PRESENTATION FOR NATIONAL GRID ESO
MARKETS ADVISORY COUNCIL,
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ENERGY CRISIS IN EUROPE, EMERGENCY INTERVENTIONS AND EU ELECTRICITY MARKET REFORM

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WHO AM I?

Full name: Christian Daugaard Mikkelsen

Position: Economist, Electricity Markets at Energinet A/S (Danish TSO) since December 2020 (before joining I worked as a management consultant for 4 years)

Roles and responsibilities (non-exhaustive but most relevant):

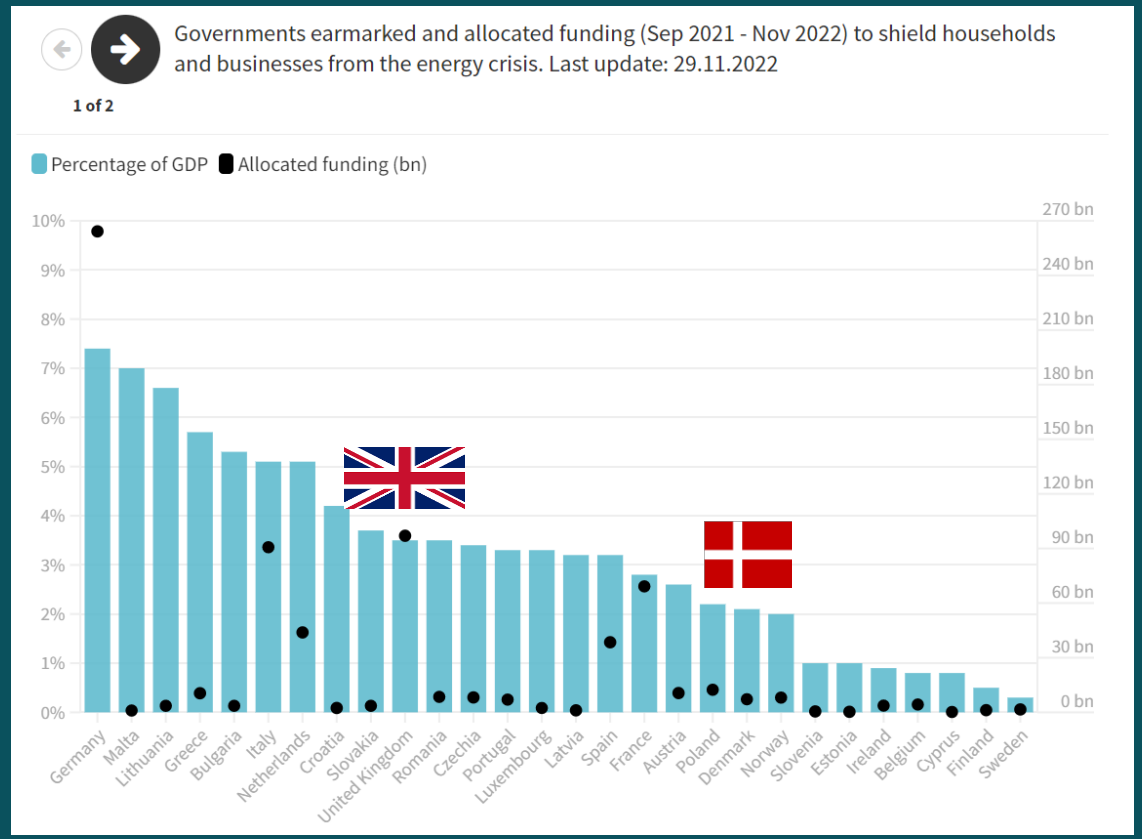
- **Member of Markets Project under Energinet Energy Islands Program**:
  - Offshore market design, balancing and reserves dimensioning, socio-economic analysis, business case analysis, market rules.
- **Member of Working Group Market Design & Renewable Energy Sources (MD RES) in ENTSO-E**:
  - Wholesale electricity market design, electricity market integration, congestion management, system flexibility, offshore market design, market integration of renewables.

