

OUR INDONESIA

TECHNICAL DETAILS

Peusangan 1

Output: $2 \times 23.1 \text{ MW} / 2 \times 26.5 \text{ MVA}$

Head: 205.3 m

Voltage: 11 kV

Speed: 600 rpm

Runner diameter: 1,200 mm

Peusangan 2

Output: $2 \times 22 \text{ MW} / 2 \times 25.3 \text{ MVA}$

Head: 187.7 m

Voltage: 11 kV

Speed: 600 rpm

Runner diameter: 1,200 mm

Peusangan 1 & 2

Installation works completed

Peusangan 1 and 2, Indonesia - The installation of the electromechanical (E&M) equipment at Indonesia's Peusangan Powerhouse No. 1 (PH 1) has been completed.

Peusangan PH 1 has an underground powerhouse, whereas a second plant, Peusangan PH 2 has a surface powerhouse. Both are run-of-river power plants located on the Peusangan River and adjacent to Lake Laut Tawar in the central region of Aceh Province in the northwest of Sumatera, also known as Sumatra.

ANDRITZ' scope of supply for the HPP Peusangan 1 and 2 comprises vertical Francis turbines, generators, transformer, 150 kV switchyard, cranes and comprehensive mechanical and electrical auxiliaries.

With an expected annual output of 327 GWh of electric energy, Peusangan 1 and 2 will be the first large hydropower plants in the region. The commercial operation of Peusangan PH 1 is scheduled to begin in early 2024.



Stator lowering of Unit 1 of Peusangan 1

IAN PROJECTS

Successful Installation and Testing

Asahan 3, Indonesia – In May 2023, the Penstock Isolation Valve (PIV) has been successfully installed and tested at Asahan 3. The valve was manufactured at ANDRITZ workshop located in Hungary. The Factory Acceptance Testing (FAT) of the PIV was completed in November 2021.

The project is located downstream of Lake Toba on the Asahan River and southeast of the city of Medan, North Sumatera, Sumatera Island.

In September 2019, ANDRITZ signed a contract with the state-owned utility PT. Perusahaan Listrik Negara (Persero) (PLN) for the hydromechanical equipment and metal works at the Asahan 3 hydropower plant. The scope of supply comprises 12 roller gates, six intake trash racks, one

intake trash rack cleaning machine, steel penstock with bifurcation, two draft tube roller gates, all with hoists and stop logs, as well as a butterfly valve with a diameter of 5.3 m. An international ANDRITZ team from Austria and Indonesia executes the project together. Completion and commissioning are scheduled for April 2024.

This contract award is another outstanding achievement, and contributes to ANDRITZ' more than century-long success story in Indonesia. With this project, ANDRITZ continues its dedication and excellence in supplying electromechanical equipment and full life cycle services "from water-to-wire" for hydropower projects to all its customers for the benefit of the people of Indonesia.



Beginning of 2023, the pressure test for the bifurcator of Asahan 3 was successfully executed.



Installation team of Penstock Isolation Valve (PIV)



PIV during FAT (Factory Acceptance Test) at ANDRITZ' workshop in Hungary

TECHNICAL SPECIFICATION OF PENSTOCK ISOLATING VALVE (PIV):

Valve type: Butterfly with biplane disc
Hydraulic-2 cylinder hoist with a hydraulic oil unit
Number of units: 1
Nominal diameter: 5,300 mm
Design water head in closed position: 33.35 mWC
Design water head in open position: 57.81 mWC
Max. static water head: 33.35 mWC
Test pressure: 86.71 (1.5 × 57.81) mWC





Excitation cubicles

Excitation retrofit for Indonesian power supply

PT. Indonesia Power Mrica PGU (UP-Mrica), Indonesia - ANDRITZ was awarded multiple contracts by PT Indonesia Power, a subsidiary of PT PLN (Persero), operating hydropower plants across the archipelago. The contracts are for the upgrading and retrofit of excitation systems for hydropower plants located in Central Java, namely Panglima Besar Jenderal Soedirman Unit-2 (with

redundant automatic voltage regulation - AVR), Timo Unit-3 (brushless excitation), Wadaslintang Unit-1, and Wonogiri Unit-1.

The scope of supply includes state-of-the-art HIPASE-E automatic voltage regulators, including thyristor bridges, installation, and commissioning for all four units within six months.

TECHNICAL DETAILS

Panglima Besar Jenderal Soedirman

Total output: 180.9 MW

Scope: 1×60.3 MW / 67 MVA

Excitation Current / Voltage: 1170 A / 160 V

Wadaslintang

Total output: 18.4 MW

Scope: 1×9.2 MW / 10.22 MVA

Excitation Current / Voltage: 674 A / 85 V

Wonogiri

Total output: 12.4 MW

Scope: 1×6.2 MW / 7.75 MVA

Excitation Current / Voltage: 256 A / 220 V

Timo

Total output: 12 MW

Scope: 1×4 MW / 5 MVA

Excitation Current / Voltage: 6 A / 110 V



PT. Indonesia Power UP Mrica

ANDRITZ has proven to be successful in a highly competitive market, delivering quality products and services in a very challenging time frame.

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ANDRITZ HYDRO IN INDONESIA, JAKARTA

For more than a century, ANDRITZ Hydro has made significant contributions to Indonesia's hydropower development with its first deliveries taking place in 1912.

As of now, ANDRITZ Hydro has supplied or rehabilitated more than 220 units with a total capacity of 3,220 MW, representing a market share of more than 60%. Responding to the positive hydro market outlook and in readiness to provide client support, ANDRITZ established a local entity, PT ANDRITZ HYDRO, back in 1996.

With its vast experience in the execution of hydropower projects in Indonesia, ANDRITZ Hydro is constantly looking for ways to improve. PT ANDRITZ Hydro has successfully built a dedicated engineering team for the design and supervision of the installation and commissioning of automation products, electrical power systems, and penstocks and gates. ANDRITZ Hydro's Indonesian team also offers services for projects both locally and in more than 50 other countries.