



Capacity mechanisms: latest developments and potential for further coordination

The 6th Vienna Forum on European Energy Law

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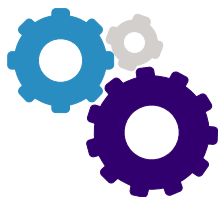
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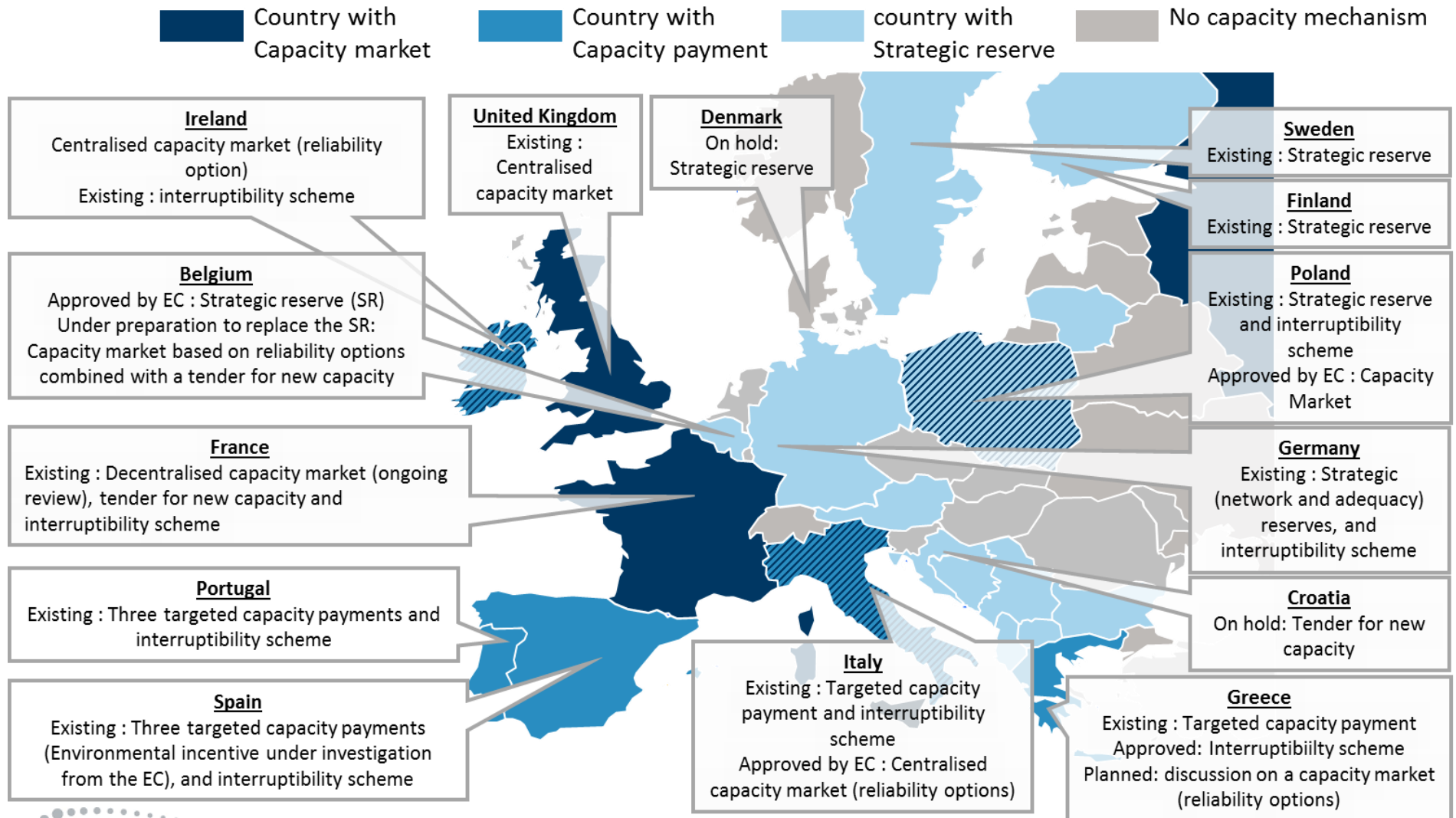


Agenda

- A patchwork of capacity mechanisms across Europe– how did we get there?
- The Clean Energy Package on capacity mechanisms
- The next challenge: How to ensure cross border participation in capacity mechanisms?
- Conclusions

A patchwork of capacity mechanisms across Europe –
how did we get there?

Capacity mechanisms have become the norm rather than the exception



Drivers of CMs: The good, the bad, and the ugly...

