MEPSO

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Interview with

Ivan Ivanov

Director of the IT/TC Sector

Women in the Energy Sector

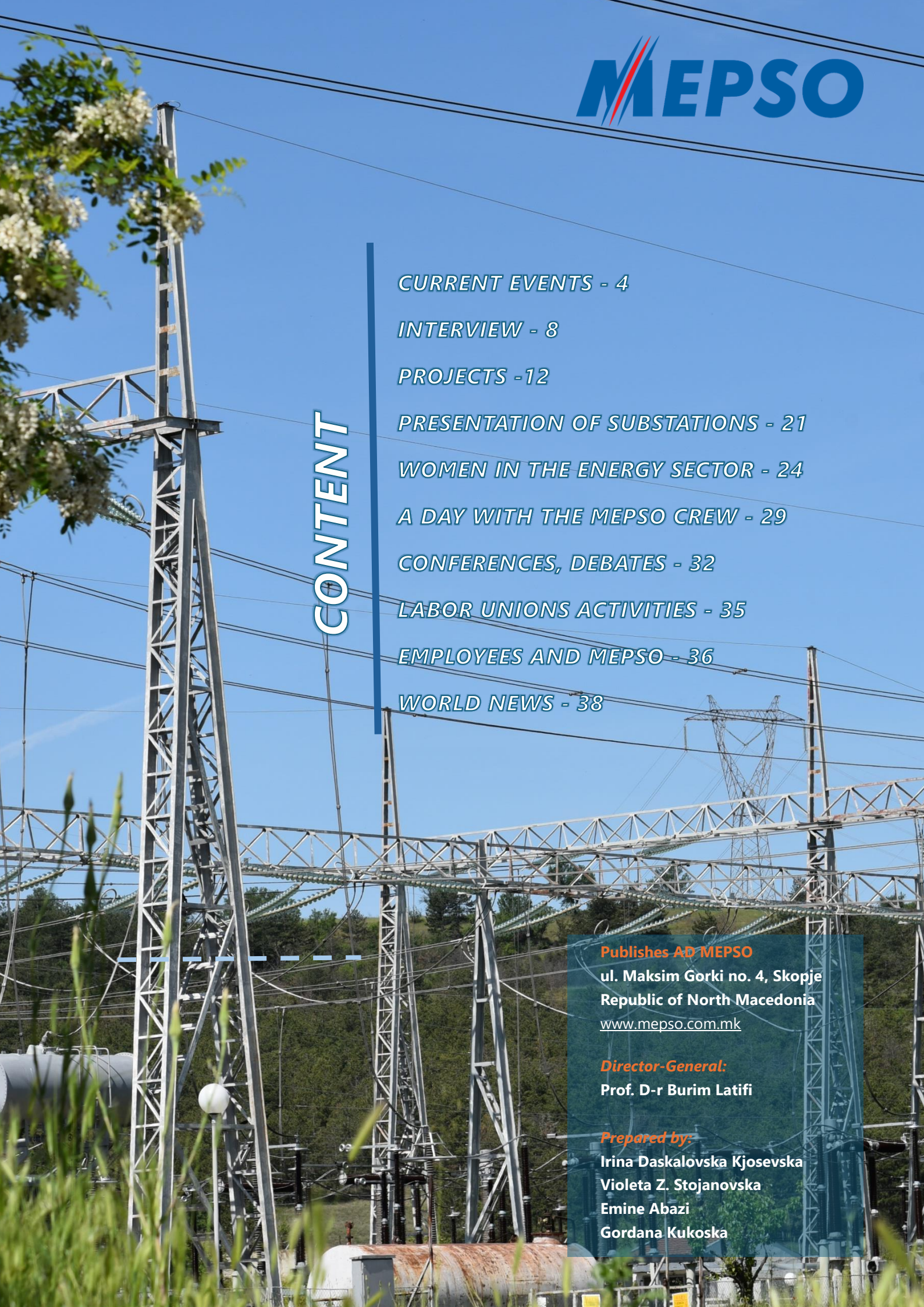
Anita Jovanova

Coordinator for International Collaboration

ELECTRICITY TRANSMISSION SYSTEM OPERATOR

Емаил: info@mepso.com.mk Тел: +389 2 314 9811


MEPSO



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ul. Maksim Gorki no. 4, Skopje
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www.mepso.com.mk

Director-General:
Prof. D-r Burim Latifi

Prepared by:
Irina Daskalovska Kjosevska
Violeta Z. Stojanovska
Emine Abazi
Gordana Kukoska

CURRENT EVENTS

SECOND POWER TRANSFORMER COMMISSIONED AT SS DUBROVO – ANOTHER SUCCESSFULLY PROJECT BY THE TGO

As part of ongoing efforts to modernize and optimize the electricity transmission system, another project has been successfully implemented at SS Dubrovo. The project involved transport, maintenance, and installation of an existing 400/110 kV, 300 MVA power transformer. The dismantling and servicing activities were carried out at the facilities of the procurement contractor, Comel, in Belgrade.

"The transformer is a key asset for increasing the system's flexibility and reliability, particularly amid the rapid integration of new energy generation capacities, as well as for improving overall system security. After a longer period, this has once again enabled the operation of the substation with two power transformers", stated Jane Gerasimovski, Chief Engineer under the TGO.

TGO completed the project that began approximately two years ago, overcoming a series of challenges along the way, and once again reaffirmed its pivotal role in the implementation of strategic energy infrastructure projects.

REVITALIZATION OF HIGH-VOLTAGE EQUIPMENT AT SS BITOLA 1 CONTINUES

The Department for Revitalization of High-Voltage Equipment continues the replacement of disconnectors at SS Bitola 1 – 110 kV. Units that have been in service for several decades are being dismantled and replaced with new of the "Rade Končar" type.

The activities commenced in March this year at the transmission line bay SS Bitola 1 – SS Bitola 4 (line No. 121/3), where the disconnectors on System 1 and System 2, as well as the line disconnector, were replaced. In April, the same works were carried out at ETR 1 – TRAFO 1 on both systems. The works are currently continuing at ETR 2 – TRAFO 2, where replacement on both systems is also planned. So far, the upgrades have been completed at the transmission line bays SS Bitola 1 – SS Prilep 1 (TL No. 109) and SS Bitola 1 – SS Bitola 4 (TL No. 121/3), as well as at TRAFO 1. In the upcoming period, activities will continue at the bays SS Bitola 1 – SS Sopotnica, the coupling metering bay, and the two transmission line bays SS Bitola 1 – SS Bitola 2 (lines 136A and 136B).

CURRENT EVENTS

CORNERSTONE LAID FOR THE 400 kV INTERCONNECTION BETWEEN NORTH MACEDONIA AND ALBANIA

Prime Minister, ministers, mayors, international representatives, regulators, companies, and contractors attended the start of construction on the energy interconnection transmission line between North Macedonia and Albania. The event drew significant public attention due to its regional importance and the project's restart after a prolonged delay.

The project enjoys strong support from the European Union and the European Bank for Reconstruction and Development, which have provided substantial financial assistance. The transmission line on the route SS Bitola – SS Ohrid – Albanian border has a total length of approximately 97.5 kilometres and includes the construction of 269 towers. As part of Corridor 8, the interconnection will enable a more reliable electricity supply, enhanced cross-border electricity exchange, and the full integration of the Macedonian power system into the regional and European networks. Construction is planned to be completed within 900 days.

AD MEPSO RECEIVED WBIF GRANT OF €2.4 MILION FOR POWER SYSTEM MODERNIZATION

AD MEPSO has been awarded an investment grant from the Western Balkan Investment Framework (WBIF) for the implementation of the project "Advancing Operational Control in MEPSO's Transmission System." The project aims to enhance operational control capabilities and modernize the monitoring and control systems of the electricity transmission network. Its scope includes the procurement and deployment of a new SCADA/EMS platform for the National Dispatch Center (NDC) and the Backup Dispatch Center (BDC), as well as the introduction of local monitoring and control systems at the substation level.

The existing SCADA/EMS platform and a portion of the substation monitoring and control systems within the transmission network of North Macedonia are technologically obsolete and approaching the end of their operational lifecycle, resulting in reduced system reliability, limited data availability, and an increased risk to the secure operation of the power system. The new system will enhance the power system's operational reliability, provide accurate real-time data, and enable advanced functionalities for load analysis and demand forecasting.

The investment in modernizing the SCADA/EMS system and substation automation is essential to ensuring secure and stable electricity transmission, improving operational efficiency, and achieving compliance with ENTSO-E and EU standards. The project will enable faster fault detection and system restoration, improved integration of renewable energy sources, increased system flexibility, and a significant reduction in the risk of system disturbances. As such, this investment represents a critical step toward strengthening energy security, advancing digital transformation, and supporting the country's long-term energy transition.

AD MEPSO ACTIVELY PARTICIPATES IN SHAPING EUROPEAN ENERGY POLICIES

The Director General, Burim Latifi, took part in the General Meeting of the CEO Strategic Workshop at ENTSO-E in Brussels, where they discussed the crucial questions for the development of the European power system.

