



Energy Efficiency in the Clothing Industry

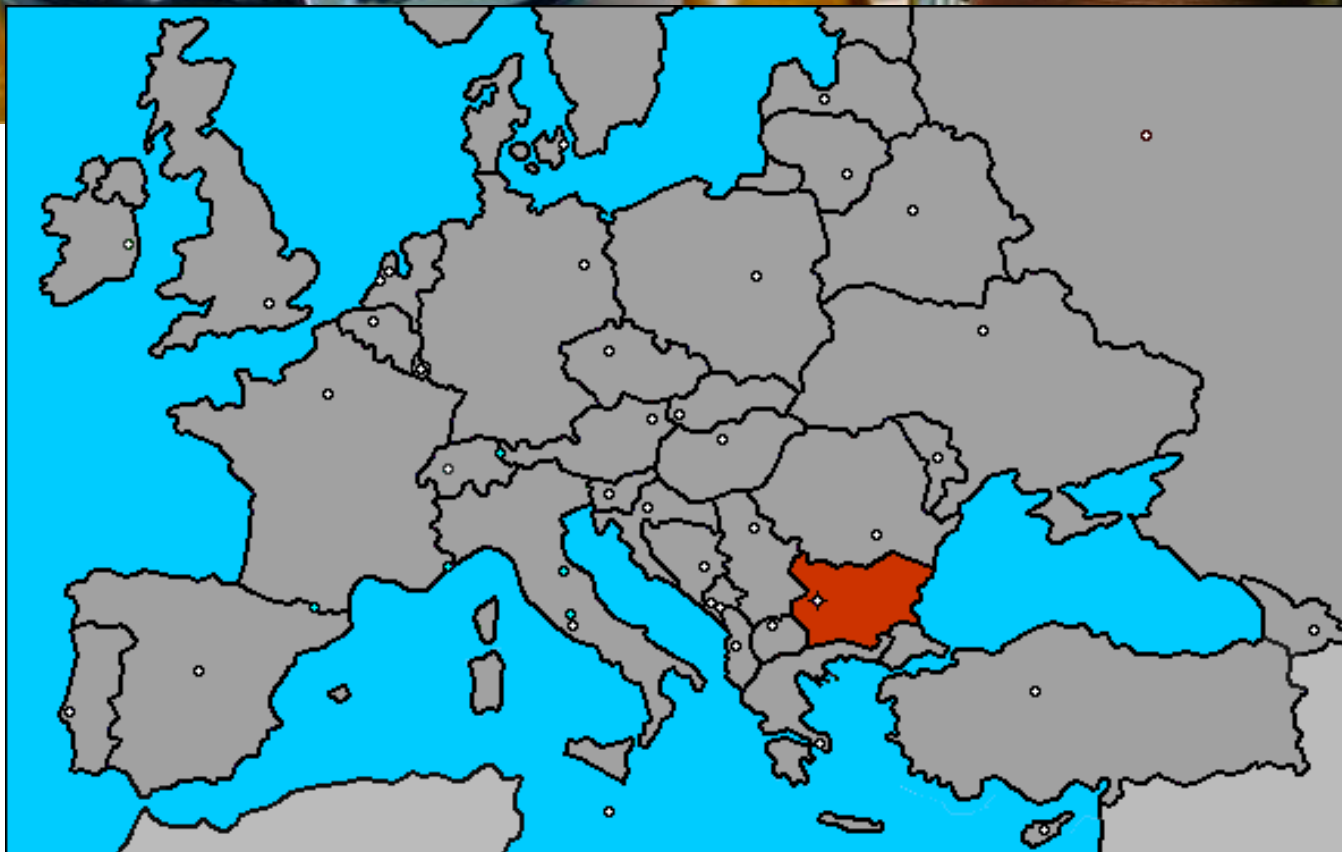
Experience from the garment industry

Bertram Rollmann

PIRIN-TEX EOOD

First of all....

