



European Union Agency for the Cooperation  
of Energy Regulators

# ACER Electricity Wholesale Market Volume - 2020MMR

**Focus: Barriers to efficient price  
formation and easy market entry  
and participation for new market  
entrants and smaller actors**

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1 December 2021 – MESC meeting



# Introduction

## Electricity wholesale market monitoring report

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The 10<sup>th</sup> edition of the MMR Electricity Wholesale volume was released on 4 November.

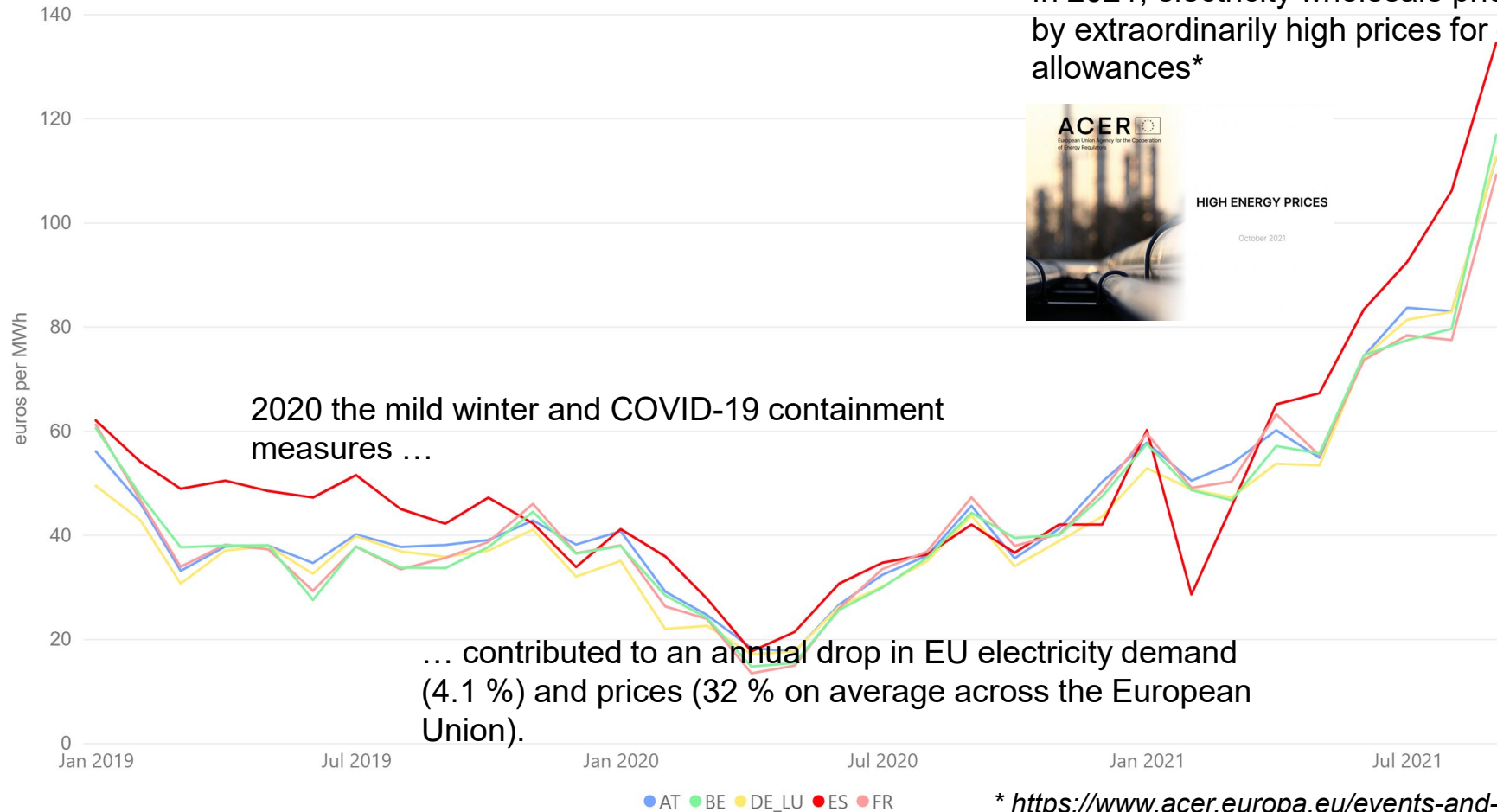
It consists of three parts :

- market trends (production, demand, prices),
- internal electricity market (capacity, liquidity, efficiency),
- Energy Community countries outlook.

The volume includes in its executive summary an assessment of current challenges to market integration and recommendations to overcome them.