The discussions addressed the role of transmission systems in the electricity market. They also highlighted challenges with reliability, energy transition, and decarbonization. The need for stronger regional cooperation, more transmission investment, and efficient grid management was emphasized.

Participation in these meetings allows AD MEPSO to contribute to European strategic developments. It ensures timely alignment with regulatory and operational requirements in the electricity sector.

CURRENT EVENTS

MACEDONIA'S 2030

NATIONAL ENERGY AND CLIMATE PLAN

The Government of North Macedonia has adopted the Integrated National Energy and Climate Plan for the 2025–2030 period, aimed at strengthening energy stability and aligning the country with European policies. The plan encompasses 61 measures focused on energy efficiency, energy security, energy market development, and innovation. The primary emphasis is placed on reducing greenhouse gas emissions, increasing the share of renewable energy sources, and improving energy efficiency.

The competent authorities have announced increased investments in solar, wind, and hydropower generation, the development of energy storage systems, the modernization of infrastructure, and the gradual phase-out of coal. At the same time, efforts are planned to strengthen energy security through diversifying energy sources and enhancing regional cooperation. Institutions, experts, and international partners, in consultation with a Strategic Environmental Assessment, prepared the document. Its implementation is expected to improve environmental quality, spur new investments, and drive economic growth. Nevertheless, some experts warn that without expanding domestic electricity generation, the country will remain dependent on imports and vulnerable to market price shocks.

INTERVIEW WITH IVAN IVANOV, DIRECTOR OF THE IT/TC SECTOR

DIGITAL TRANSFORMATION FOR A SECURE AND STABLE POWER SYSTEM

Digital transformation represents one of the key drivers in the development of the modern power system. In conditions of increasing demands for reliability, resilience, and efficiency, the role of IT systems and telecommunications infrastructure in the operations of AD MEPSO is becoming ever more significant. The modernization of networks, the strengthening of cybersecurity, and the implementation of new technologies are among the priorities that directly contribute to system stability. We discuss the ongoing projects, challenges, and plans of the IT/TC sector with Director Ivan Ivanov.

MEPSO is implementing significant investments in the modernization of information technologies and telecommunications infrastructure. Which strategic projects would you highlight as priorities, and what impact do they have on the company's operations? Are there already visible benefits?

► In the recent period, we have focused on modernizing key IT and telecommunications infrastructure. The priority was to increase the reliability, availability, and efficiency of the systems. I would particularly highlight the projects for upgrading network infrastructure, modernizing existing IT capacities, as well as the establishment of a modern Disaster Recovery Center developed in accordance with applicable standards and international best practices.
This facility is of particular importance for ensuring business continuity, rapid recovery of critical systems, and enhanced infrastructure resilience in the event of unforeseen events. The benefits are already visible through increased system reliability, improved operational efficiency, and significantly reduced risks of outages or incidents.

The energy sector is critical infrastructure with an increased risk of cyber threats. How do you structure your approach to cybersecurity, and what are the key challenges you face in protecting ICT systems?

► Our approach to cybersecurity is structured and based on the principles of prevention, detection, and timely response. In doing so, we align our activities with the applicable national regulatory framework, including the cybersecurity rules adopted by the Energy Regulatory Commission, as well as the Law on Security of Network and Information Systems, which establishes a modern framework aligned with European practices.
We continuously work on strengthening security controls, event monitoring, risk management, and raising employee awareness. Key challenges remain the dynamic and sophisticated nature of threats, the protection of complex and interconnected systems, and the need for continuous compliance with regulatory requirements.
Going forward, we believe that the application of artificial intelligence will become an inevitable part of cybersecurity, particularly in the areas of faster anomaly detection, threat analysis, response automation, and proactive protection of critical infrastructure.

At the same time, latency reduction was achieved, which is of particular importance for secure and efficient management of critical systems in real time.
These investments directly contribute to greater reliability, availability, and resilience of the overall power system.

To what extent are digitalization and automation integrated into MEPSO's work processes, and what are the next steps in this direction?

► Digitalization is a process that is gradually intensifying and represents one of the main priorities in modern corporate governance. Solutions have already been implemented that contribute to greater efficiency, improved control, and more effective process management.
In the following period, we will focus on replacing the existing Business Information System, DMS, and electronic archiving solutions with a modern, integrated, secure system. Our goal is to digitize all work processes, automate operations, improve traceability, accelerate information flow, and enable efficient decisions using relevant, timely data.
Hence, a foundation will be created for an even more advanced digital transformation and a higher level of operational efficiency across the company's overall operations.

What is the role of telecommunications infrastructure in ensuring secure and stable electricity transmission?

► Telecommunications infrastructure is the foundation for the stable functioning of the power system. It enables secure, fast, and continuous exchange of data between different elements of the system, which is essential for management, monitoring, and real-time response.
In the recent period, we implemented a significant upgrade of the telecommunications infrastructure through the introduction of modern solutions, increased transmission capacities, and additional redundancy of communication links.

How is coordination carried out between IT, TC Operational Technology (OT), and the other sectors within the company, especially during the implementation of new technological solutions?

► Coordination is based on close cooperation and clearly defined processes. During the implementation of new solutions, all relevant sectors are involved to ensure compatibility, interoperability, and security. This integrated approach is crucial for the successful deployment of complex technologies.
Particularly important is coordination in managing processes that take place in real time, where the timely exchange of information and synchronized action are essential for system stability. Coordination is also most evident during the implementation of cybersecurity projects, where a holistic approach is required, given that these systems are functionally and operationally interdependent.
This is precisely why modern management of critical infrastructure requires integrated cooperation between IT, telecommunications, operational, and other business structures.

How important is compliance with European directives and regulations, and how is MEPSO positioned about their implementation?

► Compliance with European directives, standards, and operational rules is of essential importance, especially for an operator such as MEPSO. As a transmission system operator, MEPSO is directly interconnected with the regional and European electricity network through ENTSO-E, which makes continuous monitoring and implementation of the rules, recommendations, and technical guidelines arising from this framework indispensable.

Such compliance is not merely a regulatory obligation, but also a prerequisite for secure cross-border operations, system stability, and efficient coordination with other operators across Europe. At the same time, it contributes to strengthening institutional trust and confirming MEPSO as a credible and reliable partner within the European energy landscape.
In terms of positioning, I can say that MEPSO is actively working on the continuous enhancement of its capacities and processes, with a clear orientation toward modern European practices, high security standards, and the further strengthening of its role in regional energy connectivity.

Which technological solutions and approaches are you implementing to increase the resilience and reliability of ICT systems?

► The focus is on introducing and continuously improving multilayered security controls, network segmentation, regular testing, and enhancement of incident management processes. As part of our recent activities, modern solutions such as EDR (Endpoint Detection and Response) and SIEM (Security Information and Event Management) have been implemented to enable more efficient detection, analysis, and response to security incidents.
Alongside technological investments, considerable attention is dedicated to building internal capacities through continuous training and professional development of technical personnel, as the human factor remains a key element in maintaining a high level of cyber resilience.
In the following period, the implementation of a Security Operations Center (SOC), namely a centralized center for monitoring and managing cyber threats, is also planned, which will further strengthen capabilities for proactive protection and timely response.
These approaches enable greater system resilience, faster recovery in the event of disruptions, and a higher level of operational security.

Does MEPSO have established centralized capacities for monitoring and managing security incidents, and how is this process carried out in practice?

► We have established capacities for centralized monitoring and management of security events. The process includes continuous monitoring, analysis, and timely response, with clearly defined procedures for incident management and minimizing their impact.
At the same time, internal incident response teams have been established, as well as a system for reporting cyber incidents and suspicious activities by employees, enabling faster detection and a coordinated response.
However, it should realistically be emphasized that securing highly qualified personnel for 24/7 monitoring remains a challenge, which is also present on the broader market.
This is precisely why, in the coming period, we plan to further strengthen this segment through cooperation with a specialized third party, to ensure continuous coverage, advanced monitoring, and faster response to potential threats.
With such a combined model of internal capacities and external expertise, the objective is to ensure an even higher level of cyber resilience and operational security.

What is the role of cloud technologies and modern IT architecture in your strategy, and how are the security aspects associated with them addressed?

► Cloud technologies are being considered as part of the modern IT strategy, particularly with the aim of increasing flexibility, scalability, and

operational efficiency. In this regard, some services and processes are already being carried out in a cloud environment, such as Microsoft 365, while we are currently in the phase of testing and evaluating other suitable service solutions.
At the same time, security remains a priority through careful selection of technologies, appropriate access controls, data protection measures, and compliance with relevant standards and best practices. The objective is to use the cloud approach in a way that delivers greater efficiency while maintaining the required level of security and control.

Given the rapid development of technology, how do you develop human capital within the IT/TC sector? Is investment made in education and certification?

