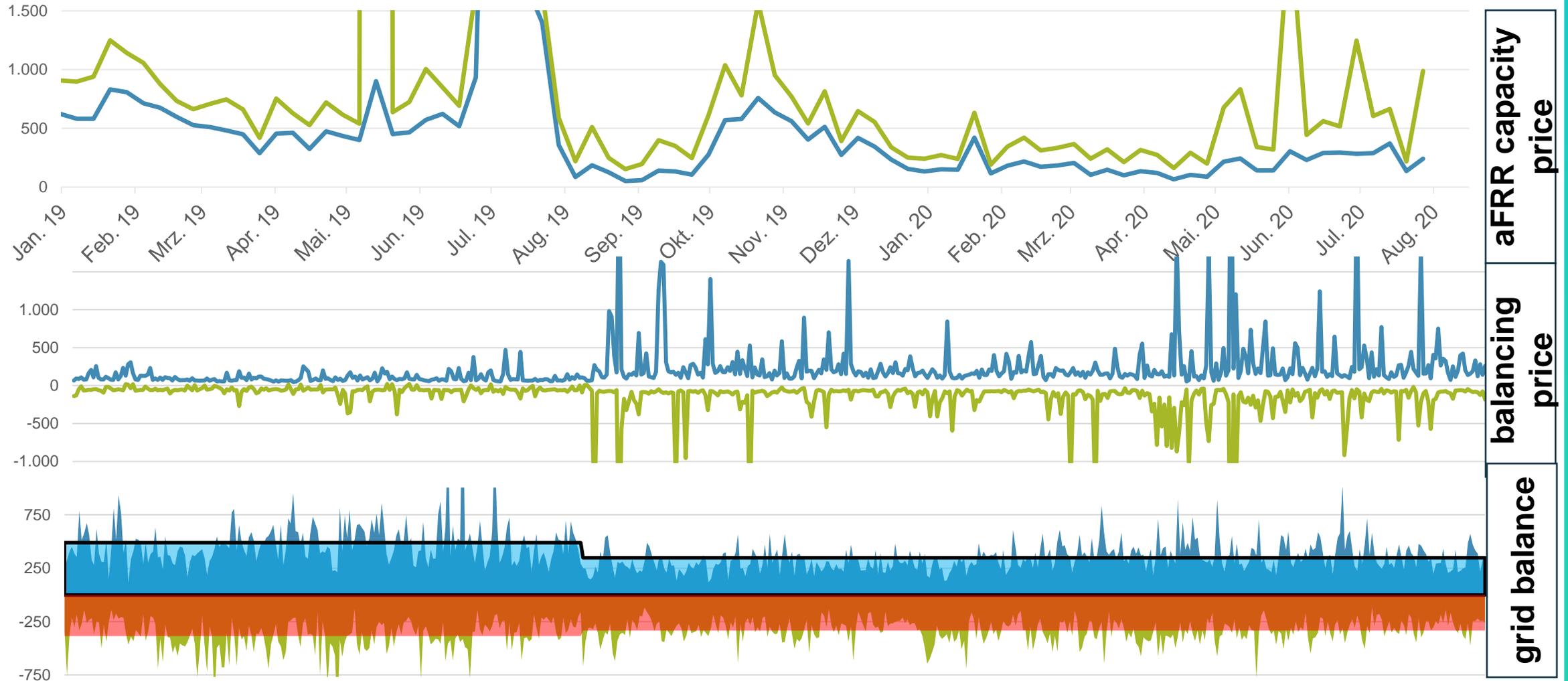


# Timing – securing revenues at the right moment



# How flexibility prices influence a balanced grid

system changes in 31.7.2019 and their results



# Stand alone storage ..... and whatever comes next



Colocation with RES



Colocation with a GT



EV in FCR



Asset stacking



With 2nd life BESS

## Points to remember

- 1. Forecasted value = current market expectations**
- 2. Securing future revenues is possible; but needs timing**
- 3. The system remunerates short term flexibility to stabilize grids**
- 4. Technical limitation and regulatory changes can be approached by combining BESS with other assets**