



## Mazovia promotes energy saving

The Mazovia voivodeship, as all of European regions, is taking its part in building the low-carbon efficient economy. The first solutions model leading to a reduction of energy consumption has been already developed.

The international conference “Energy saving in smart hospital districts” was accompanied by demo site in Żąbki and Jabłonna and focused on an innovative and very well promising, upcoming energy projects. The meeting was organized by Mazovia Energy Agency (MAE) and held in Warsaw on 22nd and 23rd of September 2015.

### The Model project

One of the topics presented during the conference, was dedicated to the results of the international project EINSTEIN (Effective INtegration of Seasonal Thermal Energy storage systems IN existing buildings), co-financed by European Commission within the 7th Framework Programme (FP7) for Research and Technological Development. The objective of the project, worth over 323 000 Euro and partly implemented by MAE, is an analysis assessment, development, validation and demonstration of capabilities of a heating district based on the Seasonal Thermal Energy Storage - STES, focus on cut the primary energy consumption. The idea is to store a solar energy during the summer season and then its utilization during the heating period.



- The generated heat energy, might be stored in tanks or directly transferred to the building through the hydraulic system. Utmost care was done to all the works associated with the project as the hospital buildings are under protection by heritage conservation officer – stressed Bartosz Starosielec. As designed, in the result of summer period, the water in the tanks should be heated even up to 70-80°C. At the same time, the system design guarantees, that in case of extremely low temperature outside (-20°C or below) the installation would be protected against freezing by keeping the temperature inside the tank at +20°C at minimum.

- The project has a seasonal character. The collectors utilize solar energy and produce the heat during the summer. Then, during the critical winter period, the accumulated energy will be sent from the storage system to the buildings to heat them – explains Bartosz Dubiński, MAE's CEO.

Robert Madera, representing Viessmann Poland, has also spoken about the aspects of integration the energy systems into the hospital infrastructure. As he informed, right next to the existing hospital in Żąbki which already possessed energy storage system financed by EU, another hospital is being constructed.

- MAE has invited us to cooperation. The idea is to integrate both hospitals. Therefore, we are dealing with combining both energy supporting systems localized in two separated buildings – explained the Viessmann's representative.



Usage of the innovation procurement to improve the energy efficiency in the hospitals was another topic brought up during the conference. Marcin Kautsch presented the project EcoQUIP, which concerned to application of this method in six hospitals across the five EU countries, including one located in Sucha Beskidzka in Poland. He pointed out, that before the project, the hospital mainly used the price as the sole criterion in determining the best offer in the public procurements. Thanks to the project, criteria such as ecological requirements, including the CO2 emissions, were introduced to the procurement process. To facilitate that, specialized tools to compare various offers from the ecological criteria' point of view were developed. What is interesting, the hospital took a part in two projects co-financed by the EU at the same time. Apart from the EcoQUIP project, was also involved in the RES Hospitals undertaking.

### Experience from abroad

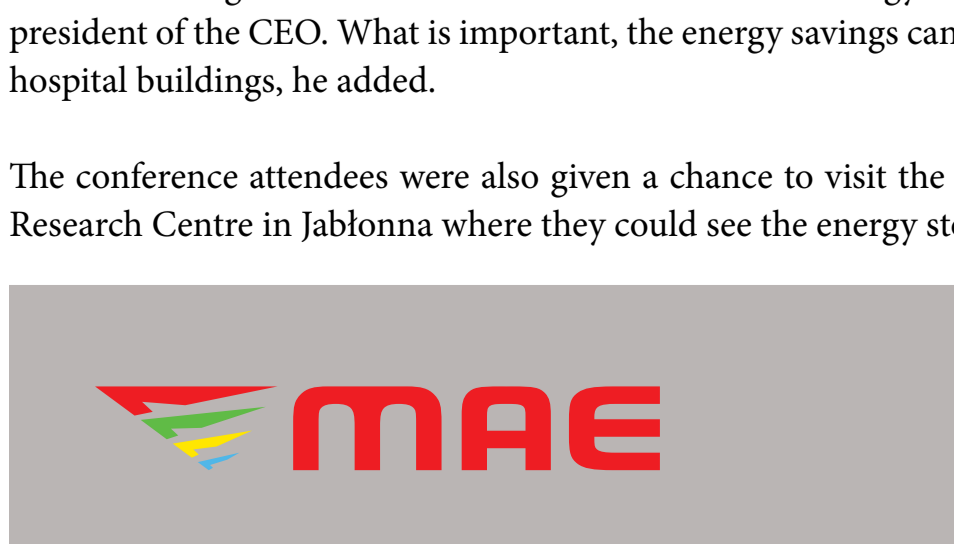
About the common, European cooperation within the energy sector also told guests from other European countries. “The possibility of visiting different EU countries, and experience utilized there is under one of the greatest advantages of the EU projects. I'm under great impression of the new research institute in Jabłonna (Research Centre PAN KEZO –energy conversion and renewable sources) and all that what is happening in Tarnów” – said Erwin Cornelis from the Flemish Institute for Technological Research.