Economic drivers

Drivers of implementation of capacity mechanisms

- Guarantee politically determined security of supply criteria
- Address market failures affecting security of supply (missing money)
- Support timely investment

- Rescue stranded thermal plants
- Smooth power prices to reduce “politically unsustainable” volatility
- Dampen investment and retirement cycles

Political drivers

■ Drivers of reform depend on many country specific factors

- Existing generation mix and embedded flexibility
- Market arrangements
- Level of interconnection

■ Looking forward, member states have different needs

- Some countries need more dependable capacity, others need flexibility to support renewables, others are well supplied by all measures...

Different power market designs and local specificities lead to different CMs designs

A wide range of power market arrangements across Europe...

	Model 1: Ireland	Model 2: ES, PT, IT	Model 3: Nordic, CWE	Model 4: GB
Forward Market	<ul style="list-style-type: none"> No meaningful forward market 	<ul style="list-style-type: none"> Financial forward market 	<ul style="list-style-type: none"> Financial and physical forward markets 	<ul style="list-style-type: none"> Mainly physical forward market
Day Ahead	<ul style="list-style-type: none"> Central dispatch with complex bids\offers Traded volumes/prices not firm Locational bidding 	<ul style="list-style-type: none"> Quasi-mandatory day-ahead auction Locational bidding 	<ul style="list-style-type: none"> DA auction with strong market support Portfolio bidding 	<ul style="list-style-type: none"> No particular significance of DA Portfolio bidding
Intraday	<ul style="list-style-type: none"> D-1 gate closure No intraday market 	<ul style="list-style-type: none"> Intraday auction slots H-4 gate closure or more 	<ul style="list-style-type: none"> Continuous trading H-1 gate closure (or less being considered) 	<ul style="list-style-type: none"> Continuous trading H-1 gate closure
Capacity	<ul style="list-style-type: none"> Fixed capacity payment 	<ul style="list-style-type: none"> Capacity and availability payment 	<ul style="list-style-type: none"> Strategic reserve (Nordics, Be, De) Decentralized forward capacity market (Fr) 	<ul style="list-style-type: none"> Centralized forward capacity market

... so no reason that CM would be similar

The Clean Energy Package on capacity mechanisms



The Clean Energy Package introduces a regional and European dimension to the assessment of capacity needs and seeks to better coordinate national CMs

■ Introduction of a coordinated European adequacy assessment, following a jointly agreed methodology

- ENTSOE would carry a medium to long-term Union level resource adequacy assessment
- Regional Operational Centres (ROCs) would also carry out very short term regional adequacy assessments (from week-ahead to day-ahead) used in the context of system operation
- Member States should set transparent and verifiable adequacy targets based on the methodology and criteria based set by the Regulation, having the freedom to choose their desired level of security of supply.

■ Conditions for CRM introduction in a market-compatible manner

- The European resource adequacy assessment should identify a resource adequacy concern.
- CRM should only be introduced for the residual concerns that cannot be addressed through removing regulatory distortions.

■ Emission standard: the '550 debate'

- New capacity should be eligible to CMs participation only if emissions are below 550 gCO₂/kWh. This threshold may also apply for existing generation capacity 5 years after the entry into force of the proposed Regulation.
- CMs already in place should be reviewed to comply with the proposed Regulation.

■ Cross-border participation and integration of CRMs

- CMs other than strategic reserves shall be open to direct cross-border participation
- Member States shall not restrict capacity located in their territory from participating in other CMs
- Sets out how ROCs, national TSOs, ENTSOE and national regulators via ACER will be involved in the development of technical parameters for cross-border participation as well as the operational rules for their participation.

The next challenge: How to ensure cross border participation in capacity mechanisms?

The different methods for cross-border participation in CMs

1

No Contribution

Neither interconnectors nor foreign providers contribute

This applies to most countries with capacity payment mechanisms (price based)

2

Statistical contribution

Contribution evaluated statistically and deducted from capacity target

Initial GB (net 0 contribution) and French approaches (~7GW out of 9GW of import capacity)

3

Interconnector participation

Interconnector participates directly in capacity mechanism

Solution implemented in GB from 2015 onwards

4

Foreign Capacity participation

Foreign capacity providers participate directly in capacity mechanism

This has been implemented in the PJM Capacity Market, work in progress in France

5

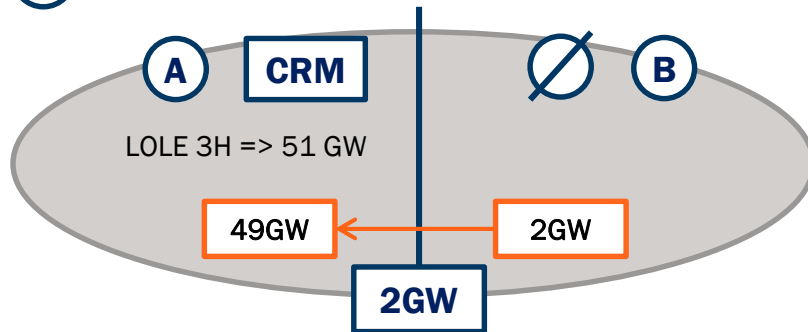
Cross-border Capacity Mechanism

Capacity mechanisms cover several zones OR national capacity mechanisms are "coupled"

