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# An investment framework to support power system decarbonization

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# STEPPING UP AND SECURING INVESTMENTS IN THE EU POWER SYSTEM IS KEY TO MAKE THE EU DECARBONISATION AMBITION A REALITY

## Historically most EU investments in the power sector were made under regulation or supported by long term contracts

- Only a small share of total generation investments in the next decade are expected to be merchant

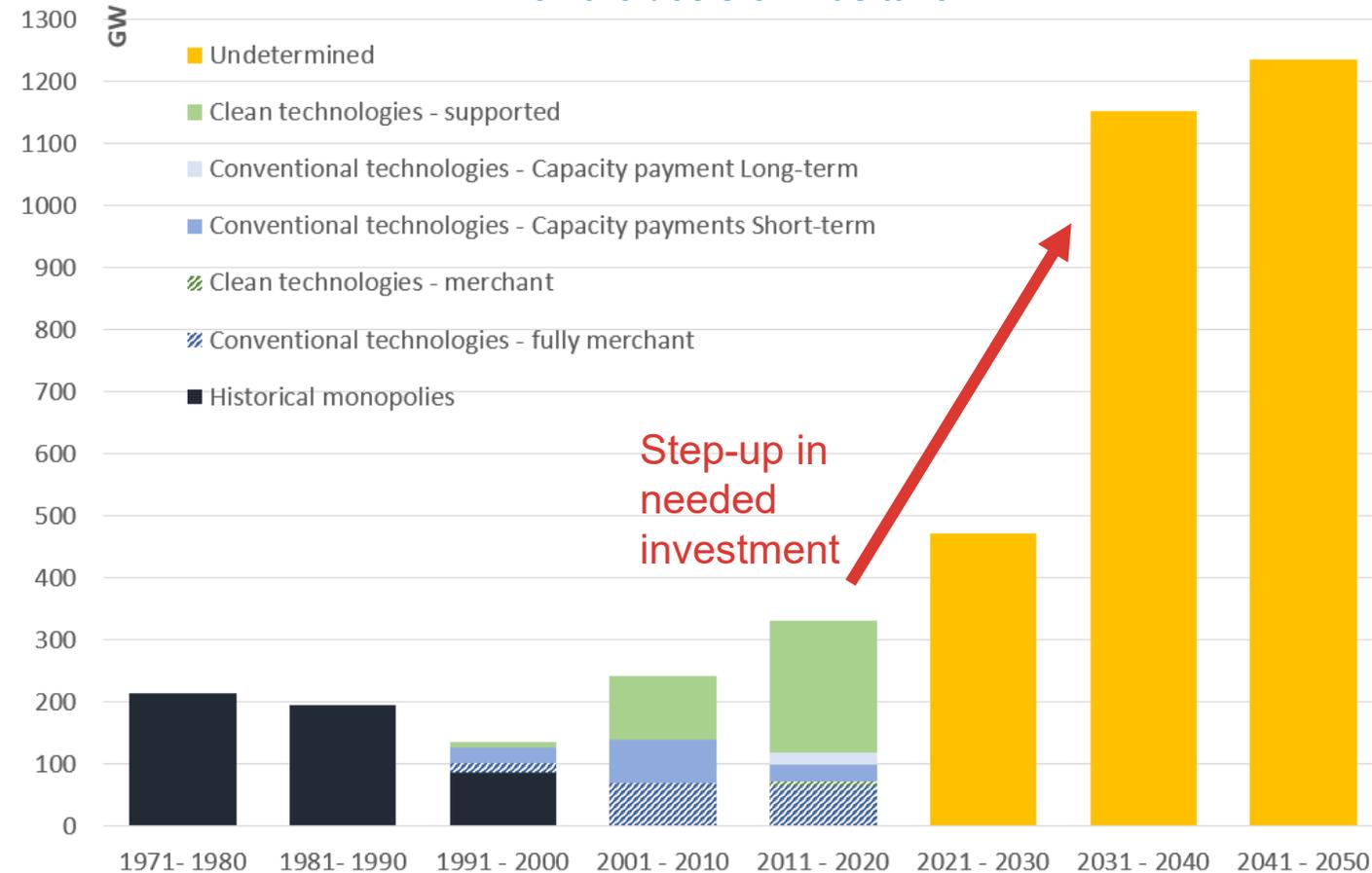
## The Green Deal requires a step up in power sector investments

