



CROSS BOrder management of variable renew able energies and storage units
enabling a transnational Wholesale market

WESTERN BALKANS: NARROWING THE GAP TO EU ELECTRICITY POLICY

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EU ENERGY POLICY VS. WB REALITY



- **Energy Union -> Clean Energy for all Europeans Legislative Package -> Green Deal -> EnC Legislation**

- Energy security, solidarity and trust
- A fully integrated European energy market
- Energy efficiency contributing to moderation of demand
- Decarbonising the economy
- Research, Innovation and Competitiveness

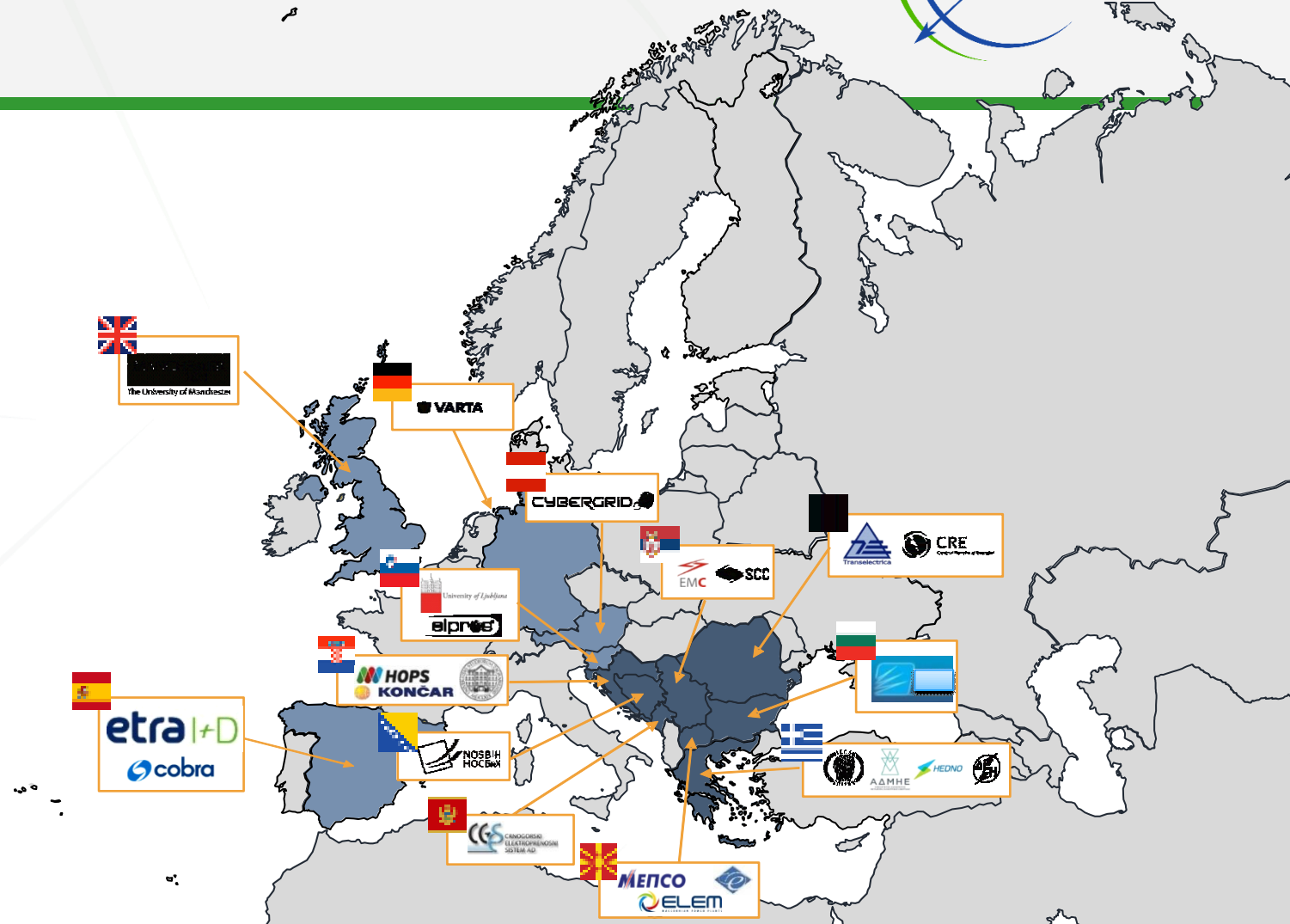
- **Obstacles in implementation in WB**

- Fragmented markets dominated by incumbent generation companies
- Low competition and market liquidity
- Depressed regulated electricity prices
- Missing horizontal harmonization (VAT, public procurement law)
- Politically driven decisions
- Coal and lignite subsidies
- RES support schemes (FIT & some FIP)