► We continuously invest in staff development through training, certification, and practical professional advancement. We are aware that qualified and well-trained personnel are a key factor for the stability, security, and further development of systems, which is why this area has high priority.
The principle of continual improvement is an integral part of our strategy for the development of the IT and telecommunications sector. This implies continuous monitoring of new technological trends, adaptation to modern practices, and timely preparation for the changes brought by the market, especially at a time when artificial intelligence is increasingly being integrated into IT processes and solutions.
In this regard, we also invest in specialized technical training for professional staff, as well as programs aimed at raising security awareness among all company employees. Our approach is that technology, processes, and people must evolve in parallel in order to ensure long-term success.

„"Technology, processes, and people must evolve in parallel in order to ensure long-term success."

What is your vision for the development of the IT and telecommunications sector within MEPSO over the next few years?

► In the coming period, the vision is focused on further digital transformation, strengthening cybersecurity, and continuous modernization of IT and telecommunications infrastructure. The objective is to ensure a higher level of reliability, efficiency, and operational readiness for future challenges in the energy sector.
Special emphasis will be placed on preparedness for the new era of artificial intelligence, where IT systems will increasingly rely on data, automation, and advanced analytics. In this context, a key priority is the development of internal capacities, knowledge, and expertise, enabling the organization to independently understand, implement, and manage new technological trends.
Additionally, the vision encompasses strengthening system resilience, greater integration of security mechanisms into all IT processes, and the gradual transition toward more agile and data-oriented architecture. In this way, MEPSO will remain technologically stable, secure, and prepared for dynamic changes within the energy and digital ecosystem.

PROJECTS

MODERNIZATION OF REMOTE MONITORING AND CONTROL SYSTEMS IN SUBSTATIONS

By Marjan Janevski, senior officer for technical and legal legislation at the Power Plants Remote Monitoring and Control Systems Unit, Department TI

Aligned with global trends in the modernization of remote monitoring and control systems among transmission system operators, the Power Plants Remote Monitoring and Control Systems Unit, part of the TI Department under the OEPS Branch of AD MEPSO, has undertaken a significant initiative to modernize and upgrade several substations with advanced monitoring and control equipment.

Particularly, modernization and equipment upgrades were implemented at SS Resen, SS Delchevo, and SS Strumica 1. The project aimed to ensure comprehensive monitoring and control of all bays in these substations by deploying a Substation Automation and Control System (SACS) found on Remote Terminal Unit (RTU) devices.

All three substations are owned by EVN and operate without on-site personnel (exept SS Strumica 1) while the high-voltage equipment is controlled by dispatchers at the National Control Center (NCC) of AD MEPSO and by the company's responsible staff. Although these substations were previously equipped with remote monitoring and control systems, due to obsolescence and reduced functionality, they needed to be replaced with new, more advanced equipment.

The term "remote monitoring and control" refers to direct control into the condition of high-voltage equipment in the substation, including condition of the equipment, measurement accuracy from transmission lines and transformers, and active alarms, if any. Thus, the dispatcher on duty is provided with full real-time monitoring and control of the substation, enabling more efficient operation of the country's overall power system. Through the remote monitoring and control system, the dispatcher at the NCC can issue commands to switch transmission lines and transformers on or off, depending on the conditions of the power system.

The installed equipment is supplied by renowned manufacturers: HITACHI RTUs were installed in SS Resen and SS Strumica 1, while in SS Delchevo, an

RTU was deployed by Schweitzer Engineering Laboratories (SEL).

The RTU continuously collects all information (statuses, measurements, and alarms) from all bays within the substation. These signals, which are hardwired to the control cabinet, are digitized within the RTU and transmitted via the communication medium (optical network owned by AD MEPSO) to the SCADA system at the NCC. Furthermore, the dispatcher at the NCC can remotely issue commands to switch circuit breakers or disconnectors, which are then executed at the substation via the RTU.

The LCP provides local insight into the status of equipment across all bays, displays measurements from analog instruments, and indicates active alarms from the SACO signaling device. From the control cabinet, authorized personnel can also operate high-voltage equipment locally, particularly during maintenance activities or fault rectification, when local control of circuit breakers and disconnectors is required.

As part of the three projects, old cables were replaced and new signaling and control cables were installed from the high-voltage equipment, as well as new cables from current and voltage transformers to the control cabinets in SS Resen, SS Delchevo, and SS Strumica 1. Additional civil works were carried out, including excavation and concreting of cable trenches after installation. Field activities were often conducted in parallel across multiple substations, and in several instances during the early morning hours due to specific power system conditions.

The project began in May 2025 and was completed in May 2026, as per the contract.

Contractor for the SS Resen and SS Strumica 1 was EMS DOO Skopje, while in Delchevo it was Benning PSAM DOO. Both Contractors executed the works in accordance with the technical specifications and requirements set out in the tender documentation.

The completion of these projects is a important step towards more secure, reliable and modern transmission system managed by AD MEPSO.

PROJECTS

RECONSTRUCTION AND ENERGY MODERNIZATION OF CONTROL BUILDINGS AT THREE SUBSTATIONS

By Slagjana Koljozov, Project manager at Investment and Development Department

AD MEPSO carries out a project to reconstruct the control buildings within the 400/110 kV substations SS Skopje 4, SS Skopje 1/5, and SS Dubrovo to improve energy efficiency, modernize the facilities, create better working conditions, and enable access for persons with disabilities.

The facilities were built in the 1970s and currently require technical and energy upgrades in line with modern standards. The project carries multiple benefits. It will improve the functionality and security of the facilities, contribute to lower electricity consumption, the integration of renewables, and a decrease in CO2 emissions.

In all three, control buildings, civil, electrical, mechanical, and technical works, new installations, improvements to the technical insulation, roof reconstruction, air conditioner modernization, and lighting. The project involves replacing the deteriorated furniture, installing LED lighting, and installing advanced air-conditioning and ventilation systems.

A particularly significant component of the project is the installation of 40 kWp photovoltaic systems at each facility. This will ensure that the required electricity is generated from renewable sources, thereby contributing to greater energy independence and more sustainable operation of the facilities.

Advancement and Improved Energy Efficiency in SS Skopje 4

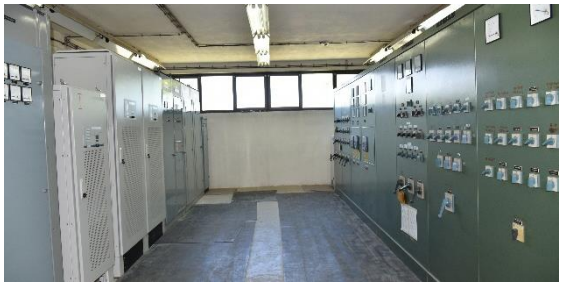
At the control building of SS Skopje 4, the project includes improving the energy performance and modernizing existing systems. This substation will receive a new thermoinsulated facade, a roof reconstruction with thermal insulation, replacement of the old windows and doors with new energy-efficient solutions, and advanced heating and cooling systems.

A 40 kWp photovoltaic system will be installed on the building for self-consumption, along with a solar hot water system. In addition, measures are foreseen to enhance accessibility for people with disabilities, including the construction of an access ramp and a platform for vertical movement between floors.

Advanced Systems and Sustainable Solutions in SS Skopje 1/5

At SS "Skopje 1/5", in addition to the installation of a new thermal façade, replacement of existing windows and doors with energy-efficient solutions, and refurbishment of the roof covering and structure, the project also includes the deployment of heat pumps, solar collectors, and integrated heating and cooling systems, further enhancing the building's energy efficiency.

Accessibility improvements for people with disabilities are also included. A 40 kWp photovoltaic system is planned for on-site consumption.



Infrastructure Upgrade and Enhanced Reliability at SS Dubrovo

At SS "Dubrovo", the reconstruction includes roof rehabilitation, installation of a new thermal facade, and replacement of worn-out windows and doors with modern energy-efficient systems. Additional measures include solar collectors for hot water, new heating and cooling systems, and upgrades to the building's electrical installations and protection systems. A 40 kWp photovoltaic system is planned for on-site consumption, along with appropriate solutions to ensure access for persons with disabilities.

Through this project, MEPSO continues its efforts to modernize the electricity transmission system and implement advanced energy-efficiency solutions. The reconstruction of the control buildings represents an investment not only in infrastructure but also in improved working conditions, reduced environmental impact, and the development of a more sustainable and efficient energy system.

PROJECTS

FROM MODELING TO DIGITALIZATION: NEW DEVELOPMENT ACTIVITIES IN AD MEPSO

By Branka Vasikj, Marjancho Changovski, Stefanija Spasovska

With ongoing changes in the electricity sector and the need for greater system flexibility and efficiency, AD MEPSO is continuously modernizing and advancing the national transmission system. Within the framework of a cooperation agreement with RTE International, financed by the French Development Agency, a number of activities have been implemented in the past period aimed at strengthening the company's technical and operational capacities through the application of new tools, expert support, and knowledge transfer.

