

## European project “Energy Efficiency in Industrial Kitchen – leading the way to sustainable production”

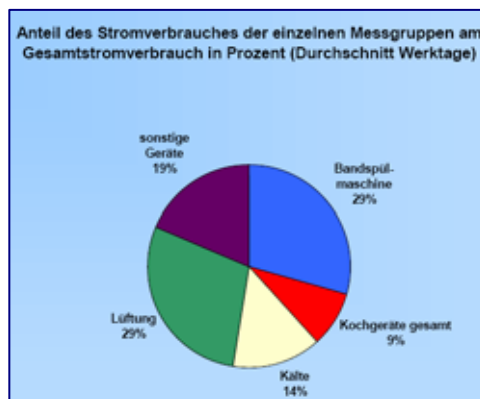
A team of five European Companies from Finland, Greece, France, Slovakia and Austria have decided to deal with energy efficiency topic in industrial kitchens. The companies developed a project named “Energy Efficiency in Industrial Kitchen – Leading the Way to Sustainable Development”, which was supported by the European Commission Program SAVE II.

The main objective of the project was to monitor the current situation in kitchen sector and identify measures without or with low cost as well as estimate savings potential for different kitchen types.

### Why energy efficiency in industrial kitchen?

The most effective way of cutting energy costs for operation of small and large industrial kitchens is implementing energy efficiency measures. Were you aware that operation costs can be reduced up to 40%? Simple operational measures alone – such as better organization of cooking processes or switching of lights when no one is in the room – could bring considerable savings up to 10-15% without or with low investment.

### Do you know, what equipment in your kitchen needs most energy?



Picture: Break down of electricity in typical hospital kitchen.

The break down of energy consumption varies for different types and sizes of kitchens. The main areas of energy consumption in industrial kitchens are:

- Preparation, production and heating of dishes
- Cooling and chilling (refrigeration)
- Air-conditioning and ventilation
- Indoor lighting
- Space heating
- Hot water preparation
- Dish washing

Implementing energy efficient measures should focus on the areas of highest energy consumption.

### Do you know what additional benefits bring energy efficient measures implementation for kitchens?

In addition to energy savings the implementation of energy efficiency measures can produce additional benefits, for example:

- Higher quality of prepared meals
- Improved working conditions in kitchen e.g. indoor air quality, thermal comfort
- Better control and regulation of devices

**Good example on energy efficiency measure implementation:**

*Type of kitchen:* Company kitchen *Number of meals per day:* 1,000

*Type of action:* Installing energy saving ventilation hood instead of “normal hood”

Energy consumption before reconstruction [kWh / year]	Energy consumption after reconstruction [kWh / year]	Energy savings [kWh / year or %]	Pay-back time [years]
115,400	42,200	73,200 (63%)	1.09

WP 4.1. Publication of a brochure on energy efficiency technologies in industrial kitchens, that includes the case studies, best practices and a decision-maker tool, in English language. The publication will be a CD/brochure.

WP 4.2. National workshop realisation. Workshops directed for local interest groups will be realised in all project participant countries. In the workshops the brochures / CD’s will be handed out to the participants.

**What are the main activities of the project?**

WP1. **Data collection** with the objective of obtaining the state of art of the industrial kitchens concerning energy consumption, energy effective kitchen planning and design, energy effective kitchen technologies, appliances and kitchen services, fire safety, health issues, indoor air quality.

WP2. **Establish a set of indicators for sustainable industrial kitchens** like heating system consumption, cold and DHW water consumption, lighting electricity consumption, technological energy consumption, technological electricity consumption, air-conditioning and ventilation system energy consumption etc.