some facts about the Bulgarian textile & clothing industry



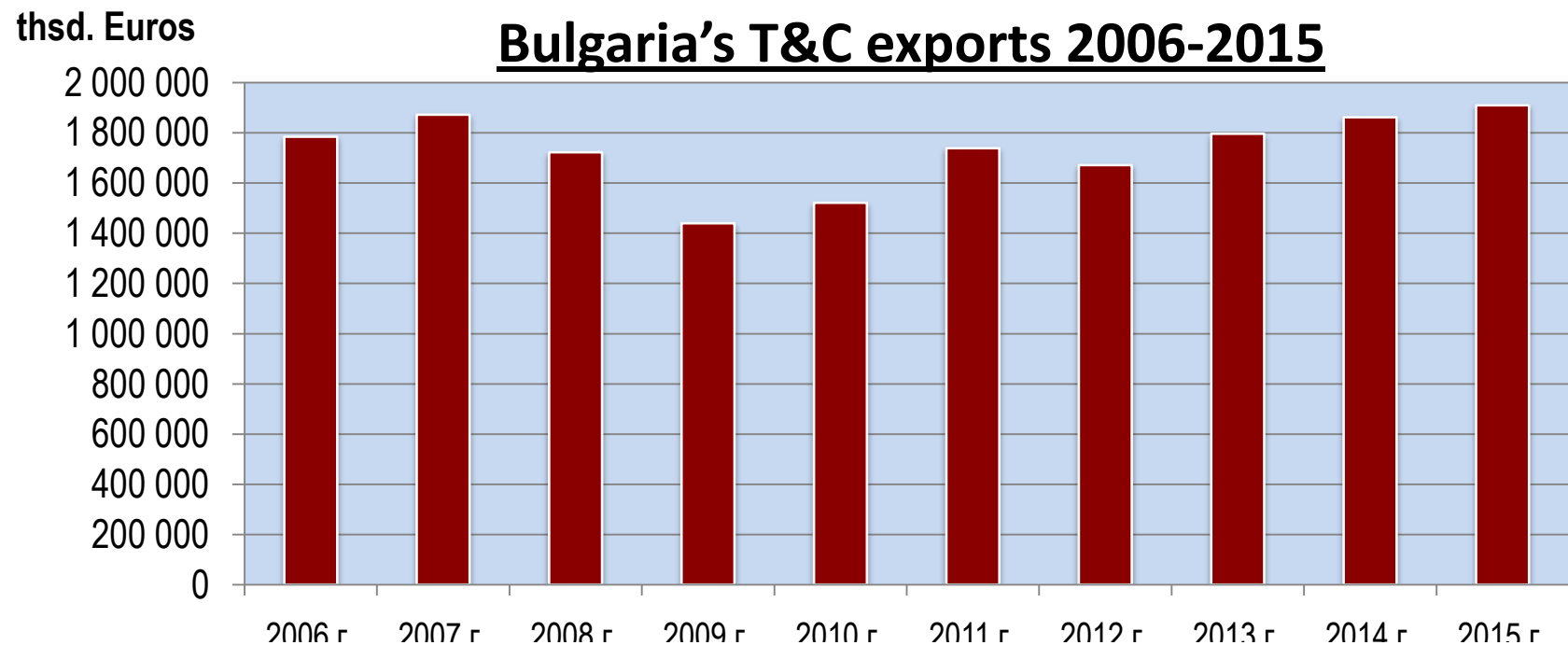
T&C industry in Bulgaria

- 103 thsd. employees in the T&C industry
 - 88% Clothing
 - 12% Textiles
- Major employer in the country – 21% of the employees in the manufacturing industry;
- Over 5000 registered companies, 4400 of which in the clothing subsector;



