

Flexible power management



On 13 July, under the media patronage of “Polish Market,” a debate was held under the title “Investment in Peak, Intervention and Regulatory Powers until 2020.” A number of experts participated in the debate, among others Marek Woszczyk, President of the Energy Regulatory Office, Jerzy Dudzik, Director of the System Management Department of PSE Operator, and Professor Krzysztof Żmijewski from the Warsaw University of Technology. They discussed the issue of ensuring the stability of the Polish electrical energy system in the context of increased investments in renewable energy sources.

Maciej Prolński

WE PRODUCE AND TRANSMIT power, but we are still unable to manage the available power in a flexible way – this was an observation made by the speakers at the conference. In Poland there are no energy-producing sources available which can be “switched off” for the night and accumulated in the system during the day, when they are required. The difference between the lower and upper limit of power demand in the peak and the so-called “trough”, according to PSE Operator’s data, amounts to 11 200 MWh.

During the debate it was emphasised that the problem with reserve power in Poland will grow, because renewable-energy sources typically operate with numerous interruptions, e.g. during windless weather (wind farms) and during cloudy days (solar-electricity plants). Such interruptions entail a sudden loss of hundreds of MW of power, which can disrupt the operation of the whole electrical energy system in Poland.

In order to balance the system, energy sources which can be quickly launched have been designed. An ideal, though costly, solution is hydroelectric and pumped-storage hydroelectric plants. The option to use gas electric plants, which can also be used as storage plants for balancing the domestic electric energy system during demand peaks, is taken into consideration as well. According to experts, a good solution is to develop the power industry based on micro-sources of energy operating in consumers’ locations.

According to Marek Woszczyk, President of the Energy Regulatory Office, in Poland it is now necessary to reprogram the energy management system in such a way that the power available on the market will meet the consumers’ demand, i.e. compensate for the shortages or withdraw the surpluses of power when necessary. “Why occasionally is there no power? It is due to a number of factors, certainly including the Polish

and European market model, equally. We are part of the EU market, which is an energy market but not a power market. It turns out that this problem with shortages of power on the market does not occur only in Poland,” emphasised Marek Woszczyk.

“At present the European Commission is beginning to recognise the problem and in the autumn it will prepare a new communication on renewable energy sources. Now the communication is at the stage of discussion by respective Member States. It assumes that after 2020 renewable energy sources should be able to maintain a strong position on the market. Attempts should be made to harmonise the support systems, which is still not the case. We are speaking of a uniform European market, leaving the Member States to decide which support systems they wish to use,” said Mr Woszczyk.

Due to EU obligations relating to environmental protection, at the beginning of 2016 power units with a total power of 5 thousand MW will have to be switched off, and, according to Professor Krzysztof Żmijewski, Secretary General of Public Board for the Development of Low-Emission Economy and experts from the Warsaw University of Technology, after this deadline, due to delays in the implementation of many investments in generating capacities, there might be an approx. 500 MW power shortage.

Professor Żmijewski claims that the only chance of closing Poland’s electrical energy balance after 31 January 2016 is “prosumer energy”, i.e. micro-heat power plants, micro-windmills, and photovoltaic cells. “Only with a power industry based on microsources of energy operating in consumers’ locations will we be able to counteract the power shortage which awaits us at the beginning of 2016,” noted Professor Żmijewski. In Professor Żmijewski’s opinion, there is no chance that in Poland by 2016 a sufficient number of power units will be created to compensate for the system shortages. At the same time, Professor Żmijewski warns that we should not rely on the understanding of the EU, because it will not exempt us from the obligations made in 2008, and the units not complying with emission norms will have to be shut down. ::