

Jovanovski, MEPSO: Decision on Optimal Model for Macedonian DAM at Start of 2017

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Although the Energy Community Secretariat has been quite critical of Macedonia due to its failure to transpose the Third Energy Package, the country's power transmission system operator (TSO) MEPSO is actively working on improving the situation in the Macedonia power sector. In addition to working on a 400 kV interconnection with Albania, the first Macedonian border – with Greece – has been included in the SEE CAO auctions. MEPSO has also prepared an analysis of the optimal model for establishment of the day-ahead market (DAM) and, according to Jovanovski, a final decision on this is expected to be adopted at the beginning of next year.



[Photo: MEPSO](#)

Nenad Jovanovski is an electrical engineer with over 15 years of experience at MEPSO. His first job at MEPSO was as operational dispatcher in the National Dispatch Centre (NDC), where he spent 12 years. NDC is essentially MEPSO's most important organisational unit from which the national electricity transmission system is managed in real-time. Jovanovski then spent another two years working on operational planning as well as organising auctions for available transmission capacity on the borders with neighbouring system operators. At the end of January 2014 he became MEPSO's Director of the Department of Power System Operators and a member of MEPSO's Board of Directors. In April 2016 Jovanovski was appointed Deputy Director-General, and in early October this year he became the General Director and President of the Board of Directors of MEPSO. Jovanovski is also a member of the Board of Directors of the South East European Coordinated Auction Office (SEE CAO), and he also represents MEPSO as a member of the General Assembly of the European Network of Transmission System Operators for Electricity (ENTSO-E).

Macedonia's power interconnector with Serbia started operating at the end of 2015. What is the current cross-border transmission capacity of the Macedonian transmission system and how important is this interconnection with Serbia?

Construction of the transmission line with Serbia began in July 2014 and in November 2015 it was in operation. The interconnection has increased cross-border interconnection capacity in the north-south direction. An increase in transmission capacity and market development are prerequisites for regional dispatching, leading to a reduction in costs for production at a regional level due to the greater availability of production capacities of different production units and low production costs. The new interconnection is also of great importance for increasing the security of supply of the Macedonian power system because it significantly reduces the risk of insecure regimes and partial collapse of the systems in South East Europe that have so far occurred.

The new interconnection is important because it reduces the need for the exchange of reactive power at a regional level. Since the start of its operation, the new transmission line has been generating 100 MVAR (Mega Volt Ampere Reactive) which is being injected into the network and has a favourable influence on the voltage profile in the surrounding nodes.

Until the connection agreement between Kosovo and ENTSO-E enters into force, this transmission line is part of the interface between the Serbian TSO, EMS, and MEPSO. Additionally, allocation of the total calculated and co-ordinated ATC for this border is performed simultaneously for the "Skopje-Kosovo" and "Štip-Vranje" transmission lines.

Additionally, the process of introducing a new mode of allocation of available cross-border capacities (joint auction) is ongoing, and auction rules have already been adopted by regulators from both states. The main new feature is the introduction of daily and intra-day allocation on this border.

What about the interconnection line planned with Albania?

From the perspective of electrical engineering, this 400 kV interconnection line represents the last part of the process of realisation of Corridor 8 (East-West), in the context of creating a corridor for the transmission of electricity between Bulgaria, Macedonia, Albania and Italy.

Connectivity between Macedonia and Bulgaria was completed in late 2008, and the realisation of an interconnection between Montenegro and Italy across the Adriatic Sea is in progress. Additionally, the 400 kV transmission line connecting the systems of Albania and Montenegro is functional, and the 400 kV transmission line between Kosovo and Albania has also been constructed.

Bearing in mind the development of Macedonia's power transmission network, the existing challenges in the south-western part of the transmission network will be adequately resolved with the construction of a new 400/110 kV substation near Ohrid. This substation will be connected to the new 400 kV interconnection between Macedonia and Albania along the Bitola-Elbasan route. The Macedonian part of the investment is planned to surpass the EUR 40 million intended for the construction of 95 kilometres of the transmission line from Bitola to the border with Albania and the new 400/110 kV substation near Ohrid.

