

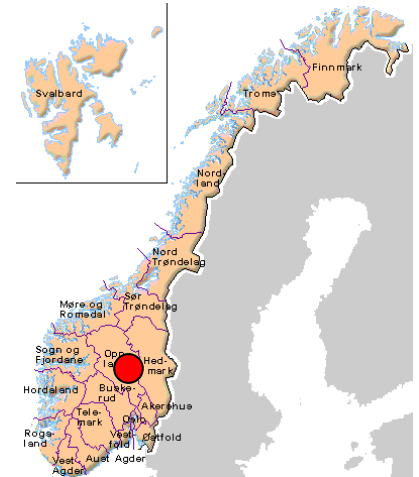


Generator 2 MVA

Svatsum 2 kraftverk Gausdal i Oppland Norge

Oppdragsgiver (Client):
Svatsum Elverk AS

Eier(e) (owners):
Harald Ove Foss,
Johannes Nordgarden,
Ivar Austad,
Olaf Sønsterud
m.fl.



Nøkkeldata (key figures):

- H 303 m bto
- Qm 0,400 m³/s
- Qt : 0,85 m³/s
- P : 1.750 KW
- E : 6 GWh
- Kostnad – 16 mill kr
- Kr/GWh – 2,00

Byggetid (construction time):
24 måneder (months)

Byggeår (year):
09/2007 – 09/2009

Idriftsettelse (commissioning):
09/2009

Finansiering (financing):
Sparebanken (local bank)



Demning



kraftstasjon



Nytt inntak her (new intake here) H-8 m, L-35m, V-1,5 mill m³

Brief project description

Sofienlund is the responsible engineer for the whole project comprising the following main key design elements: initial planning and concession application, conceptual design, detail design of intake dam and intake structure, penstock, powerhouse, tailrace channel, complete electro-mechanical works and high voltage 0,69/22kV transformer. We will also be responsible for the commissioning.

The project will be a storage reservoir project located on the eastern part of Norway. The small creek Ongsjoa has an average water flow of about 0,4 m³/sec. The turbine scaling will be $Q_t=2 * Q_m$ and with the relatively huge storage reservoir the project will use all the available water for generating electric energy.

There is already an existing dam that is quite old and with an unknown safety factor with regard to design. In connection with the upgrading with a new hydro plant the new intake structure has to improve and safeguard the safety aspects and consequently we have designed a new structure outside the existing structure.



The new intake will be a concrete structure constructed as an integrated part of the new dam downstream the present dam. The volume of the intake reservoir is estimated to about 1,5 mill m³.

The penstock will be 3500 m with DN 700 pipes of PE, GRP and ductile cast iron. The total head will be 303m. The slope is moderate at an average of 5 degrees. It is a nice topography and terrain and there will only be one anchor block along the penstock. The penstock will be buried with a minimum of 1 meter overburden to keep it steadily on place.

The powerhouse has a solid foundation of concrete and founded on gravel. The volume of the foundation has to withstand the dynamic water forces from the penstock at 122 ton. The top construction will be a wooden construction. The power plant will get both water-level control and manual control since it has a huge storage.

The power grid is only 20 meters away from the power plant. And a 22 kV high voltage power cable will connect it to the power grid.

Project team

Project manager	Einar Sofienlund,
Hydrology	Einar Sofienlund,
Civil engineer	Jann Biedilae and Einar Sofienlund,
Mechanical engineer	Bjorn Undrum and Einar Sofienlund,
Electrical engineer	Einar Sofienlund,