CROSSBOW CONSORTIUM



- 8 TSO
- 1 DSO
- 1 RSC
- 2 (+1) Large producers
- 5 (+1) Universities
- 6 Industrial partners
- 1 Industrial Association



CROSSBOW PRODUCTS



**CROSSBOW Regional
Operation Centre
Balancing Cockpit**



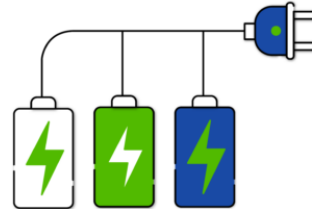
**CROSSBOW Regional
Storage Coordination
Centre**



**CROSSBOW Regional
DSM Integration
Platform**



**CROSSBOW RES
Regional Coordination
Centre**



**CROSSBOW Virtual
Storage Plants**



**CROSSBOW Wholesale
and Ancillary Market
toolset**



**CROSSBOW Hybrid
RES Dispatchable Unit**



CROSSBOW WAMAS

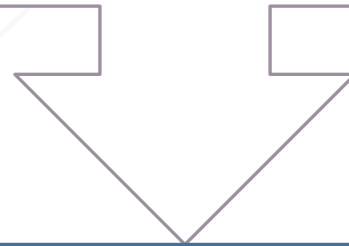


**CROSSBOW
Cooperative Ownership
of Flexibility Assets
Platform**

CROSSBOW PROJECT OFFERS A SOLUTION



CROSSBOW STRATEGIC GOAL: CROSSBOW will propose the **shared use of resources at regional/transnational level** to foster cross-border management of variable renewable energies and storage units, enabling a higher penetration of clean energies whilst reducing network operational costs and improving economic benefits of RES and storage units



CROSSBOW OFFERED SOLUTION: Implement CROSSBOW products that would provide **business opportunities** to RES, storage units and DSM resources to compete in **providing sophisticated close to real-time market services**, instead of playing passive roles and waiting for subsidies in the form of FIT or FIP schemes

