



**“Energy efficiency as driver for the competitiveness of the Italian agri-food industry”**

***Rome, EU-MERCI Conference  
23 February 2017***

## ITALIAN F&D INDUSTRY BUDGET AND FORECAST

(estimates in euros and % variation on previous year)

	2015	2016 (estimate)
<b>TURNOVER</b> (value)	€ 132 billion (0%)	€ 132 billion (0%)
<b>PRODUCTION</b> (quantity)	-0,2%	+0,8%
<b>NUMBER OF COMPANIES</b> (with more than 9 employees)	6.850	6.850
<b>NUMBER OF EMPLOYEES</b>	385.000	385.000
<b>EXPORTS</b>	€ 28,9 billion (+6,8%)	€ 30,0 billion (+3,5%)
<b>IMPORTS</b>	€ 20,8 billion (+2,0%)	€ 20,4miliardi di euro (-1,5%)
<b>TRADE BALANCE</b>	€ 8,1 billion (+19,1%)	9,6 billion (+15,7%)
<b>OVERALL FOOD CONSUMPTION</b>	€ 209 billion (real variation 0%)	€ 230 billion (real variation 0%)
<b>RANK IN ITALIAN INDUSTRY</b>	2 <sup>nd</sup> place (13%) after the engineering sector	2 <sup>nd</sup> place (13%) after the engineering sector

# A background: food security and sustainable development

Based on FAO estimation, in 2050, a population of 9 mld will require:

- ✓ to produce **70%** of food in addition
- ✓ to consume **11%** of water for agricultural use in addition
- ✓ to cultivate **120 mln/ha** in addition (in the Developing Countries)

The Italian agri-food industry is approaching these challenges by means of actions in conformity to the **3 pillars of the sustainability** – environmental, social and economic – focused on **4 main areas**:

1. *sustainable supply chain and full exploitation of agricultural raw materials (byproduct)*
2. *Efficient use of the basic resources (energy & water), diffusion of Best Available Technologies (revision Food, Drink and Milk BREF), reduction of emissions (ETS, IED)*
3. *Packaging optimisation (eco-design) and proper management of the post-use packaging (CONAI national system)*
4. *Policies aimed at waste prevention and at promoting sustainable consumption*

# EFFICIENT USE OF THE BASIC INPUTS: ENERGY

## the scenario



As a global outlook, over the next twenty years the current energetic market structure will undergo a deep change (*Study “BP Energy Outlook 2030” on the energy requirements*):

- **+40%** world energy demand
- the energy intensity and diversification of energy sources (with an increase (until 2030) - **from 5% to 18%** - of the contribution from renewable energies)

In this frame, European Commission (EU Plan of Action on the energy efficiency) considers the energy efficiency as:

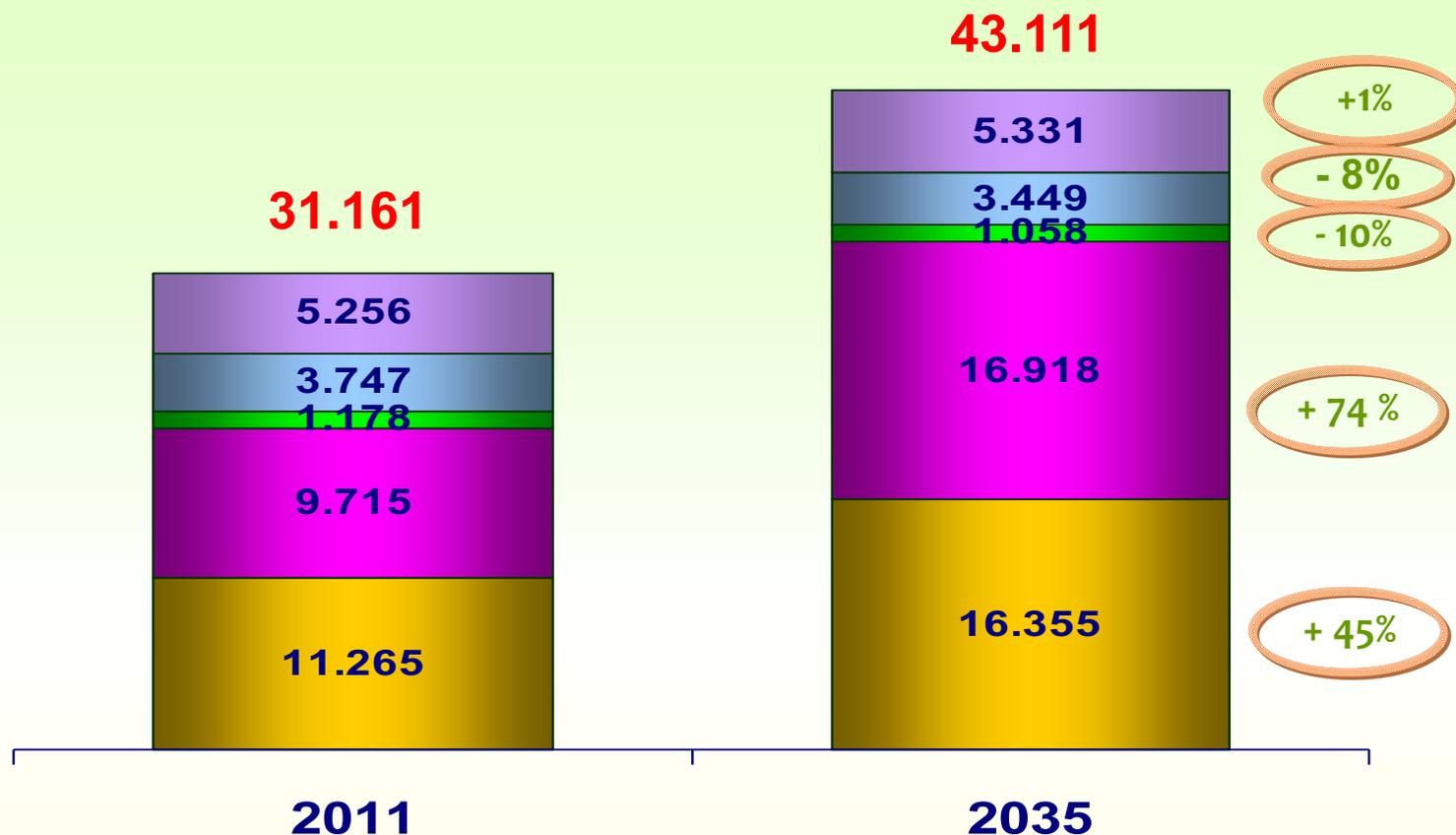
- the **main tool of CO<sub>2</sub> emissions reduction**
- an opportunity to **increase the competitiveness**