The benefits for Macedonia stemming from this project can be divided into two groups. First, higher income for the TSO from increased electricity transit, and second, creating opportunities for regional dispatching via the availability of installed hydro potential of the Albanian power system.

After the interconnector with Albania is built, Macedonia will have interconnectors with all its neighbouring countries. Nevertheless, is Macedonia planning to additionally strengthen transmission capacities with any of the neighbouring countries, and if so, which ones and why?

The main part of Macedonia's transmission network comprises 400 kV transmission lines, which form a ring constituted from three transmission lines that connect the highest consumption region in the north and the largest production capacities in the southwest of Macedonia. Additionally, 400 kV transmission lines also serve as interconnections between Macedonia and surrounding systems. The construction of a new 400 kV transmission line for connection with the Albanian system will ensure that the Macedonian transmission system is optimally integrated with the regional and European power transmission systems.

A second interconnection with Kosovo remains a long-term option. The optimistic scenario for development in Kosovo foresees the construction of new generating capacities. Foreseeing about 1,400 MW of production capacity in Kosovo, an emergence of surpluses of generated electricity is expected. Evacuation of excess electricity produced at the new generating units in Kosovo enforces the need to plan the construction of a new 400 kV interconnection.

What are MEPSO's investment plan for the next decade (what is the ten-year network development plan), and how much will Macedonia have to invest in the power infrastructure?

Generally, the transmission network is operating at a satisfactory level with regards to safety and security of supply. MEPSO has identified that priority investments and improvements of the network are needed in the northwest of Macedonia where highly burdened lines are the result of old infrastructure and the continuous increase in consumption. To address this challenge, MEPSO is in the final stages of implementing a project for reconfiguration of the 110 kV network.

In the medium term the construction of a new 400/110 kV substation near Ohrid is planned for the resolution of outstanding issues. Construction of a new 400/110 kV substation in Kumanovo is planned in the northeast of Macedonia which will lower electricity losses and enable an even distribution of power and efficient solution to outages in Kumanovo in the longer term.

Intensive building of Macedonia's transmission network took place during the 1960's and 1970's. In the next few years, MEPSO's priority will be the reconstruction of several over 50-year old 110 kV transmission lines. The first on the list of priorities is the reconstruction of power lines where operating parameters have been disrupted. We are working on this with the aim of ensuring safety and security of transmission system power supply.

Modernisation and changing of the primary and secondary equipment in substations is a continuous process. MEPSO is replacing primary equipment that exceeds the average age of 30 years (switches, disconnectors, measuring transformers, surge arresters) in preparation for the introduction of a model for remote management of substations from the National Dispatch Centre.

MEPSO has its own infrastructure for telecommunication connection of electric power

facilities in the network. This is optical ground wire (OPGW). The optical network covers most of the western and part of east-central Macedonia, both via a 110 kV transmission line, and the central part of the country via a 400 kV transmission line.

In the coming period, the priority is to complete the optical network in a ring formation which will provide redundancy and a high security of supply. The total estimated value of MEPSO's investments amounts to around EUR 130 million (according to the mid-term development plan which includes new interconnections and projects to modernise the national power transmission network).

What about investments in new power generating capacities? Are they needed?

New sources of electricity production are always welcome from several aspects. The first and most important is that of the market and maximising electricity supply, followed by an operating and system aspect of managing the system, complemented by financial and development aspects. In general, the largest power producer in Macedonia, ELEM, is leading an expansive investment policy, and this trend is being followed by private initiatives, primarily in renewable electricity.