- 800 bn€ investments needed in power generation in the next decade, a significant increase compared to the previous decades

## A framework to support private investment is needed to support EU's economic recovery

- Private investments in energy assets can play a key role in the economic recovery

## Capacity additions in Europe based on the regulatory framework when the decision was taken

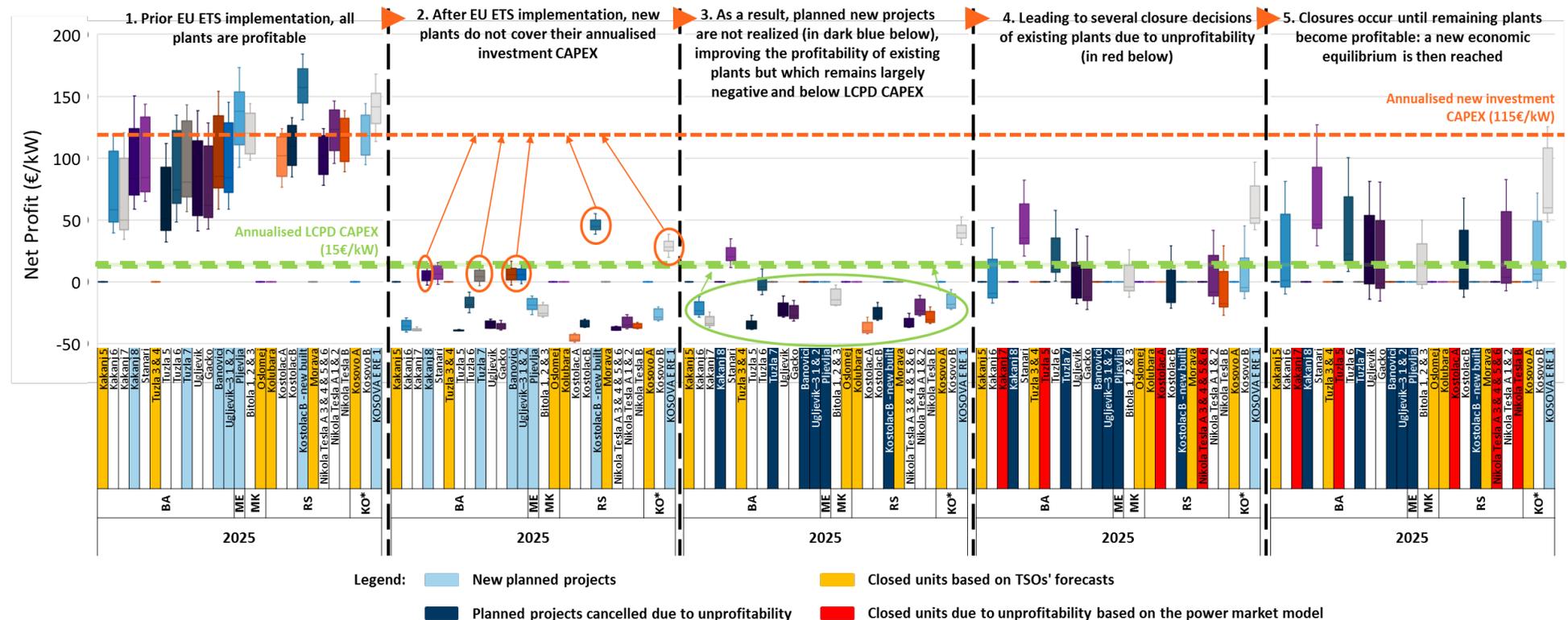


# OUR 2019 STUDY SHOWED THAT THE IMPLEMENTATION OF THE EU TARGET MODEL AND ETS WOULD LEAD TO SIGNIFICANT PLANT RETIREMENTS IN SOUTH EAST EUROPE