BASIS FOR IMPLEMENTATION: FORWARD MARKET - CAPACITY ALLOCATION

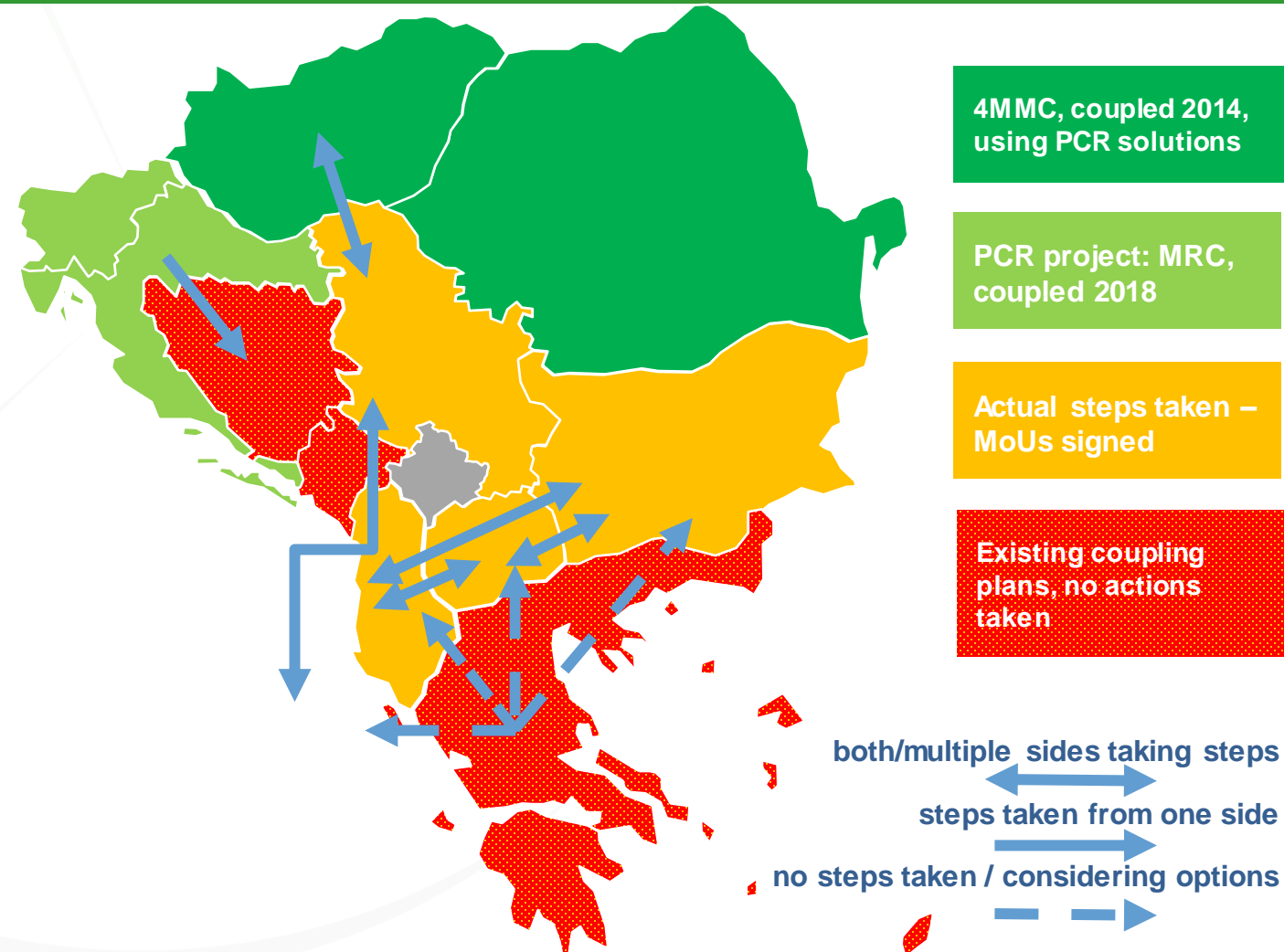


- Participation in SEE CAO
 - TSOs from ME, BiH, HR, AL, NMK, GR & TR participate in SEE CAO
 - Early implementation of FCA regulation in SEE has been conducted by Harmonised Allocation Rules in SEE CAO in 2017 for yearly and monthly auctions for 2018
 - The next major **challenge in SEE-** Implementation of provision from CACM regarding **implicit short-term allocation and introduction of Financial Transmission Rights (FTRs)** in forward capacity allocation. It depends on the introduction of market coupling
- Legal obstacles for TSO participation in Auction Office
 - **BiH:** NOSBiH participates in SEE CAO
 - **RS:** No legal obstacles for Serbian TSO
 - **ME:** Member since 2015
 - **BG:** JAO is chosen capacity auction agent. Planned for 2019.
 - **HR:** Participates in SEE CAO
 - **RO:** Will join JAO according to SAP document
 - **GR:** Participates in SEE CAO
 - **NMK:** Founder and partner in SEE CAO

BASIS FOR IMPLEMENTATION: D-1 MARKET COUPLING



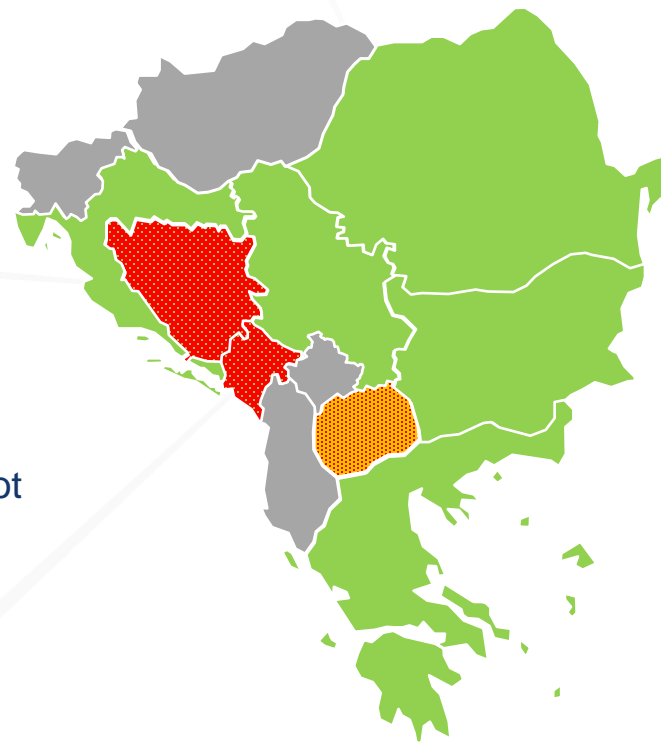
- The Price Coupling of Regions (PCR) is a key project contributing to European market integration and harmonisation; as such BSP Southpool, CROPEX, IBEX, SEEPEX, Opcom and HEnEx are all service users or members of PCR (algorithm)
- Slovenia and Croatia are already coupled within MRC; Romania is coupled within 4MMC
- Other regional or bilateral coupling projects are either planned, in negotiation or moving forward (MoUs)



