

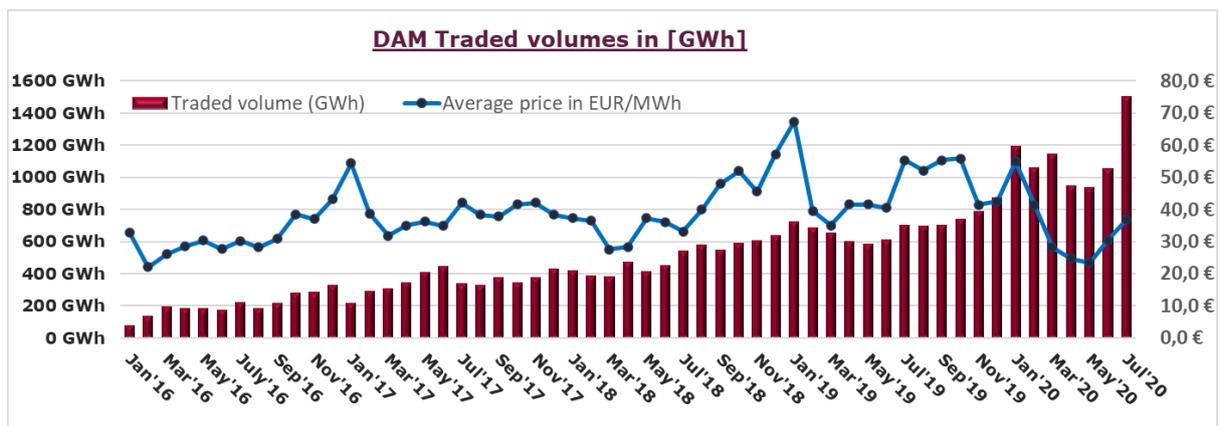
Day-ahead Market - Transparency, Liquidity, Trust

During its fifth year of operation this segment has established itself as the most preferred by market participants and almost every month it sets a record in terms of volumes of electricity traded

The good results are due both to the efforts of all market participants and institutions involved in the process of liberalization and coupling of the electricity markets in the European Union and the favourable for the market legislative changes over the past years, which taken as a whole have ensured transparency, equality, non-discrimination and security for electricity market players. The volumes of electricity traded in July 2020 set an absolute record reaching 1 505 000 MWh, which is more than a two-fold increase compared to the same period in 2019 and 42% more compared to June 2020.

Liquidity

There is a clear trend towards sustainable growth regardless of the market state of affairs:



Source: IBEX EAD

After real trading was launched in January 2016, the volumes traded have marked the impressive nearly seven-fold growth to 1505 GWh in July 2020. The liquidity growth has established Day-ahead Market as the most preferred one by market participants and the clearing prices arrived at have started to be used as reference ones for the condition of the whole market.

The high level of transparency and guaranteeing equal access to the information IBEX EAD provides have sharply increased competition in the sector which proves beneficial both to consumers and electricity generators. Market players' conduct is also changing, more attention being paid to short-term markets.

Despite the delay in economic activity during the first two quarters of 2020 as a result of the crisis provoked by the Coronavirus spread and the sharp decrease of prices of all energy resources, Day-ahead Market has remained unaffected. On the contrary, during the unprecedented period of uncertainty and lack of predictability even in the short term,

market players selected this segment for trading relying that the clearing price arrived at is as fair as possible and correctly reflects the market state of affairs at any time. Therefore, the volumes traded since the beginning of 2020 have marked a steady growth, where in most months the traded volumes exceed 1 TWh.

All this keeps attracting the attention to this segment in particular not only of registered but also of new market participants.

Transparency

The transactions on Day-ahead Market are concluded on the day preceding the day of physical delivery. The segment operates on the auction principle adopted at a common European level and the result of its operation is the formation of common equilibrium (clearing) prices for each delivery hour arrived at as a result of taking into account the aggregate demand and supply of electricity.

The operation of Day-ahead Market is based on the principles of the European target model and the Single Day-ahead Coupling (SDAC), in accordance with Commission Regulation 1222/2015, as well as the rules and procedures adopted by the PCR¹ consortium and MRC² initiative, where IBEX EAD is an associate and a full member respectively.

