

Investing In Batteries

Dr. Jan Wierzba

get inspired 2023 | Vienna | 19th Sept 2023

TSOs embrace batteries

NEP - Utility scale batteries (GW) 43



Utilities and investors are keen to deploy

Steag
100 MW

RWE
targets
3 GW

LEAG
targets
2-3 GWh

Kyon
pipeline
3-7 GW

Obton
• • •

ecostar
targets
3 GW

Juniz
• • •

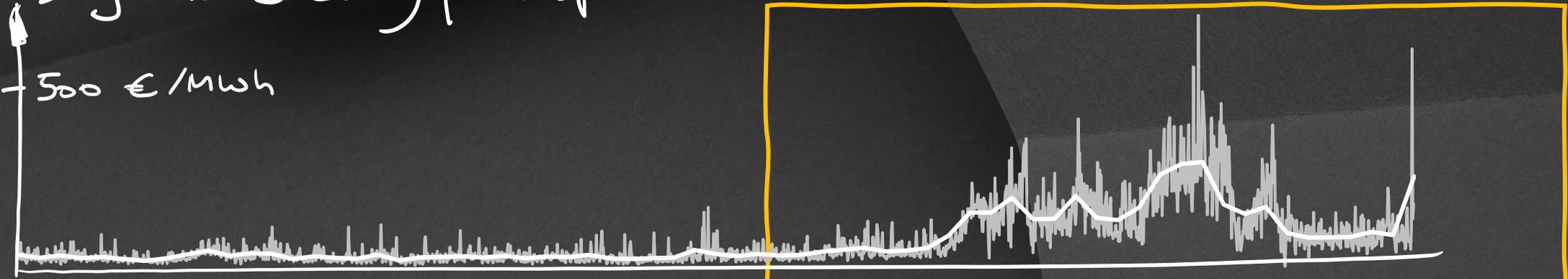
~ 2015

2023

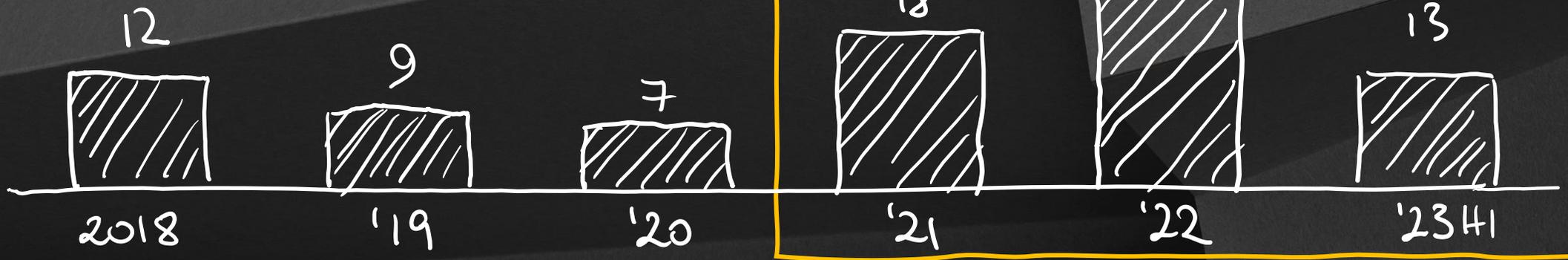
The value for flexibility has been growing in last 3y

