Towards more energy efficient companies
Focus on various industry sectors

The ICCEE project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement no. 847040.
The cold chain supply is crucial: the lack of refrigeration creates food losses, which could feed up to **90 million people**! An effective cold chain supply could avoid up to 15% of global losses through better food security and reduction of GHG emissions.

We can have an efficient cold chain by reducing energy consumption, improving system **efficiency**, applying low global warming potential on natural refrigerants and use **renewables**.

**ICCEE: Energy efficiency and strategies in logistics and storage companies**

Ina Colombo-Youla, The International Institute of Refrigeration

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**ICCEE: Energy efficiency and strategies in logistics and storage companies**

Simone Zanoni, University of Brescia

ICCEE consists of a series interrelated activities, which serve to develop a **tailor-made tool** and **training courses** to increase cold supply chain energy efficiency. The project is facilitating the food and beverage sector cold chains to undertake **energy efficiency** measures after carrying out supply chain energy assessments.

**Access presentation**

**ICCEE Pillars**

**ICCEE Toolbox**

7 tools supporting:
- Energy flows
- Benchmarking
- Life cycle impacts

**Capacity building programme**

- E-learning platform
- National trainings + Workshops

**ICCEE Goals**

- **Facilitation**
  - Promote energy efficiency measures with a focus on SMEs

- **Holistic Perspective**
  - Going beyond individual company perspective

- **Accelerate Investments**
  - Using developed formats to accelerate energy efficiency opportunities investment

Read ICCEE’s peer reviewed and scientific papers here!

Example of the **ENOUGH Project** with the European Food Chain Supply: it will identify how to make the food industry become net zero by 2050.

**Access presentation**
Energy efficiency measures best practice factsheets

Multi-stage refrigerant systems
Smart Monitoring  Free-cooling
Refrigeration System Improvement

NEBs (non energy benefits)

- Play a central role bringing value to energy efficiency by adding positive side effects of energy efficiency measures (EEMs) besides reduced energy costs and CO2 emissions.
- Improvements in production, operation and maintenance, working environment, public image, reduced emissions.
- Not traditionally included in energy efficiency implementation but could lead to higher acceptance and implementation.

Access presentation
Innovation and energy efficiency in the cold chain: lessons learnt and perspectives of the food & beverage industry

Maurizio Notarfonso, Federalimentare Servizi

A tour of the ICCEE toolbox
Beatrice Marchi, Brescia University

7 tools, covering various topics related to energy efficiency in cold supply chain performance supporting the mission of the project. Discover the tools here.

Cold supply chain model

- Life cycle assessment
- Benchmarking non-energy benefits
- Multicriteria analysis tool
- Life cycle costing
- Non-energy benefit evaluator
- Guidance tool

Access presentation

Innovation and energy efficiency in the cold chain: lessons learnt and perspectives of the food & beverage industry

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Lessons learnt

- The cold supply chain is one of the most energy-intensive systems within the food and beverage sector whilst there is a limited understanding of its large energy efficiency potential and economic advantages that can be obtained from energy savings measures.
- Energy costs can be reduced by 50% if refrigeration plants are maintained and well operated.
- Multiple benefits should be taken into consideration by producers.
- A holistic approach is needed to increase decarbonisation and maximise efficiency of the food industry.

Access presentation
Capacity building, would you like to skill-up?
Ignacio Macías, Escan Energy Consulting

National trainings

Energy outlook in the food and beverage sector

IPMVP - Measurement and Verification Protocol

Energy Performance Indicators (EnPIs)

Supply chain management and industrial symbiosis

EU Workshops

Provide the principles of the tools and how to extract valuable information that interferes with the cold chain activities.

Cooperation between different stages of the cold chain to reduce energy consumption.

Panel 1

with Marine Perrio, IEECP
Christine Weiker, ECSLA
Lisa Neusel, Fraunhofer ISI
Karina Veum, TNO

Recommendations from various project and sector perspectives

- Comprehensive approach to barriers.
- Engagement and accessibility are key, need for constant dialogue and involvement.
- Challenge of not having enough capacity to monitor data.
- Trainings and flexibility are crucial to gain trust, have several meetings with other companies from similar industries helps the process.
- Activating SMEs and organising them together with best practices and training materials, there is still a lack of culture to work together.
- Adding renewables is key for a bigger change, pushing only for energy efficiency is not enough.
- No "one-size fits all" solutions, we need targeted and tailored trainings.

Free E-learning platform, to get training on energy efficiency in food and beverage cold supply chains for experts and non-experts.

Access presentation

Access sister projects presentation // ECSLA presentation
Main conclusions

- Peer to peer learning is a boost for SMEs (findings from DEESME project)
- Solutions already exist for national authorities and need to be targeted and replicated
- Many countries have limited measures for transposition
- Adding a focus on non-energy benefits is crucial
- Question on how to oblige, monitor and make savings for all companies when they do not always have enough resources and do not implement measures after audits
- Importance of segmenting groups
- Energy management systems and how maintenance has a key role to play in energy efficiency
- Policy goals: integration of energy efficiency in daily business practices and decision making in link with operation and strategy
- Push for EMS within SMEs to close the gap of communication barriers and have a common language
- Solutions need to be tailored for SMEs

Through expert analytical tools and dedicated stakeholder capacity building programmes, ICCEE accelerated turning energy efficiency opportunities into actual investments, with a special focus on supply chains of the food and beverage sector, involving European small and medium sized enterprises (SMEs).

Visit the project on www.iccee.eu