With the EU ETS introduction, new and existing lignite plants would become **unprofitable**. This would lead to:

- **Closures of existing plants:** 0.9 GW in Bosnia, 0.4GW in North Macedonia and 3GW in Serbia.
- **Projects cancellations:** 1.5GW in Bosnia, 0.2GW in Montenegro, 0.7GW in North Macedonia and 0.3GW in Serbia

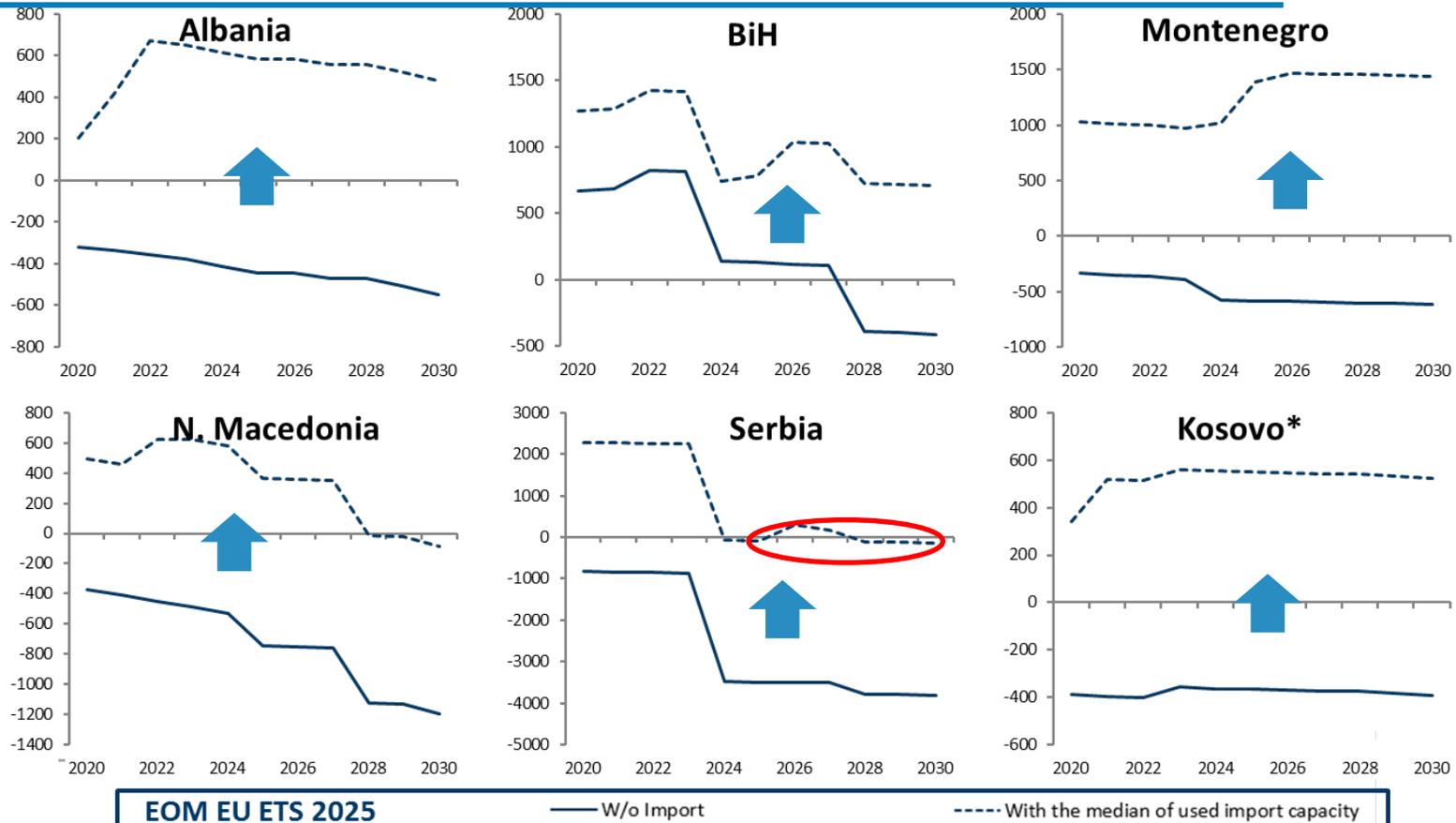
**Net Profit = Energy Revenue + Reserve Revenue – Variable Cost – Fixed Cost**