Freerk Bomhof from TNO spoke about intelligent planning and energy management in hospital district buildings based on the experience acquired during the realization of the Streamer project. The conference attendees has got familiar with the cases of the implementation of the district heating solar power integration and heat storage in Europe, which were presented by Roman Marx from the Institute of Thermodynamics and Thermal Process Engineering of the University of Stuttgart.

- Our conference proved that in Poland, in Mazovia, we not only talk about modern ways of energy saving, but we are already using them. Even if for now they are only technology demonstrators, the utilized technologies are already available and advanced enough so that they can be readily used in different places – stressed Bartosz Dubiński. In his opinion, such innovative solutions should be used increasingly in the Polish conditions. There are no specific obstacles either formal or technological nature, and the benefits of going ahead with implementing such solutions are immense and measurable. - Of course, weather conditions in Poland comparing to Spain are extremely different. Thus, there is no point in comparing Polish potential in obtaining solar energy with Spanish, but it doesn't change the fact that we should strive to save energy and to consume it as efficiently as possible – persuaded the audience president of the CEO. What is important, the energy savings can take place even in such a sensitive elements of infrastructure as the hospital buildings, he added.

The conference attendees were also given a chance to visit the heat storage facility in Żąbki and The Polish Academy of Sciences Research Centre in Jabłonna where they could see the energy storage installation.



Two pilot installations were built as a part of the project: one located in Bilbao (Spain) and the second located in Żąbki, near Warsaw in Poland. As Bartosz Starosielec, Head of Group Energy Efficiency & Sustainable Construction at Mostostal Warszawa and representative of Patricio Aguirre, Project Manager of Einstein project in Spain pointed out, in Bilbao the project has ranged only one building coupled with a cafeteria which is used for meetings and cultural events. In Poland, it covered a hospital facilities. In Żąbki, next to Mazovian Center of Psychiatry “DREWNIKA”, a flat, solar collectors field composed of 65 units of combined area of 150 m2 was built and connected to a heat exchanger, pumps system and control units localized in the container station. The heat generated by the collectors is stored with the help of the exchanger, in the water filled tank with capacity of 800 m3. Currently, the heat is used solely for the hospital's admissions rooms and outpatient care. In the future, the installation will become a part of the district heating system of a new psychiatric hospital being built nearby, and will take an advantages of renewable energy as one of its primary, design goal. Thanks to this, the new hospital will operate fully in harmony with the nature.



