



## HISTORY

**1913**

Development of Aura power station was started in 1913 by A/S Aura, which had acquired the fall rights. After a brief stoppage in work following the outbreak of the First World War in 1914, work was resumed with a reduced workforce until it was stopped completely in 1919.

**1940**

During the Second World War, the Germans resumed construction, but had to give up in 1943.

**1946**

The government acquired the development rights.

**1947**

The Norwegian Parliament approved the development based on new plans.

**1953**

The first turbine was commissioned.

**1956**

The seventh and final turbine was commissioned.



## SOME TECHNICAL INFORMATION

Power Station	Number of aggregates	Effect (MW)	Average production (GWh / year)	Share of ownership by Statkraft (%)	Entered into operation
Aura .....	7	290	1706	100	1953
Osbu .....	1	20	85	100	1958
Total Aura	8	310	1791		



### CREATING VALUE

Statkraft is Norway's largest land-based taxpayer. Our production activities generate significant wealth, which is returned to society through dividends, taxes and other public liens and charges. Statkraft also contributes actively to Norwegian society, providing financial support to sports & athletics, culture and other activities and good causes. Our social engagement is organised under the auspices of local clubs and associations and in close cooperation with the local authorities who host Statkraft's activities.

### THE SOURCE

Hydroelectric power is clean and renewable – and is actually a form of solar power. Water that evaporates due to solar energy returns in the form of precipitation. Rivers and waterfalls are used for the production of power, and large dams store the water for later use.

Thanks to hydroelectric power, we need not base our supply of electricity on fossil fuels or nuclear power, as many other countries do. Norway is like an island of clean and renewable hydroelectric power in Northern-Europe.

Our country is built, literally speaking, by hydroelectric power. Our economic growth and progress corresponded closely with the building of power stations. Electricity was the most important production factor in the industrialization of Norway, which freed our country from being a poor and underdeveloped place on the outskirts of Europe. The great change took place after 1850, and gathered speed after the dissolution of the union in 1905 when Norway once again became an independent nation. Electricity was an important part of the foundation for the enormous economic growth which occurred, and at the same time, in the course of a half century, it would completely transform Norwegian homes. The wood-fired stoves with cooking plates in the kitchen and oil lamps were thrown out for good and replaced with electric stoves, panel heaters, lamps, electrical appliances and computers.



AURA



THE OSBUDAM.

## REGULATION

The main reservoirs for collecting water for Aura power station are Aursjøen lake and the Osbu reservoir. Two smaller reservoirs are also used – the lakes of Holbuvatnet and Reinsvatnet.

The Aura river, which previously flowed from Aursjøen, down through the valley of Eikesdalen and out into lake Eikedalsvatnet, has been dammed in Aursjøen. Using tunnels, water from 8 or 9 streams is collected in what is known as a "gutter" and fed into Aursjøen, which as a result of the damming merges with lake Gautsjøen. Water from the Aursjø reservoir flows through a 5 km long tunnel across to the Osbu reservoir. From here, the water is used in Osbu power station before it ends up in Holbuvatnet.

Holbuvatnet is the forebay for Aura power station. From here, the water is fed through a 16 km long tunnel, with the cross-section of a railway tunnel,

down to the distribution head. Here, the water is distributed between pipes that transport the water down to the seven turbines inside the power station. The pipes are laid free in 1100 metre-long shafts, which are as steep as ski slopes. The slope angle is 45°.

The power station is located in a hall which has been blasted out of the rock 300 m inside the mountain and is split into two machine halls which are 16-17 metres wide, 18 metres high and 80 and 70 metres long respectively.

After the water has been used for power generation, it flows out into Sunndalsfjorden.

