



# Toward a new market model: - Barriers to long term contracts and possible approaches

Chaire European Electricity Markets (CEEM) conference  
*Toward a new electricity market model: is decoupling the right approach?*

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# Agenda

- Lessons from the energy crisis: what we already knew, and the new insights
- The solution: Hybrid market with long term hedging instruments
- Focus on forward markets and PPAs
- Conclusion



# What we already knew and what we have learnt: many of the conditions underpinning the efficient functioning of EOM markets are not fulfilled in practice

## Critical assumptions

## In theory

## In practice

Homogeneous product, perfect competition

Perfect competition with market participants atomicity (no market power), homogeneous product (commodity)

With the growth of interm... price is no longer the sing

Crisis revived debate on a “market split” with a differentiated remuneration of attributes (firmness, dependability), e.g. “Green Pool”

Inelastic demand / efficient rationing

Demand inelasticity and the determination of the Value of Loss Load with efficient rationing ensure the proper price signals (peak load pricing)

The determination of VOLL is challenging and often approximate. Policy makers often intervene before reaching and/or implement inefficient rationing

Crisis has shown that (most) policy makers think that high and volatile prices are not acceptable - at least for vulnerable consumers

Free entry / exit

Free entry & investment and exit & decommissioning of power plants

Not possible considering energy policy targets and often preventing exit to maintain security of supply

Free price formation

Peak load pricing hinges on free price formation and scarcity prices increasing up to the VOLL.

There is a range of regul... price caps. In addition, sy... manage episodes of scarcity and ensure sare system operation.

Crisis led to many policy interventions to instruct generators to start / delay closures

Continuous variation of supply capacity

Optimal pricing is obtained with SRMC + scarcity prices, and leads to instantaneous entry / exit.

Long lead times for the c... lumpiness create potentia

European Commission and ACER have highlighted the lack of liquid forward markets and long term hedging possibilities

Market completeness

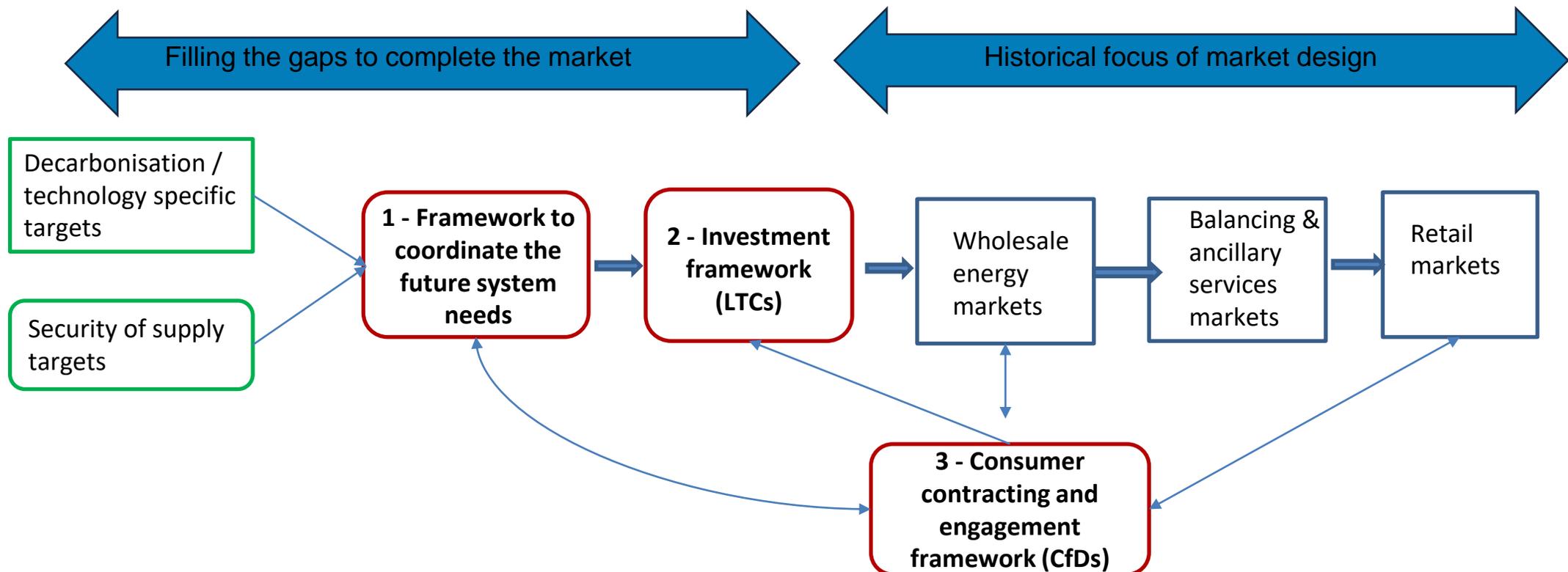
Power should be traded through a complete set of markets across time (incl. forward markets).