According to Energy Community data, Macedonia's net electricity imports decreased from 3,073 GWh in 2014 to 2,656 GWh in 2015, while net exports increased from 66 GWh in 2014 to 143 GWh in 2015. What was the reason for the decrease in electricity imports, and the increase in electricity exports?

Quantities of consumed and generated electricity are volatile categories that largely depend directly on companies' economic activity which is induced by economic trends at national and regional levels. The effects of energy efficiency policy measures that have an impact on the decline in consumption of electricity, have also been a factor of late. In a wider context, regional supply and demand of electricity have a large impact on the flows of electricity, especially bearing in mind, above all, the tourist season in Greece and weather conditions. Imports and exports depend on regional electricity prices and available capacities for the transmission of electricity. I want to point out that MEPSO's transmission capacity can meet the needs of all the participants in our national system at any time.

What is MEPSO's forecast for future volumes of imports and exports?

If the development of the transmission network follows the defined plans then the needs of producers and consumers of electricity will be fully met. At this cross-border, transmission capacities are such that they can maintain all import and export transactions of electricity, while enabling uninterrupted transit of electricity for the needs of the region.

At the end of May, MEPSO signed an agreement to become a shareholder in the South East European Coordinated Auction Office (SEE CAO). How big a step is this for MEPSO and what do you expect from this move? When will the auctions start and on which borders?

By signing the agreement MEPSO became a founder and co-owner of the regional company SEE CAO that organises auctions for allocation of available cross-border transmission capacities. The SEE CAO was established with the aim of organising capacity auctions from a single centre representing eight TSOs, thus facilitating regional electricity trade. It is also

foreseen that this will bring lower costs to participants on the regional market.

The first Macedonian border included in the SEE CAO auctions is the Macedonian-Greek border. The first auction - annual capacity auction for 2017 - is scheduled for 22 November. The SEE CAO will conduct annual, monthly and daily auctions of available transmission capacities on the Macedonian-Greek border. By joining the SEE CAO with this border we have fulfilled our obligation assumed by Regulation 714/2009 as well as the Energy Community Treaty.

The Energy Community Secretariat wrote in its new Western Balkans 6 Monitoring Report that in June MEPSO was tasked to prepare an analysis of the optimal model for establishment of a day-ahead market to be put forward to the government. When will this analysis be completed and what would be an optimal model for the establishment of a day-ahead market in Macedonia?

At the summit in Vienna (which is part of the Berlin Congress) in 2015, six Western Balkan countries (WB6) decided to take steps to improve energy connections with the priority of developing the electricity market. To achieve this goal, the WB6 countries have committed to implementing a list of measures at national and regional levels.

For the implementation of these measures the Macedonian government has established a working group which includes the representatives of MEPSO. One of the tasks of MEPSO was to prepare – with the help of the electricity market operator - a SWOT analysis of the options provided foreseen by the "soft measures" for market development, namely for the establishment of a power exchange or joining the neighbouring organised market.

MEPSO completed its task within the anticipated deadline and handed over the analysis on 14 October this year to the working body in charge of the implementation of "soft measures". A detailed comparison of the positive and negative aspects of the two options for the organised market was carried out in the analysis.

Furthermore, in accordance with the planned dynamics, prior to the decision by the government, a detailed study is being carried out based on the data from MEPSO's analysis which should provide an action plan in the framework of the project for the regional market analysis with the aim of identifying the expected electricity consumption and the short- and mid-term forecasts for electricity prices.

The final decision on the optimal model for the establishment of an organised day-ahead market is expected to be adopted at the beginning of next year. MEPSO is ready for the next steps, the basis of which will be the government's decision on the selection of the organised market model. Whichever option is chosen, the model will be in accordance with the European target model and will foresee future integration of neighbouring markets.

Does the establishment of a power exchange in Macedonia make sense as the market is very small? How would you ensure liquidity and when could such a power exchange become a reality?

