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**Power network and connectivity in
Western Balkans (WB) -
Interconnected Transmission
Systems in the Mini-Region**

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EU Energy policy

- Backbone of the EU energy policy
 - establishing functional integrated Internal Market for energy
 - energy efficiency and renewables
 - smart management of energy networks and resources
- Future energy networks in Europe are seen in two fairly opposing concepts
 - Transmission - providing sufficient transmission capacity and integration of large wind farms
 - Distribution – developing Microgrids, Virtual Power Plants, integration of Electric vehicles, Zero-energy buildings, i.e. producing electricity at the place of its consumption
- Importance of the interconnected power networks



Mini-regional PX Study¹

- The Study investigated some of the basic preconditions for establishment of a Regional Power Exchange (RPX) in the Mini-region (Albania, FYR Macedonia, Kosovo² and Montenegro):
 - complementarity of the energy sources for electricity generation
 - **existence of sufficient transmission capacities between the power systems in the Mini-region**

¹ University “Sts. Cyril and Methodius”, Faculty of Electrical Engineering and Information Technologies, “Technical Assistance for Institutional Framework for Establishing a National/Regional Power Exchange”, financed by Norwegian Ministry of Foreign Affairs, March 2014 – Feb 2017

² This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Advisory Opinion on the Kosovo declaration of independence



Power and electricity balance of the Mini-region (1)

2013	Power Balance (MW)			Electricity Balance (GWh)			
	<i>Installed Power</i>		<i>System Peak</i>	<i>Production</i>		<i>Imports</i>	<i>Consu.</i>
	<i>HPP</i>	<i>TPP</i>		<i>HPP</i>	<i>TPP</i>		
Albania	1592	97	1540	No data	No data	No data	7702
Kosovo	35	1288	1101	No data	No data	No data	5633
FYRMacedonia	580	1240	1527	1366	4128	2428	7922
Montenegro	649	219	621	2594	1308	603	4505



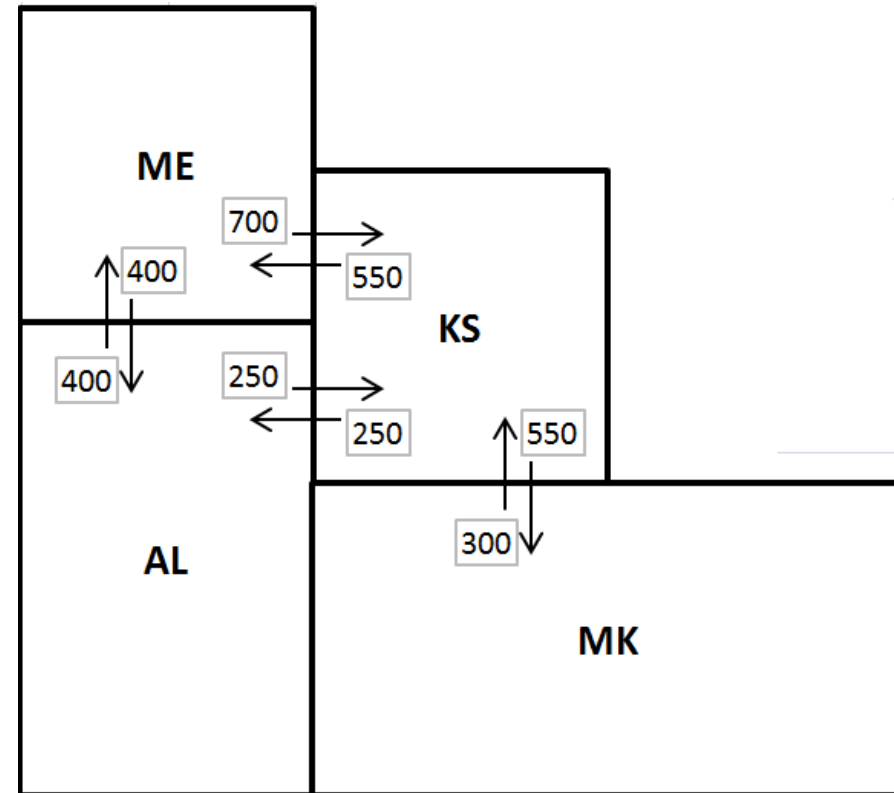
Power and electricity balance of the Mini-region (2)

