

Kpong

Important rehabilitation contract in Ghana

▲ Machine hall with four generating units

In July 2013, after an international competitive bidding process, ANDRITZ HYDRO signed a contract with Volta River Authority, a 100% state-owned public entity of Ghana, for the Kpong retrofit project. Kpong is the second largest hydroelectric dam built in Ghana, and it covers about 12% of the country's electricity production.

The existing power generation system in Ghana is dominated by two stations, HPP Akosombo (912 MW) and HPP Kpong (160 MW), both located on the Volta River below Lake Volta, 80 km from the city of Accra. The tailrace of HPP Akosombo forms the head pond for HPP Kpong. Together both hydropower plants supply about 70% of the national electricity.

The contract covers the modernization of the entire hydropower station. ANDRITZ HYDRO will carry out the design, manufacturing, supply, erection, and testing as well the commissioning for the retrofit of electrical and mechanical equipment at HPP Kpong. This comprises generators and excitation equipment, turbine and auxiliary equipment, governors, generator transformer, powerhouse station service facilities as well as hydromechanical equipment.

The main objective for the rehabilitation of HPP Kpong is to ensure continuous supply, improve service delivery and increase sustainable power generation with stabilized energy security. The old equipment and auxiliary parts will be upgraded and replaced with modern equipment to enhance efficiency and ensure a prolonged life for the plant. The rehabilitated turbines will be operated as base-load units. With upgraded governors it will be possible to increase their role in frequency control on the interconnected grid.

Before the contract was signed, the plant was thoroughly inspected by ANDRITZ HYDRO specialists to ensure smooth and timely execution of the key elements. Assessments of the turbines showed only marginal improvement could be achieved here, so greater emphasis was placed on the generators. As a result the stators will be recored and the rotor poles will be completely replaced.

During the execution phase the units will be shut down one by one and put back into operation after having been dismantled, rehabilitated, re-assembled and commissioned. The project will be completed within 43 months.



▲ Kpong hydropower plant



▲ Contract signing

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TECHNICAL DATA

Output (max.): 4 x 46.23 MW
Voltage: 13.8 kV
Head: 11.75 m
Speed: 62.5 rpm
Runner diameter: 8,238 mm

