

Summary

The Steam Up project aimed to assess the substantial and easily accessible energy-saving potential of steam systems in industries in order to support the EU objectives for energy efficiency. Steam Up presented concrete business cases to decision makers, based on 75 detailed audits from several European countries, ten of which have been executed in Austria.

Energy experts were trained in the Steam Up methodology and body of thoughts, as well as energy managers, end users, technical staff from all types of companies of various size and from all over the country. Moreover, the introduction of a capacity-building programme for technical staff and consultancies ensures a good return on investments.

Introduction to Steam Up

In all sectors of the European industry, there is a considerable and achievable energy-saving potential. Thus, the objective of the Steam Up project was to increase the energy efficiency of steam and to contribute to the CO₂ reduction by saving 55.6 GWh per year in the industry throughout Europe. The European industry has an energy-saving potential of 13%, 75% of which is found in industries that use steam and electrical motor systems. In general, these are large energy-intensive industries like chemicals, paper and pulp, food, and textile services. Steam Up therefore focused on these industries in Germany, Spain, Greece, Austria, the Czech Republic, Italy, the Netherlands, and Denmark.

Unique Selling Points of Steam Up

What made the Steam Up project different from other approaches are

- the focus on steam systems and potential alternatives,
- the attention to non-energy benefits (NEBs),
- the design and use of an energy management centre,
- the effort of bridging the gap between the technical staff and the decision makers (managers, board of directors),
- the aim to influence cultural behaviour and induce a cultural change,
- and the intention to increase the companies' commitment to energy efficiency (ISO50001, environmental policy, etc.).

Audits: savings and Non Energy Benefits (NEBs) achieved

In Denmark, 10 audits were carried out at medium and large companies in the sectors food, service and paper. The total energy saving potential of all audits is 5,71 GWh and expressed in money € 397,998 a year. Apart from the energy savings, the following Non Energy Benefits will be gained after implementation of proposed measures (for an exhaustive enumeration of NEBs visit our [website](#))

1. Reduced maintenance costs
2. Less CO₂ or other GHG emissions
3. Health and safety
4. Competitiveness increases
5. Economical (financial increase)

Audit fact sheets for Denmark and for other countries are available on the website.

Industry sectors audited:

1. Food
2. Service
3. Paper

Type of companies:

- 6 SMEs
- 4 Large enterprises

Total (estimated) Investments

€ 287,862

Total (estimated) Savings

€ 397,998 p/year

5,71 GWh p/year

Most important Non Energy Benefits

Less CO₂ or other GHG

emissions

Economical

Reduced maintenance costs

More information for Denmark

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Best practices in Denmark

In Denmark, there has been focus on optimizing steam systems for many years. This means in most of the cases steam has already been converted to other supply forms and optimized. For example, 8 out of 10 companies has a fixed service agreement on steam traps. At the other two companies installations were so small that the operating staff quickly would detect if something were wrong. In the project, there has been close cooperation with suppliers of water chargers and valves to assess potential steam savings. It can also be mentioned that the insulation condition of both boilers and steam installations was very good.

Capacity building and expertise Denmark

In Denmark were in total 66 energy experts trained in a total of 6 days in the Steam Up methodology. These yet highly qualified and experienced energy experts underline the Steam Up project body of thoughts.

The trainees primarily were students who had various backgrounds, and extensive knowledge, which met the requirements for attending the trainings. Their affiliated companies are small to medium sizes, and covers several of industries like food, paper, power etc.

Conclusion

Steam Up has been a very exciting project for Denmark to participate. Despite the fact that there has been focus on optimizing and energy savings for many years, it was still possible to find energy savings and NEB¹ at most of the visited companies. Together with the educated energy experts, Denmark is now well equipped to energy optimize in companies with steam systems