

ACHIEVING CLIMATE GOALS

Nedre Otta hydro-power station 270 km north of Oslo is producing clean energy for the municipalities of Sel and Vågå.

Norway – Following a successful commissioning phase, the Nedre Otta hydropower plant in Norway was handed over to the customer in June 2020. Nedre Otta is located in the municipalities of Sel and Vågå, in the community of Oppland some 270 km north of Oslo. This new power plant is equipped with two 43 MW Kaplan turbines and operates as a run-of-river plant with no intake reservoir.

Back in 2016, ANDRITZ Hydro was awarded with a contract to supply the complete electro-mechanical and hydro-mechanical equipment for this project, as well as excitation systems. The extensive contract also comprised design, manufacturing, and delivery of mechanical equipment in the powerhouse including turbines, main inlet valves (MIV), inlet pipes, hydraulic pressure units (HPU), electronic turbine governor, and

generators including excitation systems. The contract further included the mechanical equipment to be installed in the waterways, including trash racks, intake gates, draft tube gates, as well as cooling and bilge systems. Installation, supervision, and commissioning rounded out the contract scope.

The power plant's owners are AS Eidefoss with 50% and Hafslund E-CO with 50% (E-CO Energi 27% and Eidsiva Vannkraft AS 23%). Through participation in the development of Nedre Otta, E-CO Energi has confirmed the company's long-term strategy of developing new hydropower capacity and its position as an important and long-term player in Norway. This is also a project that contributes to achieving the country's 2020 climate goals, relevant to all hydropower projects in Norway today.

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TECHNICAL DETAILS

Nedre Otta:

Scope output: 2 × 43 MW / 2 × 50 MVA

Head: 50 m

Voltage: 11 kV

Speed: 250 rpm

Runner diameter: 3,525 mm

Av. annual production: 315 GWh



Nedre Otta uses the natural fall of the Otta River at the existing dam at Eidefossen. A new powerhouse is located after a 4 km stretch of 95 m² tunnel downstream of the dam. A tailrace tunnel with the same cross section runs for another 4 km until the outlet to the river. With an estimated production of approximately 315 GWh annually, of which 270 GWh is new production, Nedre Otta is currently Norway's largest recently constructed hydropower project and will produce enough power for over 15,000 households.



Although Norway is one of the world's leading petroleum exporters, domestic electricity production relies almost entirely on hydropower, with an annual production of about 141 TWh.



With the two host municipalities, Vågå and Sel, development agreements have been entered into where each of the municipalities will receive NOK 5 million to be used for mitigation measures. In addition, each of the municipalities will have a perpetual right to 3% of the power production from the Nedre Otta hydro-power plant.

The whole project, both in terms of technological solutions and implementation methodology, was characterized by conventional and proven solutions, with a single exception. This was the first major project where the customer decided to carry out the entire project, from start to takeover, completely without old-fashioned paper drawings. By requiring BIM (Building Information Modeling) and

a three-dimensional model, the client managed to streamline implementation and improve communication between the various professional groups, with few errors and conflicts.

Despite the strain of the situation due to COVID-19 and all related security and health measures, the project was completed in early summer 2020 with hand-over to the customer in June, one month earlier than by contractual schedule.

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