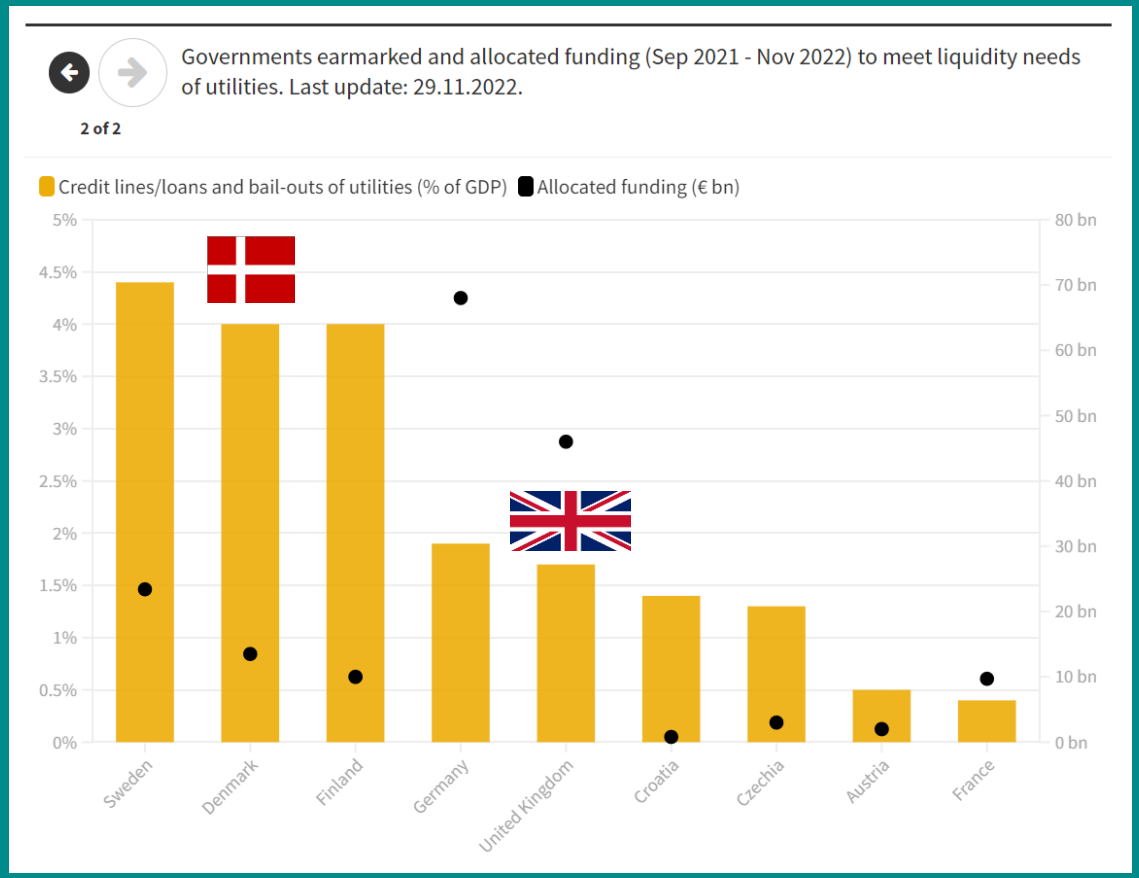
Agenda

1. **Policy reactions to energy (price) crisis in Europe**
2. Emergency intervention
3. EU Electricity Market Reform

EUROPEAN GOVERNMENTS HAVE ALREADY SPENT MASSIVELY TO FINANCE CONSUMER SUPPORT AND TO MEET LIQUIDITY NEEDS FOR ENERGY UTILITIES

BUT THIS POLICY IS NO LONGER POLITICALLY ACCEPTABLE…





Kilde: https://www.bruegel.org/dataset/national-policies-shield-consumers-rising-energy-prices

POLITICAL REACTION TO THE HIGH PRICES – SOMETHING MUST BE DONE!

POLITICAL DILEMMA: HOW TO BALANCE THE NEED FOR PROTECTING CONSUMERS AND INDUSTRY FROM EXCESSIVE PRICES WITHOUT COMPROMISING SECURITY OF SUPPLY?

