



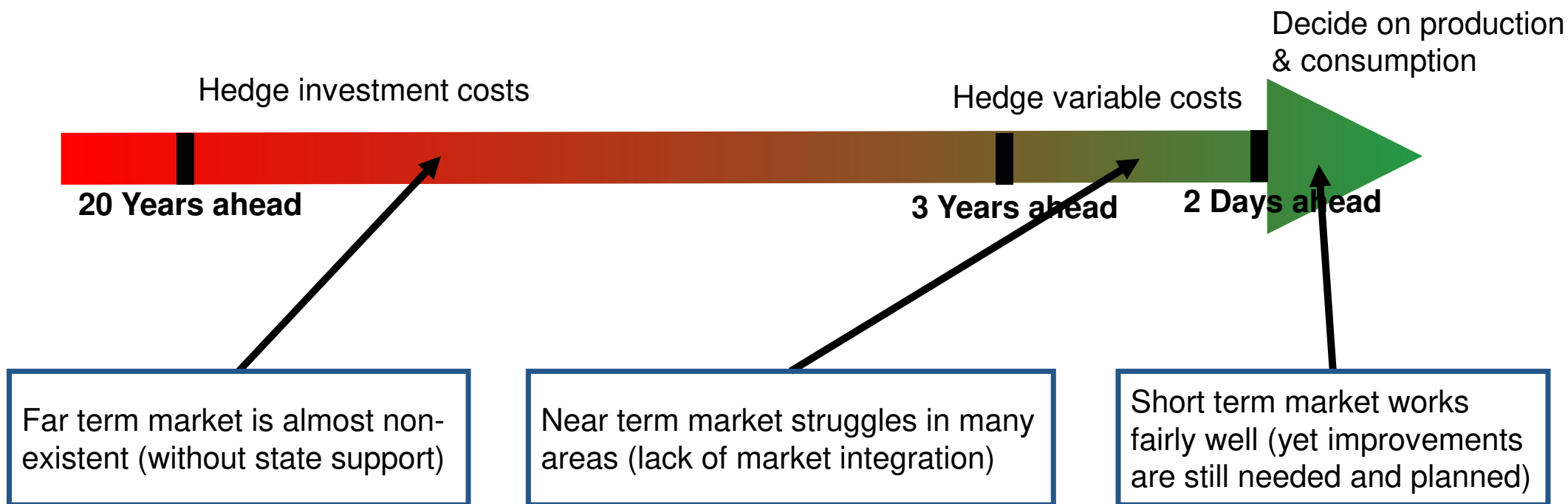
European Union Agency for the Cooperation  
of Energy Regulators

# Fleksibilitet & elmarkedet: Tilgang og temaer i EU

Forum for Fleksibilitet - Energistyrelsen  
København den 28. februar 2023

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## Electricity market diagnostics



# Volatility is here to stay: A problem or a call to action?

## Diverging views on how to tackle price volatility

*'Volatility needs to be avoided'* (e.g. new pricing rules)

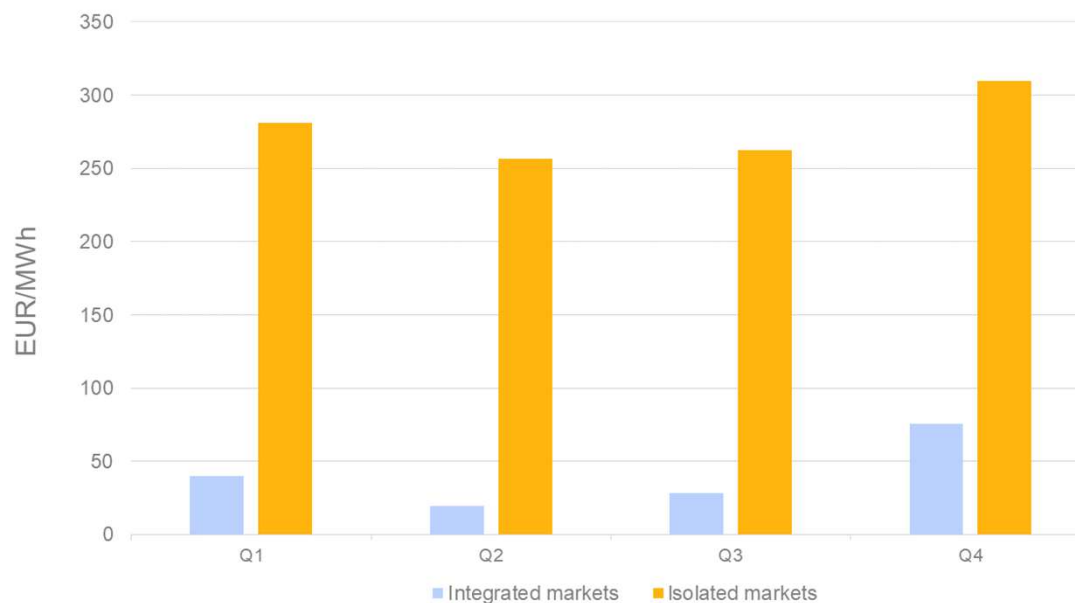
VS

*'Volatility needs to be managed'*

What are the **tools to tackle price volatility** in ACER's view?