# THESE RETIREMENTS COULD THREATEN SYSTEM ADEQUACY IN WB6 COUNTRIES AND WILL REQUIRE MARKET DESIGN REFORMS AND A COORDINATED APPROACH

- All WB6 countries except Bosnia are **dependent on interconnections to maintain generation adequacy** today.
- In the ETS 2025 scenario, the **contribution of interconnection to adequacy becomes even more important as the reserve margin deteriorates in most countries**. Serbia would face adequacy issues even when accounting for the contribution of interconnection.

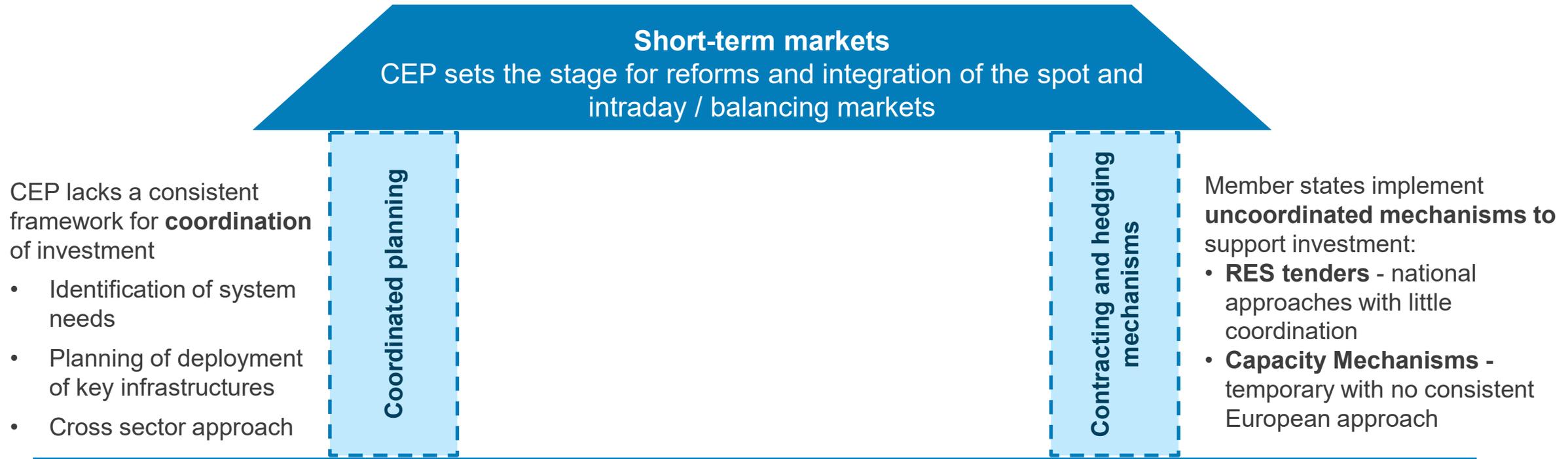
Derated margin = Available capacity – (Peak load + Reserve), MW