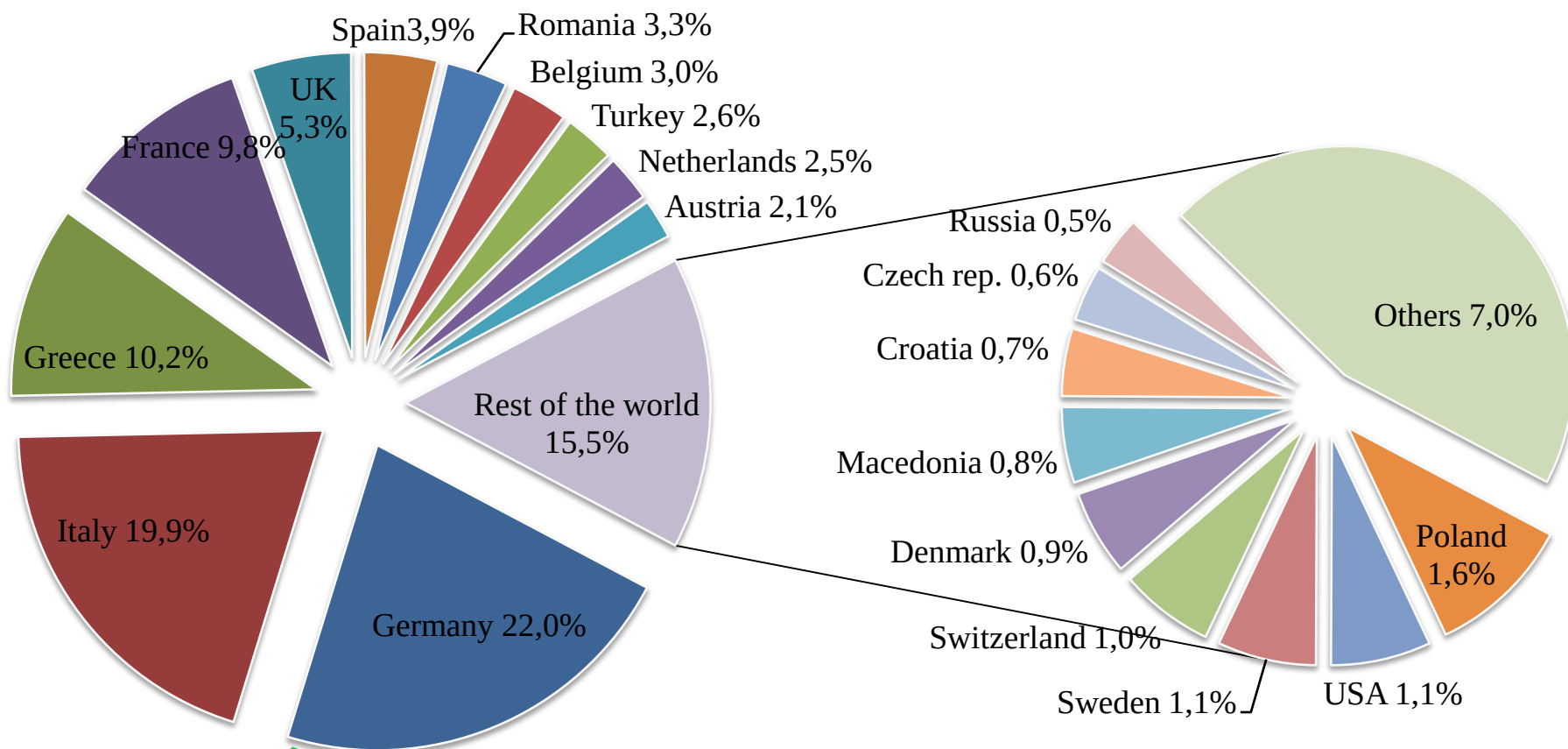
T&C industry in Bulgaria

- **Steady post-crisis growth in exports – 1,9 billion EUR in 2015**
 - 75% Clothing
 - 25% Textiles
- **T&C exports account for 8,2% of the total Bulgarian exports**



T&C industry in Bulgaria

Major export partners (2015)