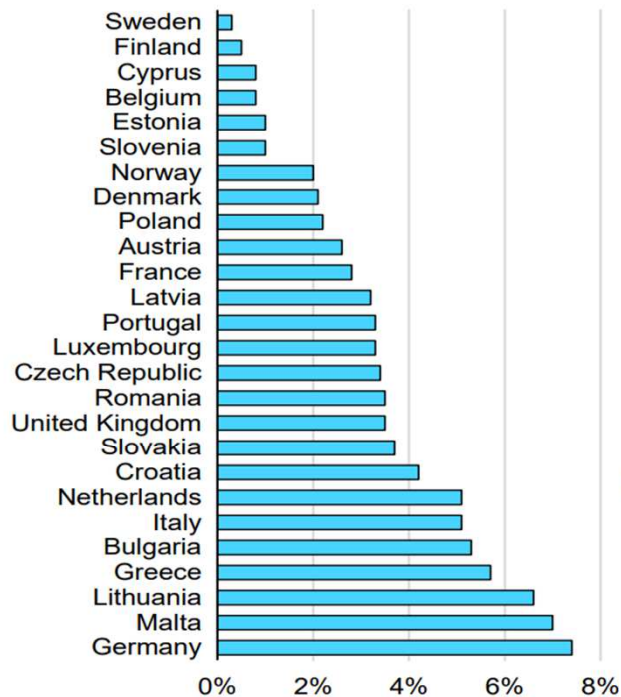
- Preserve price signals: today's volatility triggers tomorrow's flexibility (technologies)
- Strengthened EU market integration
- Improved forward markets
- Consumer protection remains key
- Longer-term contracting may play a role (if done well, avoiding distortive effects)