EDF sues French government over electricity sales

10 August 2022

EDF should sell more power to rivals in 2023 to limit price hikes -regulator

EEX FRENCH POWER FUTURES

2022-11-30

Day

Wholesale price intervention and nationalisation in France

Base

Future	Last Price	Last Volume	Settlement Price
1/23	625,00	2.159	619,95
2/23	334,00	4.368	334,39
3/23	334,00	8.832	335,57
4/23	501,00	2.209	502,04

ENERGY CRISIS

Portugal, Spain cap gas prices for power producers to bring down wholesale prices

Price Cap on gas for power generation (The Iberian Mechanism)

EURACTIV

Uber Files gives new im

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over market reform intensifies

Greek proposal to split the markets in two

Greeks pitch new electricity market model as fight over market reform intensifies

28. Jul. 2022

By Nikolaus J. Kurmayer | EURACTIV.com

Agenda

1. Policy reactions to energy (price) crisis in Europe
2. **Emergency intervention**
3. EU Electricity Market Reform

EU INITIATIVES IN 3 TEMPOS

Short term

Emergency measures, infra-marginal revenue cap, consumer support

Mid term (before winter 2023)

Targeted Market Reform to decouple gas and electricity prices

Long term

A Market Design Reform compatible with a net zero energy system

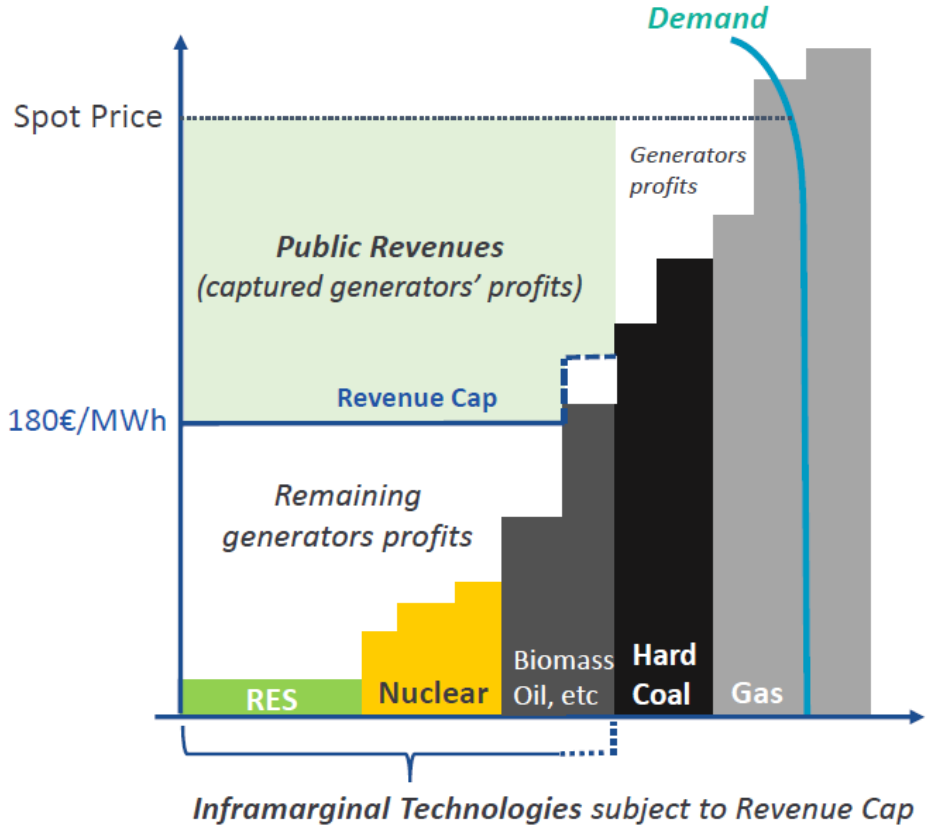
EMERGENCY INTERVENTION TO ADDRESS HIGH ENERGY PRICES IN THE EU

Content:

- Reduce electricity use
- Revenue cap (180 EUR/MWh) on inframarginal technologies to finance consumer support
- Solidarity contribution from fossil fuel businesses

Legislative process:

- EC proposal 14th Sept 2022
- Approved by EU Council on 30th Sept 2022
- National implementation deadline Dec 1st 2022
- Expires on June 30th, but can be prolonged subject to market conditions



REVENUE CAP ON MARKET REVENUES FOR INFRAMARGINALE TECHNOLOGIES

ENERGINET

Cap on market revenues above 180€/MWh in DA, ID og BM

- All technologies are subject to the revenue cap except gas-fired generation, coal and hydro with reservoir
- Applies to all types of trade, incl. volumes sold through financial hedges/contracts and PPAs
- Clawed back revenues to be used to finance consumer support

Flexibility in national implementation; Member States can choose to:

- set technology specific revenue caps that are lower than 180€/MWh (i.e., more restrictive)
- ”only” clawback 90% of revenues above the cap (to support ”healthy” incentives for market participants to trade in markets after DA)
- exempt market revenues from trades in the balancing markets (incl. TSO-transactions; redispatch, countertrade)
- set higher revenue caps for technologies with SRMC above 180€/MWh for security of supply purposes

Clawback measures on electricity market revenues proposed in major European countries

	Price ceiling per technology (€/MWh)	Clawback tax (%)	Dates of measure	Average power price (2022*)	Inframarginal generation (2021)
Germany	Solar, wind, nuclear: €130 Lignite: €82 | Oil: €280	90%	Dec.1, 2022 – Jun. 30, 2023	€233.8/MWh	75%
France	Nuclear, wind, hydro: €100 | Solar: €180 | Biomass: €130 | Biogas: €110	10-40%	July 1, 2022 – Dec. 31, 2023	€276.4/MWh	90%
Italy	Solar, wind, hydro: €180	100%	Dec. 1, 2022 – Jun. 30, 2023	€304.6/MWh	~40%
Spain	Gas price cap for power plants: €40	Not applicable	May 11, 2022 – May 31, 2023	€174.1/MWh	~15%
Poland	According to formula differing per technology and daily power price	100%	Dec. 1, 2022 – June 30, 2023	€167.5/MWh	~40%
UK (non-EU)	Wind, solar, hydro, nuclear: €87 (£75)	45%	Jan. 1, 2023 – March 31, 2028	€234.3/MWh	27%

EU-aligned (legislated at EU-level) | Proposed (national) | Legislated (national) | Above EU average | Below EU average

Source: BloombergNEF.
Note: Most price ceilings include exemptions for certain types of generators, for example small-scale generators.
*Average power price for 2022 covers January 1, 2022, to November 30, 2022.

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"This market system does not work anymore. We have to reform it, we have to adapt it to the new realities of dominant renewables", UVDL 8th June 2022

IS THERE A NEED TO STRUCTURALLY REFORM THE DESIGN OF THE EU ELECTRICITY MARKET?

Revolution?

Evolution?

"This market system does not work anymore. We have to reform it, we have to adapt it to the new realities of dominant renewables", UVDL 8. juni 2022

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EU ELECTRICITY MARKET DESIGN REFORM: WHAT WE KNOW SO FAR (1/2)

Process

- EC to issue consultation document mid-December (**Friday 16th December** according to latest rumors!) and **5 weeks public consultation (20th January 2023 latest we heard)**
- Targeted Reform: Draft **Regulation** focused on decoupling of electricity prices from gas prices, to be issued **by 23 March 2023** (European Council) --> entry into force: ideally by next winter, assuming quick EP-Council co-decision process
- More **comprehensive market design reform** delayed as it will need +/-1 year of Impact Assessment & thorough discussions.
- Legislative process can only start after the next EC establishment (autumn ’24) -> entry into force not before end of 2025/beginning of 2026.