Electricity markets are not complete in the sense that liquidity in forward markets beyond years is very limited (except corporate PPAs for large users)



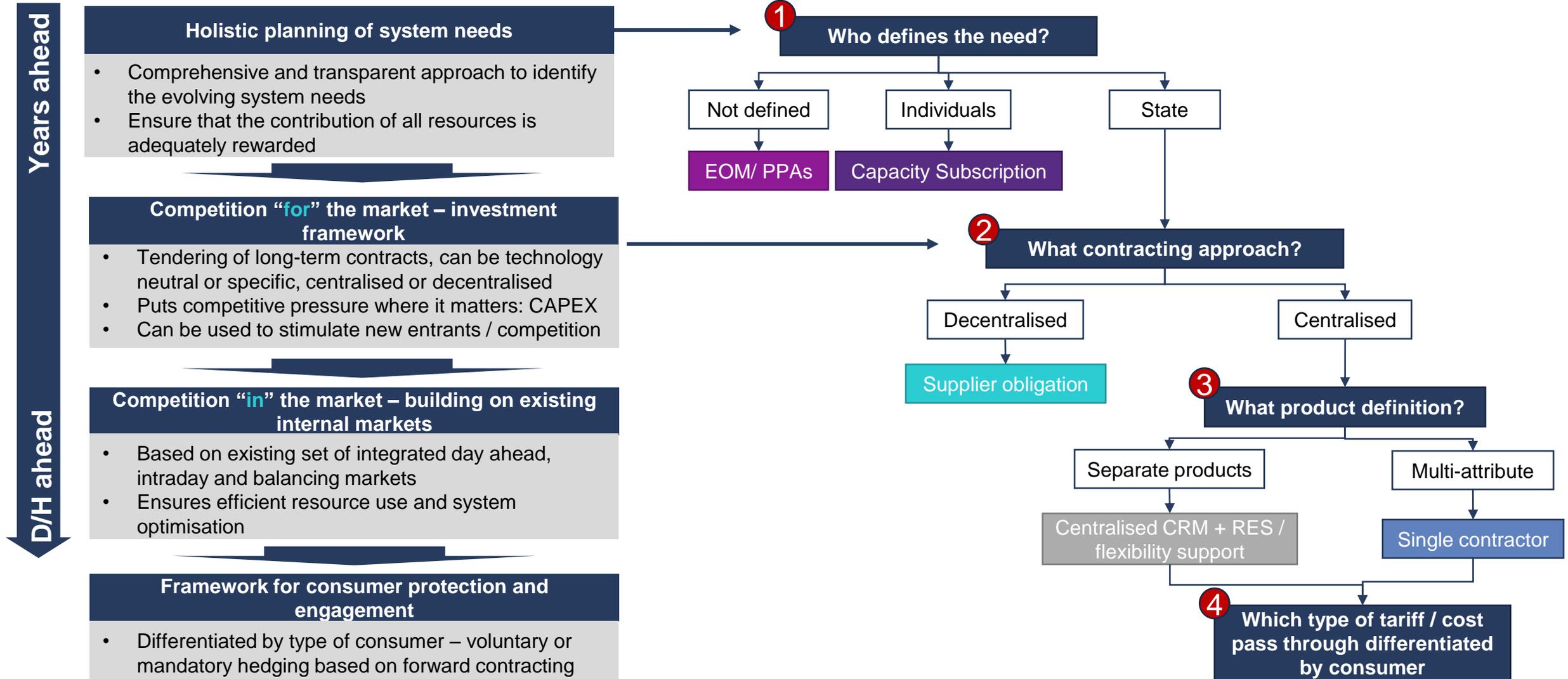
## The solution: “hybrid markets” with long term hedging instruments