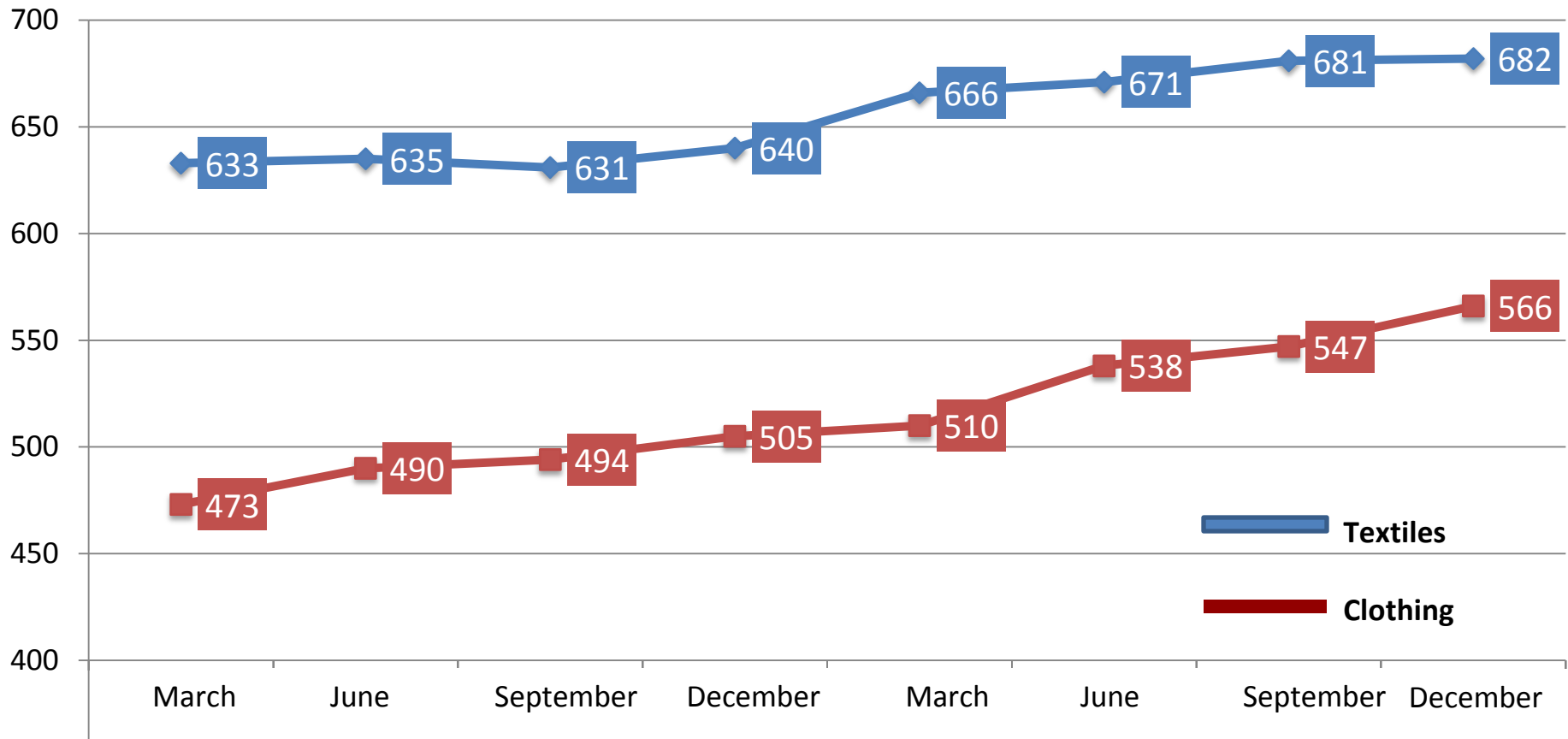
90% of the T&C exports are for the EU market

T&C industry in Bulgaria

Average gross wages in the T&C industry (in BGN)



1 EUR $\approx$ 1,96 BGN



About Pirin-Tex

Business activities:

- ✓ **Ready-made garments**
 - Production
 - Retail
- ✓ **Product development**
 - Pattern-making
 - Prototyping
 - Grading
 - Optimizing
 - Plotting
- ✓ **Garment Washing & Dyeing**

Products:

Men's and ladies' upper garments:

- Suits
- Jackets
- Trousers
- Skirts
- Waistcoats
- Shirts & blouses

About Pirin-TEX

Additional activities:

➤ **Waste collection**



➤ **Vocational training**



Engaging in energy efficiency

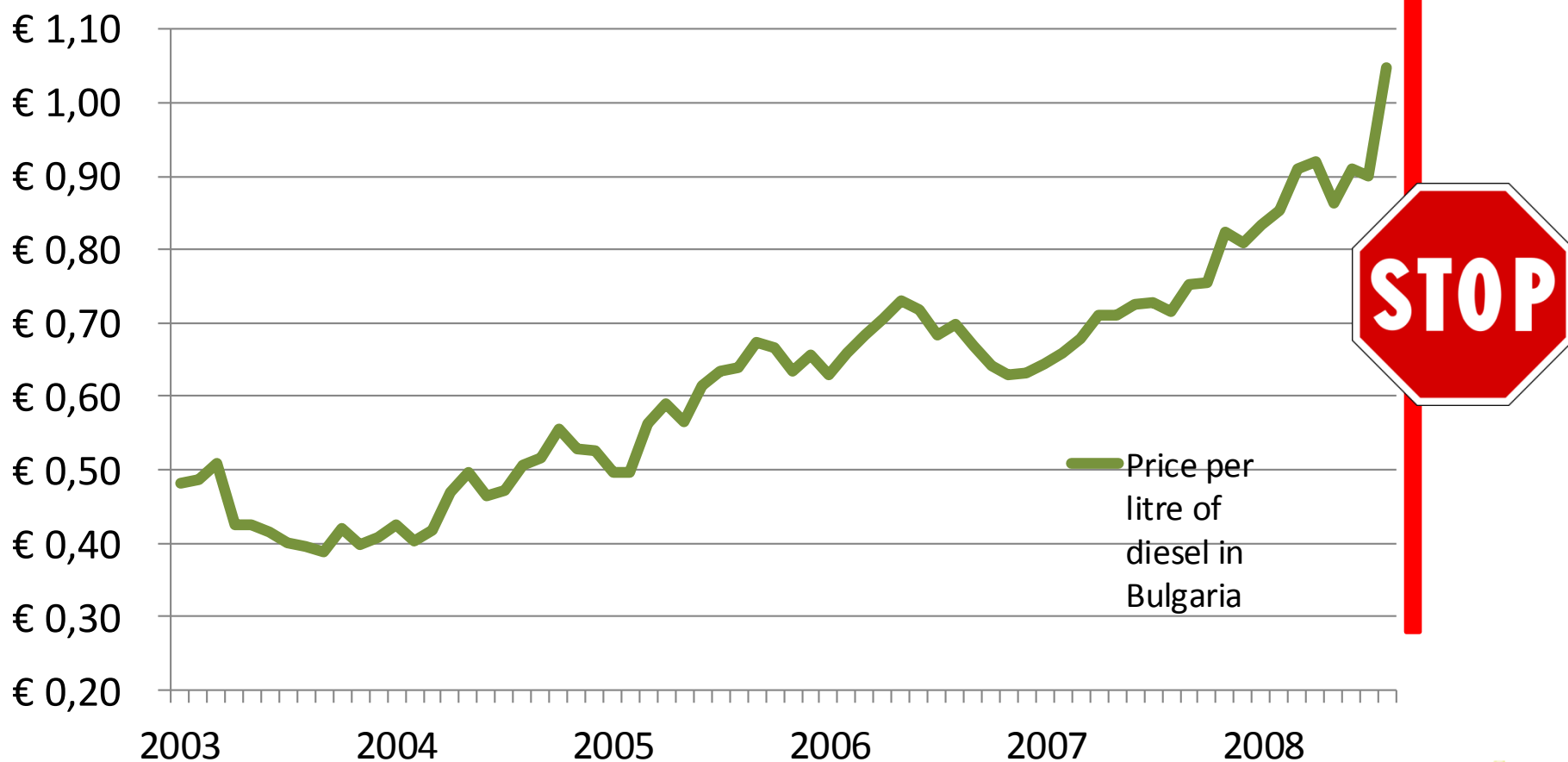
Does it make sense?

