



Balancing electricity market and future of the organized market in BiH

ISO BiH
Neum, 05.04.2017

Basic principles of balancing in 2016

- An organized market of reserve capacities and balancing energy for secondary and tertiary control has been established (primary control was mandatory for generation units connected to the transmission network, free of charge).
- Providers of ancillary services with capacities that meet technical requirements for the provision of the said ancillary services had the right to participate in the capacity market.
- Capacity prices were limited by adequate SERC's decisions. (SERC's decision establishing coefficients and price caps for the ancillary services)
- In case the required secondary and tertiary control capacities were not provided, there was a possibility for regulated procurement of the missing reserve capacities (upon proposal of ISO BiH, DERK adopted decisions on the provision of lacking quantities of supporting services).

- Apart from the restrictions on capacity prices, there were also limitations applicable to activated balancing energy:
 - electricity price for upward tertiary control was limited to **391.17 KM/MWh** in the first, and to **475.55 KM/MWh** in the second half of 2016;
 - electricity price difference for upward and downward regulation in secondary control offers was limited to **19.56 KM/MWh** in the first, and to **40 KM/MWh** in the second half of 2016;
- Based on activated offers for balancing energy for secondary and tertiary control, imbalance prices were defined, which were used in calculation of imbalance costs of balance responsible parties. Imbalance prices were determined for each hour in accordance to the most expensive activated offer (*pay-as-clear*), separately for the generated electricity deficit and excess electricity.

Capacities of the ancillary services of secondary and tertiary regulation

	Sekundarna regulacija - nevršno opterećenje (00-06)	Sekundarna regulacija - vršno opterećenje (00-06)
Prosječni raspoloživi kapacitet (MW)	12	36
Prosječni raspoloživi kapacitet (%)	38,23	71,34
Pružatelji pomoćne usluge	ERS, EPBiH	ERS, EPBiH

	Upward tertiary control	Downward tertiary control
Average available capacity (MW)	143	69
Average available capacity (%)	79.13	74.37
Ancillary service providers	ERS, EPBiH, EPZHB, ALUMINIJ	ERS, EPBiH, EPZHB

- Since October 2016, TPP Stanari has been an ancillary service provider on the daily balancing energy market with offers for tertiary control.

At the annual auction for 2017, all required capacities for tertiary and secondary control were provided (except for the secondary control for some months during the base load periods) with significantly lower prices than in 2016.

Engaged balancing energy

	Angažirana balansna energija nagore	Angažirana balansna energija nadole
Količina (MWh)	39,088	64,599
Prosječna cijena (KM/MWh)	123,01	28,86

Average price of engaged balancing energy was calculated taking into account the energy with offered negative price as well.

Imbalance

In 2016, **8** balance responsible parties were active in BiH. Average imbalance prices for 2016 amounted to **76.17** KM/MWh for generated deficit and **24.00** KM/MWh for generated excess electricity. However, these prices ranged broadly from **-750.00** KM/MWh to **450.00** KM/MWh, depending on the energy situation.

Transmission losses and compensations

- In 2016, electricity for covering of transmission losses and compensations was purchased through public procurement procedures. Total cost of this service for 2016 amounted to KM 27,006,479.96.

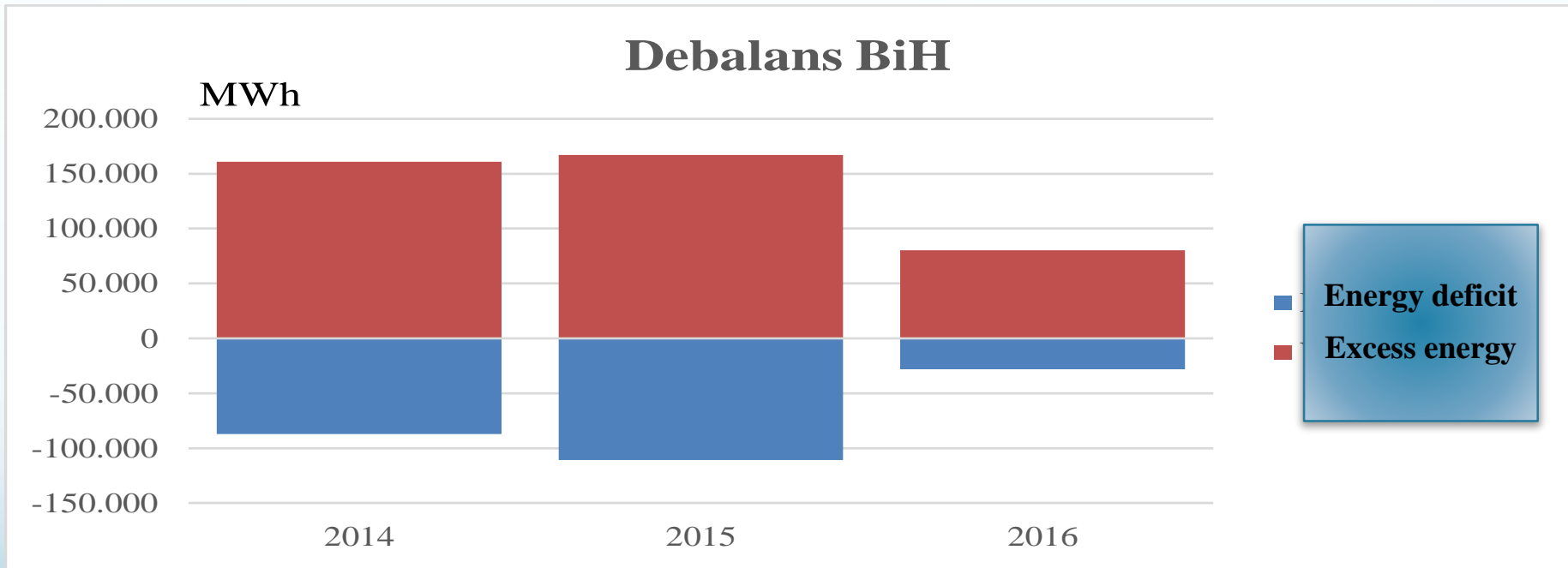
At the annual auction for procurement of energy for covering of transmission losses and compensations for 2017, the achieved prices were lower than in 2016.