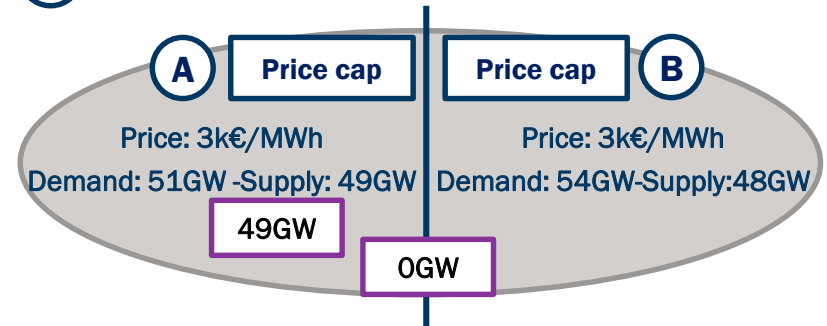
No current international examples (except zones in PJM and Italy)

The key issue is political and operational: Need for a framework to deal with situations of coincidental scarcity

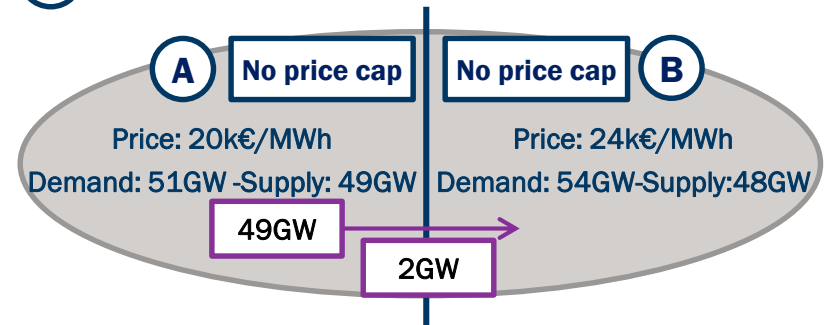
1 Capacity procurement



2a Energy market: scarcity situation simultaneously in A & B



2b Energy market: scarcity situation simultaneously in A & B



- In this example, country A contracted capacity up to 51GW, but only 47-49GW of its demand is satisfied depending on the situation
- Without specific rules to control on capacity contracted abroad at times of scarcity, cross border participation has no value added in terms of security of supply over a simple statistical approach

Conclusions

Issues for further coordination of CMs around state aid and security of supply

State aid criteria	Issues
Need for intervention	<p>Different approaches for adequacy outlook accross countries: Toward a standardised approach defined by ENTSOE / RCOs? How to take into account local specifiities (e.g TSO grid model)?</p> <p>Lack of data / harmonization of assumptions: toward common databases?</p> <p>Cross border capacity : Can a coordinated assessment be conducted at the regional level by RSCs?</p>
Appropriateness and proportionality	<p>Is some degree of harmonization of the underlying security of supply criteria needed? what happens if neighboring countries choose different reliability criteria?</p> <p>Whilst a standard approach for CMs is not suitable, can TSO's practices regarding the certification & verification procedures be harmonized?</p>
Absence of distortion / impact on competition	<p>Cross broder participation: can some guidelines be defined / a standardised framework? Key challenges:</p> <ul style="list-style-type: none"> - Develop a cooperation framework, including operational rules and clarification of responsibilities, to deal with situations of simultaneous system stress - Which institutional framework to align national responsibility with regard to security of supply and regional / EU coordination approach?



Thank you for your attention

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References

Toward the Target Model 2.0 – Policy Recommendations for a sustainable market design

[Web link](#)



Publications on capacity mechanisms

- Market design for generation adequacy: healing causes rather than symptoms [Web link](#)
- Coordinating capacity mechanisms – which way forward? [Web link](#)
- European electricity market reforms: the “visible hand” of public coordination [Web link](#)

Publications on European electricity markets

- The new European Energy Union - Toward a consistent EU energy and climate policy? [Web link](#)
- European electricity markets in crisis: diagnostic and way forward [Web link](#)