With ongoing changes in the energy sector and the need for greater system flexibility and efficiency, AD MEPSO is continuously modernizing and advancing the national transmission system. The main achievement within the cooperation agreement with RTE International, financed by the French Development Agency, is the strengthening of the company's technical and operational capacities through the application of new tools, expert support, and knowledge transfer, demonstrated by a number of implemented activities in the past period.

The partnership covers several key areas important for the future development of the power system in North Macedonia. As part of the project, a model was developed in the Antares Simulator, an advanced tool for power system modeling and simulation, using which MEPSO prepared its first National Resource Adequacy Assessment (NRAA).

In addition, the cooperation led to the development of an innovative methodology for calculating and forecasting system reserves using machine learning models. The methodology enables long-term projections of reserve requirements, accounting for consumption trends, cross-border power flows, and the growth of renewable energy sources. In the area of system balancing, a workshop was organized with experts from the French transmission system operator, who shared their experience and operational practices.

An important segment of the project is also the support aimed at improving the forecasting and management of transmission network losses.
Through the analysis of historical data and the application of advanced analytical methods, new approaches were proposed to enhance forecasting accuracy and optimize the procurement processes for electricity used to cover network losses.
The cooperation among MEPSO, the French Development Agency, and RTE International also includes a pilot project to digitalize a 110 kV substation in accordance with the international IEC 61850 standard. This project represents an important step toward developing a more efficient, secure, and flexible transmission infrastructure prepared to meet the future challenges of the energy transition. Through this partnership, MEPSO gains not only technical support but also valuable knowledge transfer and expertise from one of Europe's leading transmission system operators, thereby strengthening institutional capacities and further aligning with European standards.

Digitalization as the Foundation for a More Reliable Transmission System

A digital substation is a modern concept for managing and monitoring power system facilities. Using intelligent electronic devices, advanced SCADA systems, and modern communication infrastructure, it enables faster, more precise network monitoring. It also allows automated responses to faults or overloads. For MEPSO, the transmission system operator, digitalizing substations modernizes the network. Remote digital control allows real-time monitoring, system management, rapid issue detection, and quick intervention and event analysis.

Experience from France: Digital Solutions for a Modern Transmission System

As part of the substation digitalization project, and in accordance with the agreement between RTE International, the French Development Agency, and AD MEPSO, a technical visit was conducted to a substation in Toul, where RTE has implemented modern solutions to digitalize secondary systems. In addition, the RTE research and training center in Lyon was visited, where new technological solutions are developed, and specialized training programs for employees are conducted.
The visit aimed to examine the practical application of digital technologies in electricity transmission facilities. Special attention was given to RTE's structured staff training programs and the rigorous organization applied in the management, protection, and monitoring of energy assets.
During the review of technical solutions, it was observed that certain installed equipment and operational concepts mirror those used by AD MEPSO, Skopje. This demonstrates the company's commitment to adopting technological advancements and continually upgrading its infrastructure.

The visit provided a prime opportunity to share expertise and best practices, especially in talent development and advancing innovative solutions in the energy sector.

PROJECTS

ALIGNMENT OF THE NATIONAL ELECTRICITY MARKET WITH THE EU ELECTRICITY INTEGRATION PACKAGE

By Igor Stojanovski, Head of the Network Analysis, Operational Security and Legislation in TSO Unit

With a view to achieving greater integration of the electricity market—encompassing all trading segments (long-term market, day-ahead market, intraday market, and balancing energy market) into a single, unified electricity market—through the coupling of the European Union and North Macedonian electricity markets, the full transposition of the Electricity Integration Package is required.

The key indicators and implementation steps for achieving this alignment are defined within the Reform Agenda: Policy Area 2 – Energy/Digital Transition, Reform 2.1.1.1 Alignment with the Electricity Integration Package and the Energy Law (*) (Official Gazette No. 101/2025 and No. 135/2025). These include the comprehensive adoption and incorporation of EU electricity market directives and regulations into national legislation, ensuring that the national electricity market is aligned with the principles and standards established by the EU, collectively defined as the Electricity Integration Package.

The Electricity Integration Package consists of the following European regulations and directives:

#	Legal Act EU/En3	Main Focus	Responsible Parties
1	**Electricity Directive** Regulation (EU) 2019/944	Market organization, consumers protection	MEPMC, MEPSO, EVN Distribucija, ERC
2	**ACER Regulation** Regulation (EU) 2019/942	Defining the ACER role	MEPMC, ACER(En3), ERC
3	**Electricity** Regulation (EU) 2019/943	Integrated markets	MEPMC, MEPSO, ERC, MEMO, ENTSO-E, ACER(Ен3)
4	**Risk Preparedness** Regulation (EU) 2019/941	Risk preparedness	Government, MEPSO, EVN Distribucija, ENTSO-E
5	**FCA GL** Regulation (EU) 2016/1719	Secondary (long-term) trading with the capacity allocation trading	MEPSO, ERC, JAO

6	**CACM GL** Regulation (EU) 2015/1222	Capacity allocation and congestion management in day-ahead and intraday market coupling	MEPSO, MEMO, ERC, ACER(En3)
7	**EB GL** Regulation (EU) 2017/2195	Exchange of balancing electricity	MEPSO, BSPs, BRPs, ERC
8	**SO GL** Regulation (EU) 2017/1485	Electricity transmission system operational security	MEPSO, Transmission network users, ERC
9	**ER NC** Regulation (EU) 2017/2196	Operation under disturbance conditions and restoration of the power system	MEPSO, Transmission network users, ERC

Action Plan for Implementation

The alignment of European legislation with national legislation is defined in the Action Plan dated 28 November 2028, prepared by AETS, which foresees the implementation of market coupling through the following phases:

Phase A: Transposition – Phase A completes the transposition of the legal acts of the Electricity Integration Package (EIP) into national legislation, including secondary legislation and network codes.

Phase B: Notification and Verification – Phase B involves notifying the competent authorities (the Energy Community Secretariat) and assessing compliance with the applicable legal requirements.

Phase C: Preparation for Market Coupling – Phase C focuses on preparing for market coupling by confirming compliance, executing relevant agreements, and initiating implementation projects, including the development of Transmission System Operator Methodologies (TSMs).

Phase D: Regional and European Dependencies – Phase D addresses external dependencies, including ACER decisions on the integration of operators and capacity calculation regions.

With the objective of accelerating the implementation of Reform 2.1.1.1: Alignment with the Electricity Integration Package for coupling the EU and North Macedonian electricity markets, MEPSO has adapted the regulations under the Electricity Integration Package within its remit, in accordance with statutory obligations, obligations arising from ratified international agreements, and those stemming from its membership in ENTSO-E. In doing so, MEPSO has fully completed Phase A of the market coupling process by adopting the relevant rulebooks and regulatory acts under its jurisdiction.

In the near future, the Ministry of Energy, Mining, and Mineral Resources will notify the Energy Community of its adoption, thereby initiating the Secretariat's formal verification process.

PROJECTS

GREENING AND DIGITALIZING TRANSMISSION NETWORK

By Mentor Hamidi, Head of the Project Management Unit

The project "*Greening and Digitalizing Transmission Network in the Southwest and Pelagonia Region*" represents one of the key energy initiatives envisaged in the Energy Development Strategy of the Republic of North Macedonia up to 2040 and the National Energy and Climate Plan (NECP). These strategic documents define the long-term vision for strengthening energy security, improving energy efficiency, and increasing the share of renewable energy sources within the national power system.

The main goal of the project is to increase the capacity of the power transmission network to connect additional renewable energy. This will be done by upgrading current power lines with improved wires that carry more electricity and don't require new routes or towers.

The project has a regional dimension and is being implemented in cooperation between MEPSO and the Greek Transmission System Operator, IPTO. It foresees the replacement of conductors with substantially higher transmission capacity, enabling more efficient and secure electricity transfer. The planned upgrade is expected to nearly double the maximum thermal rating, from the current 1,330 MVA to approximately 2,432 MVA. A 17.3 km section from SS Bitola 2 to the state border will be covered by this modernization, which also forms part of the pan-European Ten-Year Network Development Plan (TYNDP).

Additional components of the project include the reconstruction of 110 kV transmission lines, such as HPP Vrutok – SS Gostivar – SS Jegunovce – SS Skopje 3 – SS Gjorche Petrov – SS Skopje 5, as well as the line SS Polog – HPP Vrutok – SS Shpile – SS Globochica – SS Struga; the digitalization of SS Bitola 1 and Sopotnica; the implementation of a Dynamic Line Rating (DLR) system; and the reconstruction and rehabilitation of the Ohrid Testing Center.

Within the project framework, a Feasibility Study and an Environmental and Social Impact Assessment (ESIA) will be done to find the best technical and economic options. These studies will provide an independent review of the project's technical, financial, and environmental aspects in accordance with international standards.

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SS DUBROVO - A STRATEGIC NODE IN THE MACEDONIAN TRANSMISSION INFRASTRUCTURE

By Irina Daskalova Kjosevska

Dubrovo Substation is one of the most important energy capacities within AD MEPSO's transmission network and is part of the so-called "big triangle" (SS Bitola 2 – SS Dubrovo – SS Skopje 4), on which the Macedonian power system has been built. SS Dubrovo has been operating since 1978, and more than forty years have been crucial in a stable power supply and electricity transmission.