EU ELECTRICITY MARKET DESIGN REFORM: WHAT WE KNOW SO FAR (2/2)

Scope/Content of Targeted Market Reform (March Regulation)

- Mandatory **2-way "Contract for Differences (CfDs)“** for **new RES**/publicly supported technologies (e.g., **nuclear**) assets.
- For **existing inframarginal technologies**, likely extension of **revenue cap,** introduced with the Emergency Intervention regulation, to become integrated into wholesale markets.
  - --> This should serve as an incentive for existing technologies to move to 2-ways CfDs
- Inclusion of some **consumer protection** aspects & some **REMIT (market transparency and surveillance)** improvements
- **Other aspects such as** adequacy & CRMs, locational signals, demand response unlikely to be included, unless consensual and quickly implementable principles can fit the scope & objective of the March Regulation
  - ENTSO-E focusing on fit-for-purpose technical input to EC on CRMs and demand response

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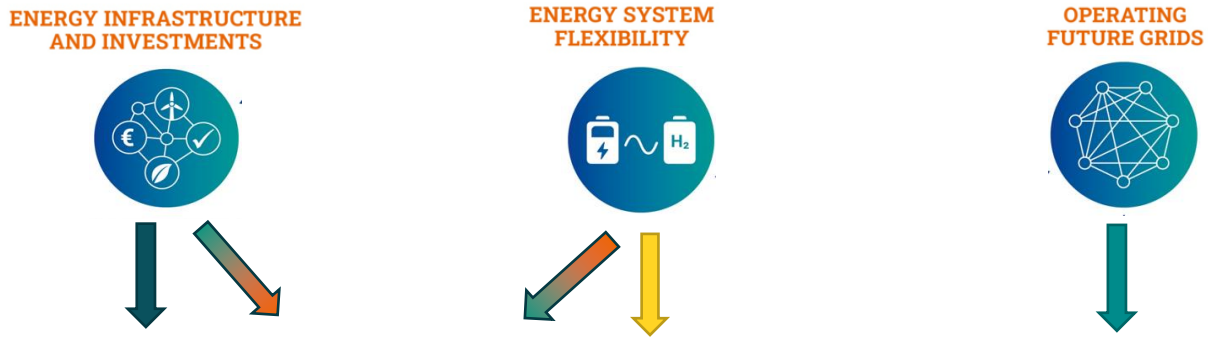
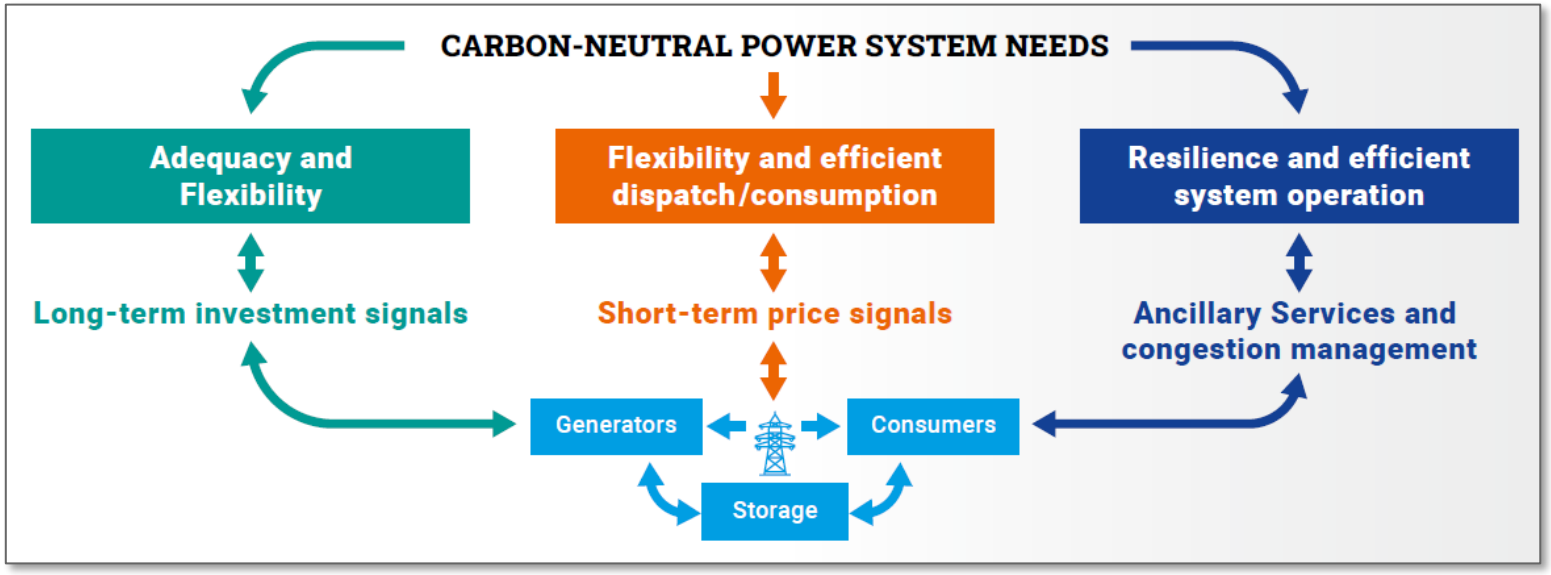
MARKET DESIGN FOR A CARBON-NEUTRAL ENERGY SYSTEM - KEY CHALLENGES