- There is a growing literature on “hybrid markets” (e.g., Roques & Finon, 2013, 2017; Keppler et al, 2021; Joskow, 2022, etc.) that puts forward different alternatives to address these various market and institutional failures:
  - ✓ Additional “modules” to internalize policy interventions to define the generation mix, the level of security of supply through the introduction of complementary planning and long term hedging / contracting mechanisms
  - ✓ Whilst preserving efficient competition in energy markets, and introducing further hedging instruments to protect consumers





# The key elements of a new hybrid market model framed around policy objectives





# How to stimulate the demand for long term contracts? Focus on barriers to forward trading

## Lack of forward market liquidity is a barrier to forward hedging

- **Forward markets lack liquidity:** larger bidding zones are more liquid (e.g. Germany) than others, but a large part of Europe has limited liquidity (ACER 2022, see graph)
- Market participants in illiquid bidding zones need to either pay **higher premiums for hedging** or **find alternatives** such as forward markets in neighbouring Member States with transmission rights
- Further developing forward market liquidity is essential to provide **effective hedging opportunities, facilitate price discovery, and support contestability** in the wholesale and retail electricity markets

## There are barriers to hedging across bidding zones, particularly for the efficient use to long-term transmission rights

- **No continuous nor secondary markets** for long term transmission rights (LTTRs), and as such capacity allocation does not match the continuous power market
- **Maturity of LTTR products** limited to year ahead or month-ahead, limiting long-term hedging strategies

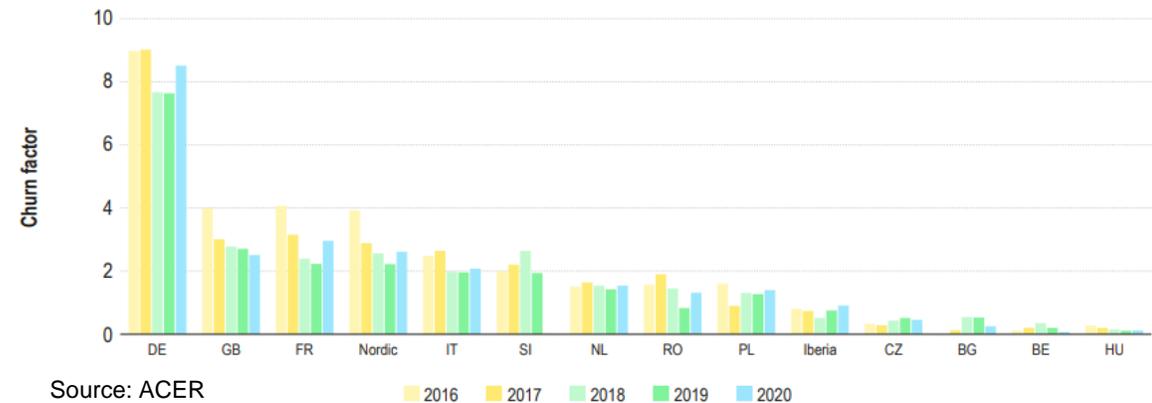
## EEX futures market volumes for 2023-2029 delivery, Germany

EEX GERMAN POWER FUTURE						
2022-09-01						
Day Weekend Week Month Quarter Year						
Baseload						
Name	Last Price	Last Volume	Settlement Price	Volume Exchange	Volume Trade Registration	Open Interest
Cal-23	555.00	35,040	523.40	1,830,840	8,786,280	92,175
Cal-24	286.50	8,784	280.00	878,400	1,016,944	24,754
Cal-25	194.00	26,280	193.00	350,400	192,720	7,360
Cal-26	160.00	8,760	166.50	8,760	-	-
Cal-27	-	-	129.00	-	-	-
Cal-28	-	-	114.00	-	-	-
Cal-29	-	-	116.00	-	-	-