In this substation are four 400 kV transmission lines, including the interconnection SS Dubrovo - SS Solun, an important connection with Greece that provides stability and electricity exchange in the region.

Besides the 400 kV network, in the SS Dubrovo are connected 13 active 110 kV bays and two auxiliary bays that transmit electricity to more significant industrial and energy plants, among which are Negotino, Buchim, Feni 1 and Feni 2, HPP Negotino Blok, Kavadarci, Valandovo, WPP Dren, and the supply of auxiliary load for TPP Negotino.

Modernization and New Energy Projects

At SS Dubrovo, an extensive process of reconstruction and modernization of the facility is currently underway. The entire 400 kV and 110 kV equipment have already been upgraded, significantly improving the system's reliability, stability, and overall functionality.

A particularly important project is the installation of a shunt reactor (a voltage profile correction device) to regulate, i.e., reduce, the voltage levels on the 400 kV side by absorbing reactive power from the transmission network. Lowering the voltage on the 400 kV side will improve voltage conditions across the system, given the prevailing trend of high voltage levels—a regional issue that also affects the Macedonian electricity transmission system.

This will be the first installation of such a device in the Republic of North Macedonia and forms part of a broader regional study on the deployment of voltage control equipment at key energy nodes across neighboring transmission system operators. Preparations for the implementation of this landmark project are already underway, with some of the required equipment delivered.

"*SS Dubrovo is of strategic importance to the Macedonian power system. The modernization works, along with the installation of the shunt reactor, will significantly enhance the reliability and security of the transmission network*," states the Head of SS Dubrovo, Zoran Angelov, who brings over 35 years of experience in the energy sector.

WPP Dren is connected to this substation, therefore the two auxiliary bays will enable additional development and renewables integration within the power system.

Round-the-Clock Operations

The uninterrupted operation of SS Dubrovo is ensured by a team of 23 employees, organized in shifts, providing 24-hour presence and supervision. The team comprises switch operators, operational electricians, a mobile switch operator, a warehouse keeper, a records officer, a general worker, and security personnel.

The working day begins early. Every morning at 7:00 a.m., a detailed examination of the facility is carried out, including a review of both primary and secondary equipment. Any observed changes or remarks are duly recorded in the substation's monthly maintenance plan.

"Working in a substation requires the highest level of responsibility, concentration, and team coordination. Each member of the crew plays a vital role in maintaining system reliability," says the foreman, Zoran Danevski, who has more than ten years of experience.

Upon instruction from the National Control Center, the crew at SS Dubrovo performs all necessary interventions required by the system at any given moment, in strict accordance with established safety procedures.

Security and Safety as Peak Priority

At SS Dubrovo, particular attention is paid to occupational safety and equipment protection. All equipment is approved and monitored by the Occupational Health and Safety Service, while protective equipment, such as boots, gloves, helmets, and grounding equipment, is regularly tested and inspected.
The operating personnel hold all required certifications for handling power system equipment and have successfully completed all mandatory internal assessments prior to working independently in shift operations.

Security through the installation of two transformers

SS Dubrovo has two installed transformers – one new and one reconstructed. The installation of advanced transformer monitoring system helps the crew to continually follow their serviceability.

The new transformer plays a particularly significant role in ensuring the stable operation of the substation and the reliable transmission of electricity. It belongs to the latest generation of transformers, incorporating advanced technological features and advanced engineering solutions.

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The operating personnel hold all required certifications for handling power system equipment and have successfully completed all mandatory internal assessments prior to working independently in shift operations.

Data Disaster Recovery Center – Investment in Digital Security

In addition to energy infrastructure, intensive work is underway at SS Dubrovo on the new Disaster Recovery Data Center, a strategic project of AD MEPSO aimed at enhancing the digital security, efficiency, and resilience of the electricity transmission system. This project directly strengthens the national energy infrastructure and enhances the reliability of the company's critical data and processes.
With its long-standing tradition, experienced workforce, and ongoing modernization efforts, SS Dubrovo remains one of the most important pillars of the country's secure and stable electricity transmission system.

A WOMAN BEHIND STRATEGIC ENERGY PROJECTS:

"THE GREATEST STRENGTH ARE PEOPLE"

Interview with Anita Jovanova – Coordinator for International Collaboration

Behind every major energy project stands years of dedication, expertise, responsibility, and teamwork. In the "Women in Energy" feature, we speak with Anita Jovanova, a long-standing engineer and professional at MEPSOS. She has spent more than three decades planning and implementing capital projects essential to the country's energy stability and development. Her work spans hydropower projects Kozjak, Chebren, and St. Petka, as well as the development of a modern transmission network and interconnection systems. Through her journey, commitment, vision, and passion for the profession emerge clearly. In our interview, Jovanova discusses the challenges facing the energy sector, the importance of teamwork, international cooperation, and the role of knowledge as the most valuable asset passed on to new generations of engineers.

Throughout your career, you have been part of major capital projects that are key to the country's energy independence and stability. Looking back today at your professional beginnings, what remains the strongest motivation that led you toward the energy sector?

▪ A perspective directed backward always carries a particular weight. When I reflect on my beginnings and on all the subsequent activities and events throughout my professional career, what prevails are strong emotions, genuine attachment, and a deep passion for the work, for the projects, for the people I have worked with, and for the company itself.

Of course, there were problems or unusual challenges; however, the positive experiences, the collaboration with wonderful colleagues, and the achievements attained have always been stronger and, over time, have overshadowed all difficulties, as if they had never existed. The sense of professional fulfillment has never left me. Even after three decades, I remain grateful for the opportunity to be part of the energy sector, starting from the former Elektrodistribucija na Makedonija—an institution which, both then and today

through its successors, including MEPSO, represents a symbol of expertise, stability, and reputation in the energy field. Being part of such an internationally recognized environment has always been, and remains, a great honor for me. Equally important is the sense of belonging to a collective that, over the years, has delivered tangible results, contributing to the country's energy independence and stability. I began my professional path by participating in capital and strategic projects in the electricity generation sector. Working on the development of projects such as the hydropower plants Kozjak, Chebren, Galishte, St. Petka, Boshkov Most, Lukovo Pole, and the Vardar Valley concept—some of which have already been realized—represented an intensive and invaluable learning experience, one rarely encountered in a career. Later, my professional path led me into electricity transmission, a field that offered equal satisfaction and challenge. Over the past two decades, I have been dedicated to developing plans and programs and implementing transmission projects of local, regional, and international significance. I am aware that the moment will come when this daily routine will be behind me. And that is precisely why I already know that all of it, the dynamics, the responsibility, the teamwork, and the sense of creating something lasting and meaningful, will be deeply missed.

You mentioned that your professional path led you toward electricity transmission and interconnection projects. What does it feel like to be part of projects of national significance, and which project has left the strongest personal and professional impact on you?

- As I have already noted, the sense of belonging to a company that plays a fundamental role in ensuring the country's energy independence and stability is truly unique. The awareness that you have been part of that process, even as a small link in a much larger system, brings a sincere sense of pride and fulfillment.

The construction of the 400 kV Skopje 5 substation stands out most in my experience. Its significance is heightened because of its extraordinary implementation speed, unique construction challenges, and the remarkable professionalism and coordination shown by contractors and the MEPSO team.

Considering all the circumstances and the complexity of such an undertaking, the fact that the substation was constructed and commissioned within just one year truly represented an exceptional achievement. It was a professional challenge that required maximum dedication, swift yet well-considered decision-making, and flawless teamwork. Honestly, it remains one of those moments deeply engraved in professional memory, a challenge of such intensity and dynamism that, at least in my experience, has not been repeated to this day.

When you talk about the implementation of the SS Skopje 5, it is clear how much such projects require serious coordination and organization. How much has the approach to planning and implementing complex infrastructure projects changed today compared to the past?

▪ The approach has significantly changed and improved over the years. Today, processes are far more structured, precise, and aligned with modern international standards and best practices. While in the past many aspects relied more heavily on individual experience and operational resourcefulness, today these are complemented by developed project management methodologies, clearer procedures, improved risk management, more detailed planning, and much stronger coordination among all stakeholders. Of course, experience remains an irreplaceable factor, as every completed project brings new insights and contributes to institutional maturity.

However, despite advances in tools and approaches, complex infrastructure projects still entail serious challenges. These include long timeframes, a large number of stakeholders, regulatory procedures, technical complexities, financial constraints, and the need for timely, high-quality decision-making in dynamic circumstances. Particularly in the energy sector, each project carries broader significance, as it is not merely an investment but part of a system that directly affects the country's stability and security.

Nevertheless, if I were to single out what is truly key to successful implementation, it would undoubtedly be teamwork. No individual effort has completed a major project; rather, it is a process of synchronized work, mutual trust, open communication, and genuine cooperation among experts, institutions, and partners of different profiles. When this is combined with professionalism, a clear vision, and a willingness to learn and apply the best international practices, success becomes the expected outcome.

