WEBINAR

THE RISING COST OF INACTION:
HOW THE ENERGY CRISIS IMPACTS THE WATER SERVICE SECTOR IN THE DANUBE REGION

On 2 March 2022, the Danube Water Program held a KnowNow webinar that dealt with the impact of exploding energy costs and available mitigation measures for utilities. Spoiler: When striving for efficiency, cutting down non-revenue water is a double whammy.

Kicking off the event, moderator Christian Hasenleithner, General Manager of Energie AG Bohemia, extended a warm welcome to a sizeable international audience and presented two graphs showing the development of electricity and gas prices in Central Europe. Since January 1st, both had shown an upward trend not seen at any time in the last decade, followed by an explosion to +430% and +670% at the onset of the Russian invasion in Ukraine. “It gets harder every day to look at the screen,” remarked Mr. Hasenleithner, asking how utilities could secure their energy supply for the next 12 months, and, in the long term, how to improve the efficiency of water and wastewater plants.

The size of the problem

Some interesting answers came from World Bank Senior Water Supply & Sanitation Specialist Kristoffer Welsien who started his presentation with an anecdotical look at energy management deficits in water utilities everywhere in the world. He reported that, e.g., Panama’s national water utility is the largest consumer of energy in the whole country, that Addis Ababa’s water utility consumes 30% of the city’s available electricity, and that the Manila Water Company in

the Philippines serves 6 million customers without ever having completed a comprehensive energy audit.

Mr. Welsien remarked that up to recently, energy efficiency in the water sector had been below the World Bank's radar. He himself is currently leading the first team that deals systematically with this theme. The value of their work became obvious with the next sheet in the presentation. In a country-by-country comparison, it showed that electricity costs contribute never less than one third, and sometimes more than 80%, to the non-labor operating costs of utilities, indicating huge potential impacts of energy efficiency improvements on a company's bottom line.

The key to improvements

They key to real improvements here is, according to Mr. Welsien's findings, non-revenue water, plain and simple: Leakages in pipe networks and aging pumps eat into the substance of utilities not once but twice. Water lost along the way is water that will not earn money, and the related pressure drops drive up the energy consumption of pump systems. This is why investments in energy efficiency have an amazingly short simple payback of between two months and five years: Modernizing pumps and pumping system operations, introducing water-loss management technologies, smart pumps and SCADA systems, and implementing efficiency-improving technologies in wastewater treatment plants pays. Electricity cost are by far the largest "controllable" operating costs in most water utilities, and reductions of between 20% and 50% are there for the taking.

The model solution

There is a huge "if", though: The investments needed to bring all water and wastewater utilities in Eastern Europe and Central Asia to the desired level of energy efficient operation add up to a volume between 3 and 11 billion USD. "This is a humbling number", comments Kristoffer Welsien, asking where this amount of money could be found. His team has come up with an answer and tested it in a pilot case in Uzbekistan, where a pump manufacturer entered into a 5-year ESCO contract with the Samarkand water utility. The producer shouldered the investment of 5.4 million Euro for a modernization program that succeeded in reducing energy consumption by 45%, and the utility used the energy cost savings to pay the investment without stressing its budget.

Mr. Welsien closed his presentation with the proposal to pool "design-build-finance-operate-transfer" contracts to reach volumes between 10 and 100 million USD and durations between 5 and 15 years, thus mobilizing private sector financing, with the World Bank potentially stepping in with payment guarantees for the private sector. "Advanced technologies are out there, promising good returns on investment", he said. "But we need to change our mentality from water engineering to financial engineering. That's where the sector as a whole has a gap to cover."

The grim reality

Next, Sokol Xhafa, Acting CEO of the Regional Water Company of Pristina, Kosovo, took the stage, contributing insights into a sometimes brutal reality. Reporting to both the Kosovo regulatory authority and to the D-LeaP Utility Benchmarking Program, Mr. Xhafa has the relevant numbers ready, and they look grim. Mr. Xhafa agrees that non-revenue water is the critical issue, especially in the Western Balkans. In a water network where the oldest pumps date back to 1965 and the latest updates happened around 2000 to repair war damages, the

energy bill eats up 20% of the company's total revenue, making up 50% of the non-labor operating costs. The 2019 energy market liberalization in Kosovo failed to create the expected competition and led to a 30% rise in energy costs instead. A further 50% rise has hit households in Kosovo early this year, with businesses and industry as yet unaffected, but that may change soon. On the other hand, the revenue growth has been flat over the last two years due to the pandemic crisis, making it harder and harder to cover the operating costs, let alone investing in energy-saving upgrades like installing photovoltaics and replacing aging 800 kW pumps: "That is a huge investment", he says. "But we have to go through it."

The need for data

Bosnia and Herzegovina (BiH) faces a similar situation, according to the next speaker: Vesna Muslic, is President of the AQUASAN Network and Committee Council Chair of the Danube Learning Partnership. BiH wrestles with an outdated infrastructure, improperly designed, partly undersized and partly oversized water systems and 49% non-revenue water. Exacerbating the situation is a widespread lack of awareness of the economic impacts of these water losses: "Most utilities lack the necessary skills to collect and process data and to independently carry out energy audits", remarked Ms. Muslic, stressing the importance of capacity building through the D-LeaP program.

Wrapping up the panel discussion, moderator Christian Hasenleithner remarked that obviously all utilities in the Danube region are faced with the same problems, mentioning Kristoffer Welsien approach as a viable, but sadly underrated solution. "Getting an investment from a private partner and paying it back during the contractual period in a performance-based contract makes sense, and is a widely known approach", he comments. "Why isn't it used more frequently?"

The need to act

The ensuing Q&A session was exceptionally lively, with a large part dedicated to decision-making problems. "My impression is that everywhere in the water sector, experts in utilities are wrestling to improve things, but often fail to make an impact, because other problems are more pressing at the time, or because decision-makers are reluctant and have doubts in the merits of project proposals," remarked one panelist. "Often private investors are not comfortable with the creditworthiness of utilities, and I also think few of us want to include the private sector at scale, but looking at the size of the problem, we don't really have a choice", said another.

Moderator Christian Hasenleithner is quite familiar with these issues: "We at Energie AG Bohemia are not owners, just operators, and we see how difficult it is to convince our partners, bring together potential investors and utilities who want to improve." As a reaction his company has set up an investment fund for energy efficiency improvements, photovoltaic installations, and improved wastewater treatment. In his closing statement Mr. Hasenleithner said: "We as utilities have to use all available tools to solve the energy issue. Creating a marketplace for investments in pumps, biogas, photovoltaic, hydro power, all the improvements that are locally possible, might be a future role for the Danube Water Program."

Further information, including the presentations and recording of the webinar, can be found on our website!