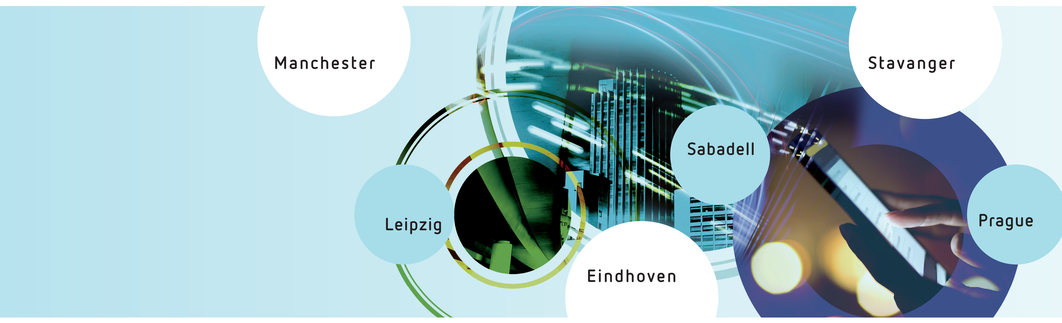
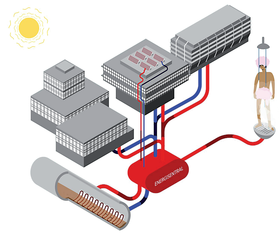


triangulum

DEMONSTRATE·DISSEMINATE·REPLICATE

STAVANGER LIGHTHOUSE CITY ENERGY



Credits: Triangulum/PlayDesign

Stavanger municipality has established a central energy plant that uses heat from the city's wastewater to produce energy

- Any water that flows into the sewer, like washing clothes or dishes, taking a shower or bath, can potentially be used as an energy source.
- Today, the central energy plant delivers heat and cooling to three of the municipality's administrative buildings, including the main swimming pool in Stavanger. The central energy plant is based solely on local renewable energy sources and will reduce the municipality's CO_2 emissions by at least 75 % compared to previous solutions.
- The central energy plant is based primarily on heat pump technology and heat exchangers. The sewer tunnel is equipped with 100 heat exchangers, extracting heating and cooling from the sewer.
- In addition to the energy from the heat pumps and the wastewater, the central energy plant is supplied with additional energy sources. 200 m^2 of solar collectors on the roof of the public swimming pool, and heat recovered from the showers in the swimming pool. On extra cold days, the energy plant uses climate-neutral biogas as a peak-load extracted from the same energy source, the sewer.
- One of the goals of the Triangulum project is to be able to replicate the solutions trialled in the lighthouse cities in other cities. With sewage as a potential energy source, the project has a high carry-over value in Norway and Europe.

Credits: Triangulum/PlayDesign

Energy management in 100 homes

- The main objective was to integrate ICT-based solutions for efficient energy use through smart gateways (data hubs) for use in both residential and public buildings.
- Most of the 100 homes had smart lighting and heating control installed, and a separate screen in the home where the occupants can control their energy use and also make use of open data (traffic information etc.) for decision support.

Smart solutions in public buildings

- Lyse has also been given the opportunity to try out smart solutions in buildings owned and operated by the municipality of Stavanger. Kvaleberg school and Bergåstjern nursing home were chosen for this.
- At the school, Lyse installed energy management and air quality measurement in the gym, while Bergåstjern had lighting and heating control installed in 8 rooms in the rehabilitation department.
- For Bergåstjern, this makes it easier for the staff to cater for residents who are often sensitive to temperature fluctuations.

Website

www.triangulum-project.eu

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 646578