In that process, coordination and international cooperation undoubtedly play a major role. To what extent does the exchange of experience with other operators and institutions influence the quality of project solutions?

▪ All these factors significantly impact project quality, especially in complex infrastructure projects. As mentioned before, modern project management is increasingly sophisticated and based on best practices. International cooperation is a key mechanism for transferring, adopting, and advancing these practices.

In today's operating environment, particularly in the energy sector, hardly any major project can be viewed in isolation or within a purely local context. Energy systems are interconnected, technical standards are harmonized, and projects often carry a regional or broader strategic dimension. In such circumstances, the exchange of experience with institutions and experts from other countries helps avoid already encountered mistakes, enables the application of proven solutions, and provides a broader perspective in decision-making. At the same time, effective coordination is what transforms knowledge and experience into tangible results. Even the best technical solutions may encounter difficulties without timely communication, clearly defined roles, and aligned action among all stakeholders.

My experience shows that the best results always come when there is a willingness to learn

continuously, engage in professional exchange, and collaborate genuinely. This brings us back to the same fundamental point—technology, methodologies, and experience are extremely important, but it is people, trust, and team synergy that ultimately make projects truly successful.

Taking into account your entire professional path and your work on transmission network projects, how do you assess the development of MEPSO, and what kind of company do you envision in the years ahead?

▪ If I were to describe the development of the transmission network in a different, less technical way, I would say it is a story of maturation, vision, and perseverance. A transmission network is not built overnight, nor is its development measured solely in kilometers of lines or the number of substations. It is a living system that grows alongside the country's needs, technological advancements, and the changes brought by time.

Over the past decades, we have all witnessed significant progress—from a system primarily focused on ensuring stability within national borders to a network that today plays a much broader role as part of a regionally and European interconnected power system. Behind this development lies extensive knowledge, responsibility, expertise, and the quiet yet dedicated work of generations of professionals.

When I speak about MEPSO in the years ahead, I see it as an even stronger, more modern, and more integrated transmission system operator, a company that will not only follow energy developments but will actively help shape them. The energy sector is evolving at an extraordinary pace, renewable energy sources, digitalization, new technologies, and increasing demands for flexibility and security, and this is precisely why the role of the transmission system is becoming ever more important.

However, if there is one thing I have learned over the years, it is that the true strength of a company lies not only in its infrastructure, but in its people. That is why I see MEPSO as a company that will continue to advance technologically while preserving its greatest asset—knowledge, professionalism, and the dedication of the people who sustain the system every day.

Throughout the conversation you emphasized the importance of knowledge, cooperation and professionalism. Your work is recognized outside of MEPSO too, what is crucial to build such professional credibility?

▪ In my opinion, professional credibility is not something built with the intention of being recognized, but rather something that naturally appears from the way you do your work over the years. It is not created through titles or formal memberships, although these have their value, but through consistency, knowledge, integrity, and the relationships you build with people.

In every profession, and especially in ours, people quickly recognize whether there is significance behind your words, whether you truly understand what you are talking about, whether you take responsibility, and whether you are willing to keep learning, even after many years of experience. I believe that credibility is built precisely in this way, quietly, through work, through results, but also through

the way you treat colleagues, partners, and the professional community.

For me personally, it has always been important to remain open to new knowledge and the exchange of experience, because professional development is never a completed process. I see membership in national and international organizations as an opportunity to learn, engage in professional dialogue, and gain a broader understanding of the processes shaping the energy sector.

However, if I were to single out something essential, I would say that credibility is built when people know they can trust you, both professionally and personally. Such trust is not gained overnight; it is built patiently over years through dedicated work, significant effort, and a sincere commitment to the profession.

You say that professional development never ends and knowledge should be constantly shared. How important is to pass on experience to young engineers?

▪ Engineering is one of those professions in which knowledge is not only theory, but also a sense of assessment, intuition built through experience, an understanding of context, and the ability to make decisions in complex situations. That cannot always be learned from books and manuals; it is acquired when someone gives you the space to participate, ask questions, and even make mistakes to learn. The most valuable part of professional experience is, in fact, transferred through direct collaboration, conversation, mutual problem-solving, and through the opportunity for younger colleagues to closely experience the entire process—not merely as a technical task, but as a living profession with its own dynamics, responsibilities, and weight.

I believe that every generation has an obligation to leave something behind, not only completed projects and built infrastructure, but also knowledge, values, and professional culture. The greatest satisfaction is not only seeing a project successfully completed, but also seeing a young engineer move forward with confidence and self-assurance, carrying with them a part of what you have shared.

Perhaps this is the most meaningful continuity in our profession—the awareness that the systems we build will continue to function, and that the people who come after us will further develop them with their own energy, knowledge, and new ideas. There is something particularly beautiful and reassuring in that, the sense that our work does not end with us, but continues to live on through the generations of engineers that follow.

A DAY WITH THE REVITALIZATION DEPARTMENT

REVITALIZATION, THE SILENT FORCE BEHIND THE TRANSMISSION SYSTEM

By Irina Daskalova Kjosevska

"This is a team effort. The Project Documentation Unit lays the foundations, the Electrical Unit ensures technical correctness and functionality, while the Civil Works Preparation Department creates the conditions for all of it to be implemented in the field. Only through proper coordination can reliable and timely project execution be ensured."

In the transmission network, reliability is not a coincidence, but a result of continuous care, planning, and timely modernization. This is precisely where the story of the Revitalization Department within AD MEPSO begins.

We follow a typical working day filled with coordination, technical challenges, and responsible decision-making together with the Head of the Department, Tomislav Lazarov, an electrical engineer and Master of Electrical Engineering with 25 years of professional experience.

„Our role is to give new life to the existing equipment," explains Lazarov. "Instead of building everything from scratch, revitalization is often the preferred option. It is a process that involves modernization, reconstruction, and replacement of critical elements within substations and the transmission network. The objective is clear: enhanced reliability with optimal costs," he adds.

The working day in the Department begins with a short briefing. Ongoing projects are reviewed, ranging from the preparation of technical documentation to the replacement of high-voltage equipment, deadlines are checked, and tasks are assigned. "*We must know exactly who is responsible for what and what the priorities are*," says Lazarov.

The work is rarely monotonous. Depending on the season, the team is either on-site or in the office. From March to October, when conditions allow, activities mostly take place on site, in substations, where every intervention requires precision and high safety standards. The rest of the year is reserved for analysis, preparation, and harmonization of both new and completed projects.

Behind every successfully implemented project stands strong coordination among three key segments: the Project Documentation Unit, the Electrical Unit, and the Civil Works Preparation Department. "This is teamwork," emphasizes Lazarov. Project documentation lays the foundations through conceptual and detailed designs; the Electrical Service ensures technical correctness and functionality, from equipment to protection systems; while civil works preparation creates the conditions for all of this to be physically implemented in the field.

Coordination among these units is achieved through regular meetings and comprehensive communication. "*Communication between the services takes place through regular coordination, technical documentation, operational communication during implementation, and formal procedures, all aimed at ensuring coordinated and safe project execution. We constantly hold coordination meetings, daily and weekly briefings, and align activities and deadlines. This is how we also agree on who takes responsibility for what*," Lazarov points out.

Within this structure, the Electrical Unit has a particularly crucial role. The involvement goes beyond connecting cables; secondary connections entail the "*logic of control and protection*." Even a minor error can have serious consequences, which is why attention to detail is essential, Lazarov states.

Units' Tasks

The Project Documentation Service leads the project and prepares conceptual and detailed designs, including single-line diagrams, layouts, calculations, and compliance with applicable standards and regulations. Coordination with other services is crucial because, without it, even a well-designed project can be poorly implemented. Effective coordination ensures technical soundness, safe implementation, error avoidance, timely execution, and reliable commissioning.

Electrical Unit field activities include maintaining, servicing, and replacing disconnectors and circuit breakers; handling secondary connections; troubleshooting signaling and interlocking faults; performing functional tests; and participating in commissioning new equipment. Revitalization specifically enhances system reliability by minimizing faults, increasing equipment dependability, strengthening protection and control, and preventing outages.

Department for Civil Works Preparation. The preparation of construction works includes preparing the site, foundations, cable infrastructure, construction adaptations, logistics, and ensuring compliance with the conditions for the secure and prompt execution of the project. Without proper preparation of the construction work, execution may be delayed, or technical problems may arise. The most common site challenges are unforeseen technical conditions, limited tripping, working in highly safe conditions, installation problems, and the need for quick coordination and on-site decision-making

Challenges and Responsibility

Challenges are part of everyday operations — working with aging equipment, limited outage possibilities, unforeseen faults, and complex coordination among multiple teams. Nevertheless, these very situations make the work dynamic. "*Our motto is prevention rather than reaction*," says Lazarov, emphasizing the

importance of regular maintenance and timely inspections.