Exchange of cross-border balancing energy

- Based on the agreement on common reserve in the control block Slovenia – Croatia – Bosnia and Herzegovina, capacity that should be provided in the control area of BiH was reduced from 250 MW to 184 MW, generating significant savings in the costs for reservation of control capacities.
- In September 2016, 20 MWh of electricity was delivered from the BiH system to the electrical energy system of Slovenia, for a price of 475.55 KM/MWh.

BALANCING MARKET - CONCLUSIONS

➤ New balancing system was established in 2016, and it primarily comprises of market procurement and valuation of provided balancing services, and allocation of balancing costs to actual generators of those costs; it reduced deviations of the BiH control area from the remainder of the interconnection compared to the previous period, which is illustrated in the chart below:



BiH imbalance		Energy deficit			Excess energy		
		2014	2015	2016	2014	2015	2016
Total	<i>MWh</i>	-87.222	-110.950	-28.159	160.839	166.863	80.310

BALANCING MARKET - CONCLUSIONS

- **With the establishment of the balancing market as of 01.01.2016, apart from significantly reduced deviations of the BiH Control Area against the interconnection, the safety of the electricity system in Bosnia and Herzegovina has been increased.**
- **Functioning of the balancing market is one of the significant factors in creating of conditions for the establishment of an organized electricity market in BiH and its integration with the regional and common European market.**

Organized electricity market

- COMMISSION REGULATION (EU) 2015/1222 - Directive CACM (entered into force on 14 August 2015)
- Western Balkan 6 initiative on the establishment and functioning of the regional electricity market in compliance with the Energy Community Treaty and relevant EU acquis.

Implementation of Western Balkan 6 Initiative will directly contribute to better organization of the internal electricity market in BiH, which will enable electricity buyers to get a better offer of electricity supply services, and at the same time enable power management companies to sell excess electricity to the markets of the countries in the region more easily.

Organized electricity market

Organized electricity market is the institutionally arranged relationship between supply and demand of participants in the electricity market, with pre-determined standardized products and physical delivery, within the day-ahead and intra-day timeframe.

Main principles of the organized market are objectivity, transparency and non-discrimination.

NEMO - nominated electricity market operator responsible for:

- establishment of the organized electricity market, in cooperation with the transmission system operator (TSO);
- organized electricity market administration;
- for efficient and functional connecting of the electricity market with neighboring electricity markets, in cooperation with TSO, as well as TSOs and market operators of the neighboring countries, in accordance with the defined international principles and applicable obligations.

Organized electricity market

- Electricity market liberalization (establishment, maintenance and development of competitive relations between market participants);
- Providing a transparent and reliable mechanism for formulation of wholesale price in the electricity market by coupling the supply and demand with a fair and transparent price, and providing adequate assurance that all transactions concluded in the market will be realized and paid;
- Integration into the regional and Pan-European electricity markets;
- Safe, stable and good-quality electricity supply to end-consumers for the most favorable prices.

Experiences of neighboring countries in organization of electricity markets

Croatia

- Croatian Power Exchange ltd (CROPEX) was established on 20 May 2014 (the company is co-owned (50-50) by the Croatian Energy Market Operator-HROTE and Croatian Transmission System Operator-HOPS). Service provider NORD POOL.

Serbia

- SEEPEX a.d. Beograd is a licensed market operator in the organized market/power exchange in the Republic of Serbia, established through the partnership of the transmission system operator JP EMS and European Power Exchange EPEX SPOT as a joint stock company.

Organization of electricity market in BiH - establishment of BiH Power Exchange “BiHPEX”

Preparatory stage:

- Assessment of the legal framework?
- Assessment of business environment?

Implementation stage:

- Agreement on the market model. Selection of strategic partner.
- Formation of company/power exchange organization,
- Trading options,
- Product structure,
- Clearing options,
- Organizing market operations,
- Contractual framework,
- Specific adjustment of trading options,
- Operating procedures
- Testing,
- Preparation for go-live,
- Launch of power exchange.



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ATTENTION!**