ENERGINET





Ensuring resource adequacy & long-duration flexibility

- Financing massive RES development
- Remunerate complementary sources for adequacy & flexibility

Incentivising short-term flexibility

- Efficient price signals & improved products
- Optimised interaction between sectors, grid levels and markets

Facilitating Resilience & System Operation

- Reflect grid congestions and other operational constraints

Affordability & consumers' needs

- Aim at affordability & limit consumers' exposure
- Facilitate emergence of new services, incentivise demand response and energy savings

ENTSO-E Vision: A market design fit for a carbon-neutral energy system

Rethinking Market Design

Today market design is **not fully fit for delivering a climate neutral energy system** and needs to adapt to upcoming challenges and opportunities.

Optimal value allocation

Electricity market design should **allocate value to what is most needed** for the energy system (adequacy, flexibility, resilience) in each timeframe and at each location.

Stronger long term price signals for RES & LD flexibility

Strengthen long-term price signals and provide stable regulatory framework to reduce capital costs to accelerate investments in both RES & complementary long-duration flexibility resources.

Efficient ST markets for dispatch & flex

Efficient short term price signal remain essential. To increase short duration energy system flexibility, wholesale and balancing markets need to be made fit for the future generation mix and new market actors, optimising the integrated energy system of systems.

Efficient use of grid capabilities

To facilitate system resilience and efficient use of infrastructure, market design should better **reflect grid constraints and operational challenges** via requirements, locational price signals and products, coordinated with DSOs when needed, and new ancillary services.

Affordability & Consumer needs

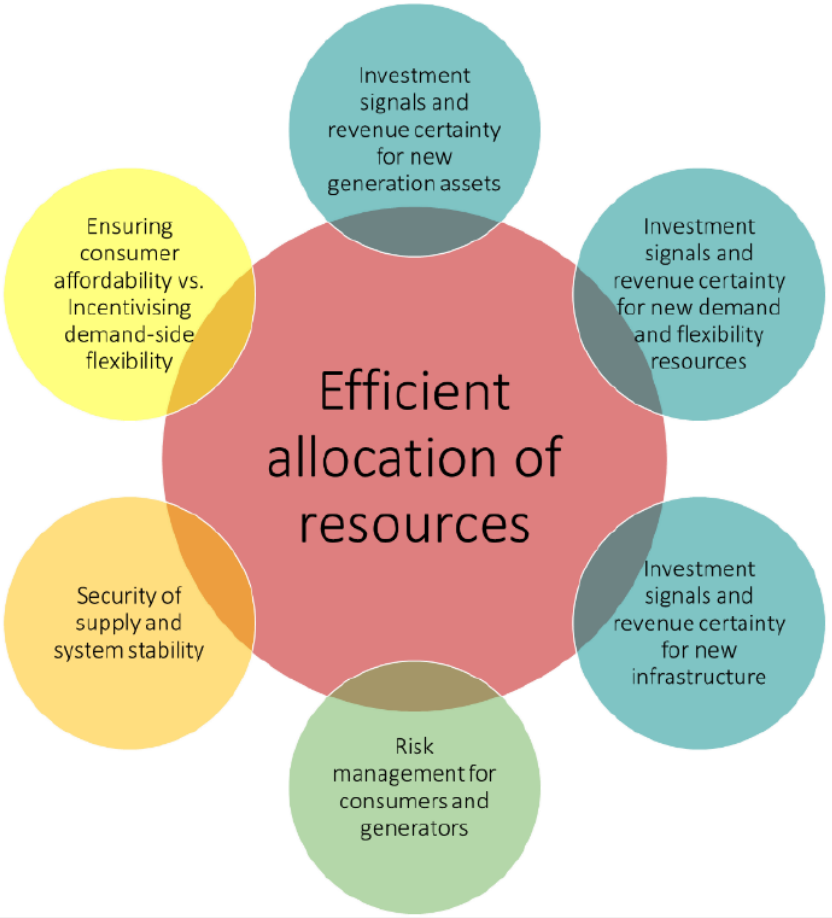
To meet the different **needs and preferences of consumers**, market design should facilitate consumers engagement and the provision of new services, while aiming at simplicity of use, transparency and affordability, and duly protecting specific categories of consumers.