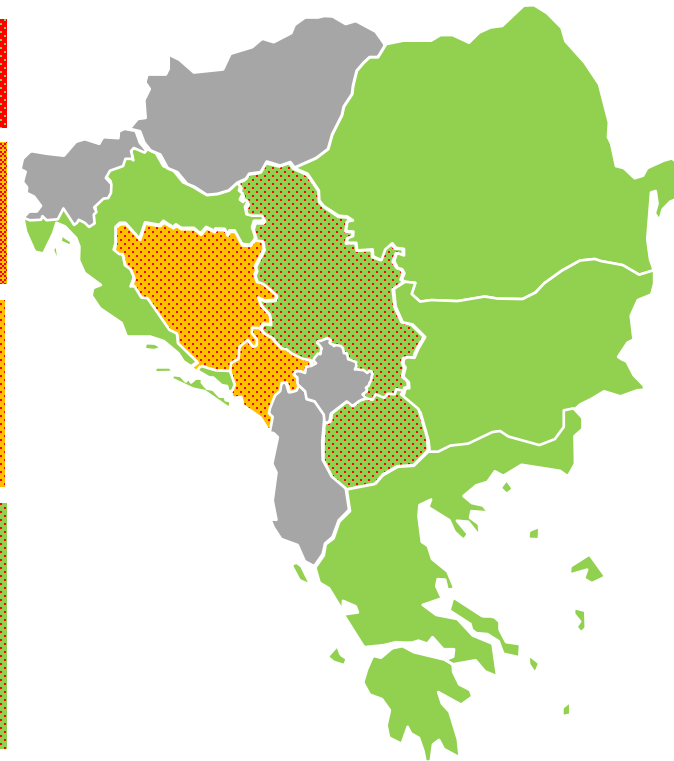
BASIS FOR IMPLEMENTATION: MARKET COUPLING OBSTACLES



- VAT and Public procurement harmonisation
 - EnC Guidelines for amendments to Value Added Tax (VAT) and Public Procurement Law to facilitate transposition of EU legislation in WB6
 - Harmonization of VAT rules in WB6 is a precondition to enable real market coupling and functional BMs
 - Amendments introduced in RS and partially in NMK legislation, while Montenegro has not yet begun with required adjustments; BiH is preparing new VAT Law
 - The national legislation on public procurement in the WB6 countries is in line with EU legislation, but the practical implementation remains a challenge
 - The major obstacles in implementation of public procurement rules is the lack of market competition