**Price volatility (EUR/MWh) in integrated and isolated electricity markets in the EU in 2021**

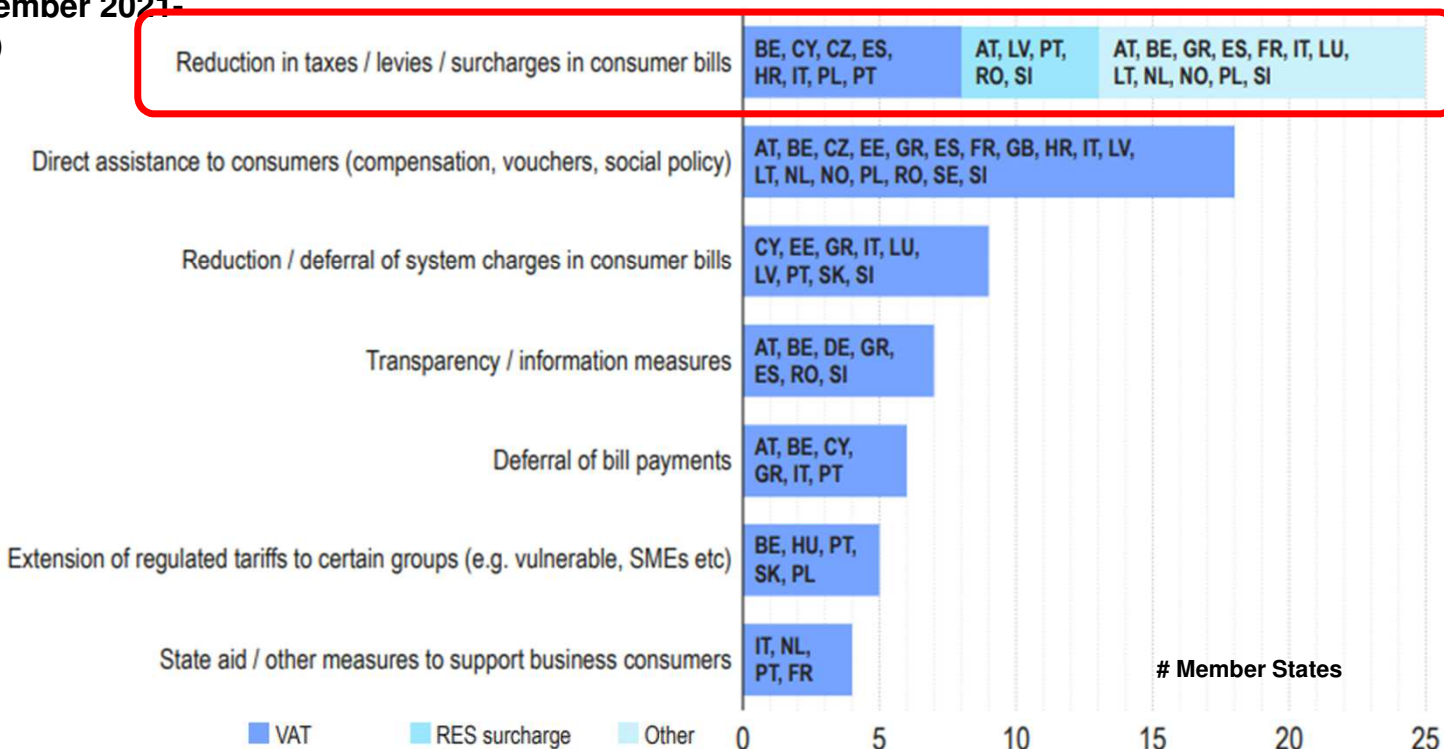


# Support measures may well need adjusting ...

**Magnitude of support schemes to household and industrial consumers in the EU, Norway and UK, September 2021-November 2022 (% of 2021 GDP)**



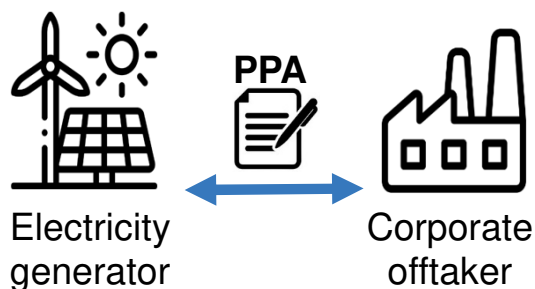
**Type of support measures provided to consumers – 2022**



**To date ~EUR 600 billion+ have been spent on support measures in the EU. If support measures are retained, experience offers lessons e.g. for further targeting such measures plus retaining incentives to lower demand.**

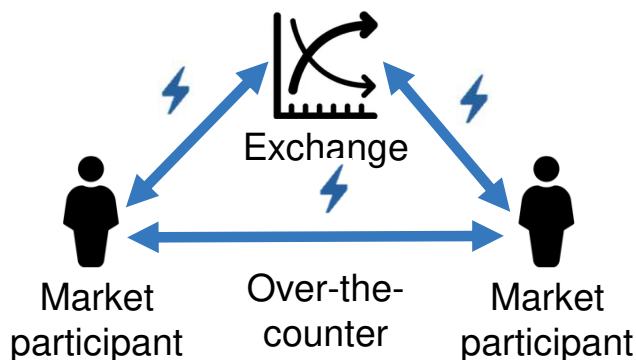
# Overview of the different tools

## Power purchase agreement



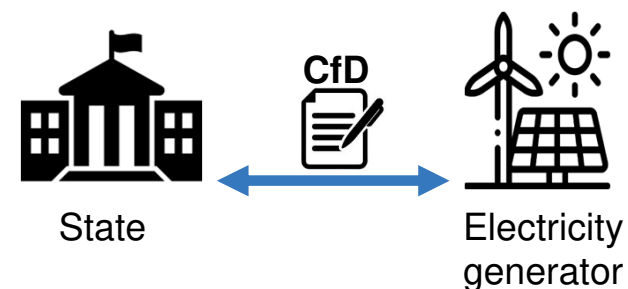
A (corporate) PPA is a bilateral contract between private market participants with either physical or financial obligations. They are usually tailor-made to the participants and over the (very) long term (>10 years).