ENERGINET POSITION ON EU ELECTRICITY MARKET DESIGN

THREE FUNDAMENTAL INSIGHTS TO REMEMBER IN THE FORMULATION OF REFORM PROPOSALS

1. Regardless of how the electricity market design is reformed, it **cannot solve a shortage of primary energy and/or capacity** in the European Union. This is not the role of the market, but it is the role of the general energy policy

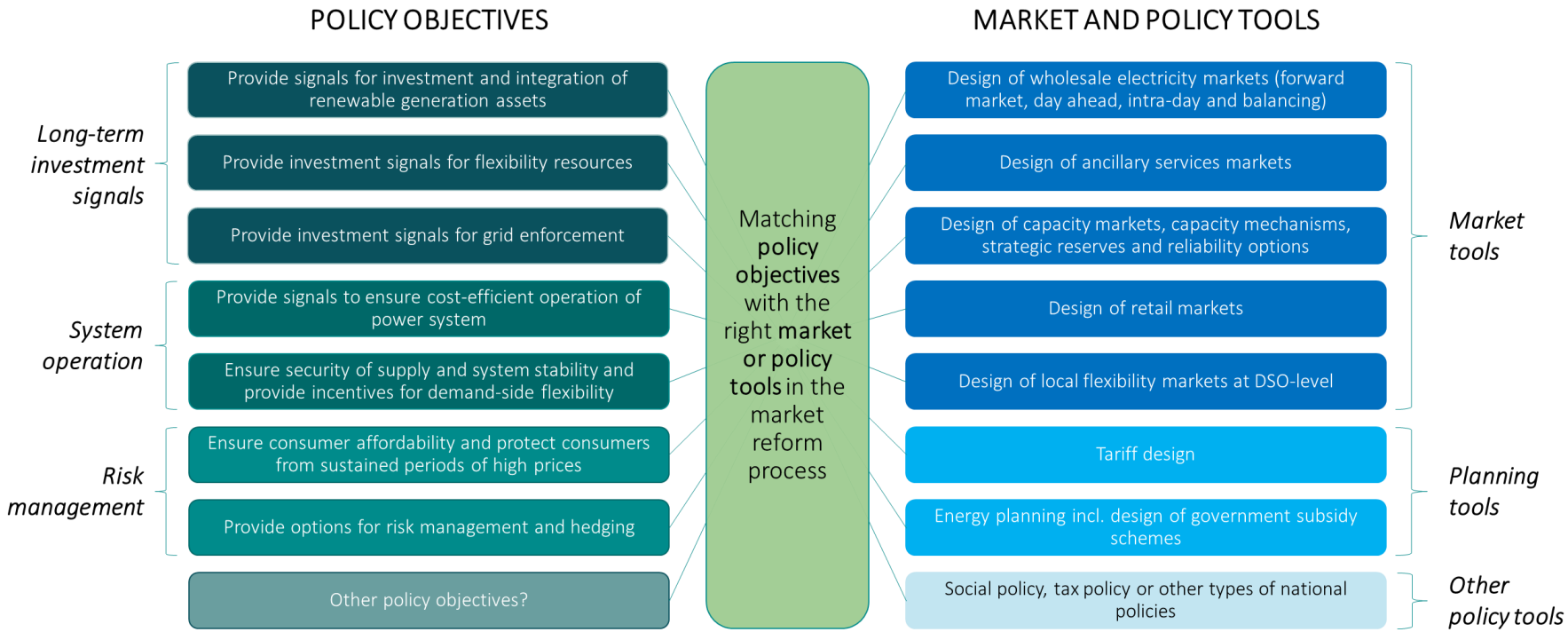
2. If we ask the market to solve an increasing number of interlinked (and sometimes conflicting) policy objectives, we **risk hampering the market in fulfilling its primary role, which is to ensure the most cost-efficient allocation of resources**