# World Emissions: the weight of the «New Economies»

Estimation of emissions increase World 2011-2035

World Emissions CO<sub>2</sub> 2011 – 2035 = + 38 %

Mt CO<sub>2</sub>



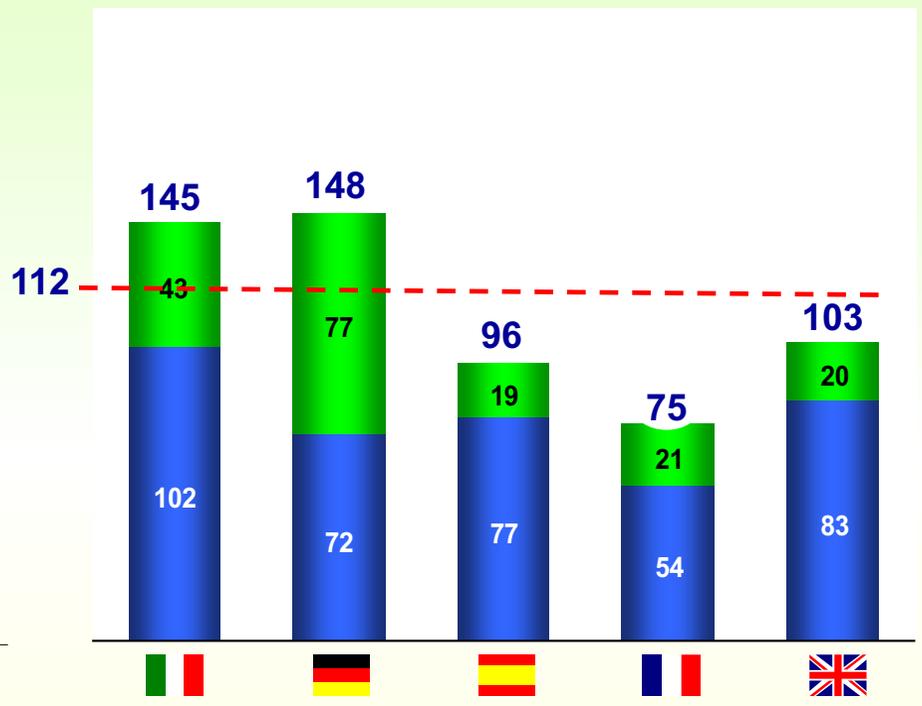
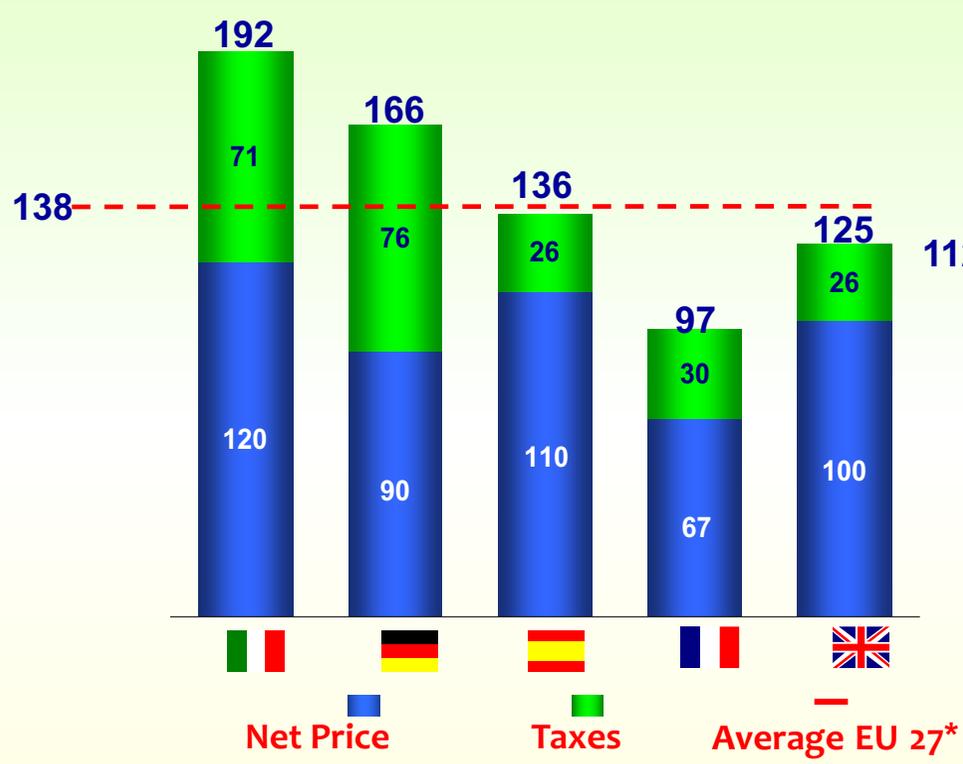
# Energy price: comparison amongst EU countries