## Forward market

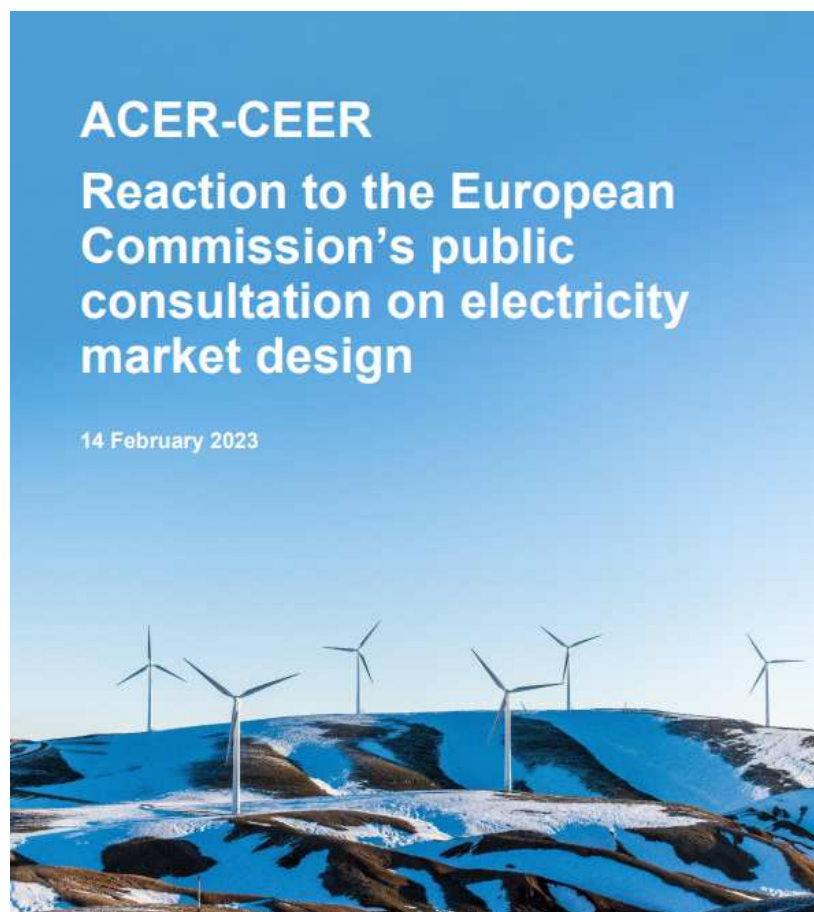


The forward market allows market participant to hedge their electricity needs either on exchanges or through over-the-counter deals. The forward market is currently illiquid for deliveries > 3 years.

## Contract for differences



Contract for differences are contracts auctioned by states with generators for the delivery of electricity over the (very) long term (>10 years). The electricity is settled at a fixed price.