# What a difference a year makes...

## Average Day-Ahead prices in Europe (euros/MWh)

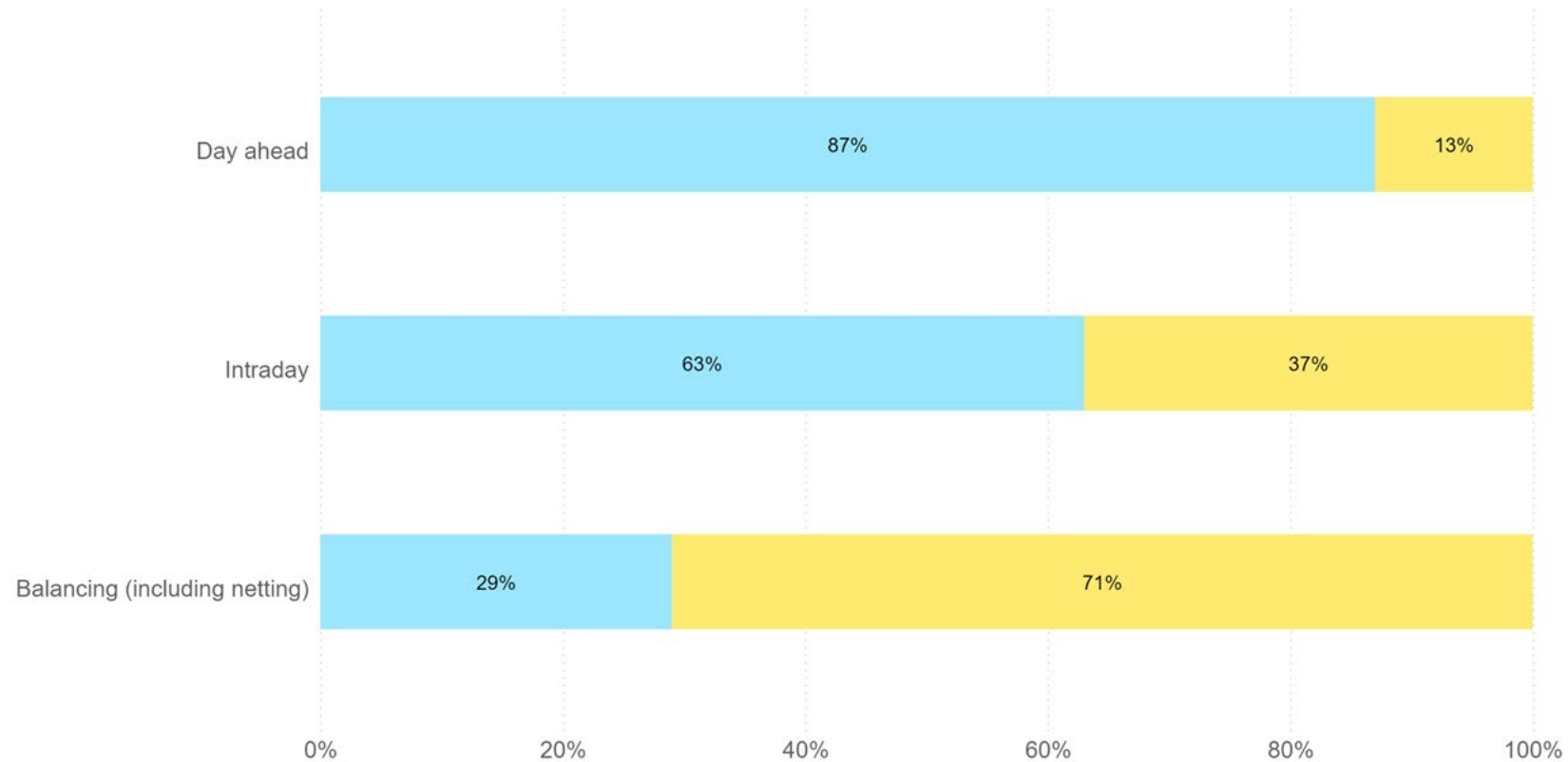


Source: ACER calculations based on ENTSO-E data.

\* <https://www.acer.europa.eu/events-and-engagement/news/europes-high-energy-prices-acer-looks-drivers-outlook-and-policy>