The market segment is operated as part of the MRC coupling and uses the common European algorithm for prices and flows calculation, EUPHEMIA³, which is approved by the system operators of the respective market areas as well as by ACER⁴. Using EUPHEMIA to calculate the prices and flows in SDAC guarantees that the following is achieved:

- ✓ *Welfare maximization for all market participants;*
- ✓ *As competitive as possible price of electricity;*
- ✓ *Efficient implicit allocation of cross-border capacities (no additional auctions being needed for allocation of the capacities themselves).*

The clear and commonly adopted at EU level mechanisms for clearing prices formation are one of the main factors for increasing the trust in the operation of Day-ahead Market and for the growth of the traded volumes respectively.

Market participants

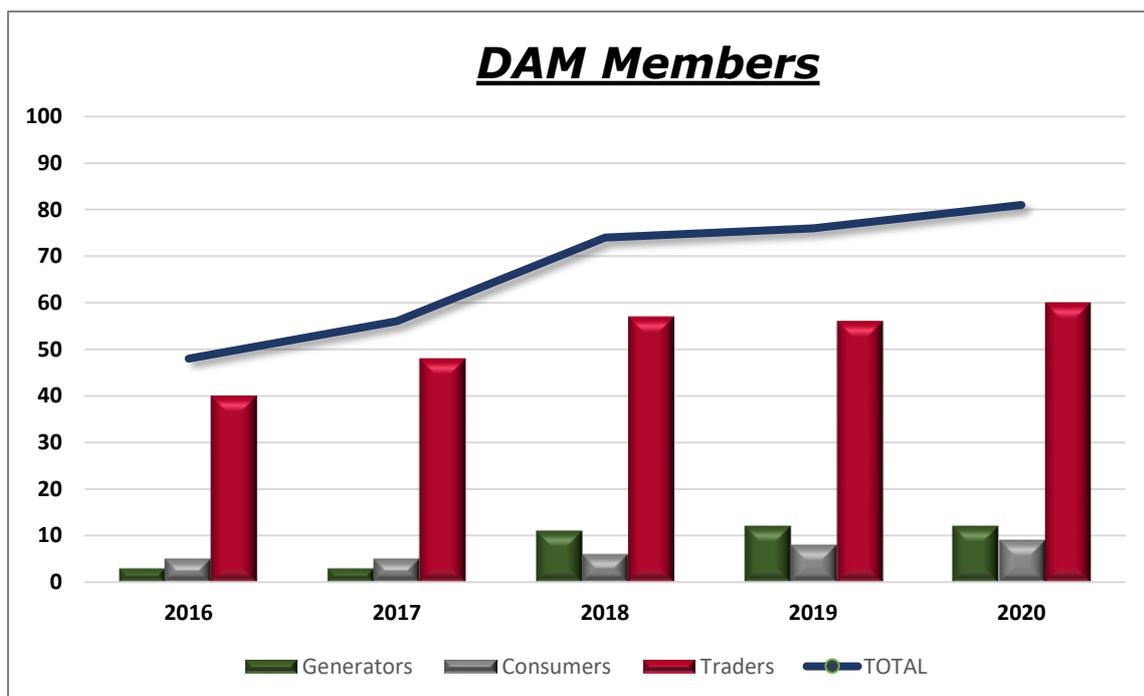
The structure and number of market participants for the period since the market segment was launched are presented in the graph below:

¹ PCR (Price coupling of regions), the project is an initiative of the seven biggest power exchange operators in Europe (in the form of a consortium) aiming at completing the target model adopted at Community level via common rules and procedures.

² MRC (Multi-regional coupling project) is a project for coupling the national electricity markets based on the European target model (Single Price Market Coupling for DAM) with implicit allocation of cross border transmission capacities - https://www.entsoe.eu/Documents/Events/2014/141013_ENTSO-E_Update-on-IEM-related%20project%20work_final.pdf

³ EUPHEMIA - EU + Pan-European Hybrid Electricity Market Integration Algorithm - <http://www.ibex.bg/bg/downloads/euphemia/>

⁴ ACER - Agency for the Cooperation for Energy Regulators



Following the strong growth of registered market participants over the first three years of operation of the market, it can be stated that their maximum number has almost been reached considering the level of liberalization and the existing legal framework.