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## ACER-CEER

### Reaction to the European Commission's public consultation on electricity market design

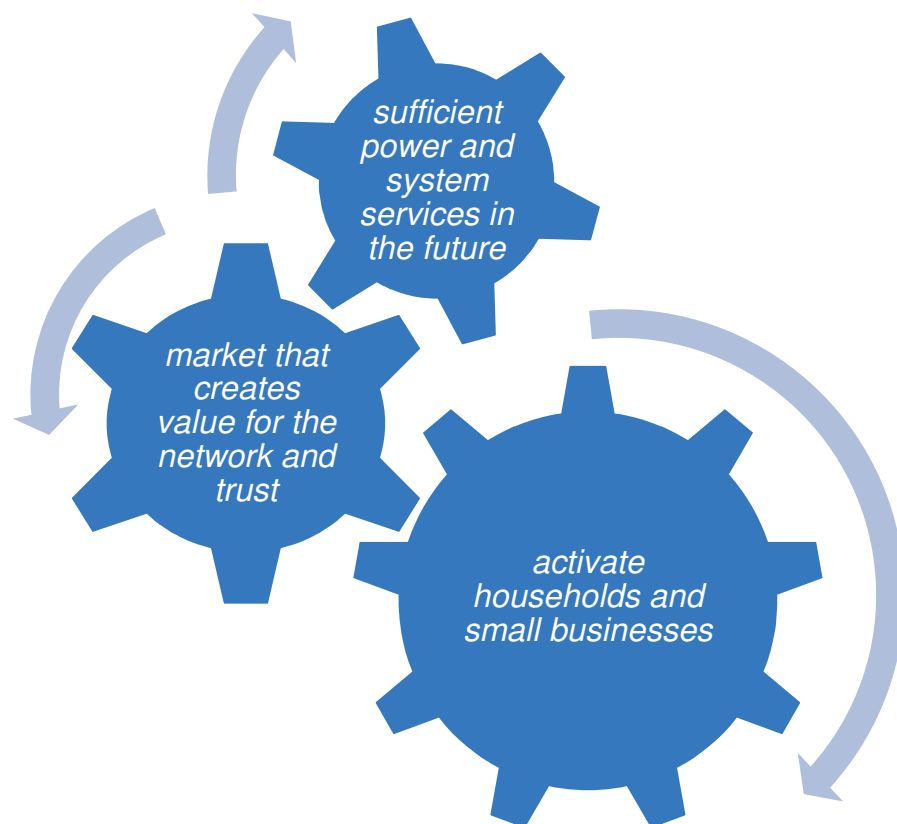
14 February 2023



#### 5. Continuous growth of implementation delays in key integration projects

Electricity market integration is a continuous process of (i) monitoring market functioning, (ii) identifying inefficiencies, (iii) designing improvements and (iv) implementing market design improvements. Europe's energy regulators observe that this process cycle is too slow to be able to adapt to the needs of the fast-moving landscape of decarbonisation and change of associated technologies. Furthermore, any change of market design requires significant time (judged by the mere technical challenges). One example is the flow-based capacity calculation project in the Core region which experienced several delays and was finally implemented in 2022 (seven years after the adoption of the CACM Regulation), whereas flow-based capacity calculation in the Nordic region is still not implemented. Such delays can be measured against socio-economic welfare losses because they are implemented much later than what they should be. Regulators call for an analysis of whether the overall governance and organisation of the EU internal electricity market is still fit for the purpose to deliver integration projects and bring their benefits to EU consumers in reasonable time. In the context of the current energy crisis, many stakeholders also asked for significant market design reforms. Europe's energy regulators emphasise that the EU framework does not allow for fast adaptation of the market design, which would be required to address the emerging problems.

# Enabling participation and lifting barriers



## **Activate households and small businesses**

- Exposure to price signals with sufficient protection
- Aggregators

## **Market that creates value for the network and trust**

- Market based procurement of system operation services

## **Sufficient power and system services in the future**

- Participation: prequalification and ancillary services



# Demand response through aggregation

## Existing legal framework

- Market codes allow participation of demand response, aggregation and storage
- Electricity Directive requires the implementation of demand response through aggregation in Member States

Already implemented but diverse implementation among Member States

## New European rules\*

- List of the possible types of aggregation models that may be applied by the Member States
- Roles, responsibilities and interactions among market participants
- European principles and general requirements for their implementation

Long time until the adoption (currently drafting phase to be launched) and the final implementation, but early implementation as way forward

\* ACER [Framework Guidelines on Demand Response](#)

## Prequalification

- European principles for the prequalification, in order to smoothen the process and **lift any unnecessary entry barriers** for the participation of all the resources

## SOs coordination

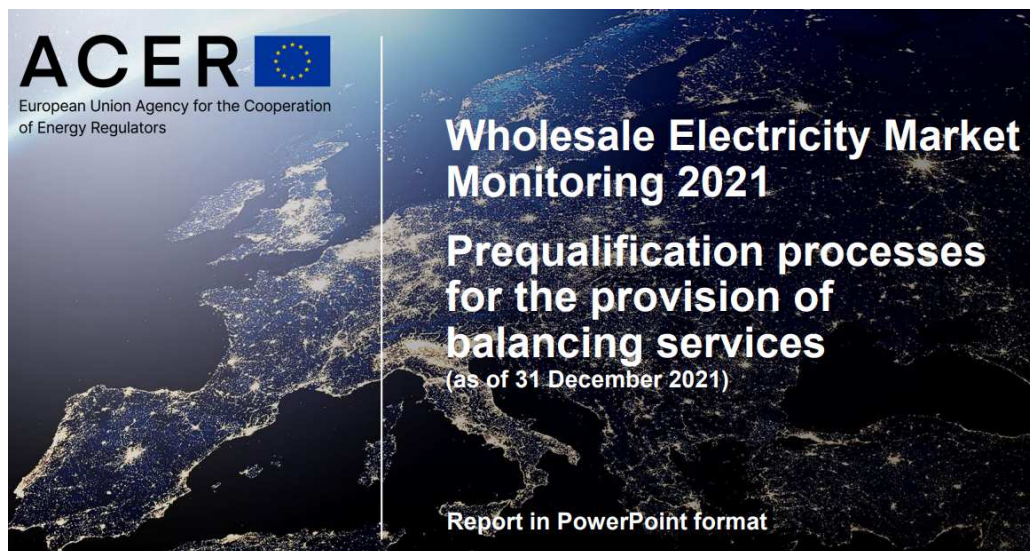
- Principles for the coordination of local markets with wholesale markets, and between TSOs/DSOs, ensuring **coherence in the interaction across different markets and different time frames**

## SO services

- Requirements for the **market-based procurement of products used for congestion management and voltage control**
  - Products
  - Procurement and pricing
  - Transparency and information provision

- The current regulatory framework allows the establishment of **market-based procurement processes** for system operation services.
- The new rules that will be developed in accordance with the Framework Guideline will set up **European principles to lift the barriers for the participation** of all the resources.