## Composition of energy price between net price and taxes in the EU countriesE (2011)

Companies consumption range:  
500 – 2.000 MWh/year

Companies consumption range:  
20.000 - 70.000 MWh/anno

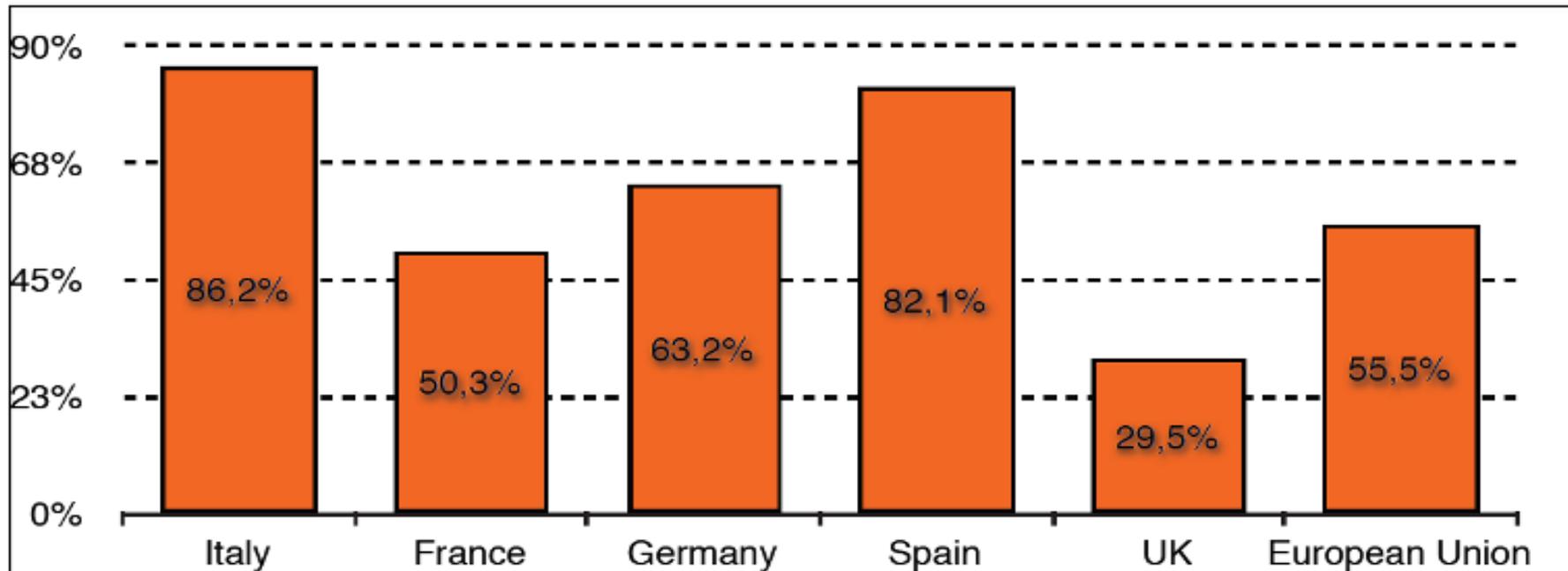
€/MWh



Source: Elaboration Confindustria on Eurostat data

## Energy dependance: comparison among big EU countries

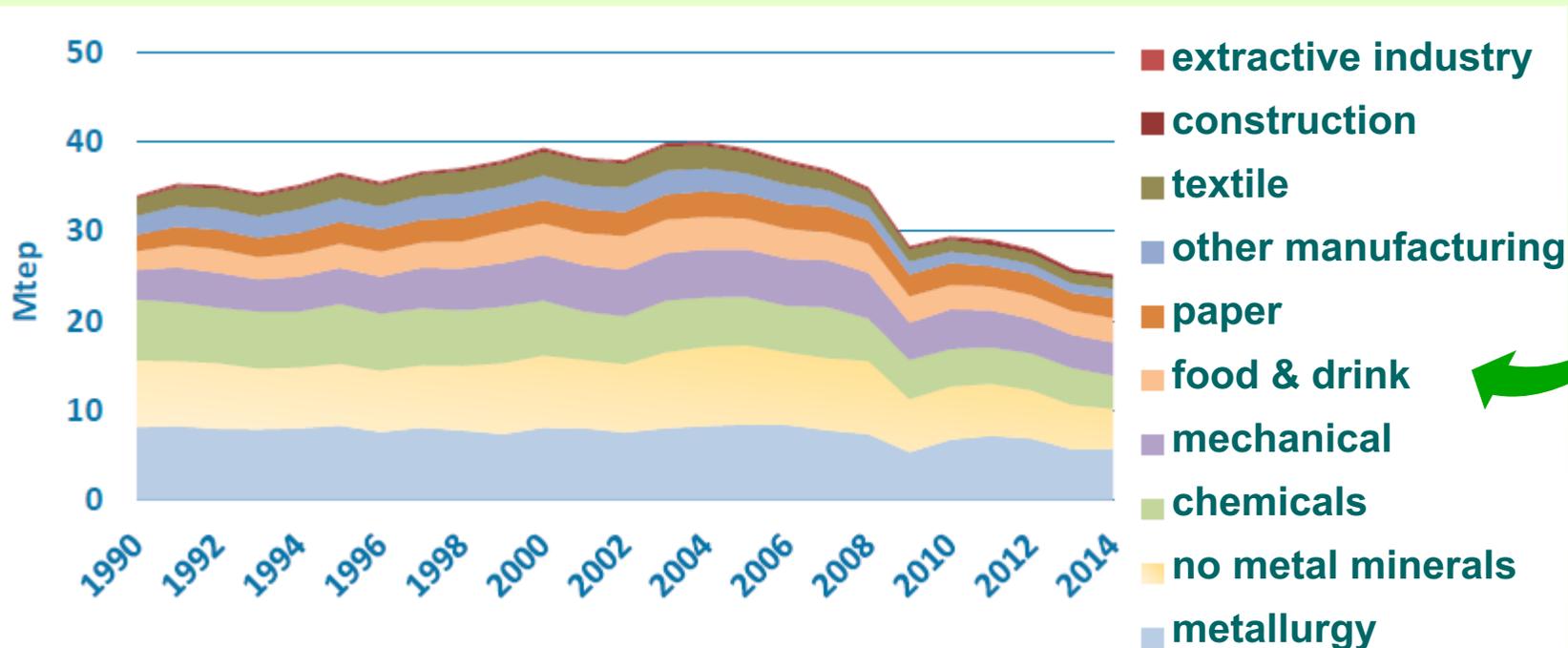
The comparison amongst France, Germany, Spain and UK shows that the Italian degree of energetic dependence from the external supply is always higher