WP2.1 **Selection of case studies** with energy efficiency design and energy efficient technologies of industrial kitchens, already existing in European Countries

WP2.2. **Performance of Audits** in new and existing industrial kitchen (one for each participant country)

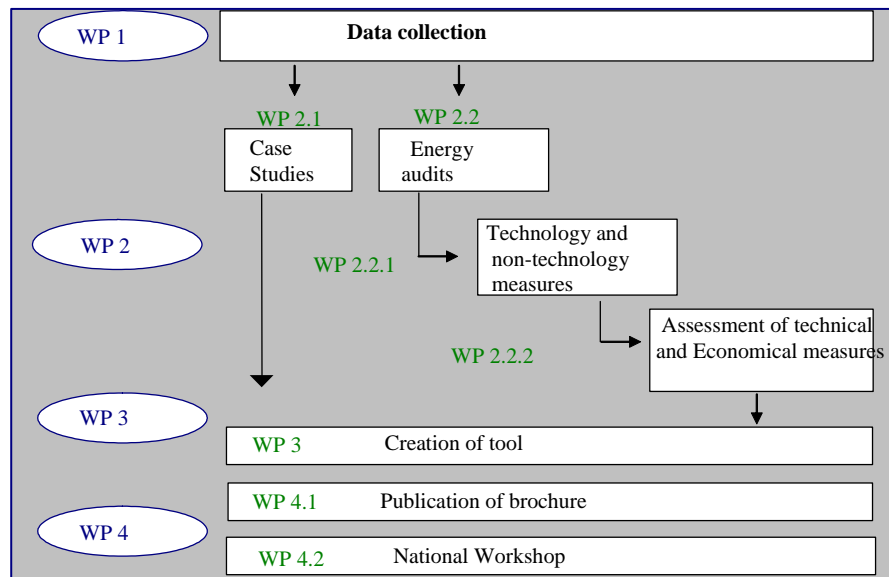
WP 2.2.1. Identification of technology and non-technology measures to be implemented

WP 2.2.2. Assessment of technical, economical, market potential and barriers of suggested measures. Working groups with relevant stakeholders

WP3. **Creation of a tool** with the objective of facilitating the integration of RUE and efficiency technologies for industrial kitchens decision-makers and target groups. The tool will use all the information gathered in the previous phases of the work program.

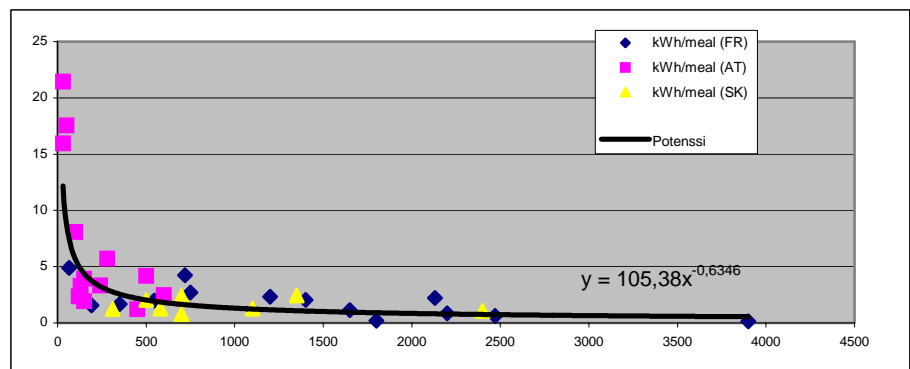
WP 4. **Dissemination** of results and knowledge obtained in this project to a targeted interest groups

### Project Scheme



### What are the main results?

- Review of energy consumption in industrial kitchens in all participating countries and cross-country comparison



Energy consumption in each country in the kitchen sector (will be possible to make after WP1 and WP 2.4 were finished)

- Three Audit reports per country
- A set of technological and non-technological measures supporting energy saving kitchen services, indoor air quality, safety and health in industrial kitchens

- Analysis of technical, economical and market potential and barriers of suggested measures.

*Graph – comparison of potential*

*A few words on barriers*

- Collection of case studies as a good example of implementation of energy efficient measures
- Increasing awareness of the sustainability issues connected to kitchens in all participating countries
- Decision maker tool published on CD and in HTML version on the web-site of each project partner.

### Who are the target groups and key actors?

- Technology suppliers
- Kitchen owners and operators
- Representatives of public/municipal sector as operator of public kitchens such as hospital and school kitchens
- Architects/planners/engineers
- Consultants
- All interest group

### Project partners

If you need to know more about the result of the project, you can contact each of the project partners or download more detailed material on website of the project partners.

Leader of the project:

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