# While progress towards market integration was observed in 2020, some barriers remained

## Efficient use of interconnectors in the different timeframes in 2020 (%)

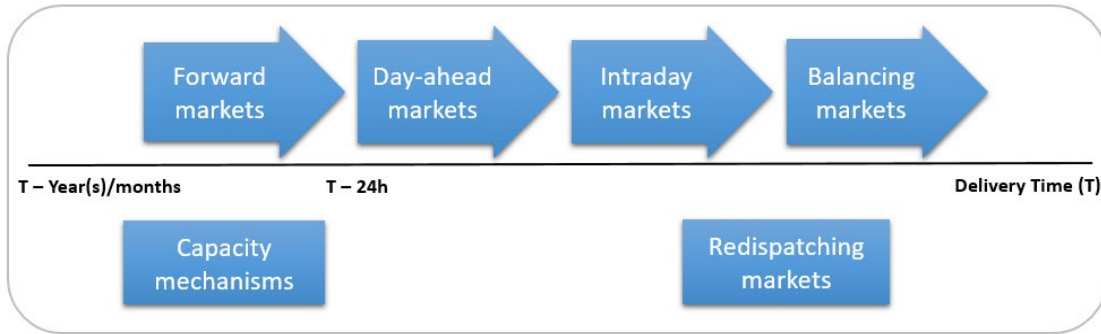


*Note: Intraday and balancing values are based on a selection of EU borders.*

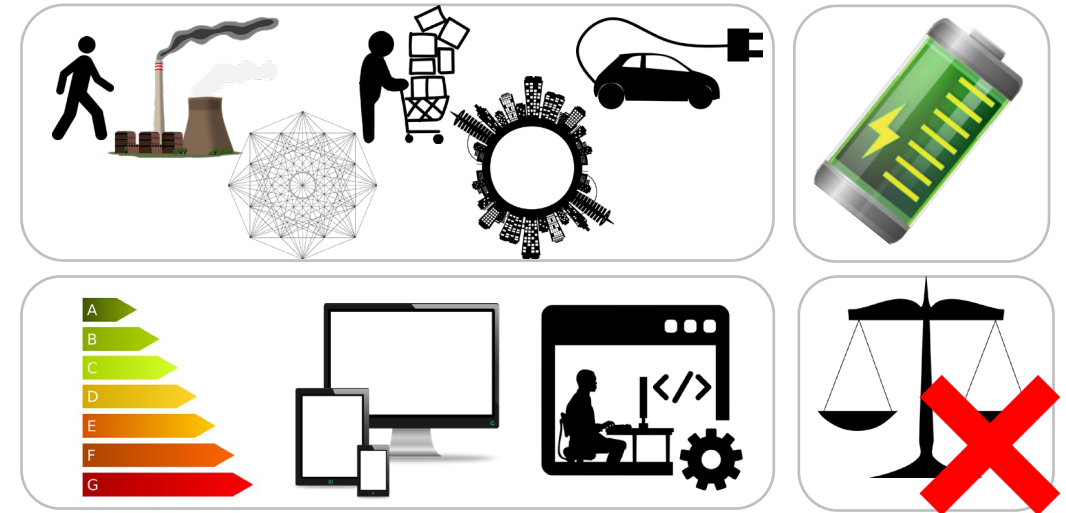
*Source: ENTSO-E transparency platform and ACER calculations.*

# A wide scope to identify barriers...

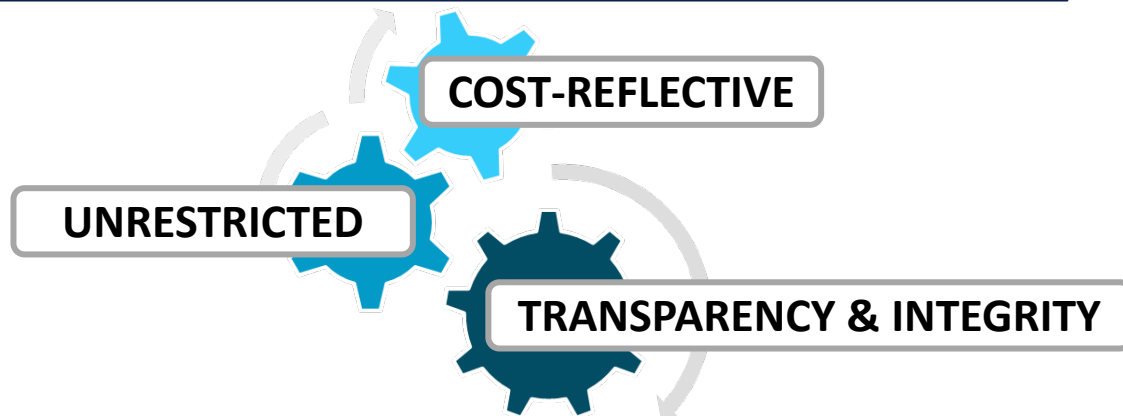
## PRICE FORMATION



## NEW ENTRANTS AND SMALL ACTORS



## BARRIERS TO EFFICIENT PRICE FORMATION



## BARRIERS FOR NEW ENTRANTS AND SMALL ACTORS



# Barriers analysed in the 2020 MMR

## BARRIERS TO EFFICIENT PRICE FORMATION

### Upcoming MMRs:

- Distortions due to support schemes
- Distortions due to capacity mechanisms
- Market integrity issues
- Insufficient market transparency
- Issues related to network tariffs

### 2020MMR:

- Price limits
- Restrictions in balancing markets
- Limited competitive pressure and liquidity  
Insufficient cross-zonal capacity
- Bidding zones not reflecting structural congestions

## BARRIERS FOR NEW/SMALL ACTORS

### 2020MMR:

- End-user price interventions
- Low incentive for dynamic retail contracts
- Insufficient information provided by system operators

### 2020MMR:

- Lack of a proper legal framework
- Restrictions in balancing markets
- Restrictions in capacity mechanisms and interruptibility schemes
- Low competitive pressure in retail markets

### Upcoming MMRs:

- Complex administrative and financial requirements
- Lack of incentives for non-wire alternatives

# To a greater or lesser extent all MSs have some barriers ...

BARRIERS TO EFFICIENT PRICE FORMATION																												
Price limits and restrictions on features of imbalance settlement	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Limited competitive pressure and/or liquidity in wholesale markets	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Insufficient cross-zonal capacity	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Bidding zones not reflecting structural congestions	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Restrictive requirements in prequalification and/or the design of products for balancing	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
End-user price interventions	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Limited incentive to contract dynamic retail prices	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Insufficient information provided by system operators	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK

BARRIERS TO ENTRY AND PARTICIPATION FOR NEW ENTRANTS AND SMALL ACTORS																												
Restrictive requirements in prequalification and/or the design of products for balancing	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Lack of a proper legal framework to enable new entrants and small players	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Restrictive requirements to participate in capacity mechanisms and interruptibility schemes	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Limited competitive pressure in the retail market	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
End-user price interventions	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Limited incentive to contract dynamic retail prices	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
Insufficient information provided by system operators	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK



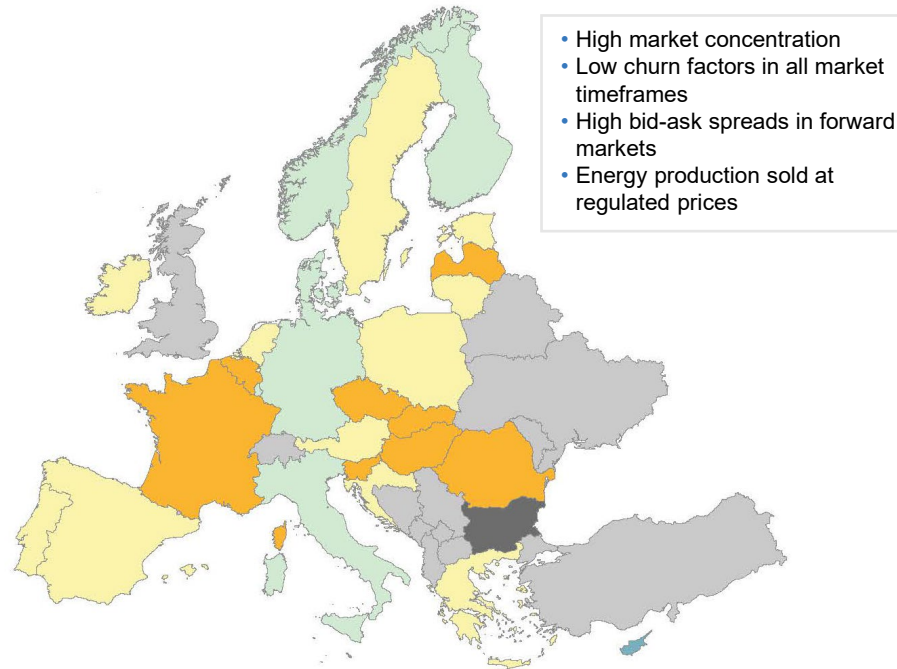
Despite some MSs overall performance looks satisfactory, in some cases severe underlying restrictions may still apply

Note: "High" refers to a barrier score  $\leq 0.2$ , "moderate" to  $0.2 < x \leq 0.4$ , "light" to  $0.4 < x \leq 0.6$  and not restrictive to  $x > 0.6$ . NA (not available) refers to Member States where it was not possible to assess the barrier due to insufficient data available. None (not applicable) refers to Member States where the barrier does not apply, e.g. if no capacity market was operational, if there were no price interventions in the retail price settings, etc.

# Efficient price formation: the most common barriers...(1/2)



## Limited competitive pressure and/or liquidity in wholesale markets

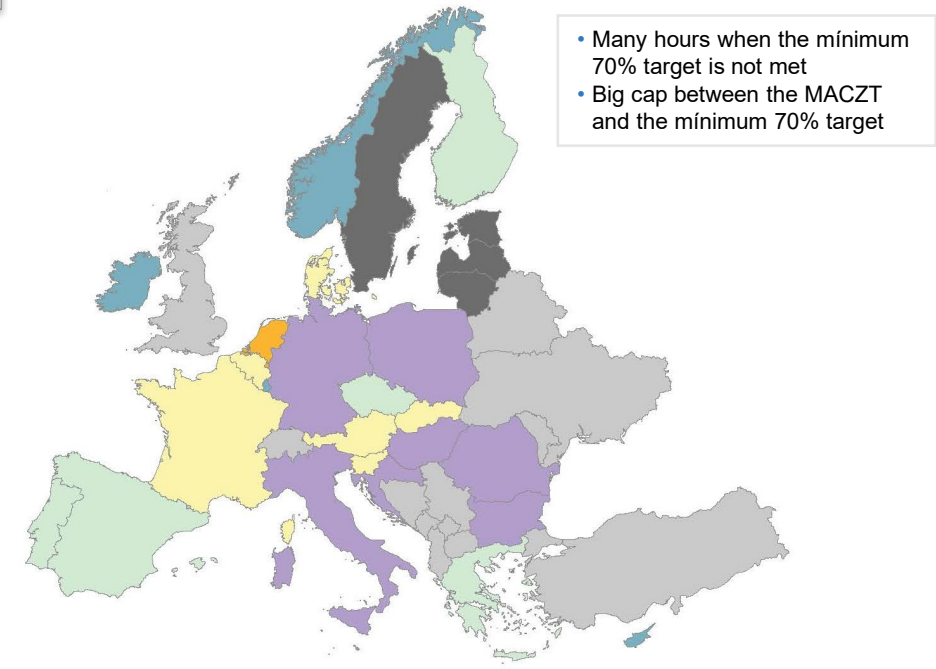


Barrier ● High ● Moderate ● Light ● Not restrictive ● NA ● None

- Moderate barrier: Most MSs with a high market concentration
- Some production required to be sold at regulated prices in FR, RO, IE and IT