Regardless of the lack of a clearly expressed upward trend with respect to registered participants, the fact needs to be noted that their number is relatively big in relation to the size and level of liberalization of the electricity market. For the sake of comparison, the table below presents a comparison of the number of active participants on some European power exchange markets for electricity:

Power Exchange	Market zone	Number of active members
OPCOM	Romania	374
Nordpool	Nordics, UK	360
EPEX	France, Germany, Benelux, UK	269
OTE	Cech Republic	115
IBEX	Bulgaria	81
HUPX	Hungary	60
BSP Southpool	Slovenia	31
Cropex	Croatia	20
Seepex	Serbia	21

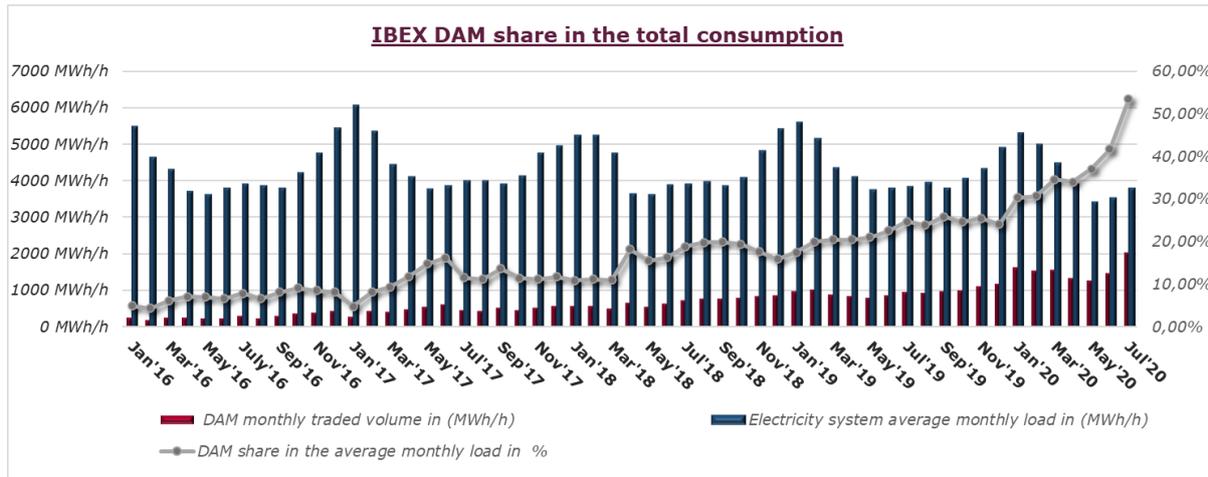
Source: Official webpages of the power exchange operators

The number of active participants on the segment, which is one of the prerequisites to arrive at fair reference prices, exceeds that in most countries in the region. Thanks to the

integration of the Bulgarian market area with the neighbouring ones through the operations of the registered electricity traders, there is also a positive correlation of the prices arrived at which is a main criterion for the correct functioning of the market.

Representativeness

The level of representativeness of the price arrived at on Day-ahead Market reflects the share of traded volumes in relation to the total consumption in the market area. From the perspective of the Bulgarian electricity market and Day-ahead Market, there is a clearly marked trend towards increase in the share of traded volumes in the total consumption:



The huge importance of Day-ahead Market segment is evidenced by the sharp increase of the share of traded power on this segment in relation to the total consumption over the past year.

Currently the conclusion can be drawn that the price levels arrived at on the segment give the most representative information about the status of the electricity market. This is also the reason why the results from Day-ahead Market are used by the Energy and Water Regulatory Commission (EWRC) in setting the regulated prices, premiums of RES generators and cogenerations, etc.

It needs to be noted that the agreement signed in June 2019 between IBEX EAD and European Energy Exchange (EEX), based on which EEX uses the clearing prices arrived at on Day-ahead Market and started to offer Bulgarian financial futures for electricity, is an international recognition for the high level of representativeness and efficient operation of the segment.

The stability and further development of Day-ahead market shall be a priority both for the power exchange operator and the bodies and companies involved in its management, regulation and administration- the Ministry of Energy (ME), EWRC, Bulgarian Stock Exchange (BSE) AD.