**Volume exchange**  
**2023 – 1,831 GWh**  
**2024 – 878 GWh**  
**2025 – 350 GWh**  
**2026 - 9GWh**

Source: EEX, screenshot on 07/09/2022

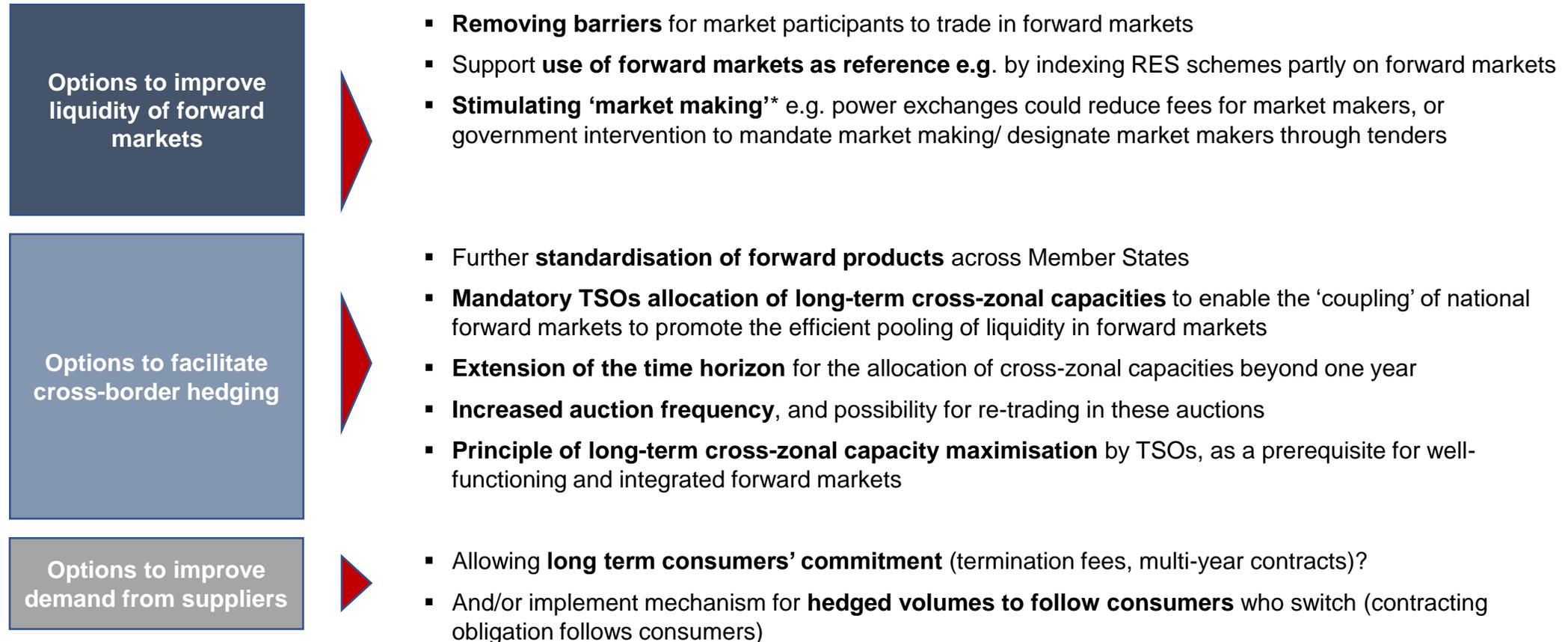
## Churn rate in major European forward power markets, 2016-2020



Source: ACER



## How to stimulate the demand for long term contracts? Potential approaches to support forward trading



Source: ACER 2022 \*Note: 'Market making' refers to certain traders submitting at the same time orders to buy and sell, in order to increase the amount of orders in the market.

