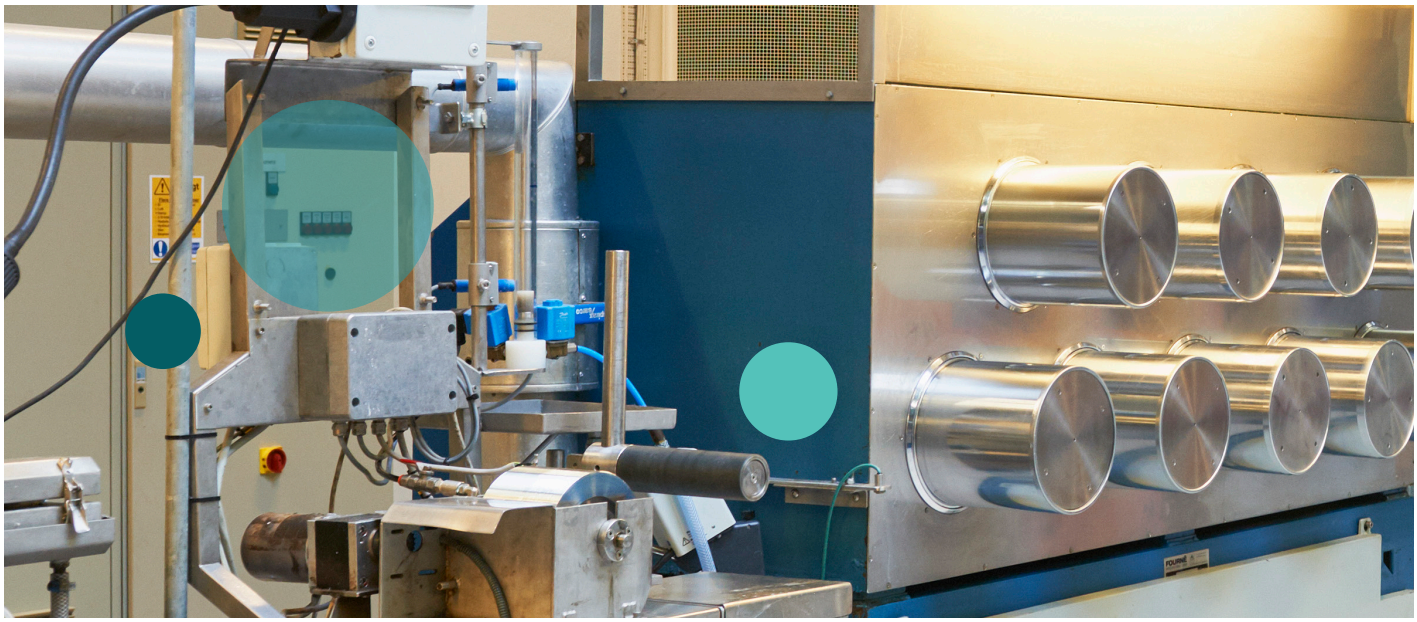

HEAT RECOVERY IN VENTILATION SYSTEM GENERATES SUBSTANTIAL SAVINGS

Fertin Pharma A/S produces medicated chewing gum. This imposes high demands on ventilation and this was a major item in the company's energy accounts. The company therefore implemented extensive renovations and invested in a brand new system with heat recovery. This has resulted in substantial savings.

Fertin Pharma A/S, Aarhus

Production
Medicated chewing gum

Initiative
Heat recovery in ventilation system

Result
Annual energy savings of 1.65 GWh or DKK 900,000 (EUR 120,000)

Economy

1.3 GW Annual natural gas savings	900,000 DKK Annual savings
335 MWh Annual electricity savings	2.4 years Simple pay back period

The result

- Energy savings of 1.3 GWh of natural gas and 335 MWh of electricity
- Corresponds to annual savings of approx. DKK 900,000 (EUR 120,000)

How much did it cost?

Total capital investment was DKK 2.8 million (EUR 190,000). After energy subsidies, there is a simple payback period of 2.4 years.

Why was the project carried out?