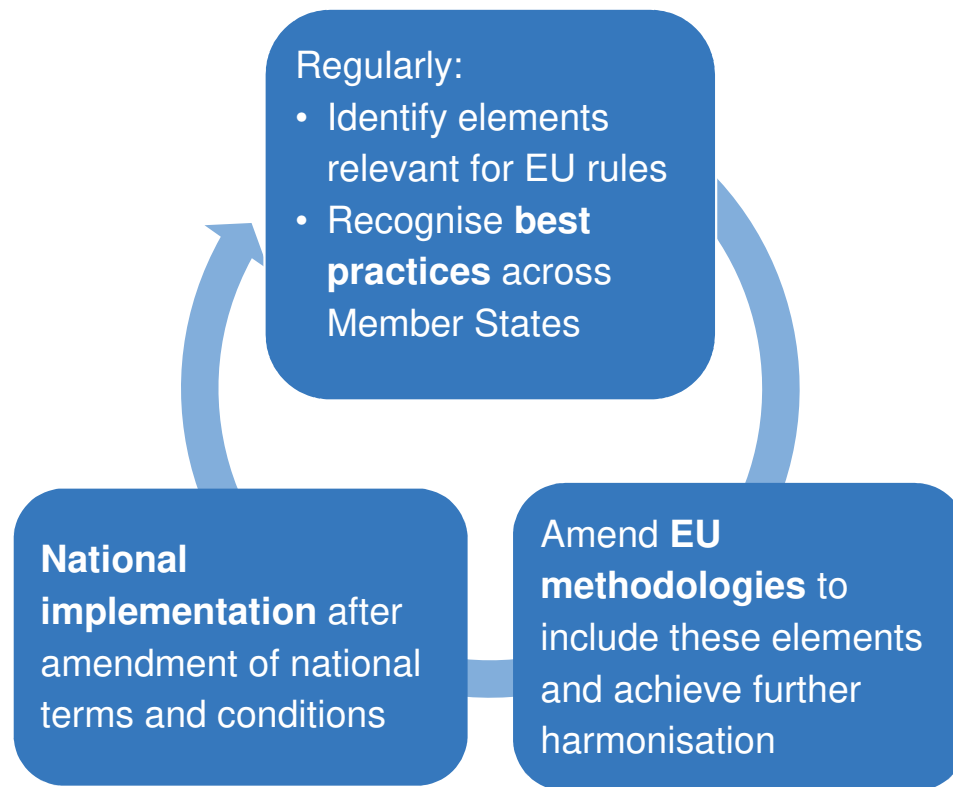
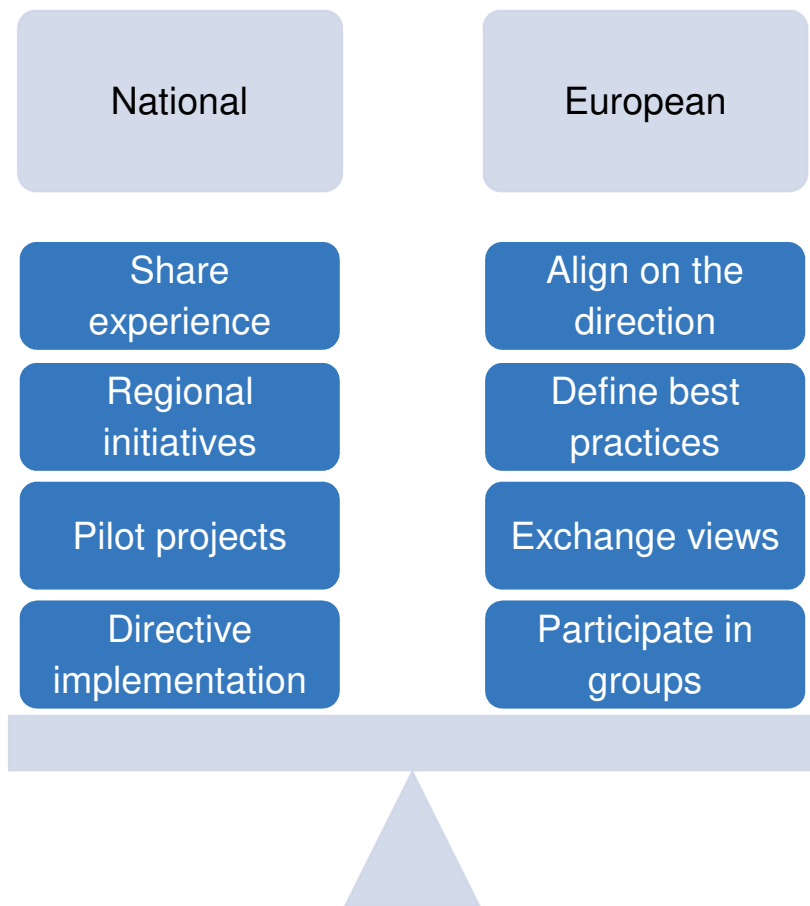
# Prequalification for balancing in DK