Day ahead daily price spread

500 €/MWh



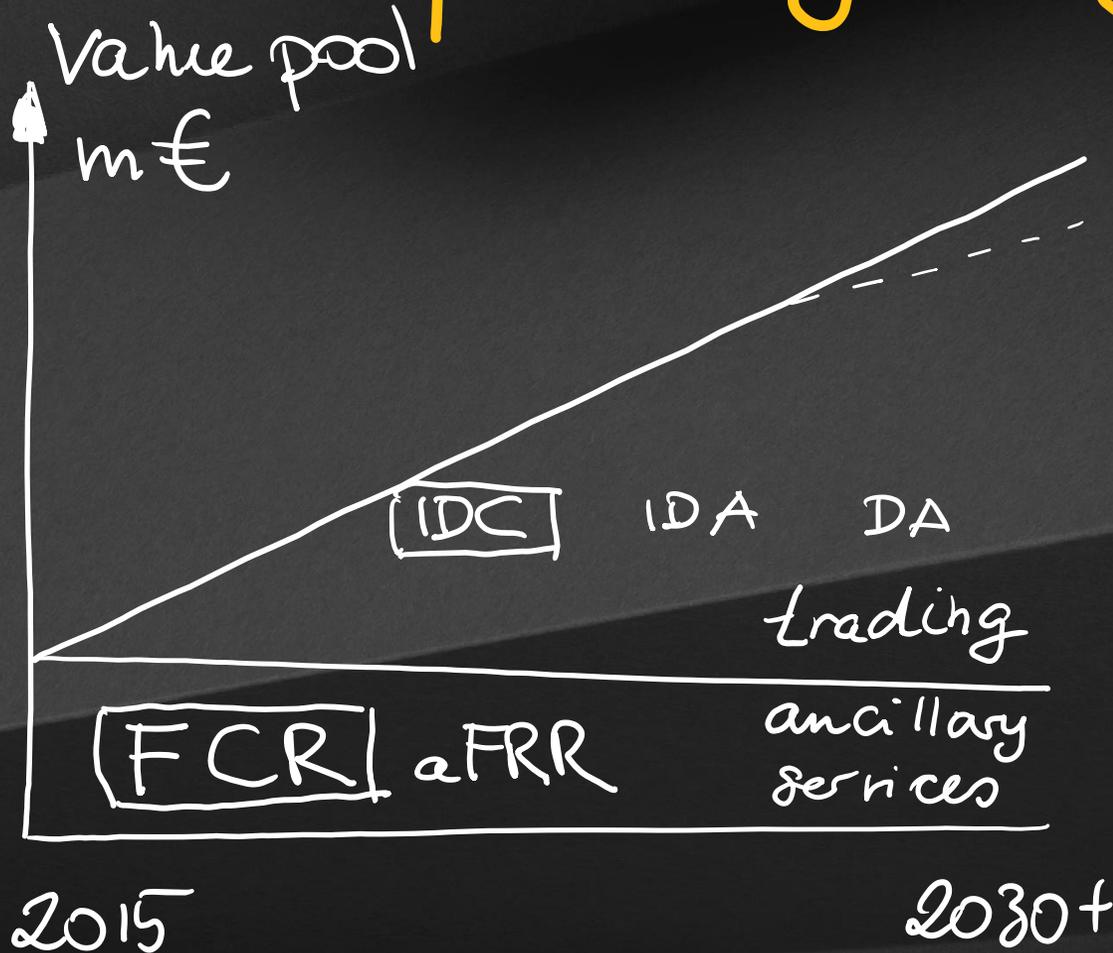
FCR (€/MWh)



3 things to focus on when investing in batteries

- ① Believe in a growing value pool
- ② Choose your route-to-market operator
- ③ Beware of the merchant risk

We expect a growing value pool for batteries



- Capacity schemes?
- Growth in RES
- Coal exit
- System tightness
- RES forecasting error
- Stable capacity demand by TSOs

Which route-to-market?