- The conclusion is that the market integration of the countries in the Mini-region and the foundation of a RPX would provide benefits to the electricity sector in the Mini-region in terms of **more economic (efficient) usage of the available generation capacities**
 - the resources of hydro energy from Albania and Montenegro could solve the problems with electricity shortages in Kosovo in peak hours as well as provide ancillary services
 - the power from the TPPs in FYR Macedonia and Kosovo could provide base-load electricity to Albania and to Montenegro during the summer months



Net Transmission Capacity values between the countries in the Mini-region (1)

→ NTC (MW) ←	AL	KS	MK	ME
AL		250		400
KS	250		550	550
MK		300		
ME	400	700		





Net Transmission Capacity values between the countries in the Mini-region (2)

- At present a major problem in terms of transmission capacities in the Mini-region is the nonexistence of an interconnection between FYR Macedonia and Albania and the insufficient capacity of the interconnection between Kosovo and Albania
- One of the basic preconditions for establishing a RPX in the Mini-region is the increase of cross-border transmission capacities by building new interconnections, along with an integrated cross-border capacity allocation mechanism



EU/EnC for WB energy infrastructure

- EU energy policy measures
 - Third Package for Electricity and Gas Markets
 - Energy Infrastructure Package - mainly the Regulation (EU) 347/2013 (TEN-E)
 - Commission Recommendation of 29 October 2014 on the application of internal energy market rules between the EU MSs and the EnC Contracting Parties
 - EU Network Codes and Guidelines
- EnC developments
 - The High Level Reflection Group Report, Sep 2014 - definition of "interconnectors" in the Third Package
 - Policy Guidelines by the EnC on the Application of the EnC Acquis between the CPs and the EU, Nov 2014
 - Start of the SEE CAO's operation, Nov 2014
 - WB6 Energy Connectivity Initiative, 2015




WB6 Vienna Summit 2015

- The heads of government, foreign and economic ministers of both EU MSs and the WB6 in cooperation with the EC decided to take steps to improve energy connectivity in the region and for that:
 - agreed to a short list of four investment projects in the area of energy
 - decided to establish a regional energy market
 - agreed on the priority list of 'energy soft measures'
 - invited the EnC Secretariat to take the lead
- The agreed four investment projects are actually the two missing power interconnections identified by the Mini-regional PX Study



Co-financed Investment Projects

- The Summit endorsed four “Projects of Energy Community Interest (PEICs)” to be co-financed through the EU’s IPA 2015 multi-country programme:

 Electricity Infrastructure Projects of Energy Community Interest - IPA 2015 Investment Projects Co-financed		
Project description	International Financial Institution	Investment / Grant (in million EUR)
Grid Section in Albania: Albania - FYR of Macedonia Power Interconnection (I)	KfW	70 / 14
Grid Section in FYR of Macedonia: Albania – FYR of Macedonia Power Interconnection (II)	EBRD	49 / 12
Grid Section in Montenegro: Trans-Balkan Electricity Corridor (I)	KfW EBRD	127 / 25
Grid Section in Serbia: Trans-Balkan Electricity Corridor (II)	KfW	28 / 6.6

Source: Energy Community (EnC) Secretariat website



Conclusions & Further discussion

- EU Supergrid vs. Microgrids and Zero-energy buildings
 - It is obvious that these two concepts are complementary. But, which one of them will win the future?
- Mini-region (Albania-FYR Macedonia-Kosovo-Montenegro)
 - For efficient regional market integration, sufficient transmission capacities both between the countries of the Mini-region and other countries in the broader region are crucial
- High expectations of the WB6 Energy Connectivity Initiative
 - Will the promise for IPA co-financing of these capital infrastructural projects, preconditioned with a fulfilling of the established 'soft measures', speed up or slow down their realization?



Thank you for the attention!

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