a) VAT harmonization

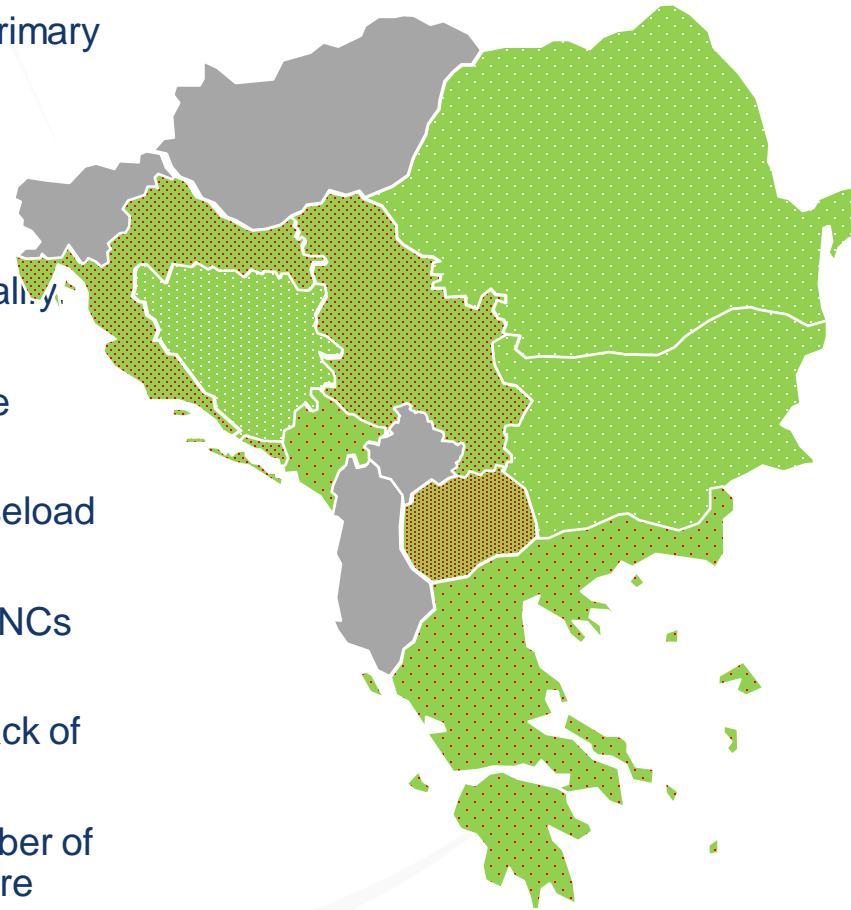


b) Public procurement harmonization

BASE FOR IMPLEMENTATION: BALANCING MARKET – CAPACITY/ENERGY PROCUREMENT



- Current procurement of balancing services
 - **BiH:** Functional BM with 5 BSPs, some legal provisions in the primary legislation are missing, secondary legislation enables non-discriminatory procurement of balancing services
 - **ME:** BM with 2 BSPs (incumbent generation and consumer)
 - **NMK:** Secondary legislation and electronic platform in dry-run. Operation starts 1 January 2020. 3 - 4 BSPs expected to prequalify.
 - **RS:** BM with one domestic BSP – regulated price for balancing reserve capacity, market rules give preferences to BSPs that are obliged to offer balancing services (EPS)
 - **BG:** BM with price cap for shortage set to 2.5 times of IBEX baseload DAM price and zero price for surplus
 - **GR:** Implementation of Information System for BM according to NCs
 - **HR:** BM with one domestic BSP – regulated prices for some balancing services, prices of balancing energy linked to DAM, lack of data from DSO hindering reserve procurement
 - **RO:** Highly functional BM for balancing energy with a large number of participants. For example, in the beginning of October 2018, there were 67 licensed BSPs



- Secondary legislation adopted, competitive BM starts 1 Jan 2020
- Functional BM, no legal obstacles, no competition
- Functional BM, no legal obstacles, low competition
- Functional BM for balancing services
- Functional BM (energy) + ancillary market (capacity)

- **RES, Storage units and DSM should be given market opportunities to prove their cost-effectiveness**
 - They can provide effective services in close-to-real-time markets, i.e. balancing energy market, when they have rather accurate forecasts for their production.
- **Market opportunities for RES and flexibility assets can allow for:**
 - Attractiveness of RES and flexibility assets' investments;
 - Increased participation and competition in the markets;
 - Local markets' liquidity; and
 - Final integration into the Internal EU Energy Market.
- **The critical role is seen in participation in organized balancing markets:**
 - Not a real choice of BSPs;
 - New technologies can play a significant role in increasing power system flexibility.

CONCLUSIONS (2)



- **Forward market timeframe**

- Most of the volumes in WB electricity markets are still traded at the **physical bilateral contract** forward markets

- **Day-ahead and Intraday market timeframe**

- RS is a good example with DAM already in operation
- NMK, ME, BiH and AL are advancing towards functional national DAMs and their coupling with the neighbouring markets
- EU countries from SEE (Romania, Bulgaria, Croatia, and Slovenia) recently entered into IDM coupling within LIP15

- **Balancing market timeframe**

- Most of the CROSSBOW Project participating countries have taken steps to establish national BMs and to participate in EU projects supporting the implementation of the balancing NCs
- Nevertheless, a uniform implementation of Market and System Operation NCs across all countries is a prerequisite for the establishment of a functional regional BM

THANK YOU



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