

## 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 CO<sub>2</sub> 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 the Czech Republic 10 audits were carried out at large companies in the sectors Pulp production, Brewery, Coke production, Dairy, Sugar plant, Textiles, Tyre manufacturer, Meat Processing, Machinery, Facade/Roofing manufacturer. The total energy saving potential of all audits is 26 190 MWh per year and expressed in money € 647 980 per 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 emissions of pollutants and CO<sub>2</sub> emissions at the local level
2. Reduced water consumption for steam generation
3. Reduced chemicals for water supply
4. Environmental protection
5. Economical (financial increase)

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

## Industry sectors audited:

1. Pulp / paper
1. Pulp production
2. Brewery
3. Coke production
4. Dairy
5. Sugar plant
6. Textiles
7. Tyre manufacturer
8. Meat Processing
9. Machinery
10. Facade/Roofing manufacturer

## Type of companies:

- 10 Large enterprises

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## Total (estimated) Investments

€ 4 853 000

## Total (estimated) Savings

€ 647 980 per year

26 190 MWh per year

## Most important Non Energy Benefits

Reduced emissions of pollutants and CO<sub>2</sub> emissions at the local level.

Reduced water consumption for steam generation.

Reduced chemicals for water supply.

Environmental protection  
Modernisation of production process.

Stabilization of the production process.

Economical (financial increase).

## More information for Czech Republic

[www.steam-up.eu/cs](http://www.steam-up.eu/cs)

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### **Best practices in the Czech Republic**

The pulp producer made significant changes in the production of classical sulphite pulp for the production of viscose pulp. This change was associated with extensive investments in technology and had a great influence on energy consumption of the company. The consumption of coal for the production of steam was gradually replaced with renewable energy sources at the end of 2013 and the company became electricity supplier instead. New technology has enabled better utilization of wood mass, lower energy costs and increased process efficiency of heat production yearly by 12%.

### **Capacity building and expertise Czech Republic**

In the Czech Republic were in total 51 energy experts trained in 36 hours in the Steam Up methodology. There yet highly qualified and experienced energy experts underline the Steam Up project body of thoughts. Most energy experts came from audited companies, remaining from large companies or several energy experts employed in SME.

### **Conclusion**

The audit campaign was only beneficial. The steam Up project was very interesting for companies, bringing lots of benefits and giving energy savings measures or recommendations what can save significant amount of money. Other pluses are Non Energy Benefits (NEBs) and side effect like improving of working conditions. Regarding the main organizational results we are experienced with the willingness of the top management to participate on the project.