The electricity market in Macedonia is relatively small and in a similar condition to those in other WB6 countries. Yet, when it comes to electricity trading we should point out the solid interconnection connectivity at the 400 kV level with the neighbouring markets. Macedonia is

also working on connecting its power transmission system with that of Albania.

In 2015, WB6 countries committed themselves, amongst others, to the development of electricity trading by establishing a power exchange and regional linking of national electricity markets. It is certain that the key challenge in almost all the national markets of these countries is to strengthen the liquidity which can be done most efficiently by connecting the markets.

Prior to connecting the markets a series of measures for ensuring liquidity are being analysed and planned, all in accordance with the European target model in the field of production and consumption of electricity. The expectations are that the connection of electricity markets will enable growth in liquidity in Macedonia and in the region.

MEPSO could not participate in a balancing energy market until 30 June 2016 due to a regulatory exemption from balance responsibility for regulated companies. Has this already changed? What obstacles are MEPSO still facing in the balancing market and how do they affect your business?

Guided by the goal of introducing the balancing mechanism, MEPSO has a proactive role in this respect. On the initiative of the Energy Regulatory Commission, working groups have been formed involving representatives of all the parties involved in this process. The goal was to prepare amendments to the Trading Rules in the section regarding provision of system services and methodology for the calculation of imbalance.

The Energy Regulatory Commission adopted these amendments on 13 October this year. These changes enable the legal possibility for MEPSO to provide balancing services from all market participants that can provide this service at a national level and, in the near future, also at a regional level.

The amended rules additionally allow the defining of individual rates for the lease of capacities for system services and rates for delivered electricity intended for balancing, which enables participation in the regional market for balancing energy. According to the changes, the balancing model allows non-discriminatory and transparent cross-border exchange of balancing services.

The amended Trading Rules will be applicable as of 1 July 2017.

The Energy Community also warned that there has been no progress regarding the DSO and TSO unbundling. What is Macedonia doing in this area and in the area of transposing the Third Energy Package into its own legislation?

There are ongoing activities related to changing energy regulations and adjusting them to the Third Energy Package.

Macedonia has also postponed the date of full market opening to 2020, which again provoked considerable criticism. Why did Macedonia decide on such a postponement and what do you then advise energy companies which are interested in supplying electricity in Macedonia? Should they wait?

Market opening phases are complex processes and strategic decisions in this regard are being

taken by Macedonian legislative and executive authorities, namely the Assembly and the Government of the Republic of Macedonia. After completed analysis and broad consultation among the expert public, the dynamics of liberalising certain segments have been established. The priority is that the transition does not bring negative shocks and drastic changes in working conditions and prices of services and products to market participants. This is especially so if you know that the electricity price is the main impetus for the formation of the price of products and services in many economy sectors, and that it also has a big impact on the competitiveness of companies. The electricity price is also substantially reflected in the standard of living and in economic growth at a national level.

There will always be criticism and that is one of the benefits of a democratic society. However, in the decision-making process the most important factor is to preserve national interest. The level of openness of the Macedonian electricity market is very high in relation to the countries from our region, exceeding 45% of the entire national consumption in the last three years.

I am sure that all companies interested in the supply of electricity and in participating in the Macedonian market are making really good judgments when targeting target groups of potential clients. I believe that these companies are also being encouraged by the experience of actual participants in our electricity market.

When can we expect the Macedonian power market to become fully open and really competitive?

MEPSO has based its work on the Energy Law which defines the phases of electricity market opening. About 50% of the total consumption of electricity in Macedonia is currently traded at market prices, including the procurement of electricity intended for technical losses in the transmission and distribution network.

Consumers can choose among 10 electricity suppliers which are registered, or in the case of independent participation on the market, can buy electricity from the 32 registered electricity traders.

Macedonia is the only country in our region where the supplier who was once part of a vertically integrated state monopoly company (which no longer exists) does not have the largest market share. This fact indicates that the process of liberalisation has been based on real processes, a marked competition which should be encouraged in the future.