Fertin Pharma A/S in Vejle, Jutland, produces nicotine chewing gum categorised as a medical product. Fertin Pharma A/S therefore has strict requirements for air humidity and room temperature in its production areas. Furthermore, odour and dust must be removed for health and safety reasons.

This places great demands on ventilation in virtually all areas of the company. The aim of the project was therefore to examine whether it is possible to recirculate air and recover heat in the ventilation systems.

How was the project carried out?

Fertin Pharma began the process by checking the rooms in the factory one by one to assess whether the air could be recirculated. If recirculation was not possible due to dust or odour, the air had to be released through a filtering plant with recovery of heat from the exhaust air via a heat exchanger.

The solution was a new ventilation system as well as refurbishment of an existing ventilation system. The new ventilation system, with an airflow of 45,000 m^3 per hour, replaces several older ventilation systems with local exhaust ventilation and injection.

Another ventilation system was converted and fitted with a heat recovery function. Heat recovery takes place through direct recirculation of air from the rooms and through transfer of the heat from exhaust air to injection air via a liquid-coupled heat recovery surface. The new ventilation system thereby replaces an entire ventilation system that had no heat recovery.

What were the results of the project?

Conversion of several older ventilation systems and installation of a brand new ventilation system with heat recovery will save Fertin Pharma around DKK 900,000 (EUR 120,000) a year. The new ventilation system has an expected lifetime of at least 20 years. The return over the next 20 years is thus approx. DKK 18 million (EUR 2.5 million).

Overall, optimisation of ventilation at Fertin Pharma will cut the company's annual heating bill by DKK 672,000 (EUR 90,000). In addition, the new ventilation system will result in annual electricity savings of DKK 218,000 (EUR 30,000), because the system is energy-efficient and has fans, blowers, air transport and demand control. Finally, Fertin Pharma will use less energy for dehumidification because more air is being recirculated.

The investment was DKK 2.8 million (EUR 380,000), resulting in a simple payback period of 2.4 years after subsidies.

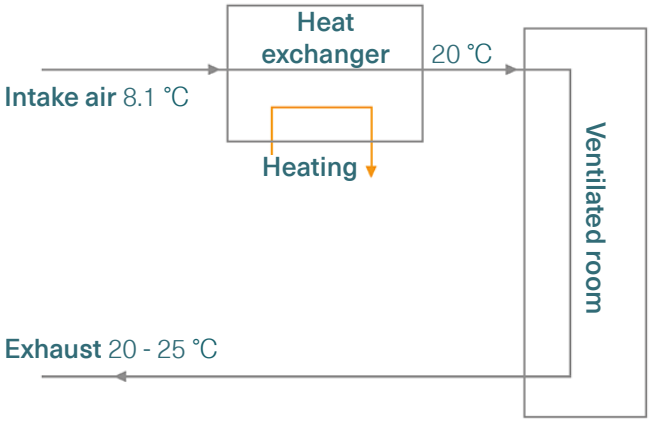

Figure 1 Previsous ventilation system at Fertin Pharma A/S without heat recovery

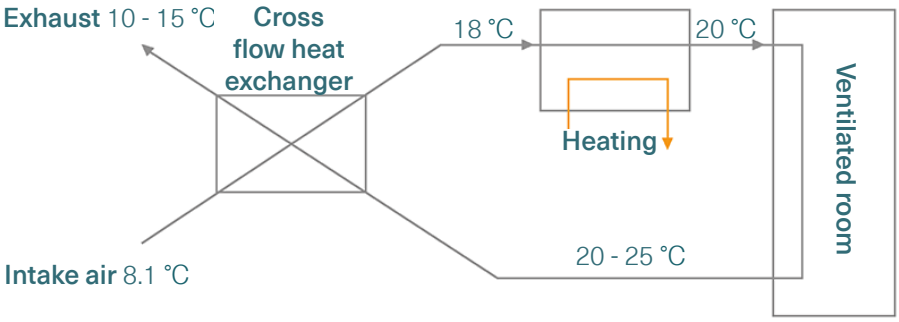

Figure 2 New ventilation system at Fertin Pharma A/S with heat recovery

For further information, please contact:
Center for Global Cooperation
Phone: +45 33 92 67 00
ens@ens.dk