

Norwegian Water



May

2014

The water services in Norway

The Norwegian water industry takes care of health and environment, by delivering 700 million cubic meters of drinking water a year and treating wastewater prior to discharge back into nature. 6500 employees ensure that water supply and wastewater services function 24 hours a day, 365 days a year.

The infrastructure for water supply and wastewater can be divided into the following units:

- Water source (ground water or surface water) and associated catchment areas
- Water treatment plants
- Distribution networks (water mains, water towers, pumping stations)
- Transport systems for wastewater (sewers, pumping stations)
- Wastewater treatment plants, including sludge treatment plants
- Recipients for treated wastewater

Water supply

Each person in Norway uses 200 litres of water daily. There are approximately 1600 water works which supply water to more than 50 persons and in total cover 90 % of the population with water services, while the other 10 % of the population use private wells. Of the 1600 water works, 1100 are municipally owned, 400 are smaller water works owned by the users and 100 are supplying holiday home areas.

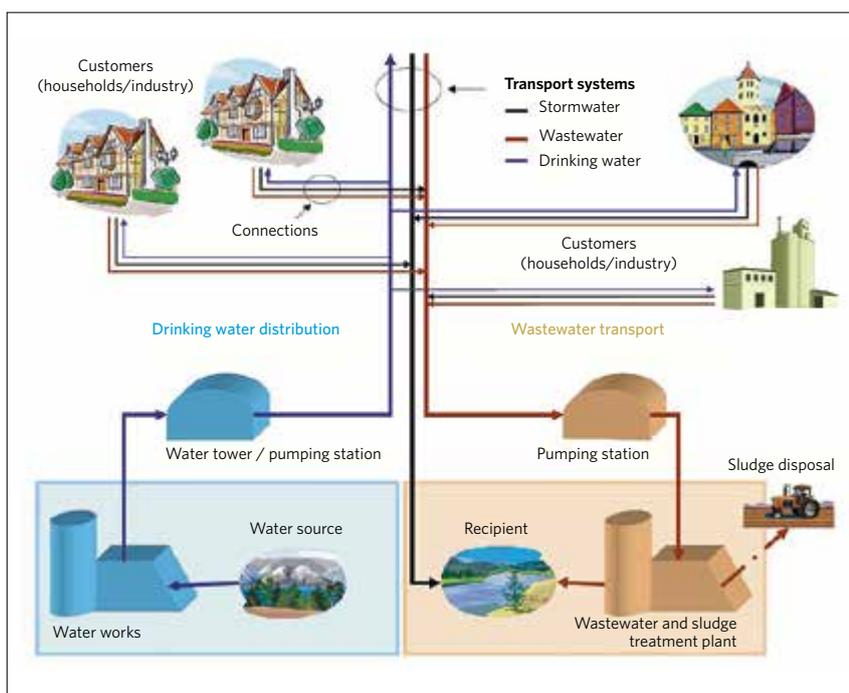


90 % of the water supply in Norway is based on surface water such as lakes and rivers, while 10 % is based on ground water. 41 % of the water production goes to households, 2 % to holiday homes and 25 % to industry. 32 % of drinking water produced is lost due to leaks from the water distribution system.

Wastewater treatment

There are almost 2700 municipally owned wastewater treatment plants with size of more than 50 population equivalents, which takes care of the wastewater from 84 % of the Norwegian population. The remaining 16 % in rural areas are covered by in total 330 000 small wastewater treatment plants. The demands of treatment vary depending on the size of the plant and the condition of the recipient.

Having gone through substantial treatment and quality control, the sludge from the treatment process is often recycled as a fertiliser or soil improver for use in agriculture and green areas.



Schematic diagram of the Norwegian water supply and wastewater infrastructure



Water distribution and wastewater transport

The Norwegian municipalities have in total 43 000 km water mains, 35 900 km sewers (included combined sewers) and 15 700 km stormwater drains. Additionally, there are 180 000 km of private owned house connections.

Ownership

The municipalities own the majority of the water and wastewater infrastructure in Norway. Some municipalities have organised the service in inter-municipal companies. In 2012, the Norwegian parliament approved a law on municipal water and wastewater infrastructure, stating that the infrastructure has to be owned by the municipalities and cannot be privatised. The reasoning behind this law is that water and wastewater services are natural monopolies, and that public ownership is important to ensure the quality, safety and price of these services in a long term perspective.

Costs and fees

The value of the water and wastewater infrastructure in Norway today is calculated to be 1053 billion NOK (130 billion EUR). The municipal and private pipes accounts for approximately 90 % of this value. The investment need in the water sector is estimated to approximately 490 billion NOK (60 billion EUR) until 2030, due to:

- Increasing quality demands for drinking water, wastewater and sludge
- Climate change adaptation
- An increasing population and urbanisation
- Need of higher renewal rate for the water mains and sewers

A single Norwegian household pays on average 7000 NOK (850 EUR) in total fees for water and wastewater services. In order to perform the necessary investments and maintenance, there is a demand for increasing these fees in many municipalities. The average annual

renewal rate is 0.48 % for sewers and 0.66 % for water mains. However, it is seen as necessary to double the renewal rate to avoid sending the bill to future generations.

Authorities

There are several authorities involved in the governing of the Norwegian water industry. The most significant ministries are the Ministry of Climate and Environment (ownership, fees, wastewater, sludge, climate change adaptation), the Ministry of Health and Care Services (drinking water), the Ministry of Local Government and Modernisation (planning and building, organisational aspects), the Ministry of Petroleum and Energy (water resources, dams) and the Ministry of Justice and Public Security (security, preparedness).

Other important governmental bodies are the Norwegian Food Safety Agency, which approves and controls the water works, and the Environmental Directorate as authority for wastewater and climate change. At the regional and local level, the County Governors are the pollution control authority for the 400 largest wastewater treatment plants, while the municipalities themselves are the authority for all other wastewater treatment plants.



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