Speech Mr. Alberto Biancardi – from : *“Il costo dell'energia in Italia”* (Member of Authority of Gas and Electric Energy) on [www.museoenergia.it](http://www.museoenergia.it)

## TREND IN FINAL ENERGY CONSUMPTION IN INDUSTRY BY SECTOR

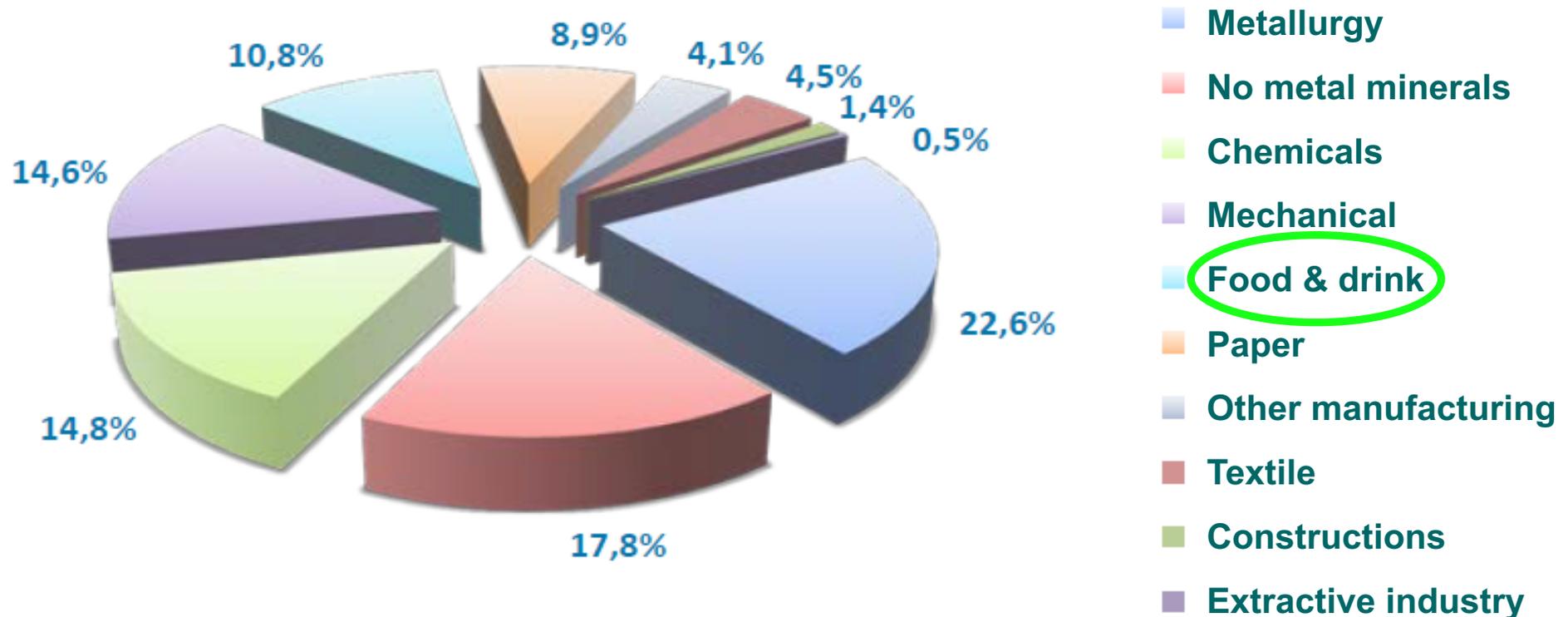
The analysis of the trend in final energy consumption in the Italian industry sectors during the period 1992-2014 registered a growth until 2003, then a decrease for all the sectors, including those more energy intensive as well as the less energy intensive such as the agrifood (-29%)



# Energy consumption: *positioning of the food industry sector*

In 2014 the energy intensive sectors accounted about 2/3 of the total industry consumption (60%). Food industry registered a consumption share equal to 10,8% on the total.