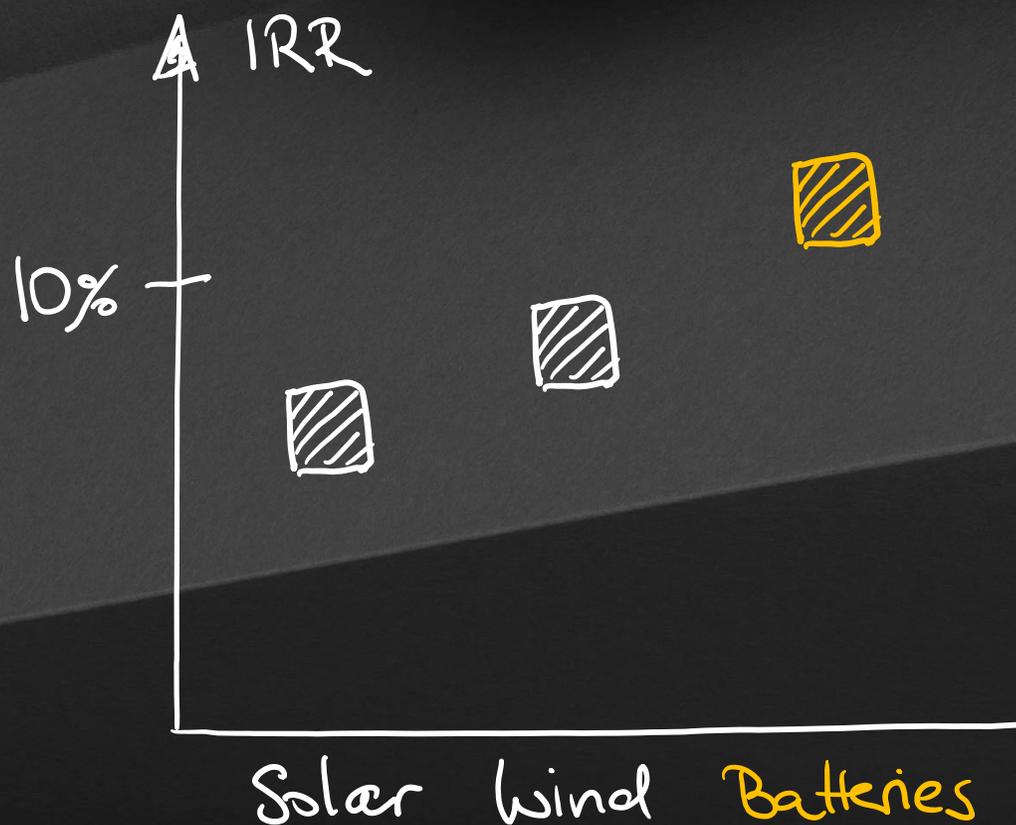
Intraday Continuous is key

- Primary source of value
- Auto/ algo trading a must
- Don't worry about IDA / DA

FCR/aFR are good additions

- Diversify revenue streams
- Stacking gives extra value
- Helps to manage cycle budget

Beware of the merchant risk

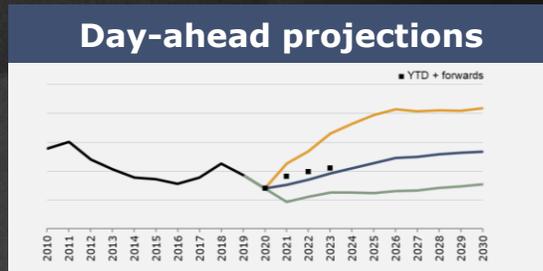


Ways to deal with the merchant risk:

- Accept the exposure
- Negotiate fix or floor prices
- Sell capacity to third parties

We offer a wide range of services for battery storage projects covering key commercial and technical aspects

PRICE PROJECTIONS



BATTERY GROSS MARGIN FORECASTS



DUE DILIGENCE

Commercial Due Diligence

- Market
- Commercial / Regulatory
- Review of indiv. business cases
- Review and projections of revenue streams
- ...

Commercial Due Diligence

- Review of Technical integrity
- Review of OPEX
- Review of CAPEX
- ...

Leading advisor for the transition of the energy and bioindustry sectors

Presence

5

continents

Revenue

110 million

EUR in 2022

Projects

>100

countries

Staff

600+

management consultants

Backed by

19,000

experts at AFRY

Energy transition



Transition to Bioeconomy

- Global transition towards decarbonised energy system
- Sector integration due to decarbonisation and electrification (e.g. mobility, industries, cities)
- Need for smart infrastructure to enable transition and new decentralised business models
- Growing sustainability awareness and commitment
- Global shift in demand and products
- Need for green carbon to ensure full decarbonisation
- Resource scarcity

ABOUT AFRY MANAGEMENT CONSULTING



Forward looking market analysis



Strategic advice



Operational and digital transformation



M&A and transaction services

Bonus Question: Will prices stay high?

Bonus Question: Will prices stay high?

2020

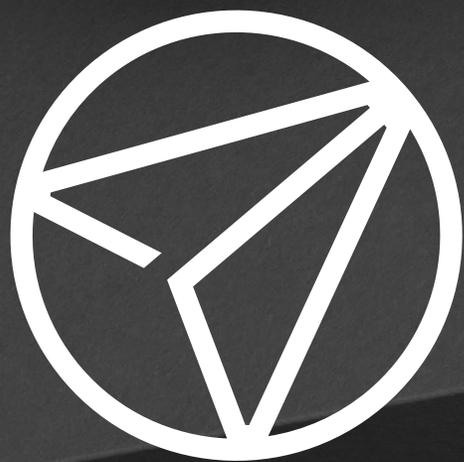
2023



**Bockwurst
& Brötchen**
Sausage & roll

7,50 €





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