Press Release

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Green energy and security of supply: Bilfinger supports hydropower plant expansion in Lithuania

- **Bilfinger to supply large pressure piping for new pump-turbine unit at Kruonis pumped storage hydroelectric power plant**
- **Expansion of green energy sources to ensure security of supply in the Baltic States**
- **Europe-wide unique full service: engineering, fabrication and installation of pressure piping provided from a single source**
- **Market expansion: First hydropower order for Bilfinger in the Baltic States**

Kruonis, Lithuania. Industrial services provider Bilfinger is supporting energy company Ignitis Gamyba in the expansion of the Kruonis Pumped Storage Hydroelectric Power Plant (KPSHP) in Lithuania. The order is being realized in cooperation with technology group Voith and aims to strengthen Lithuania's green and independent energy supply. The expansion of the hydropower plant is a response to the Baltic States' plans to be integrated into the European power grid by the end of 2025, to reduce their dependence on energy imports and to systematically expand renewable energy sources. The order supports Bilfinger's strategic goal to become number one in efficiency and sustainability for its customers.

“We are proud to be part of this significant energy transition project. As Bilfinger's first hydropower project in the Baltic States, it is an important milestone and underlines our strategic goal to expand our core business in adjacent regions,” says Thomas Schulz, Group CEO of Bilfinger. “The order demonstrates our company's outstanding expertise, capacities and many years of experience in this field. Bilfinger is the only provider in Europe that can offer all steps from engineering to fabrication and installation of pressure piping of this size from a single source.”

The KPSP is located approximately 35 km east of Kaunas and 80 km west of Vilnius. Originally planned to operate eight pump turbines, only four machines with an output of 225 MW each went into operation after completion in 1992. Voith will now supply a new fifth pump-turbine unit, while Bilfinger is responsible for the construction of a new exposed pressure pipeline connecting the upper basin of the power plant with the lower basin and the pump-turbine.

A team from Bilfinger Industrial Services Austria is responsible for the entire value chain for the approximately 900-meter-long pressure pipeline with a diameter of 5,250 mm, including engineering, fabrication, transportation, installation, corrosion protection and commissioning. Adaptation to the existing plant components and the prevailing conditions is posing a particular challenge. Due to the lack of detailed plans of the old plant, an accurate condition assessment is required to ensure that the pipeline remains stable under extreme temperature fluctuations of up to 80 degrees Celsius, large water loads and the high dynamic pressure of the connected turbine.

To ensure the highest quality and durability of the pipeline, state-of-the-art thermomechanically rolled steels are used. The huge components are prefabricated to the nearest millimeter and precisely joined on site using metal active gas (MAG) welding. This advanced welding process has the advantage of preventing hydrogen from penetrating the weld and allows for automation, which increases the quality and speed of the process. Bilfinger also uses automated ultrasonic testing to ensure the highest quality standards.

The new plant is expected to be operational by the end of 2026. The KPSHP is the only one of its kind in the Baltic region and plays an important role in securing energy supplies and stabilizing the power grid. KPSHP is used primarily to balance electricity supply and demand. When demand is low, the plant operates in pumping mode, using excess energy to lift water from the lower Kaunas Lagoon to the upper 303-hectare reservoir, which is 110 meters above the level of the Kaunas Lagoon. During periods of peak energy demand, it functions like a conventional hydropower plant. Other equally important functions of KPSHP are the ability to level the system load balance, to regulate voltage and frequency, and to start the system after a total system blackout.

Bilfinger is a long-standing international partner in the hydropower sector. For many decades, the industrial services provider has been constructing pressure piping and hydraulic steel structures and installing turbines for the generation of electricity from hydropower. As a leading supplier in the European market, the company offers engineering, fabrication and installation of pressure piping from a single source, such as in the construction of the Limberg III hydropower plant in Austria.

During a surplus of electricity generation, the KPSHP uses the surplus electricity to pump water from the lower pool to the upper pool. © Ignitis Gamyba

The KPSHP is the only power plant of its kind in the Baltic region. © Ignitis Gamyba

Bilfinger is an international industrial services provider. The aim of the Group's activities is to increase the efficiency and sustainability of customers in the process industry and to establish itself as the number one partner in the market for this purpose. Bilfinger's comprehensive portfolio covers the entire value chain from consulting, engineering, manufacturing, assembly, maintenance and plant expansion to turnarounds and digital applications.

The company delivers its services in two service lines: Engineering & Maintenance and Technologies. Bilfinger is primarily active in Europe, North America and the Middle East. Process industry customers come from sectors that include energy, chemicals & petrochemicals, pharma & biopharma and oil & gas. With its ~30,000 employees, Bilfinger upholds the highest standards of safety and quality and generated revenue of €4.3 billion in financial year 2022. To achieve its goals, Bilfinger has identified two strategic thrusts: repositioning itself as a leader in increasing efficiency and sustainability, and driving operational excellence to improve the organizational performance.

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