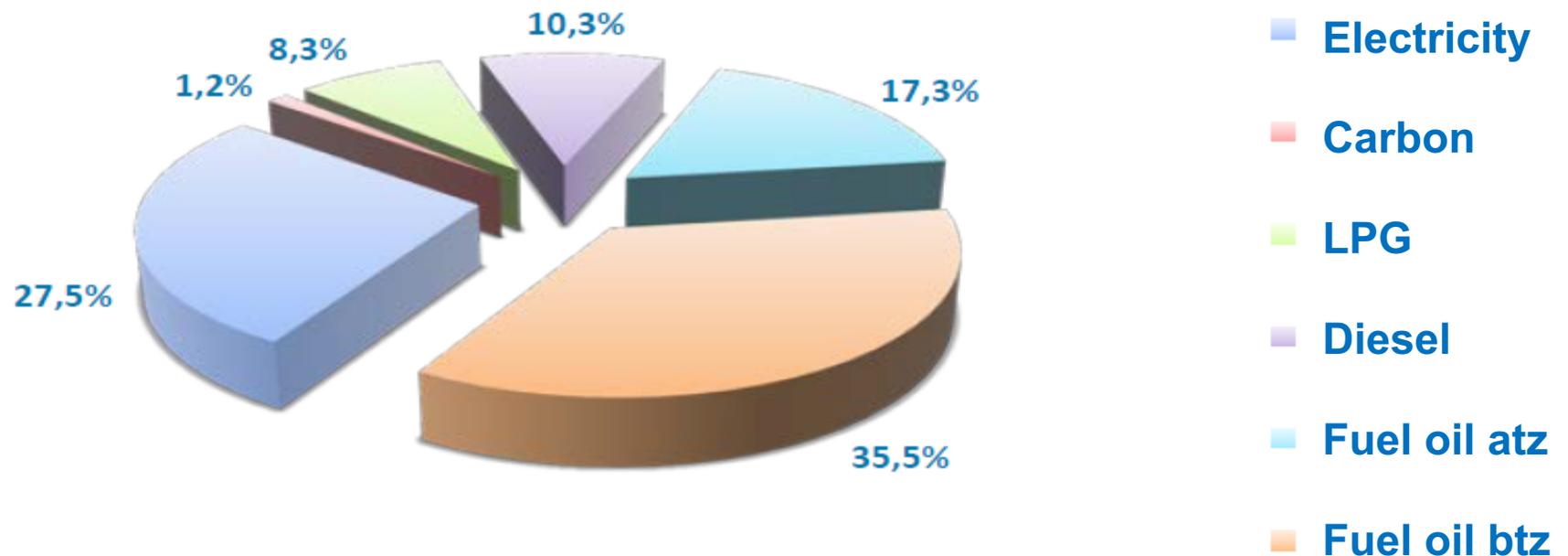
Source: Annual Report on Energy Efficiency RAEE 2016, ENEA



# Energy consumption of the food industry per type of sources

With regard to the energy produced from < secondary > sources, the table below shows BTZ oil fuel and electric energy as the most demanded from the food industry, respectively, 35,56% and 27,5%

Source: Annual Report on Energy Efficiency RAEE 2016, ENEA





# Energy efficiency

## in the *Food & Drink Industry: main features*

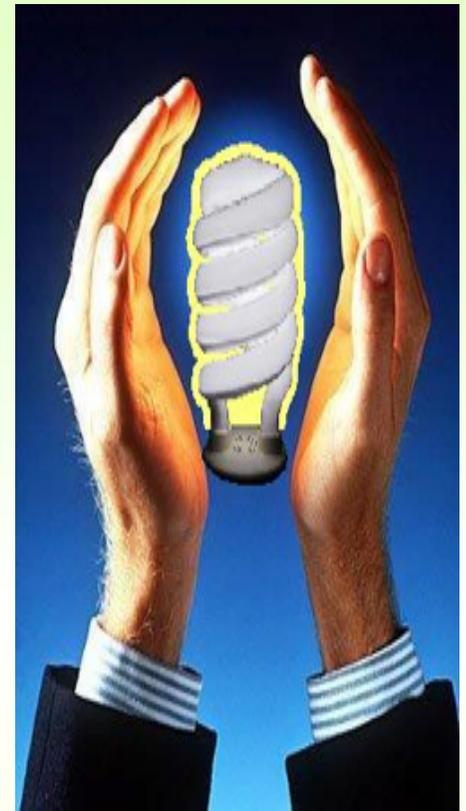
- ✓ Food & Drink industry – except some *energy intensive sectors* – has environmental impacts relatively low in terms of energy consumption and GHG emissions
- ✓ At the same time, energy is one of the main inputs both in the food processing lines and in the agricultural raw materials production
- ✓ The Food industry is suffering higher cost of domestic energy bills than those of major competitors
- ✓ Also in the food & drink industry the good exploitation of potential energy savings combines the environmental targets and the economic sustainability with the mission to reduce the impact of the food-chain