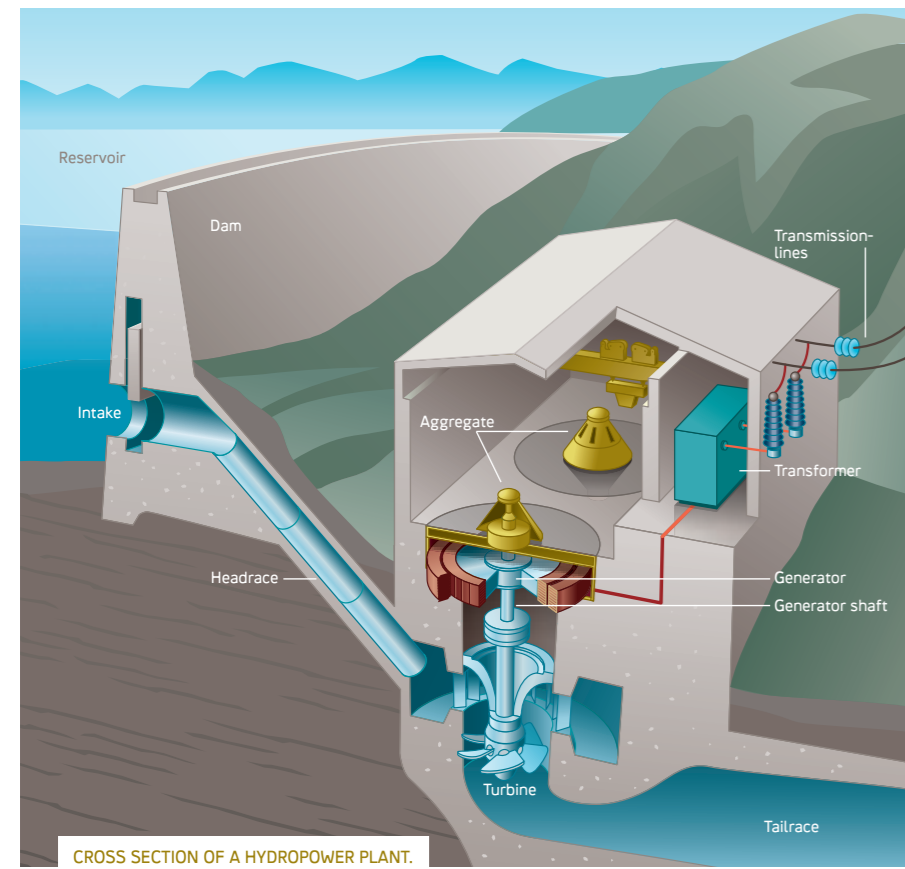


## THIS IS HOW ELECTRICITY IS PRODUCED:

The water is collected in dams up in the mountains. It is then released through tunnels and shafts heading down towards the power station and the turbines. The water drives the turbine which spins the generator mounted on the same shaft.

In the generator the mechanical energy is converted to electrical energy. The voltage in the generators in Aura power station is 12 kV (kilovolt).

To reduce losses during transport from the power station to the consumer centres, the voltage is transformed up to 132 and 300 kV. Then the power is carried out to the national grid. Before the electricity arrives at your socket, the voltage is once again reduced to a level which suits the stove, washing machine and freezer.



CROSS SECTION OF A HYDROPOWER PLANT.

## AREAS OF REGULATION



MAP BASIS: NORWEGIAN MAPPING AUTHORITY/CONCESSION NO. 2001/653

## NATURE AND THE ENVIRONMENT

Recent power development schemes take into account environmental and landscaping requirements at a much earlier stage in planning than was the case for developments in previous years. Through a considerable effort in research and development, we also continuously implement measures during and after development to ensure that nature and the environment will be disturbed and affected to the least possible degree.

In order to improve conditions for fish in regulated watercourses, we try various measures. In some cases these are combined with the setting out of fry and juvenile fish.

The construction of thresholds, planting and seeding are also done on a large scale. Wherever there is a need, tidying up after previous developments is done.



ONE OF THE MACHINE HALLS AT AURA POWER STATION.



THE CONSTRUCTION OF SILLS IN THE RIVER PROVIDES A WATER SURFACE WHICH IS OF VALUE TO BOTH PEOPLE AND LIFE IN THE WATER.