Source: CL Energy, WB6 Adequacy study 2019

# THE CLEAN ENERGY PACKAGE IS AN IMPORTANT STEP FORWARD BUT LACKS AN INVESTMENT FRAMEWORK TO DELIVER ON THE POLICY OBJECTIVES

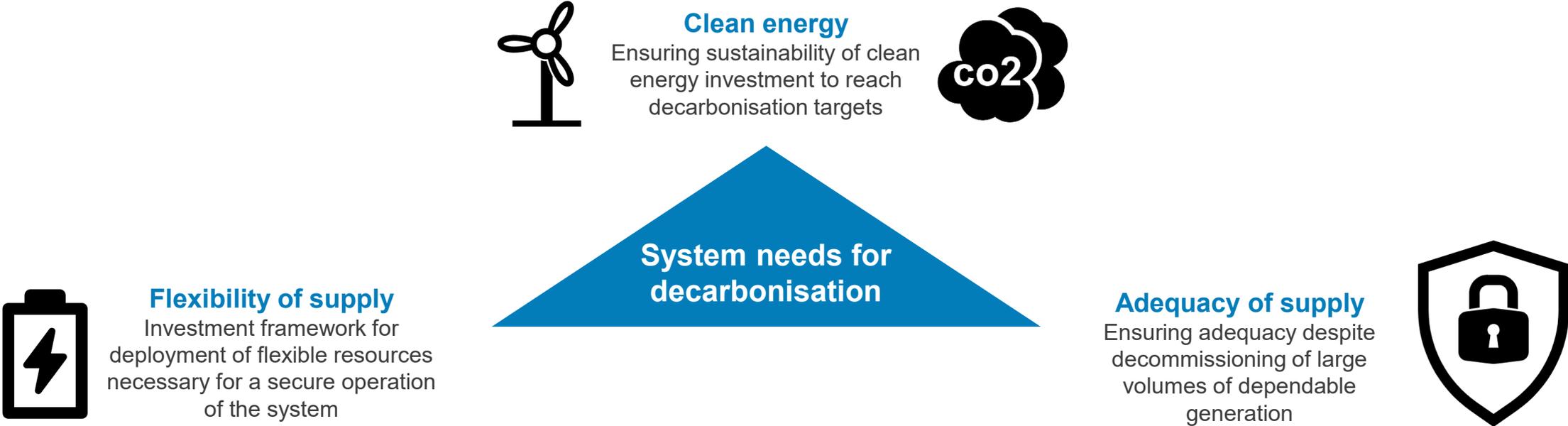
- The **Clean Energy Package** sets out general principles to improve the EU electricity markets focusing on short-term markets
- But does not provide an investment framework with a structured and coordinated approach for **planning** and **contracting/hedging mechanisms** in order to deliver the investments required to meet policy targets



# THE INVESTMENT FRAMEWORK SHOULD SECURE THE POWER SYSTEM NEEDS FOR DECARBONISED, FLEXIBLE AND DEPENDABLE ENERGY

## The investment framework needs to address the new system needs stemming from the EU decarbonisation objectives

- The energy sector is moving from a single energy commodity towards three differentiated system needs (firm capacity, flexibility capacity, green energy):



