

# STEAM AUDIT – Denmark. Ardo A/S.

## FACTSHEET



### Companies connection to energy efficiency

For many years, the company has worked to target the environment and has an ambition they call "Green Ambition". The environment of the company is not only about the environment associated with the product, but equally about the energy and water used in connection with the production

### Steam system

The nominal capacity of the steam system, which consists of one boilers, is about 3.9 t/h. The nominal steam pressure is 7 bar. The maximum needed pressure level is 7 bar. When there are no need for steam for the main process, the pressure level will be 3.5 bar. The boilers use LPG gas as fuel. The main consumers are the blanching machine, building heating exchanger. Most of the condensate returns from the consumers, but there are also consumers like the blanching machine that can use the steam directly if the built-in heat exchanger cannot keep up with the production.

### Steam system problems identified

The steam system is in a good overall condition and several energy efficiency measures have already been implemented during the last years, for example, there was a fuel switch from oil to natural gas a few years ago.

### Proposed energy saving measure, investments, and expected results

In connection with the mapping of the steam system, it was found that the company had a major energy loss in the steam system. The steam system is designed for several machines and a greater steam consumption. Due to changes in production, there is now only production of the main steam consumer for approx. 3 months a year, which means that the steam distribution system is oversized for much of the year. The loss of steam vapour is about 70% and a conversion to decentralized hot water systems will result in a saving of 1.9 GWh.

### Implemented proposed energy saving measure, investments and results achieved

The investment for installing local hot water boilers is rated at 33,000 € and the repayment period is only 1 year.

### Achieved and/or expected Non Energy Benefits (NEBs) as result of implemented and/or proposed measures and investments involved

The projects reduce the heat losses in the steam system, which means less maintenance of the steam system, fewer watch keeping hours and a lower consumption of chemicals and salt to the water treatment system, which overall will also lead to lower CO<sub>2</sub> emissions.

### Involvement of internal stakeholders

The management of the company is highly interested in implementing measures to achieve cost-effective energy savings.



**ARDO A/S**

[www.frigodan.dk](http://www.frigodan.dk)

**4840 Nørre Alslev  
Denmark**

**Food**

**Vegetables**

**47-60 employees**

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**Total (estimated) Investment**

**€ 33,000**

**Total (Estimated) Savings**

**€ 78,800 p/y**

**1,900 MWh p/y**

**Non Energy Benefits**

**Lower cost of boiler chemistry  
Reducing of maintenance cost  
and hour.**