Despite all the challenges, according to him, the greatest satisfaction comes at the end of the process, when the project is completed, and the equipment is safely commissioned. "*That feeling that we have contributed to the reliability of the system is priceless*," he says.

Professional Motivation and Engineering Dedication

For Lazarov, motivation lies in the fact that he works within a system essential to the country's functioning.

"*What motivates me is the opportunity to work in a system that is of fundamental importance for the reliability of the power transmission network. The field of revitalization is particularly interesting to me because it combines technical knowledge, solving real-life problems, and the long-term improvement of the system. I am especially drawn to modernizing equipment such as disconnectors and circuit breakers, as this directly contributes to system reliability. My personal motivation is to continue developing professionally in a field that requires responsibility, technical expertise, and team coordination*," he concludes.

According to him, revitalization represents a combination of knowledge, experience, and the practical resolution of real-world challenges — a field where every day brings new learning opportunities.

His message to young engineers is to remain curious and persistent: "*This field requires a combination of theory and practice, which is why it is important to understand the real system, not only the textbook. I would also encourage them to learn from more experienced colleagues, to be team-oriented, and to view every project as an opportunity for growth. Practical field experience is what shapes an engineer the most.*"

A day with the Revitalization Department demonstrates that behind a stable power system stands a team that carefully plans and executes every task, step by step, with a clear objective: a reliable and modern transmission network.

Lazarov with Gjorge Shilev and Milivoj Stojanoski

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CONFERENCES, DEBATES

VISIT TO THE INSTITUTE OF ELECTRICAL ENGINEERING IN LJUBLJANA

Senior representatives of AD MEPSO visited the Milan Vidmar Institute of Electrical Engineering in Ljubljana, Slovenia. The purpose of the visit was to gain insight into the work of this renowned institution in the field of energy, established in 1948 and recognized as one of the leading research centers in the region.

As part of the visit, a working meeting was held with the Institute's Director, Dr. Uroš Kerin, during which the Institute's role and position in the Slovenian energy sector were presented, along with its long-standing cooperation with the Slovenian Transmission System Operator – ELES.

The Institute's expert teams presented their current projects, advanced technological solutions, and proprietary software systems that are widely used across several European countries. MEPSO representatives were especially interested in the SCALAR system, an advanced system for predicting, detecting, and analyzing atmospheric discharges developed by the Institute.

"If we implement this system in MEPSO, we will reach precise detection and localization of lightning strikes, as well as analysis and forecasting of atmospheric discharges that directly affect transmission line faults. At the same time, the system would significantly facilitate fault interventions and contribute to greater predictability and operational reliability," emphasized Vase Jovevski, Director of the TGO Subsidiary.

CONFERENCES, DEBATES

OPC/STA TRAINING IN PRAGUE

From 3 to 4 March, the specialized training course "OPC/STA Basic Pan-EU" was held in Prague, hosted by the renowned technology company Unicorn. Representatives of AD MEPSO participated in the training alongside experts from European transmission system operators. The event focused on Operational Planning Coordination (OPC) and Short-Term Adequacy (STA) analysis at a pan-European level. Through practical work with specialized software tools, participants had the opportunity to deepen their understanding of the implementation of ENTSO-E methodologies and procedures, which are critical to ensuring the reliability and stability of the European power system. The training also enabled participants to exchange experiences and best practices, with the aim of further strengthening regional coordination, integration, and the security of the international electricity transmission network

ЕНЕРГЕТСКА ENERGY TRANSFORMATION AND DIGITALIZATION IN FOCUS AT ERRA 2026

The Director of PSO, Sashko Lakinski, participated in the 23rd Annual Conference of Energy Regulators Regional Association (ERRA), held on 27–28 April 2026 in Bratislava. The conference, which this year marked the 25th anniversary of ERRA, brought together national energy regulators, system operators, energy company representatives, investors, and energy sector experts, with a focus on transforming energy policies and regulatory frameworks.

Lakinski took part in the panel session "Transforming Transmission and Distribution Networks," which focused on investments in energy infrastructure, cross-border projects, smart grids and digitalization, tariff models, and regulatory mechanisms to stimulate the development of power systems.

The conference also addressed current challenges and future directions for the development of the electricity and gas sectors, with particular emphasis on modernizing energy networks and the ongoing energy transition.

CONFERENCES, DEBATES

AD MEPSO AT ENTSO-E LEGAL AND REGULATORY GROUP MEETING

The Director of Legal and General Affairs, Ibrahimi Ibraimi, together with the representatives of AD MEPSO in the Legal and Regulatory Group (LRG) of ENTSO-E, participated in a workshop and LRG meeting held on 22–23 April in Zurich, hosted by Swissgrid.

One of the key topics discussed was the investigation report on power supply interruptions in Spain, Portugal, and North Macedonia, which initiated a broader discussion on system reliability and coordination within power systems. The ENTSO-E expert panel concluded that the incident in North Macedonia was not caused by a single failure but by a structural and regional issue related to high-voltage conditions, which is becoming increasingly pronounced in Southeast Europe.

The discussions also focused on the results of the LRG Engagement Survey, the level of member participation, and opportunities to improve cooperation and communication. Additional topics included developments related to CBAM and TEİAŞ's membership in ENTSO-E.

A joint conclusion of the meeting emphasized the need for continuous coordination, transparency, and enhanced cooperation among all stakeholders in order to ensure the effective implementation of strategic priorities.

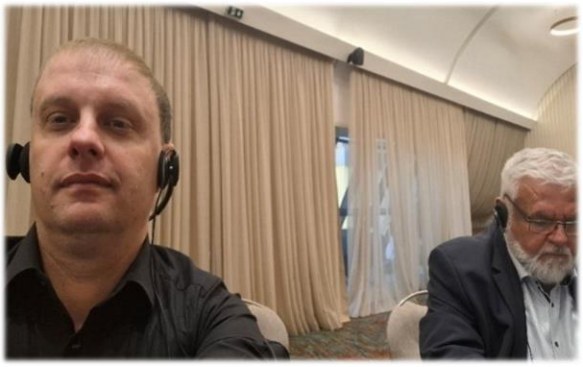
BELGRADE ENERGY FORUM

At a time when the energy transition is increasingly reshaping the regional energy landscape, the Belgrade Energy Forum 2026 brought together policymakers, companies, and experts from Southeast Europe to discuss security of supply, decarbonization, and regional interconnection. The Deputy General Director, Aleksandar Paunoski, also participated in the forum, highlighting the increasingly important role of transmission system operators amid the accelerated development of renewable energy sources and the growing need to integrate them into the transmission network. The energy transition process requires continuous investment in modernizing and reinforcing transmission infrastructure, he noted, to ensure reliability, stability, and greater power system flexibility. AD MEPSO is actively developing network infrastructure and creating conditions for the connection of new renewable generation capacities, while further strengthening cooperation with transmission system operators across the region.

INTERNATIONAL COLLABORATION BETWEEN TRADE UNIONS

The Trade Union of AD MEPSO this year continues its activities aimed at protecting workers' rights, improving working conditions, and enhancing their standard of living.
In the past period, representatives of the union participated in more regional and international trade union meetings and conferences organized by RETUNSEE, EPSU, and PSI. The focus was on collective negotiation, union organization, the challenges faced by energy sector workers, and the necessity of a mutual fight to protect workers' rights amid economic and energy uncertainty.

Especially significant were the meetings in Skopje and Zagreb, where the unions from the region exchanged experiences and standpoints regarding:
• Alignment of the salaries with the growth of the living costs
• Strengthening of the collective negotiation
• Protection of the union organization
• Improvement of 'workers' standards in the public and energy sectors.



The Trade Union of AD MEPSO continues to actively advocate for salary alignment with rising inflation, increasing living costs, and the ongoing rise in the prices of essential goods and services. In a condition when the real cost of living has risen significantly, it is fundamental that employees' salaries keep pace with economic developments and maintain a deserving standard of living.

The Union maintains that the effort, professionalism, and responsibility of employees in the energy sector must be adequately recognized and compensated, particularly given the critical importance of energy stability and the functioning of the power system.

In addition to its activities aimed at collective protection, the Executive Board of the Trade Union of AD MEPSO has decided to provide financial support to its members on the occasion of the past holidays, with the aim of at least partially alleviating the everyday financial challenges faced by employees and their families.

The Trade Union remains dedicated to transparency, participation in all processes that involve workers, and a continuous struggle for better working conditions, higher salaries, and the dignified treatment of each worker.

EMPLOYEES AND MEPSO

Zhivorad Serafimoski's career path at MEPSO is closely linked to professional challenge and a strong commitment to the energy stability of the country. As part of the team responsible for Net Transfer Capacity (NTC) calculations, he actively participates in processes that ensure secure and efficient electricity exchange, as well as in regional coordination with neighboring transmission system operators. His participation in Regional Security Coordinators (RSC) processes continuously enhances his expertise and helps him meet European standards. A particular focus of his work is introducing new technologies and optimizing the transmission network. For him, working at MEPSO is not merely a technical process, but an ongoing mission of professional development, teamwork, and the delivery of impactful projects, guided by a clear vision for the further modernization and integration of the Macedonian electricity transmission system into European markets.

