An investment framework to support power system decarbonization

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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

Source:
- CL analysis based on Platts, Country NECPs and CL Intelligence
- European Commission - Final Report of the Sector Inquiry on Capacity Mechanisms
- CEER – Capacity Remuneration in power markets: an empirical assessment of the cost of production
- CEER - 2nd CEER Report on Tendering Procedures for RES in 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, 0.4 GW in North Macedonia, and 3 GW in Serbia.
- **Projects cancellations**: 1.5 GW in Bosnia, 0.2 GW in Montenegro, 0.7 GW in North Macedonia, and 0.3 GW in Serbia.

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

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\text{Net Profit} = \text{Energy Revenue} + \text{Reserve Revenue} - \text{Variable Cost} - \text{Fixed Cost}
\]

Source: CL Energy, WB6 Adequacy study 2019
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 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 Clean Energy Package is an important step forward but lacks an investment framework to deliver on the policy objectives.

- Coordinated planning
- Contracting and hedging mechanisms

Short-term markets
CEP sets the stage for reforms and integration of the spot and intraday/balancing markets.

CEP lacks a consistent framework for coordination of investment:
- Identification of system needs
- Planning of deployment of key infrastructures
- Cross sector approach

Member states implement uncoordinated mechanisms to support investment:
- RES tenders - national approaches with little coordination
- Capacity Mechanisms - temporary with no consistent European approach.
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):

  - **Clean energy**
    Ensuring sustainability of clean energy investment to reach decarbonisation targets
  - **Flexibility of supply**
    Investment framework for deployment of flexible resources necessary for a secure operation of the system
  - **Adequacy of supply**
    Ensuring adequacy despite decommissioning of large volumes of dependable generation

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.
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.

**CONCLUSIONS: KEY MESSAGES OF THE STUDY**
Thank you for your attention

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