## Insufficient capacity available for cross-zonal trade

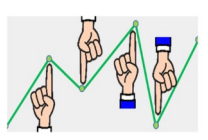


Barrier ● High ● Moderate ● Light ● Not restrictive ● NA ● None

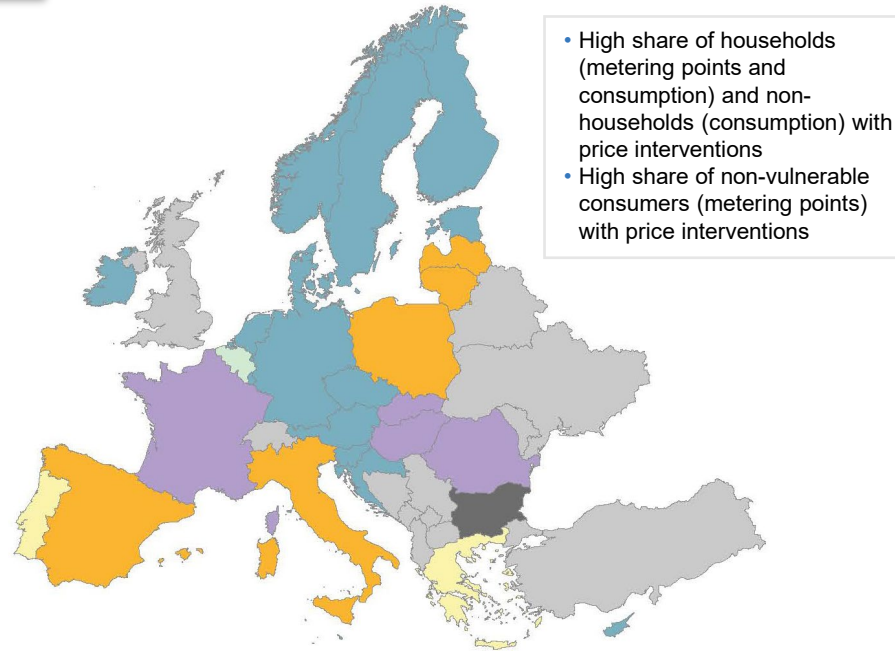
- The TSOs of the Core Region (particularly DE and PL), and those in IT, BG, HR, HU and RO need to make the biggest efforts to meet the minimum 70 % target



# Efficient price formation: the most common barriers...(2/2)



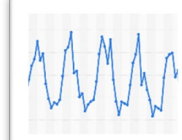
## End-user price interventions



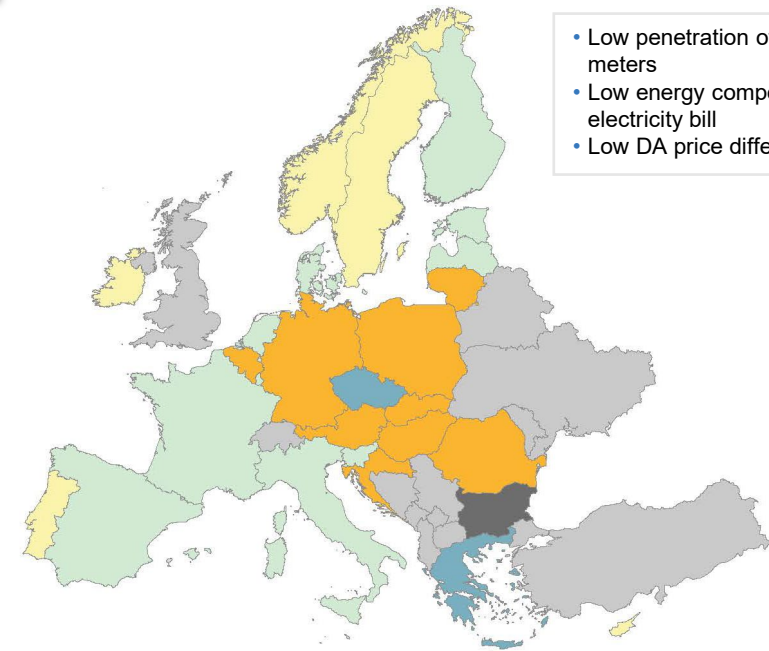
- High share of households (metering points and consumption) and non-households (consumption) with price interventions
- High share of non-vulnerable consumers (metering points) with price interventions

Barrier ● High ● Moderate ● Light ● Not restrictive ● NA ● None

- High barrier: > 50% households with price intervention
- High/Moderate barrier: Most consumers with price intervention are not defined as vulnerable



## Limited incentive to contract dynamic prices

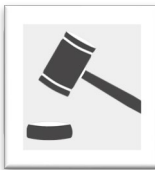


- Low penetration of smart meters
- Low energy component in the electricity bill
- Low DA price differentials

Barrier ● High ● Moderate ● Light ● Not restrictive ● NA ● None

- Moderate barrier: All MSs with roll-out rate of smart meters lower than 30%
- Moderate barrier: Most with a low share of the energy component in the electricity bills and limited DA price differentials

# New entrants and small actors: the most common barriers...



## Lack of a proper legal framework



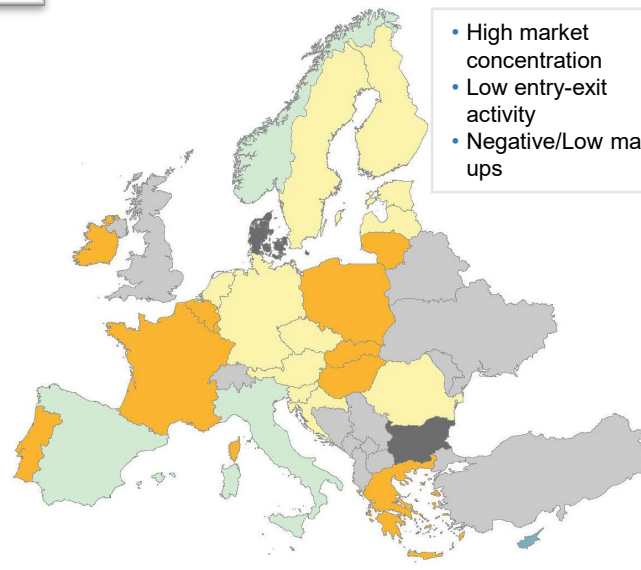
- Roles and responsibilities set in Electricity Directive
- Legal eligibility in all market timeframes and products

Barrier ● High ● Moderate ● Light ● Not restrictive ● NA

- High/Moderate barrier: Main roles and responsibilities not defined
- High/Moderate barrier: Not eligible to participate in most market timeframes or provide TSO and DSO services



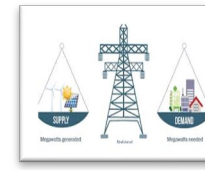
## Limited competitive pressure in the retail market