Katerina Shkoro-Nikolikj graduated from the Faculty of Economics at the Ss. Cyril and Methodius University in Skopje, and she began her professional career in 1997.

She joined AD MEPSO in 2009, initially within the Financial and Commercial Affairs Department, where she held several positions and gained significant professional experience.

Since 2025, she has been part of the Investments and Development Department, where she serves as Head of the International Cooperation Unit.

Within her daily responsibilities, she actively participates in monitoring and implementing AD MEPSO's capital investment projects, maintaining continuous communication with international financial institutions, project contractors, domestic banks, and competent ministries.

She is a member of several working groups and commissions, where, through her dedication, expertise, and experience, she makes a significant contribution to strengthening the position of AD MEPSO as a successful and reputable company.

Aco Risteski is a graduate electrical engineer from the Faculty of Electrical Engineering at Ss. Cyril and Methodius University in Skopje, with more than 36 years of experience in the field of power engineering and transmission systems. He began his professional career at ESM – Macedonia, and since 2005 has been part of AD MEPSO, where he has held several managerial and engineering positions, including Chief Engineer, Head of Maintenance, Substation, and Revitalization Departments, as well as Director of the TGO Subsidiary and Member of the Board of Directors of AD MEPSO. He has played a key role in preparing and executing projects to reconstruct and revitalize 110 kV and 400 kV power plants, and in establishing the 400 kV interconnection with Albania. He holds licenses for supervision, design, and revision, and, as a certified court expert in electrical engineering, he is engaged by the Bureau for Forensic Expertise in Skopje. He has also completed advanced training and seminars hosted by industry leaders Siemens, ABB, and Končar.

Andrej Josifovski holds a Bachelor of Laws and a Master's degree in Business Law from the Faculty of Law "Iustinianus Primus" at Ss. Ss. Cyril and Methodius University in Skopje and has successfully passed the bar examination. He began his work experience at AD MEPSO in 2013 as a trainee, becoming familiar with the company's operations while supporting ongoing legal matters. Since 2015, he has been employed full-time in the Legal Affairs Department, where he has consistently advanced his professional expertise. Within the Legal Affairs Department, he is actively involved in preparing and conducting court proceedings, as well as drafting legal acts, contracts, and legal opinions, with the aim of safeguarding the Company's rights and interests. In addition to his regular duties, he actively participates in several working groups and committees established within the Company and in external bodies. He serves as an alternate member of the Legal and Regulatory Group within ENTSO-E. Furthermore, he is one of the designated officials responsible for handling requests for access to public information, thereby contributing to the Company's transparency and accountability.

Sandra Paneva is a graduate economist with several years of professional experience. Since 2018, she has been part of AD MEPSO, initially in the International Cooperation Unit and later in the Project Management Unit within the Investments and Development Department, where she currently serves as Finance Officer. She actively participates in the implementation of projects financed by international financial institutions. As a member of several working groups, she is involved in preparing documentation, evaluating, and implementing contracts engaged in projects financed by the World Bank and the European Bank for Reconstruction and Development.

Erdol Prespa is a Bachelor of Informatics and Computer Engineering at the Faculty of Electrical Engineering and Information Technologies. He works as a responsible engineer for network security in the IT Sector under MEPSO, enabling the secure and stable operation of the network infrastructure. As part of his everyday activities, he actively monitors potential cyberattacks, promptly responds to safety incidents, and implements advanced security policies and technologies to protect data. He conducts detailed network analysis to promptly detect suspicious activities and potential risks. He collaborates with other teams within the company to enhance overall IT security while regularly updating and maintaining security tools and systems. He actively participates in the planning and implementation of new network solutions, ensuring compliance with relevant cybersecurity standards and regulations. Through his work, he directly contributes to the security, reliability, and stability of the country's power system.

WORLD NEWS

EU INTRODUCES NEW PACKAGE OF MEASURES FOR ENERGY INDEPENDENCE AND PROTECTION AGAINST PRICE SHOCKS

The *European Commission* has presented a strategy, "AccelerateEU," to reduce reliance on imported fossil fuels and curb the impact of energy price surges on citizens and industry. The Commission states that geopolitical tensions led the EU to spend an additional €24 billion on energy imports without receiving any extra supplies. The aim of the measures is to deliver immediate support and secure lasting energy stability. President Ursula von der Leyen emphasizes that expediting the shift to domestic, clean energy is critical for Europe's security and resilience. The measures feature coordinated management of gas and oil reserves, financial aid for vulnerable groups, and accelerated electrification and investment in renewable energy. The EU seeks to strengthen energy independence and minimize vulnerability to future global energy disruptions. Rising prices for fuel, electricity, and energy have led EU countries to adopt support measures. Germany and Italy reduced fuel taxes and offered direct financial aid. France launched a subsidy package. Croatia and Slovenia applied administrative price caps, Serbia and Hungary implemented state price controls, while Bosnia and Herzegovina focused on lower taxation.

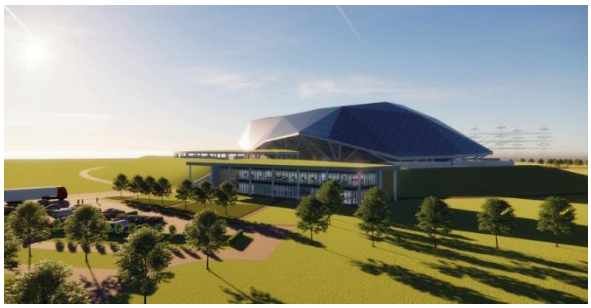
https://ec.europa.eu/commission/presscorner/detail/en/ip_26_629

NEW ENERGY GIANT – WORLD'S LARGEST HYBRID POWER PLANT COMMISSIONED IN CHINA

In northwestern China, the world's largest hybrid power plant using wind and solar energy has started operation. The facility has a total capacity of 6 GW and is expected to produce over 12 TWh of green electricity every year. Electricity will be sent to factories on China's east coast via special power lines. This project is part of Envision Group's activities. The group also built a large battery energy storage system with a capacity of 4 GWh. Construction was particularly challenging due to the mountainous and desert terrain; however, through advanced engineering solutions, optimized logistics, and specialized turbines, the complex was successfully completed within a short timeframe.

https://www.energetika-net.com/obnovljivi-izvori/u-kini-pokrenuta-najveca-hibridna-elektrana-na-svijetu

SMALL MODULAR REACTORS BETWEEN AMBITION AND UNCERTAINTY: THE CZECH REPUBLIC LAUNCHES THE PROJECT IN TEMELÍN



Rolls-Royce SMR and ČEZ Group have agreed to initiate construction of the Czech Republic's first small modular reactor (SMR), to be built near the Temelín Nuclear Power Station. The two companies, with a project of broader geopolitical significance, plan to develop up to 3 gigawatts of electricity generation capacity, positioning the country among the leaders in deploying this technology in Europe. At the same time, Europe is increasingly considering small modular reactors as a potential solution to ensure more affordable, low-carbon energy. Nevertheless, the technology still faces numerous challenges, including high initial costs, site selection, and securing nuclear fuel, as developers continue working to overcome these obstacles. Although, SMRs promise serial production and long-term cost reductions, only a limited number of reactors currently operate, mainly in Russia and China. Despite its potential, experts caution that developers must use new materials, maintain stringent safety standards, and secure stable nuclear fuel supply chains. The Czech Republic project serves as a test case for the future of this technology, which carries high expectations but also uncertainty about whether it will become a key energy source or remain an experimental solution.

(https://balkangreenenergynews.com/rolls-royce-smr-to-start-works-with-cez-on-small-modular-reactors/)

TRUMP PUSHES FOR EXPANDED DOMESTIC FOSSIL FUEL PRODUCTION IN THE USA

U.S. President Donald Trump has signed a series of memoranda aimed at ramping up domestic production of oil, coal, and natural gas, arguing that energy security is integral to national security. The documents stress that an inadequate energy supply leaves the country exposed, underscoring the need to bolster industrial capacity and energy output, particularly to support defense preparedness. The measures invoke mechanisms under the Defense Production Act, enabling the federal government to prioritize and support projects linked to fossil fuel extraction and infrastructure. At the same time, directives have been issued to the United States Department of Energy to facilitate and accelerate fossil fuel-related initiatives. Meanwhile, rising fuel and food prices are placing additional strain on households, with potential knock-on effects on the broader economy. Forecasts suggest that food prices in 2026 will continue to rise, remaining above the average of the past two decades. These decisions come amid heightened geopolitical tensions and volatility in global oil markets, further reinforcing the administration's push to secure reliable domestic energy supplies.

https://www.theguardian.com/us-news/2026/apr/20/trump-memos-domestic-fossil-fuels-defense


ELECTRICITY TRANSMISSION SYSTEM OPERATOR
ul. Maksim Gorki no. 4, 1000 Skopje
WWW.MEPSO.COM.MK

MEPSO