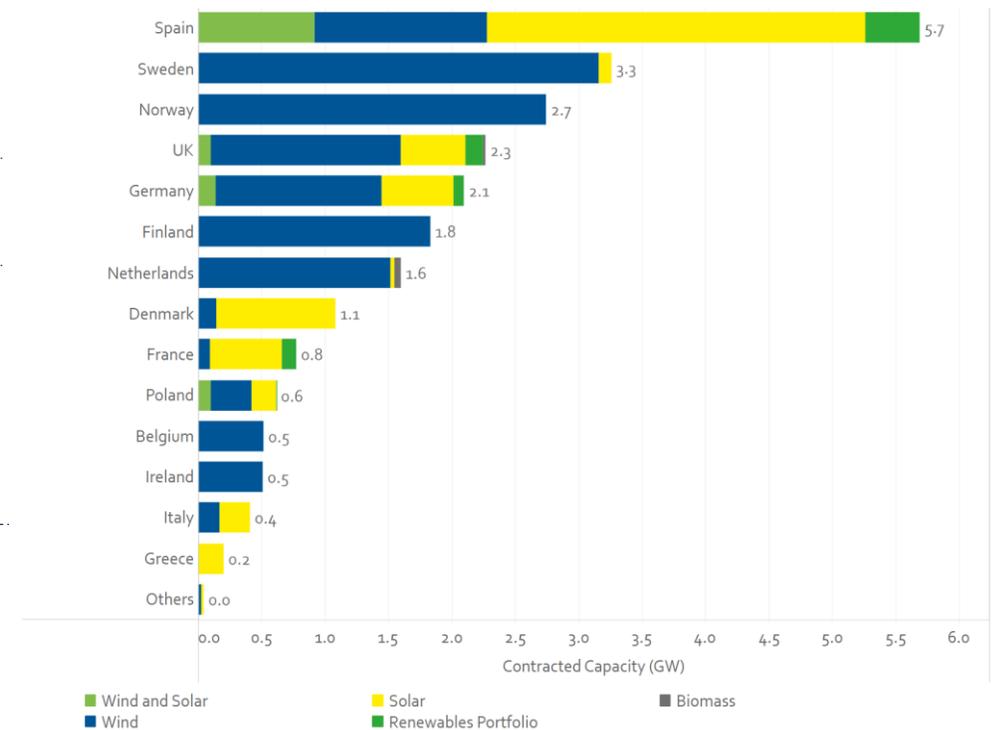


# How to stimulate the demand for long term contracts? Focus on barriers to PPAs

## Barriers to broader uptake of corporate PPAs

<b>Regulatory barriers</b>	<ul style="list-style-type: none"> <li>▪ Legal constraints to sign direct contracts btw. generators and off-takers</li> <li>▪ Barriers to signing contracts with more than one supplier</li> <li>▪ Barriers to the transfer of Guarantees of Origin (GoOs) to the off-taker</li> </ul>
<b>Policy barriers</b>	<ul style="list-style-type: none"> <li>▪ Support schemes that are incompatible or compete with corporate PPAs</li> <li>▪ Limited visibility on the evolution of support schemes</li> </ul>
<b>Economic barriers</b>	<ul style="list-style-type: none"> <li>▪ Creditworthiness of off-takers</li> <li>▪ High transaction costs</li> <li>▪ Lack of long-term hedging products to address imbalances or defaults</li> <li>▪ Variability of RES production and the associated costs for managing volume imbalances via 'sleeving contracts'</li> </ul>
<b>Awareness issues</b>	<ul style="list-style-type: none"> <li>▪ Limited awareness and interest, especially for SMEs</li> <li>▪ Perception that corporate PPAs are more expensive</li> </ul>

## Renewable PPAs are concentrated in only a few member states



Source: [EC, 2022](#). Data based on [Re-Source \(2022\)](#)



# How to stimulate the demand for long term contracts? Potential approaches to support PPA demand

There is a spectrum of interventions to support further voluntary PPA uptake

Least intervention

Strong intervention



**Removing barriers to PPAs**

Regulatory, policy, economic or other barriers limit the current uptake of PPAs

**Public guarantees to SMEs**

Broadening the offtaker base by actively helping smaller parties engage in PPAs

**State buyer**

As a large consumer, the state engage in PPAs to stimulate investment

**Central counterparty**

A public agency acts as a counterparty to PPAs, overtaking this risk

**State-run green power pool**

A public agency runs a RES power pool, with standardised PPA contracts to enable secondary trading



# Conclusion and next steps

- **The energy crisis has revealed what we already knew** : many of the conditions underpinning the efficient functioning of EOM markets are not fulfilled
  - The new market model needs to internalize policy objectives and likely interventions
  - The reform is an opportunity to realign the market design and division of responsibilities anchored in the EU legislation (e.g. generation mix, security of supply, vulnerable customer protection are national prerogatives)
- **The key elements of a revised hybrid market model designed to deliver policy objectives (SoS, decarbonisation) include:**
  - Holistic planning of system needs
  - Competition “for” the market -- investment framework
  - Competition “in” the market – building on existing internal markets
  - Framework for consumer protection and engagement
- **There is a large spectrum of approaches built on these principles and it is likely that different countries will make different choices regarding the following key trade offs:**
  - Who defines the system needs (consumers/ retailers or central entity)?
  - What contracting approach (voluntary or mandatory, centralised or decentralised)?
  - What product definition (technology neutral or not, separate products or multi attribute)?
  - Which type of tariff / cost pass through to which consumer?

# Thank you for your attention

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