

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 Austria ten audits were carried out at eight medium sized and two large companies in the sectors industrial laundry, food (brewery, dairy), and printing. The total energy-saving potential of all audits is 14 GWh, which expressed in monetary terms amounts to 570,000 EUR p.a. From these, measures corresponding to 2.5 GWh energy savings or 160,000 EUR money savings have already been or will be implemented during this or the next year.

Apart from the energy savings, the following non-energy benefits will be gained after the implementation of the proposed measures (for an exhaustive enumeration of NEBs, please visit our [website](#)):

Industry sectors audited:

1. Industrial laundry
2. Food (brewery, dairy)
3. Pharma
4. Others (waste incineration, textile printing, wall panels)

Type of companies:

- 8 SMEs
- 2 Large enterprises

Total (Estimated) Investments

€ 2.2 million (suggested in audits)

€ 0.7 million (will be implemented)

Total (Estimated) Savings

€ 570,000/a (suggested in audits)

€ 160,000/a (will be implemented)

14 GWh/a (suggested in audits)

2.5 GWh/a (will be implemented)

Most Important Non-Energy Benefits

Increased security of supply

Reduced maintenance costs

Positive marketing effect

More information about Austria

www.steam-up.eu

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1. Increased security of supply (e.g. by replacement of old, oversized steam boilers)
2. Reduced maintenance costs
3. Reduced water consumption (e.g. feed water)
4. Easier operation
5. Reduced emissions (CO₂, NO_x)
6. Marketing effect

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

Best Practices in Austria

In one of the audited companies, the steam boiler was replaced by a new one as a result and, furthermore, heat recovery for the reduction of the steam consumption was installed. Another company already insulated its feed water tank.

Several other companies are planning investment in a flue gas heat exchanger, reduction of oxygen level, heat recovery systems for heating purposes or feed water pre-heating, improvement of condensate systems, or new steam boilers during this year or the next few years.

Collaborations gained included the companies providing the audits (sattler energie consulting, Allplan) and the system providers supporting AEA as trainers during the trainings (Eichler Flow Technology, Spirax Sarco, Bosch Industriekessel Austria) as well as the planners and specialized consultants (EDTMAYER Systemtechnik).

Furthermore, several industrial companies had been supported in the analysis of their steam system.

Capacity Building and Expertise in Austria

In Austria 39 energy experts were trained in three workshops including by detailed home work (corresponding to 12 hours of training) in the Steam Up methodology.

Participants came from large as well as small companies. Two thirds of the participants were consultants, one third were industrial energy managers from branches like paper industry, hospitals, dairies, and pharma industry.

Steam Up trainings will be available in Austria within the klimaaktiv network, the country's climate protection initiative.

Conclusion

The Steam Up project was very successful in bringing different stakeholders (industry, consultants, planners, and steam equipment providers) together. During the project several optimizations of steam systems took place in Austria, which, however, were only partly documented in the Steam Up project as different stakeholders involved in this project (trainings and audits) also did several other steam optimizations. In general, the Steam Up project increased the awareness level of possible steam optimization profits in industry and service companies.