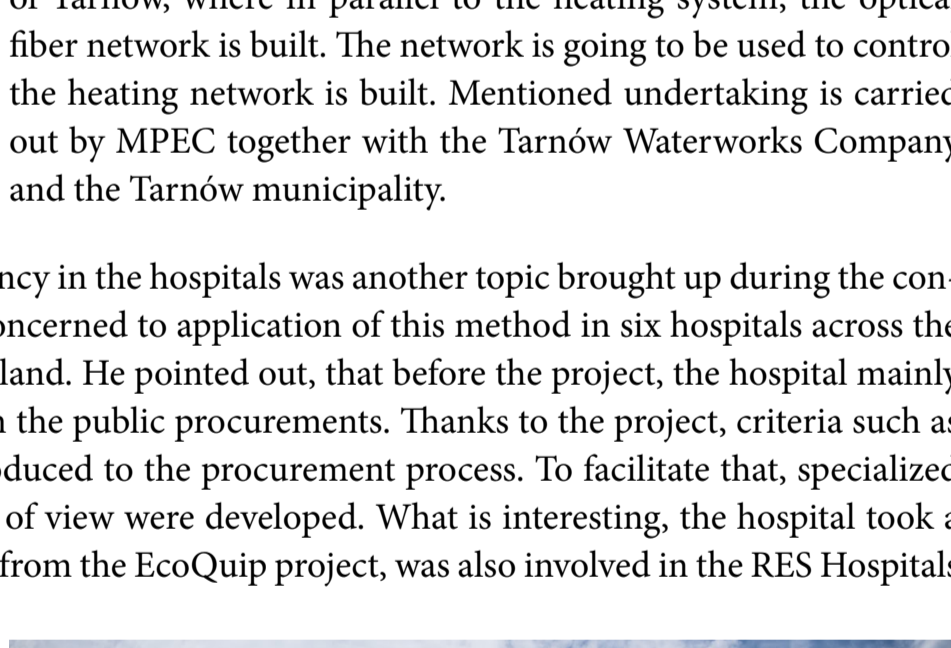
### The Financial support

- As all the European regions, we are also taking our part in building the low-emission economy. We are supporting the use of renewable energy sources (RES), and we want to raise the energy efficiency of the public-owned buildings. It is not a secret that, our economy is still very high energy consuming and many buildings were built in the times when no one took right care about the topic concerned the energy consumption – said Adam Struzik, Marshal of the Mazowieckie Voivodeship. As he explained, being a member of the European Committee of the Regions, and sitting on the two commissions, including the commission of environment, climate change and energy, he had recently observed a great progress being made in Europe in the matters of improving the energy efficiency.

Marshal Struzik has declared, in the name of the Voivodeship's government, to consistently support all the efforts to cut the use of energy and the CO2 emissions. “We'll take a look at the Horizon 2020- EU programme to find the money needed to support all the projects promoting innovative methods of the management, and we'll use finance resources from the Mazovian Regional Operational Programme 2014-2020” – he announced.

The collected experiences in the field of improving energy efficiency on the municipal level was the main topic of a speech given by Leszek Cichy. He represents the Municipal Thermal Energy Company (MPEC) in Tarnów, a town of 110 000 inhabitants. The company has been modernizing the Tarnów district heating systems for the past 20 years.

- The district heating system is not something you build for a year or two, but rather for decades. When it's oversized, it generates enormous costs. On the other hand, when it's too small it doesn't allow to connect the new users - he explained. That is why, a truly optimal configuration is what is really needed. As he pointed out, the cooperation is crucial and he cited the example of Tarnów, where in parallel to the heating system, the optical fiber network is built. The network is going to be used to control the heating network is built. Mentioned undertaking is carried out by MPEC together with the Tarnów Waterworks Company and the Tarnów municipality.



- The main objective of PAN KEZO Research Centre is to support the research & development activity in the area of the micro-energy technologies. We want to test and demonstrate brand-new technologies. We utilize there all available, local energy sources to obtain an energy and store it. The centre is a living lab – explained dr Sebastian Bykuć.

We want to support local, regional and national governments in developing a vision of the energy saving through well-thought-out heating and cooling strategy. In this way, we can achieve tremendous energy savings in the European scale. We should start it immediately and we will not regret it. The houses can be passive to such extent, that they would be virtually independent from the network. We have great reserves in this field – convinced Erwin Cornelis, reminding that the heat can be also obtained from the post industrial products such as waste. According to Erwin Cornelis, not only heating process is important, but cooling as well. For example, in Brussels during the summer, the temperature is 4 degrees higher, than in the surrounding regions. During the night, this difference can rise even up to 8°C.

- It means, the district cooling systems are needed. Many cities, like Brussels, but also Antwerp, Ostrava, Vienna or Milan took a systematic approach to the problem – said Erwin Cornelis. He also informed about the development of a “Pan-European Thermal Atlas” based on the one kilometer grid where it can be seen in detail where and how the energy is consumed.