

# Vietnam

## Renewable Energy in Harmony with Nature

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Ha Long Bay, UNESCO World Heritage site in northern Vietnam

**Vietnam** has a fast growing population of about 90 million people and an economy which is rapidly developing. The country is focusing on renewable energy, mainly hydropower, which currently contributes some 33% of the total power generation. With an annual hydro potential of 120,000 GWh, of which less than half has been developed as of today, Vietnam is one of the most vital and prospective hydropower markets.

### **ANDRITZ HYDRO in Vietnam**

ANDRITZ HYDRO has run a representative office in the capital Hanoi for more than 15 years, but has been active in the country since the 1960s. More than 50 units with a combined total capacity of about 1,000 MW has been installed or rehabilitated by ANDRITZ HYDRO. In 2016, ANDRITZ HYDRO Company Limited was established (100% FDI of ANDRITZ HYDRO Austria GmbH) to better cover the local activities in Vietnam. ►

**HPP Thuong Kon Tum:** In 2012, ANDRITZ HYDRO signed a contract for the electro-mechanical works for the Thuong Kon Tum hydropower plant, located at the border between Laos and Vietnam, near the city of Kon Tum.

ANDRITZ HYDRO is going to supply turnkey electrical and mechanical equipment, including two high-head Pelton turbines with speed governors, generators, and auxiliary systems.

After completion in 2017, this hydropower plant will have an installed capacity of 220 MW and will generate about 1,000 GWh of electrical energy per year.

**HPP Nam Tha 3:** ANDRITZ HYDRO has received an order from Phuc Khanh Energy Development and Construction Investment JSC for the 14 MW Nam Tha 3 hydropower plant, located on the Nam Tha River in Lao Cai province.

ANDRITZ HYDRO's scope of supply comprises the complete electro-mechanical equipment, including two four-jet Pelton turbines, generators, and mechanical auxiliaries. The project is scheduled to be put into commercial operation in mid-2016.

**HPP Dak Mi 2:** In 2014, following the HPP Chi Khe project, ANDRITZ HYDRO signed a second contract with Agrita-Quang Nam Energy JS Company (AGRITAM) for the complete electro-mechanical scope of supply for the Dak Mi 2 hydropower plant, located on the Dak Mi River, in the province of Quang Nam.

ANDRITZ HYDRO is supplying the complete electro-mechanical equipment, including two vertical 49 MW Francis turbines, governors, and generators. HPP Dak Mi 2 will supply 415 GWh of sustainable and clean electrical energy per year.

**HPP Chau Thang:** In February 2015, ANDRITZ HYDRO's Compact Hydro business division made a breakthrough in the field of low-head turbines in Vietnam and signed a contract with Prime Que Phong JSC for the supply of two vertical Kaplan units for the 14 MW Chau Thang hydropower plant. The project is located on the Quang River, some



Contract signing for HPP Xim Vang 2

330 km north of the capital of Hanoi and is scheduled to be put into commercial operation in 2016.

**HPP Xim Vang 2:** In July 2015, ANDRITZ HYDRO received an order from Xim Vang Hydroelectric Power JSC for the Xim Vang 2 hydropower plant, located on the Xim Vang River in the Son La Province. HPP Xim Vang 2 will have a total installed capacity of 18 MW. ANDRITZ HYDRO's scope of supply comprises electro-mechanical equipment, including two Pelton turbines, generators, and auxiliary systems. The hydropower plant is planned to be put into commercial operation in 2017.

**HPP Hoi Xuan:** ANDRITZ HYDRO won a contract for the supply of electro- and hydro-mechanical equipment for the new 102 MW Hoi Xuan hydropower plant, owned by VNECO Hoi Xuan Investment and Electricity Construction JSC. The scope of supply includes design, delivery, installation, and commissioning of three Bulb turbines and generators, as well as automation and the hydraulic equipment. Commissioning of the plant is scheduled for the beginning of 2018. Thereafter, more than 425 GWh of renewable energy will be supplied every year for Vietnamese households and local industry.

With its long-established presence in Vietnam, ANDRITZ HYDRO is prepared for the future and is looking forward to providing tailor-made solutions to its local customers. ■



Runner installation at HPP Chi Khe

#### TECHNICAL DATA

##### Thuong Kon Tum

Output	2 × 110 MW
	2 × 129 MVA
Head	879 m
Speed	600 rpm
Runner diameter	2,060 mm

##### Nam Tha 3

Output	2 × 7 MW
Head	274 m
Speed	428.6 rpm
Runner diameter	1,350 mm

##### Dak Mi 2

Output	2 × 49 MW
Head	252.4 m
Speed	428.57 rpm
Runner diameter	1,530 mm

##### Chau Thang

Output	2 × 7 MW
Head	21 m
Speed	272.7 rpm
Runner diameter	2,350 mm

##### Xim Vang 2

Output	2 × 9 MW
Head	568 m
Speed	750 rpm

##### Hoi Xuan

Output	3 × 34 MW
Head	21.5 m
Speed	166.66 rpm
Runner diameter	4,500 mm