

DENMARK¹

Context

The Danish Hedensted Municipality, which used to cool its computer servers using regular ventilation, moved to a new solution using a technology through which it can re-use the heat generated by the servers. The heating system collects the excess heat from servers and re-uses it for heating and hot water through the existing heating system of a building.

Objectives

The objective was to invest in solutions that save CO₂ and create financial savings.

Impact and monitoring

The system is both environmentally friendly and economically viable. Heating costs are reduced when the excess heat is recycled. Also, less CO₂ is emitted as other sources of heat and refrigeration are limited. Moreover, the solution is based on natural refrigerants that do not pollute the environment.

Hedensted Municipality calculated that it saves approximately DKK 73 000 annually in cooling and heating expenses. With a purchasing and assembly price of DKK 400 000, the system has a payback period of approximately 5.5 years.

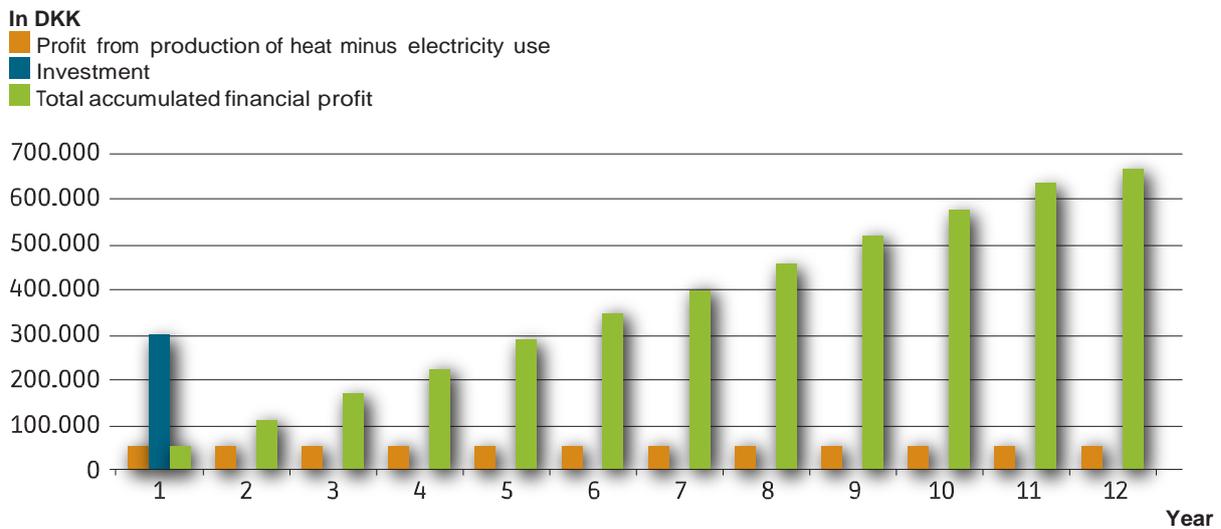
Roughly 700 kWh is generated from the servers every day. This corresponds to the daily electricity consumption of 24 households and it satisfies 50% of the City Hall's heating need during the winter months. When the outdoor temperature increases, the system provides up to 75% of the City Hall's heating. Overall, Hedensted Municipality saves approximately 10 000 litres of oil a year which corresponds to an annual saving of 28 tonnes of CO₂. Also, the income from heat recycling is greater than the cost of the total electricity consumption of the system.

Key lessons learnt

Hedensted Municipality used functional performance-based criteria instead of describing traditional cooling systems in the tender documents. This made it possible for the market to find an innovative solution to save money and reduce CO₂ emissions and resource consumption. New solutions created new jobs and generated savings.

1. Case study submitted by the Ministry of the Environment, Denmark.

Profits under Hedensted Municipality's new heating and cooling system



Source: Ministry of the Environment, Denmark.