# The concept of Energy Efficiency

- Maximizing the amount of useful final process energy delivered from a unit of purchased energy sources to the plant.
- Minimizing the amount of purchased energy use (fossil fuels plus electricity) per unit of final product.
- Delivering the same result with less energy use.

# The importance of Energy Efficiency: benefits

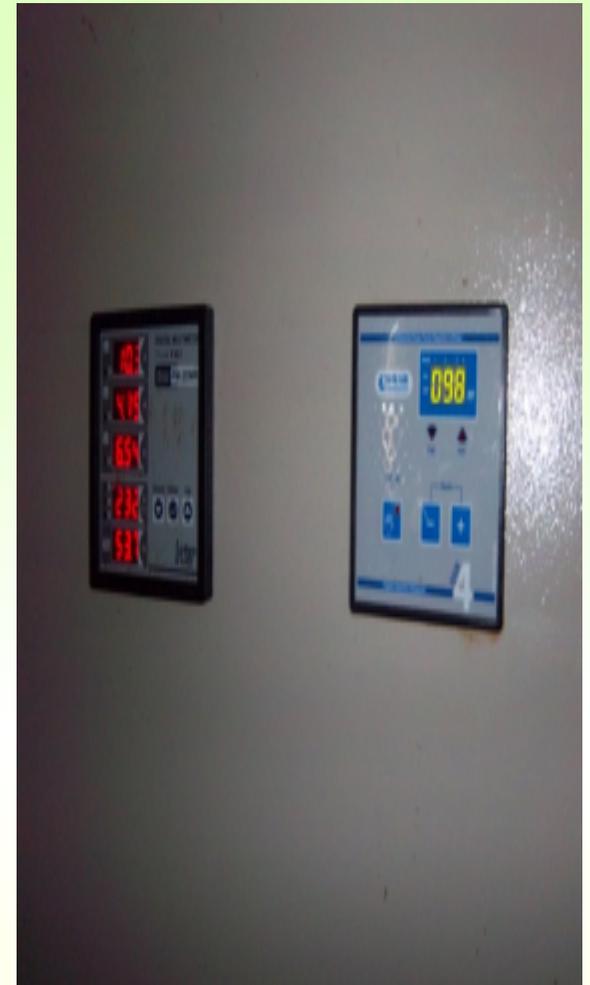
- Reduces energy related production costs.
- Improves competitiveness and profitability.
- Manages risk exposure to energy prices and security of supply.
- Reduces company greenhouse gas emissions.
- Improves environmental footprint and public image of the company in a cost effective way.



# The importance of Energy Efficiency

*Agrofood SMEs need a lot of energy for heating, chilling, freezing, moving and lighting*

- Heat destroys enzymes and microorganisms; removes water further prohibiting microorganisms growth; improves quality and added value of food products
- Chill slows down and Freeze halts completely growth of microorganisms
- Raw materials, intermediate and final products need to be moved around the plant for the production process
- Lighting increases personnel productivity.



# Energy efficiency: the actions of the Food Industry



The fields of action to increase the energy efficiency concern:

- ✓ diffusion of BAT on the management of energy resources;
- ✓ participation in national energy efficiency schemes;
- ✓ evaluation of co-generation, tri-generation and poly-generation potential ;
- ✓ moving to refrigeration technologies less harmful to the ozone;
- ✓ diversification of the energy mix with the use of the renewable energies, in order to increase the share of self-produced energy, mainly from biomasses and bioliquids of animal and vegetal origin.