ENERGINET POSITION ON EU ELECTRICITY MARKET DESIGN

THREE FUNDAMENTAL INSIGHTS TO REMEMBER IN THE FORMULATION OF REFORM PROPOSALS

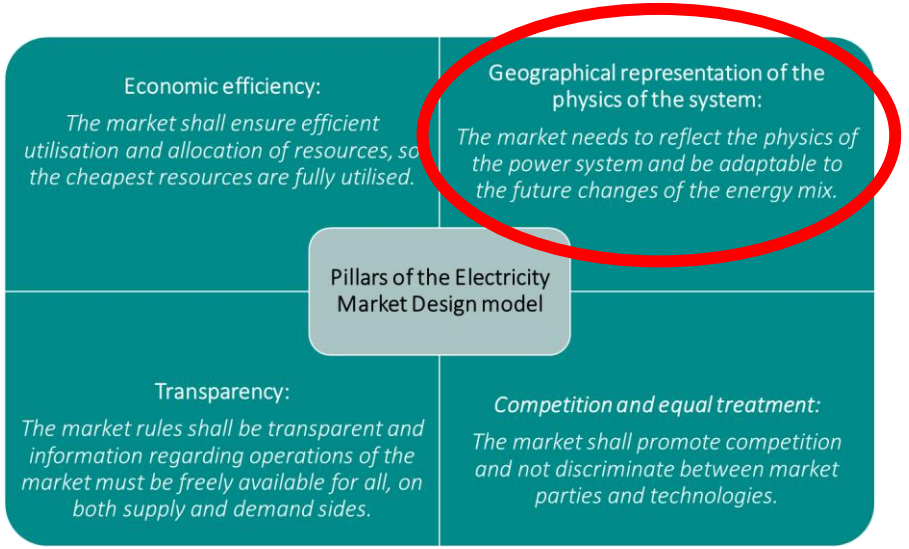
3. The electricity market consists of several markets and mechanisms with different roles and functionalities. To ensure a well-functioning market, also after reforms of the EU electricity market, it is **important to match the right market or mechanism with the right policy objective**.

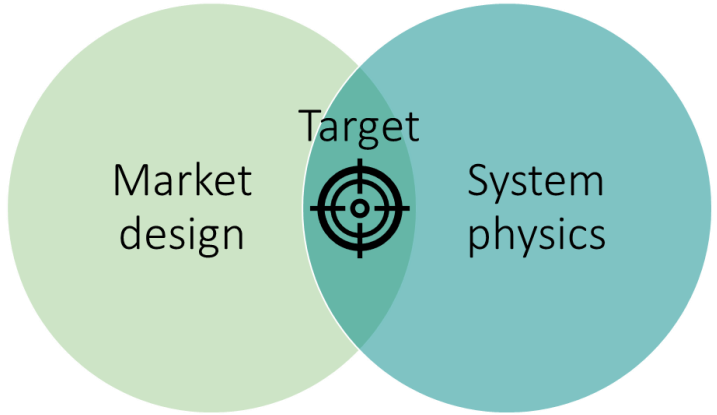


ENERGINET POSITION ON EU ELECTRICITY MARKET DESIGN

LOCATION, LOCATION, LOCATION

- Mismatch between market and physics → increasing costs of operating and balancing the system.
  - → System costs will increase as the uptake in renewables continue rising!
  - → Risk that the pace of grid development will become a bottleneck on the path towards the net zero system (even more than it already is today)
- **A market reform that is future-proof and able to deliver net zero must have, at its heart, improved and more granular locational signals for the location and dispatch of new generation and demand**, as well as sustained and transparent price signals for grid development and flexibility resources





Questions