1,000 GWh

MEETING SUSTAINABLE ENERGY NEEDS

Ghana – Strategically important, the Kpong hydropower station in Ghana had been undergoing an extensive refurbishment when final commissioning was suddenly halted due to the COVID-19 pandemic. Despite this setback, with considerable effort and exceptional dedication, ANDRITZ Hydro still managed to put Kpong back into full commercial operation.

Located about 25 km downstream of Akosombo Generating Station, Kpong is a run-of-river hydropower station originally commissioned in 1982. After 30 years of reliable operation, the power generation components were experiencing higher failure rates and subsequent forced outages. A retrofit project was initiated to update the plant equipment to modern standards and to ensure reliable operation for many decades to come.

In 2013, ANDRITZ Hydro received a contract from Volta River Authority, a 100% state-owned public entity in Ghana, for the modernization of the entire hydropower station. The contract covered design, manufacturing, supply, installation and testing, as well as commissioning for the mechanical and electrical equipment. This included intake roller gates, turbines and governors, generators, excitation, protection, and control systems, as well as powerhouse station service facilities.

After the successful commissioning of units #2, #1, and #3 in 2016, 2017, and 2019, respectively, the installation of unit #4 was completed on schedule at the beginning of 2020. However, finalization of the commissioning of this unit was halted in mid-March 2020 due to the COVID-19 pandemic. Unit #4 was the last part of the retrofit project to be commissioned but travel restrictions prevented the ANDRITZ Hydro commissioning team from travelling to Ghana.

Nonetheless, the pressing need for electrical energy led all involved parties to seek out a solution. As a result, a special charter flight was organized to fly in the team and finalize the commissioning process. After a 10-day quarantine in a government-determined hotel, followed by a four-day stay in the isolated ANDRITZ Hydro camp, the outstanding works were started. (For more details on the challenges facing our customers and colleagues during the global pandemic please see the interview on page 26.)

Commissioning, including performance tests, was successfully completed on September 19, and on October 26, 2020, all refurbished units of Kpong hydropower plant were officially inaugurated in the presence of the president of the Republic of Ghana, H.E. Nana Addo Dankwa Akufo-Addo. Traditional representatives, a high-ranking governmental delegation

SITE REPORT — GHANA, KPONG

Ceremonial inauguration of HPP Kpong took place on October 26, 2020 in the presence of the president of the Republic of Ghana, traditional representatives, and a high-ranking delegation.

and international guests also attended the inauguration. Now, all four units of the Kpong hydropower plant are again fully operational to the utmost satisfaction of the customer.

Whilst contributing 160 MW of power to the national grid and neighboring countries, the dam provides additional services such as irrigation for farmland within the Fodjoku, Amedeka and Akuse districts, as well as flood control and fishing opportunities for local citizens.

Saving about 400,000 tonnes of carbon emissions per year, Kpong also plays an essential role in the mitigation of climate change. The safe and reliable annual production of about 1,000 GWh of electrical energy is thus a cornerstone of Ghana's climate policy and its sustainable future.

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TECHNICAL DETAILS

Kpong:

Total output: 160 MW
Scope: 4 × 40 MW
Voltage: 13.8 kV
Head: 11.75 m
Speed: 62.5 rpm
Runner diameter: 8,238 mm
Av. Annual production: 1,000 GWh