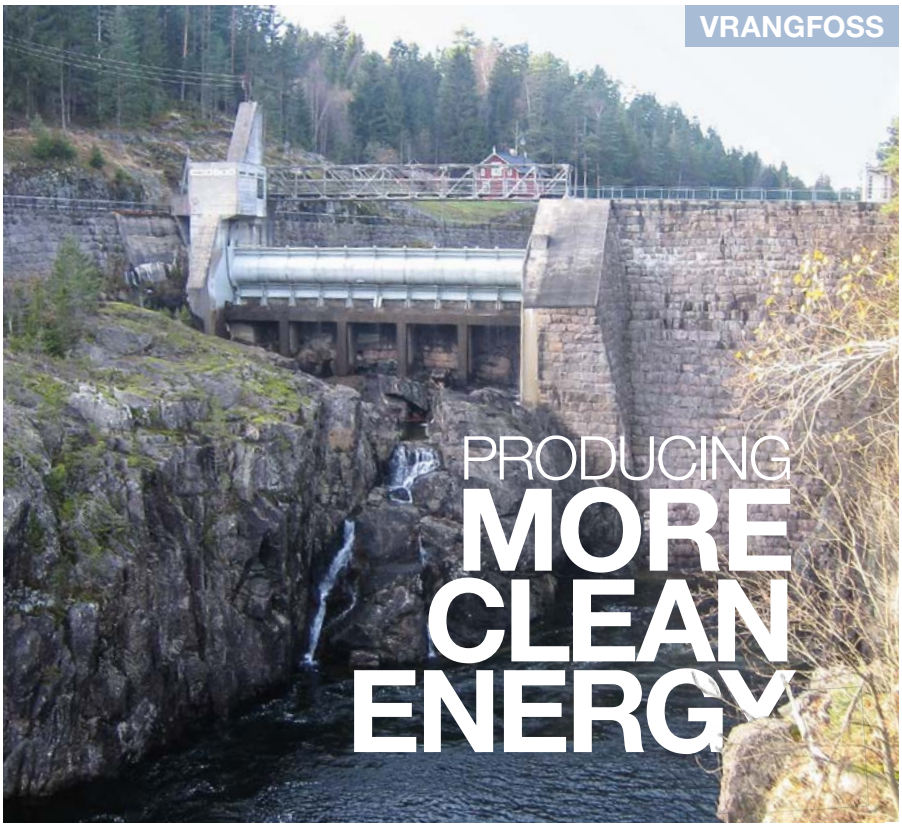
SITE REPORTS

VRANGFOSS



NORWAY – Since 2017 the Vrangfoss hydropower plant has been producing clean energy for the Norwegian grid with a new control system supplied by ANDRITZ Hydro.

HPP Vrangfoss is a run-of-river hydropower plant, owned by Norsjøkraft AS and operated by Statkraft Energi AS, using the waters from the Skien water system. Located in Eidselva, Telemark County, it was originally put into service in 1962.

Two Kaplan turbines with a total capacity of 35 MW utilize the 23 m head from the Nomevann Lake, producing an average annual output of 190 GWh. The intake dam is built above the power station, which is an underground installation, while the 132/66 kV switchyard is located outside close to the station. Parallel to the intake gates there is a 25 m wide and 3.5 m high spillway gate. This is mainly in use during spring and autumn season to control the waterways in flood situations. Next to the hydropower plant is the biggest ship lock in the entire Telemark canal with its five locking chambers and a lift height of astounding 23 m.

For ANDRITZ Hydro the scope of supply consisted of the replacement of the complete control system according to Statkraft's "Design Principles for Control System for Hydro Power Plants". Additional equipment like electrical protection, station supply, diesel generator, cables, transformers, and busbar systems, as well as mechanical works on the generator and turbine also formed part of the contract.

The ANDRITZ Hydro team consisted of employees from Norway, Austria, responsible for the excitation system, and Czech Republic, providing the PLC and SCADA system. Manufacturing of 120 new electrical cabinets of different sizes was completed by Norwegian partners.

Commissioning was carried out in cooperation between all the involved ANDRITZ Hydro locations to the full satisfaction of the customer. This order confirms again the high competence and know-how of ANDRITZ Hydro and represents an important reference in the Scandinavian region.

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Vrangfoss | Norway

Technical data:

Total output:	35.2 MW
Scope:	2 × 17.6 MW
Head:	23 m
Voltage:	10.2 kV
Speed:	200 rpm
Runner diameter:	3,400 mm
Av. annual production:	190 GWh