## Energy efficiency: *the importance to have a clear framework*

The rationalization of energy consumption can represent an opportunity for the industrial system in order to reduce costs in the production process and the competitiveness gaps, but requires:

- *a stable regulatory framework*
- *a strategy of incentives covering medium-long period (i.e. white certificates, tax deductions) and structural co-funding to R&D (in coherence with EU strategy under this topic), a wide penetration on the market of technologies for energy savings*
- *more integration of the environmental sustainability policies with those for energy purpose (efficiency and renewables)*
- *facilitating access to credit with ad hoc solutions*

# The «culture» of the energy efficiency and the barriers

## Obstacles to the EE approach could be:

- ✓ **Lack of knowledge** of the opportunities and already existing tools
- ✓ **Failure of perception** of the EE actions as a priority
- ✓ “**distrust**” with respect to the plurality of technical options
- ✓ **Resistance** to make investments of which there is no immediate perception of their concrete return

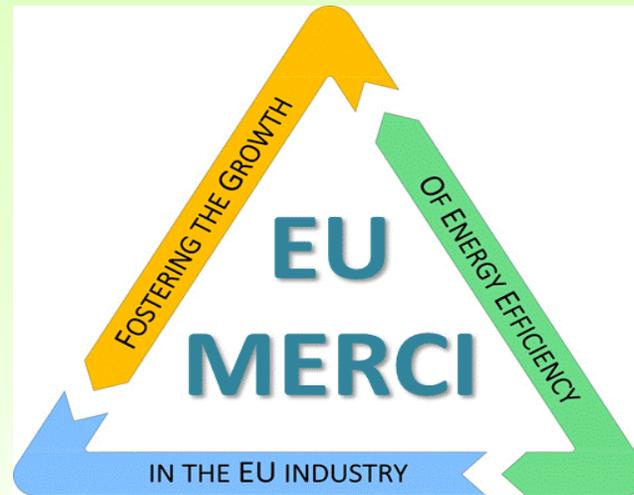
## Useful initiatives to overcome such bottlenecks:

- ✓ To draw Guidelines for the evaluation and the monitoring of the results (benefits) achieved
- ✓ To promote **energy audits** as useful tool (also on a voluntary basis) to realize the **diagnosis** and the planning of the measures
- ✓ **spread** the knowledge on EE (information/experience)



European  
Commission

Horizon 2020  
European Union funding  
for Research & Innovation



**EU coordinated MMethods and procedures based on Real Cases for the effective implementation of policies and measures supporting energy efficiency in the Industry**

## PARTNERS

The project partners, working to seek, develop and disseminate best practices are:

- ▶ Ricerca sul Sistema Energetico, *Italy* (**RSE**);
- ▶ JIN Climate and Sustainability, *The Netherlands* (**JIN**);
- ▶ Center for Renewable Energy Sources and Saving, *Greece* (**CRES**);
- ▶ Polish National Energy Conservation Agency, *Poland* (**KAPE**);
- ▶ Austrian Energy Agency, *Austria* (**AEA**);
- ▶ Italian Federation for Energy Efficiency, *Italy* (**FIRE**);
- ▶ Carbon Trust, *United Kingdom* (**Carbon Trust**);
- ▶ Black Sea Energy Research Centre, *Bulgaria* (**BSERC**);
- ▶ Energy Restructuring Agency, *Slovenia* (**ApE**);
- ▶ Spread European Safety SPES GEIE (**SPES**);
- ▶ Centre for the Promotion of Clean and Efficient Energy in Romania, *Romania* (**ENERO**).

## CONTACTS

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## THE PROJECT IN BRIEF

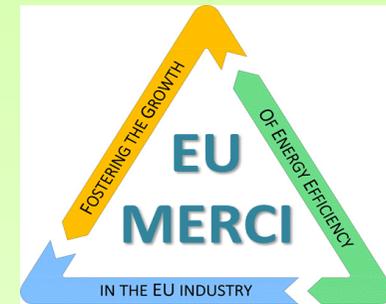
Coordination and Support Action

**Duration** ▶ 2 years (start date February, 1st 2016)

**Funding** ▶ Horizon 2020

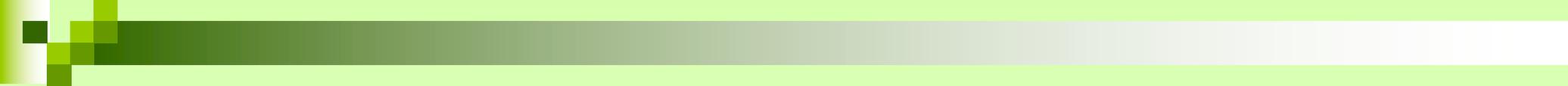
**Ref. Call** ▶ EE-2015-3- Market Uptake

**Topic** ▶ EE-09-2015: Empowering stakeholders to assist public authorities in the definition and implementation of sustainable energy policies and measures+



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**Thanks for the attention!**