With a total nominal production capacity of 2,832 MWth, the Belgrade district heating network, operated by Beogradske elektrane, the Belgrade Public Utility Company, is one of the largest in Europe. Since 2007, Metronik* has successfully completed several retrofitting projects at the pumping stations on the district heating network. More than 100 VACON® AC drives with a total power of 30 MW currently control the hot water distribution.

As the operator of 15 heating plants with a total nominal production capacity of 2,832 MWth, Beogradske elektrane is one of Europe’s largest producers and distributors of thermal energy, supplying heat to more than 300,000 households across Belgrade, the capital of Serbia. The distribution network consists of more than 600 km of hot water pipes.

In 2006, Beogradske elektrane decided to start to modernize the distribution system, with a special focus on the pumping stations. The goal was to replace the old medium voltage, manually-operated control system with a modern solution based on AC drive technology in a low voltage network. Metronik was chosen as the general contractor and engineering company to design a customized solution that would meet the needs of the Belgrade heating plant.

Metronik chose its long-term partner Vacon AT, Vacon’s subsidiary based in Leobersdorf, Austria, to supply the AC drives to control the circulation pumps used for the hot water distribution. Metronik has installed and commissioned more than 100 VACON® AC drives in the power range from 37 kW to 1.1 MW. These include twelve VACON® NXC drives with a power of 750 kW and five with a power of 1.1 MW. The VACON® NXC drives are run independently in a multi-pump application driving several pumps in parallel, controlled by the pressure in the system.

At the same time, an automation system is being installed at the district heating plants – plant by plant. To meet customer requirements, Vacon and Metronik developed software for redundant communication, based on the Profibus fieldbus. Dusan Ilic,
Positive experiences

Beogradske elektrane is satisfied with Metronik’s performance in project execution and maintenance, as well as with the benefits from the VACON® AC drives in terms of savings and improved process reliability.

In detail

Metronik provides a complete range of automation solutions for industry, energy systems and infrastructure and produces IT systems for better production management. Founded in 1990, Metronik is headquartered in Ljubljana, Slovenia, and employs 70 persons.