

Building & Industry

NOVENCO 

SCHAKO Group

Water powered by NOVENCO[®] ZerAx[®] – Total energy retrofit of Sima Power Station

About the project

Hydropower is created by falling or fast-running water and is one of the world's most cost-effective renewable energy sources. Unlike coal or gas plants, hydropower plants consume no water during production.

The Sima Power Station, Norway's second-largest hydro-electric plant, is located in Eidfjord in Hordaland and surrounded by the region's characteristic fjords. Its main hall sits 700 metres inside a mountain and is 200 metres long, 20 metres wide and 40 metres high. Water is drawn from several river basins and stored in reservoirs for release when additional electricity is needed.

The station operates at a total installed capacity of 1,120 MW and produces on average 2,850 GWh annually.



ZerAx fans supply fresh air to tunnels



Sima Power Station, Norge

The solution

NOVENCO Building & Industry installed nine high-efficiency ZerAx fans as part of a full energy retrofit at the power station. The fans ventilate all tunnels and working areas inside the mountain and remove heat from the power house, transformer and generator areas. Replacing the old fans with ZerAx technology cut energy consumption by at least 30%.

NOVENCO retrofit solutions reduce energy use in existing installations by replacing outdated transformer fans with modern, energy-saving alternatives. This significantly lowers environmental impact and CO2 emissions. Retrofitted ventilation systems often achieve major improvements in both climate performance and energy efficiency.



Old NOVENCO fans installed in 1980s



New fans installed – cutting energy use by over 30%



Behind the fan – ZerAx technology delivering maximum efficiency

Equipment delivery

Fresh air is supplied to tunnels and working areas by

- 2 × ZerAx AZN-1600
- 2 × ZerAx AZN-1000

with a combined airflow of approx. 395,000 m³/h.

Exhaust air from the power house and generator areas is extracted by

- 3 × ZerAx AZN-1600
- 1 × ZerAx AZN-1120
- 1 × ZerAx AZN-1000

providing a total exhaust capacity of approx. 500,000 m³/h.

All ZerAx fans were supplied with inlet cones and diffusers to ensure uniform airflow. Due to limited tunnel space, inlet cones and diffusers were delivered in separate parts for on-site assembly.

Facts:

- Efficiency up to 91%
- At least 30% energy saving



Old fan installation in the power house



Newly installed ZerAx fan – compact design, maximum airflow