- ✓ Allow prequalification of reserve providing groups (including generation, demand and storage)
  - ✓ As a whole group the first time (although with exceptions).
  - ✓ New prequalification process for changes only in certain cases.
  - ✓ No re-prequalification in case of removal of units.
- ✓ Testing multiple changes simultaneously

Improvement for consideration → **simplified approach**: the technical capabilities of the assets to provide the product are not verified ex-ante during the prequalification phase but ex-post during the service delivery

# Way forward: National level ~ EU level



***Tak for muligheden.  
Ser frem til diskussion.***

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# Anneks

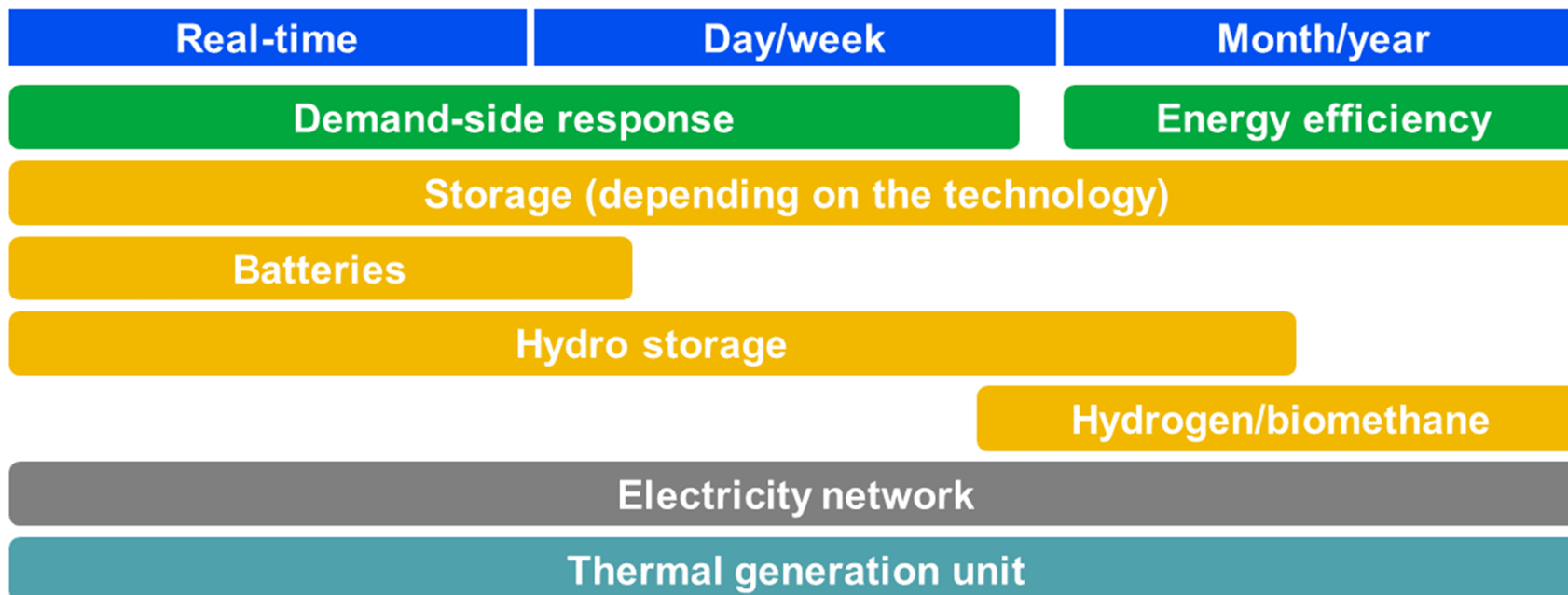
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- **Supporting the integration of energy markets in the EU** (by common rules at EU level). Primarily directed towards transmission system operators and power exchanges.
- **Contributing to efficient trans-European energy infrastructure**, ensuring alignment with EU priorities.
- Monitoring the well-functioning and transparency of energy markets, **detering market manipulation and abusive behaviour**.
- Where necessary, **coordinating cross-national regulatory action**.
- Governance: **Regulatory oversight is shared** with national regulators. **Decision-making** within ACER is collaborative and joint (formal decisions requiring 2/3 majority of national regulators). **Decentralised enforcement** at national level.