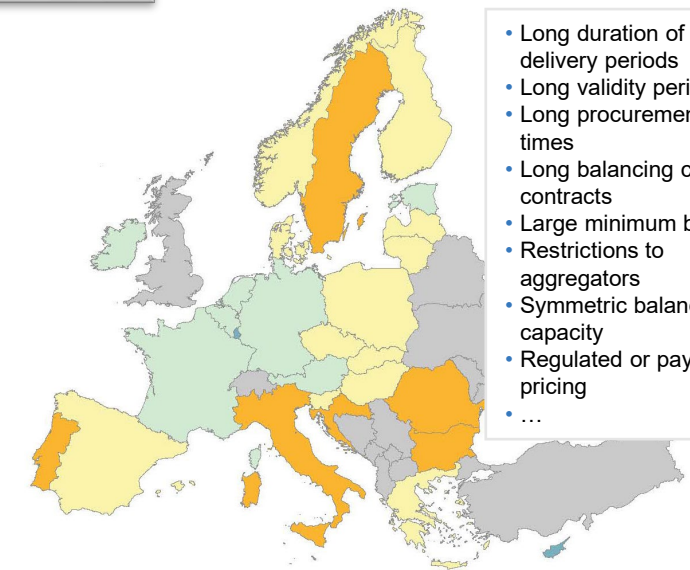
- High market concentration
- Low entry-exit activity
- Negative/Low mark-ups

Barrier ● High ● Moderate ● Light ● Not restrictive ● NA ● None

- Moderate barrier: Most with highly concentrated retail markets
- Moderate barrier: Some with low entry/exit activity and negative correlation energy component of retail prices / wholesale prices



## Restrictive requirements in balancing markets



- Long duration of the delivery periods
- Long validity periods
- Long procurement lead-times
- Long balancing capacity contracts
- Large minimum bid sizes
- Restrictions to aggregators
- Symmetric balancing capacity
- Regulated or pay-as-bid pricing
- ...

Barrier ● High ● Moderate ● Light ● Not restrictive ● None

- E.g. Minimum bid size higher than 1MW (RO, CZ, BG, PT, FR)
- E.g. Balancing capacity products procured year or month-head (LT, SK, SL, HR, CZ, HU)

**End-user price interventions and a limited incentive to contract dynamic prices may also hinder participation of new and small market players**

# As an example: Some requirements and features of balancing markets becoming restrictive for new/small actors and/or efficient price formation...

Restrictive requirement / Design feature	European target model	Away from the European target model	Country			
			FCR	aFRR	mFRR	RR
Large minimum bid size - balancing energy	≤1MW	x > 10MW	None	None	None	PT
		5MW < x ≤ 10MW	None	RO	NO, FR	FR
		1MW < x ≤ 5MW	None	AT, BG, CZ, SK	BG, CZ, DK, FI, HR, RO, SK	ES, RO
Large minimum bid size - balancing capacity	≤1MW	x > 10MW	None	None	NL	None
		5MW < x ≤ 10MW	None	RO	FR, SE	FR
		1MW < x ≤ 5MW	BG, CZ, RO	AT, BG, CZ, FI, SK, SE	BG, CZ, DK, FI, HR, RO, SI, SK	RO
Long validity period of the balancing energy bids	15 min	4 hours	NAP	AT, DE	AT, DE	None
		1 hour		BG, CZ, ES, HR, HU, IT, PL, SI, SK	BG, CZ, DK, EE, ES, FI, HR, HU, IT, LT, LV, NO, PT, RO, SE, SI, SK	ES, IT, PL, PT, RO
		30 min		FR, GR	FR	FR
Long procurement lead time	1 day	LI (100% of balancing capacity was procured year-ahead), SK (97% year-ahead), SI (52% year-ahead and 11% month-ahead), HR (92% year-ahead), CZ (72% year-ahead), HU (88% month-ahead)				
Long balancing capacity contracts	1 day	One year or more	ES, SI	HR	HR, LV, LT	None
		One month or more	BG	BG, DK, SI	DK, SI	None
Symmetric balancing capacity products	Asymmetrical	Symmetrical	NAP	DK, PL, RO	None	NAP
Regulated or pay-as bid pricing - balancing energy market	Marginal pricing	Regulated prices	FR, IT	CZ, DK, FR	None	None
		Pay-as-bid	SE	AT, BE, DE, HR, HU, IT, SI, SK	AT, BE, CZ, DE, FR, HR, HU, IT, SI, SK	FR, IT
		Hybrid	IE	GR	IE	IE
Pro-rata activation rule	Merit order	Pro-rata	NAP	BG, CZ, DK, ES, FI, FR, GR, HR, IT, NO, PT, SE	None	None
...*	...	...	...	...	...	...

Source: ACER based on ENTSO-E AS Survey 2020 and NRAs data.

Note: NAP refers to not applicable. Some indicators are not available in a number of countries.

\* For more information about additional indicators analysed, please refer to the Electricity Wholesale Volume of ACER 2020 Market Monitor report.

