Intermediate & Khaw

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Jordan – ANDRITZ HYDRO signed a contract with Fayat Energie Services International (FESI) for the supply of electro-mechanical equipment for two small hydropower plants in Jordan in June 2016.

FESI is involved in the construction of a 35 km-long water transmission pipeline, the so-called "Abu Alanda–Khaw Pipeline", providing drinkable water to the capital city of Amman. This pipeline will allow the transfer of about 30 Mm^3 of water per year. Along this pipeline two hydropower plants – HPP Intermediate and HPP Khaw – will be installed, each equipped with one unit of 1,320 kW and 897 kW, respectively.

ANDRITZ HYDRO will supply vertical Pelton turbines, generators, inlet valves and hydraulic power units. Commissioning is scheduled for mid-2017.

The experience of ANDRITZ HYDRO in the field of drinking water supply technology together with the management of a transient calculation due to the very long penstocks, have been key factors in the awarding of this contract.

TECHNICAL DATA

Intermediate		
Output	1,320	kW
Head	164	m
Speed	750	rpm
Runner diameter	670	mm
Khaw		
Output	897	kW
Head	168	m
Speed	750	rpm
Runner diameter	660	mm

Kavak

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Turkey – In April 2016, ANDRITZ HYDRO received an order for two horizontal Francis turbines and electrical power systems for the Kavak hydropower plant, located in the city of Arhavi in the Artvin Province, Turkey.

The order was placed by Arhavi Elektrik, part of the MNG Group of Companies, for which ANDRITZ HYDRO has already successfully executed two hydropower projects – HPP Aralık and HPP Sukenarı.

ANDRITZ HYDRO won the contract after an international tendering process. With the scope of supply including design, manufacturing, testing, supply, transportation, installation, and commissioning, the turbines and related equipment will be supplied by ANDRITZ HYDRO France. Electrical power systems, turbine spiral case, and draft tube as well as installation of all electro-mechanical equipment will be delivered by ANDRITZ HYDRO Turkey.

The project is expected to see commercial operations within the second half of 2017.

TECHNICAL DATA

Output	1 × 8.44 MW / 1 × 2.38	MW
Head	40.5	m
Speed	1 × 750 rpm / 1 × 375	rpm
Runner diameter	1 × 862	mm
	1 × 1,677	mm

Angel I and III

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Peru – Generadora de Energía del Peru (Gepsa) awarded ANDRITZ HYDRO two contracts for the supply of electro-mechanical equipment for the hydropower plants Angel I and Angel III in March 2016. Both orders followed the contract for HPP Angel II, which was also awarded to ANDRITZ HYDRO.

All three hydropower plants are part of a cascade system, located in the Carabaya Province in the south of Peru.

HPPs Angel I–III are identical and hence have the same scope of supply – combining two vertical, six-jets Pelton turbines (10 MW output each), two 11.22 MVA generators (6.6 kV each), spherical inlet valves, hydraulic pressure units, cooling water systems, control and SCADA system, speed governor, automatic voltage regulator, and auxiliary equipment.

The supervision of erection and the commissioning are scheduled for mid-2017. With the new contracts for HPPs Angel I and III all three hydropower plants are under execution by ANDRITZ HYDRO.

TECHNICAL DATA

Angel I–III identical equipment		
Output	2 × 10 MW / 2 × 11.22	MVA
Voltage	6.6	kV
Head:	277	m
Speed	600	rpm
Runner diameter	1,110	mm
Av. annual production	131	GWh