# Driving sufficient investment in flexibility & capacity

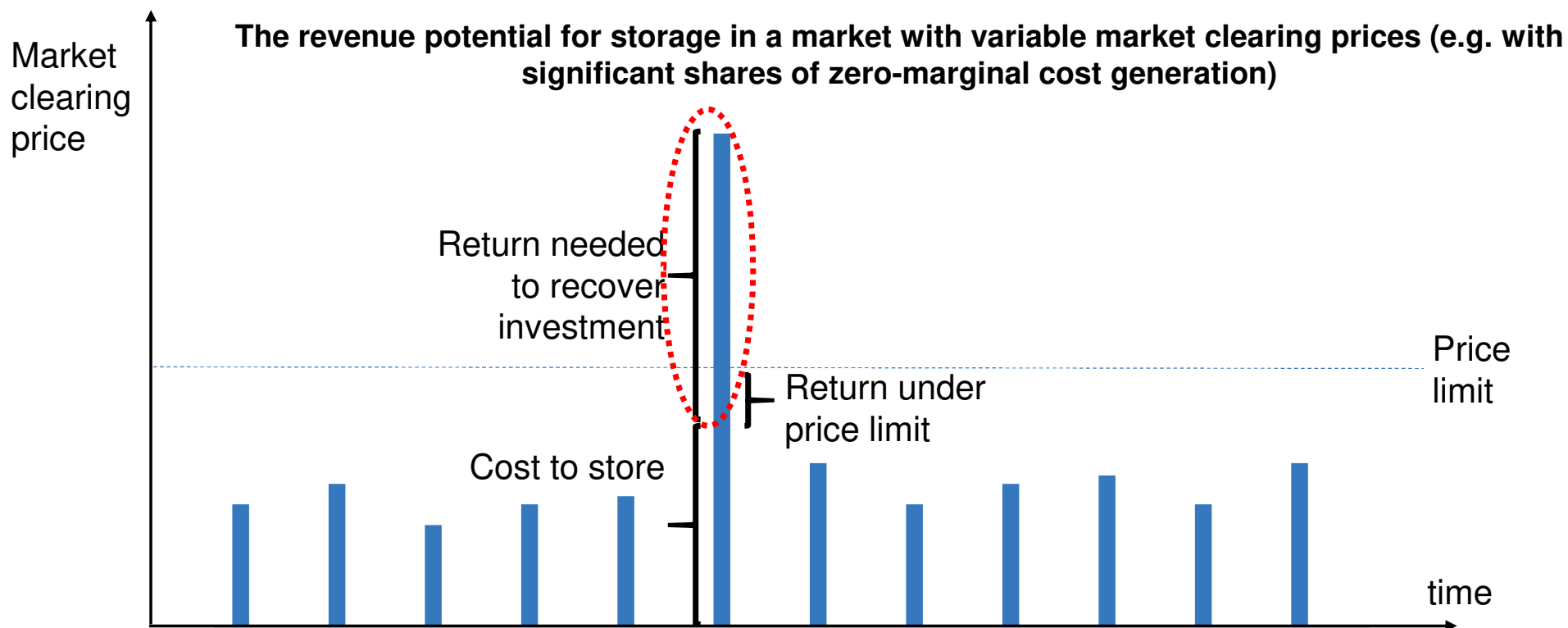
Flexibility services provided by various technologies



**The power system will need significant and diverse flexible resources across multiple time frames (with seasonal flexibility a key challenge). Price volatility sends a clear signal of the need for flexible resources. In the absence of such signals, innovation in new solutions will be hampered.**



## Price signals: Zero-marginal cost & ‘missing money’



More of a discussion some years ago, the challenge of potentially ‘missing money’ & ‘revenue cannibalisation’ is countered by the enhanced uptake of storage and electrolysis, adding revenue streams by ‘shifting’ generation across time frames. However, instituting price limits may hamper investment incentives for such technologies, thus inadvertently bringing back past discussions on ‘missing money’ & ‘revenue cannibalisation’.

# Evaluation of demand response in DK

Access to ancillary services	<ul style="list-style-type: none"> <li>• FRR</li> <li>• FCR</li> <li>• aFRR</li> <li>• mFRR</li> </ul>
Participation requirements	<ul style="list-style-type: none"> <li>• Prequalification process</li> <li>• Measurement</li> </ul>
Market composition	<ul style="list-style-type: none"> <li>• Not disclosed</li> </ul>
Data transparency	<ul style="list-style-type: none"> <li>• Advanced for grid data</li> <li>• Market composition unknown</li> </ul>
Upcoming legislative changes	<ul style="list-style-type: none"> <li>• Uncertainties over the implementation timelines</li> </ul>

- Denmark has a wide range of ancillary services that are procured through market-based mechanisms.
- Generation and demand assets can compete on equal footing and aggregation is allowed. Nevertheless, aggregated units must be part of the same BRP, which limits the possibilities for market players to form their portfolios.
- The participation of EV batteries in ancillary services is particularly common in Denmark due to favourable conditions to access the fastest products, FFR and FCR.
- The TSO requires local measuring systems with 1 second resolution that are particularly costly for smaller assets and can limit the business case of residential aggregators.
- Finally, the transparency of the market is limited due to the unavailability of market composition data.