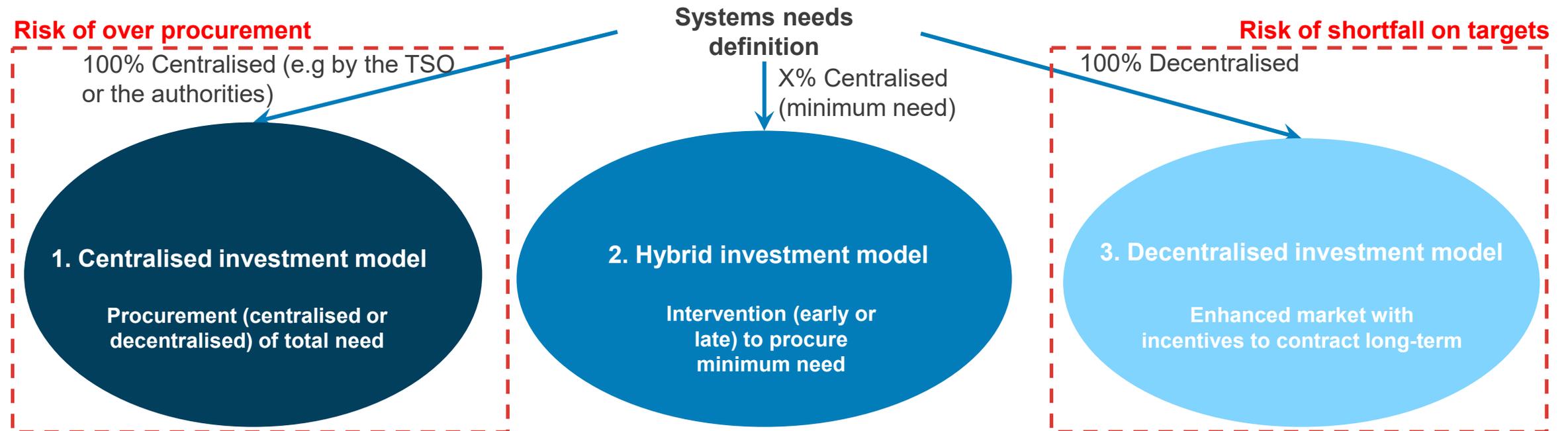
The new market design will need to reward resources to reflect their contribution to these three system needs and create a level playing field  
The investment framework will need to be differentiated depending on the resources and products considered

# WE PROPOSE 3 ALTERNATIVE INVESTMENT FRAMEWORKS

## THE FIRST STAGE DEFINES THE ROLE AND NATURE OF THE PLANNING OF SYSTEM NEEDS

**First stage – definition of the role and nature of the planning process for the system needs:**

- Who is best placed to define the system needs? A centralised entity? Or market participants / consumers themselves?
- In case of central need definition, how much of it should be defined centrally? All of it? The minimum (“default service obligation”)?



The hybrid investment model (where only the minimum system need is centrally procured) has many advantages to overcome the pitfalls of the fully centralised and decentralised investment models

# CONCLUSIONS: KEY MESSAGES OF THE STUDY

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1. **The current EU power market design requires a radical rethink to step up investment** and deliver on the increased climate change mitigation ambition as it lacks a coordinated and predictable investment framework
2. **There is a gap between the perception of policy makers and the reality of what is driving investment in power markets:** uncoordinated and sometimes distortive national interventions and support mechanisms are the norm rather than the exception
3. **The decarbonisation of the power sector raises new challenges that require an investment framework with two key features:**
  1. A more **structured and coordinated planning approach** across sectors at the local, national and EU level to deliver on policy objectives
  2. **Long term contracting mechanisms allocated competitively** (“**competition for the market**” followed by “**competition in the market**”) to allocate risks efficiently and facilitate financing and innovative business models
4. **This study provides the first attempt to provide a structured investment framework compatible with the current EU short term power markets, and based on a number of innovative concepts:**
  1. A **new approach to planning under uncertainty**, based on the concept of “**low regret pathways**”
  2. The goal to **combine “the best of both worlds” with enhanced coordination and planning mechanisms** working in synergy with market and competitive auctioning processes to support innovation and minimize costs
  3. The introduction of a set of **long term contracting and hedging mechanisms** to allocate risks efficiently, support innovation and new business models
  4. The development of a “**menu of contracts and products**” to create a level playing field between technologies and an efficient interface with existing markets
  5. The introduction of the concept of “**contractual obligations follows load**” when consumers switch suppliers to ensure compatibility with retail competition

Thank you for your attention



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