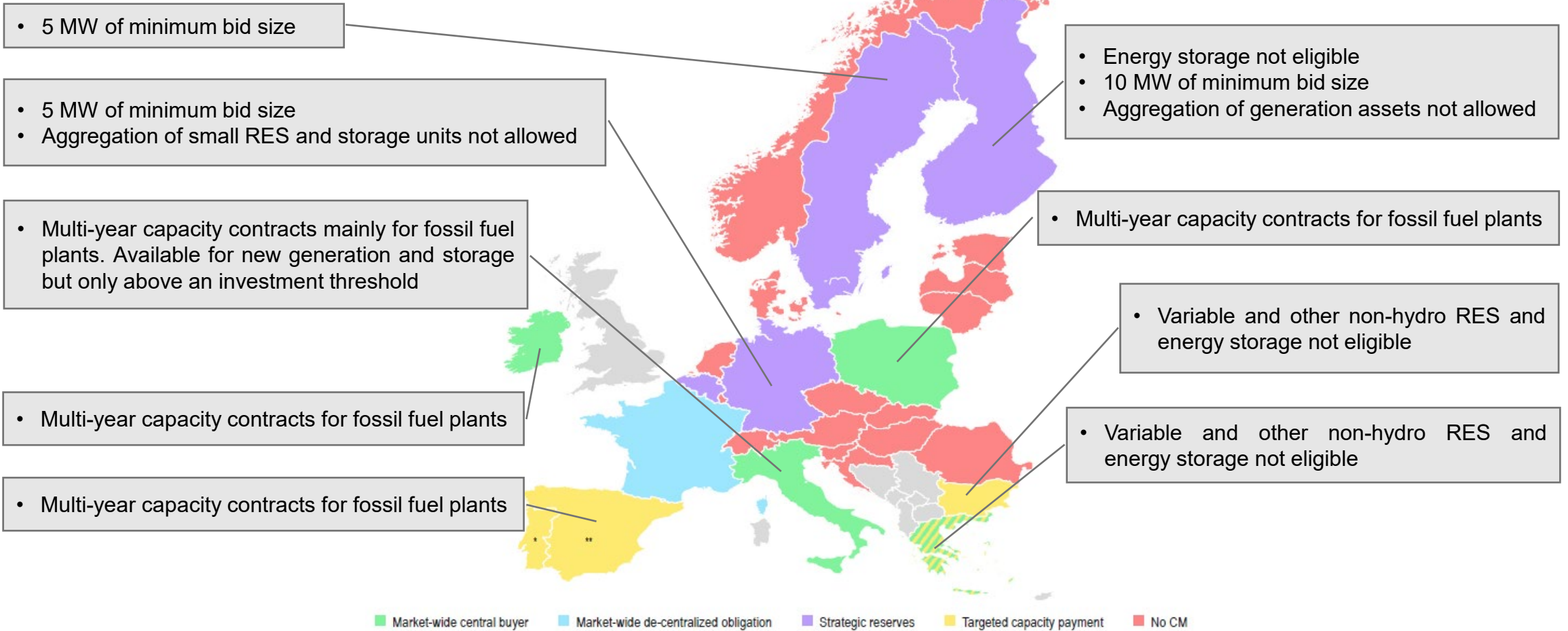
# Less common barriers but also relevant in a lower number of MSs...

		Efficient price formation	New and small market players
	Bidding limits (Iberian and Italian DA and ID markets)	✗	
	Bidding zones not reflecting structural congestions (DE)	✗	
	Some design features of balancing markets impacting price formation (≈ half MSs becoming more restrictive in HR and SK)	✗	
	Restrictive requirements to participate in capacity mechanisms and interruptibility schemes (DE, FR, GR)		✗
	Insufficient information provided by system operators (Baltic, SE and IE TSOs)	✗	✗



# As an example: Some requirements and features of capacity mechanisms becoming restrictive for RES, DSR and energy storage participation...

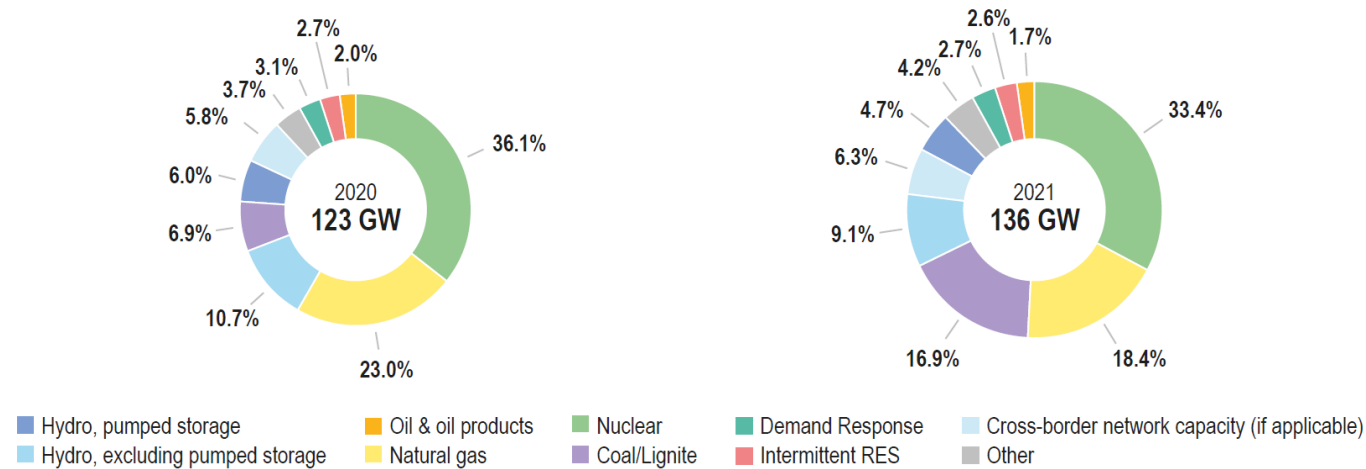
## Operational capacity mechanisms in 2020



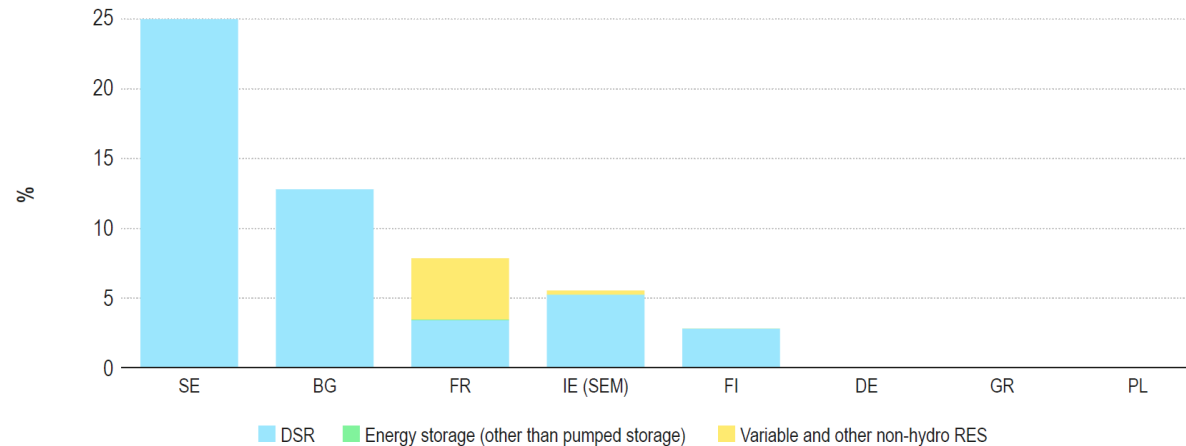
Source: ACER based on NRAs data.

Note: \* In Portugal, a strategic reserve scheme was introduced in 2017, which is currently postponed subject to assessment from the EC. The targeted CM has been revoked since 2018, yet some capacity payments will be provided in the future to hydro power plants, currently under construction, due to "legacy" contracts.  
 \*\* In Spain, the CM used to comprise "investment incentives" and "availability payments"; however, such availability payments were removed in June 2018 and the investment incentives payments still apply only to generation capacity installed before 2016. In Greece, the temporary flexibility remuneration mechanism is a targeted capacity payment (only flexible capacity providers are eligible) where the remuneration level is defined through a centrally organised auction.

# ... these restrictions could lead to a marginal RES, DSR and energy storage participation



Source: ACER calculation based on NRAs data.  
Note: The figure is based on capacity remunerated in BE, BG, FR, FI, DE, GR, IE (SEM), PL, PT, ES and SE.



Source: ACER calculation based on NRAs data.  
Note: The figure only refers to the countries that held an auction in 2020 and/or where data on the type of capacity remunerated in 2020 was available.

# Some recommendations to take away...

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## MSs/NRAs:

- Remove **explicit wholesale price restrictions**
- Review potential **restrictive** requirements and design features of **capacity mechanisms**
- Urgently transpose the Electricity Directive defining proper **national legal frameworks for new and small players**
- In line with the Electricity Directive, **protect vulnerable consumers without interfering with free price formation**
- Speed-up the **roll-out of smart meters** and **reduce taxes and levies** in the electricity bills to incentive demand response

## TSOs:

- Increase **cross-zonal capacity** and perform an unbiased, sound, technical and neutral **bidding zone review**
- Review potential **restrictive requirements** and design features of **balancing markets**
- Increase their levels of **transparency in information sharing**

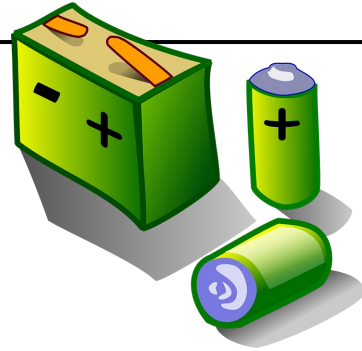
# Annex

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# Recommendations - overview

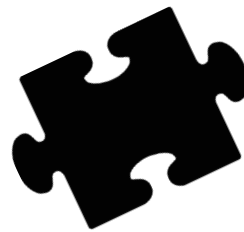
1. Implement re-dispatching and countertrading;
2. Amend capacity calculation methodologies (CEP);
3. Bidding zone reviews.



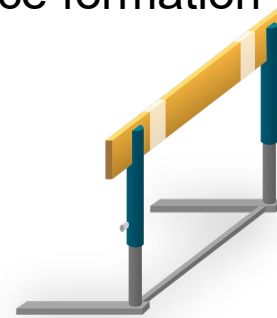
I. Increase the amount of cross – zonal capacity

4. Market coupling.
5. Common grid model methodologies
6. Electricity Balancing Guideline
7. Pan-European intraday auctions for pricing cross-zonal capacity
8. Improve forward markets

II. Complete market integration accross all timeframes



III. Remove barriers to market entry and price formation



IV. Efficiently address adequacy concerns



9. Remove wholesale price restrictions;
10. Review requirements for prequalification and aggregation,
11. Transposition of the Electricity Directive;
12. Protect vulnerable consumers without interfering with free price formation;
13. Roll-out of smart meters;
14. Reduce non-contestable charges in electricity bills;
15. TSOs to increase transparency.
16. Adequacy assessments at the EU and national levels;
17. Only capacity mechanisms where needed
18. Dedicated interruptibility schemes only when no alternative.