Why?

- ❖ **Constantly rising prices of oil, natural gas and electricity**
- ❖ **Lack of technological development**
- ❖ **Legal obligations**
- ❖ **Sustainable and environment-friendly production**
- ❖ **Responsibility for each major player in the European garment industry to improve in all technical sectors related to their businesses**

Diesel price boom

Price per litre



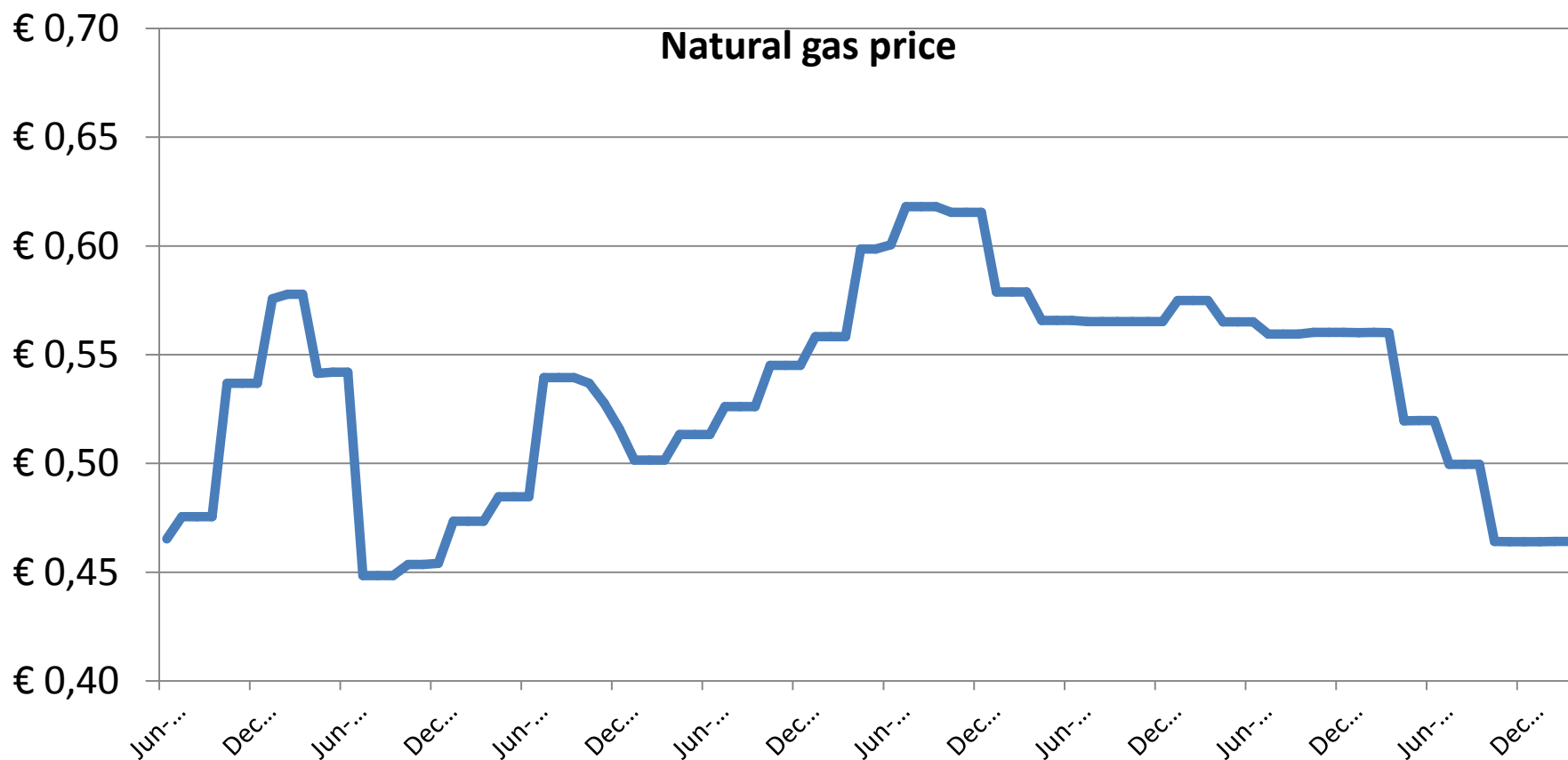
Regular rises in electricity price

Price per kW/h



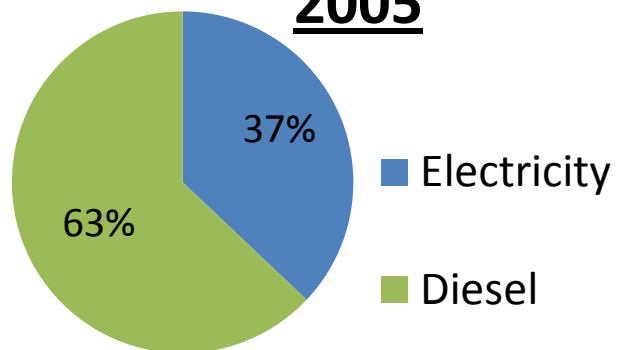
Natural gas – unstability in prices

Price per m³

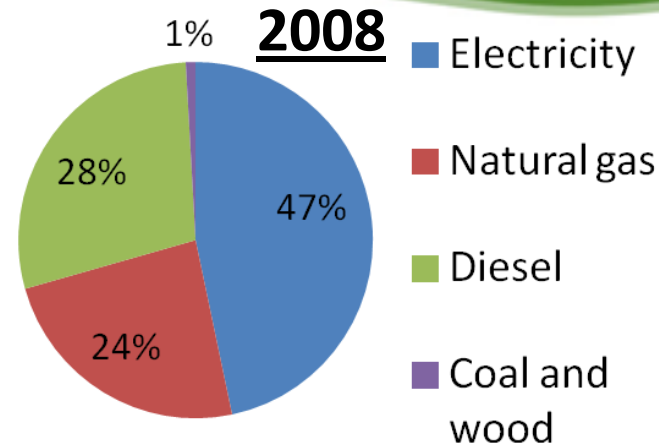


Energy base restructuring

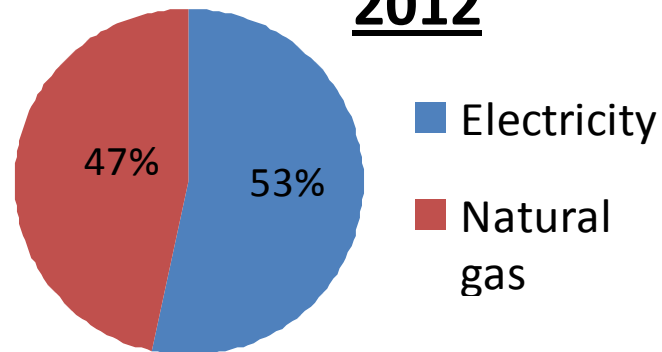
2005



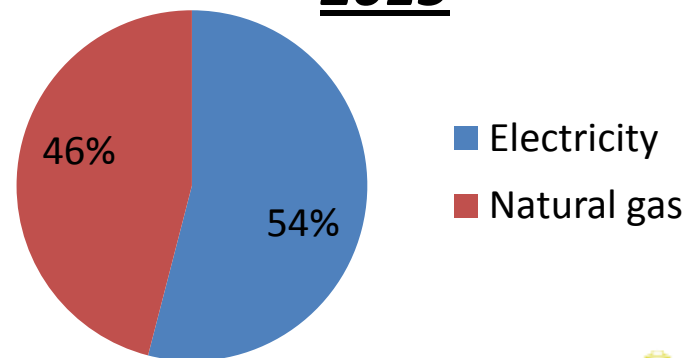
2008



2012



2015



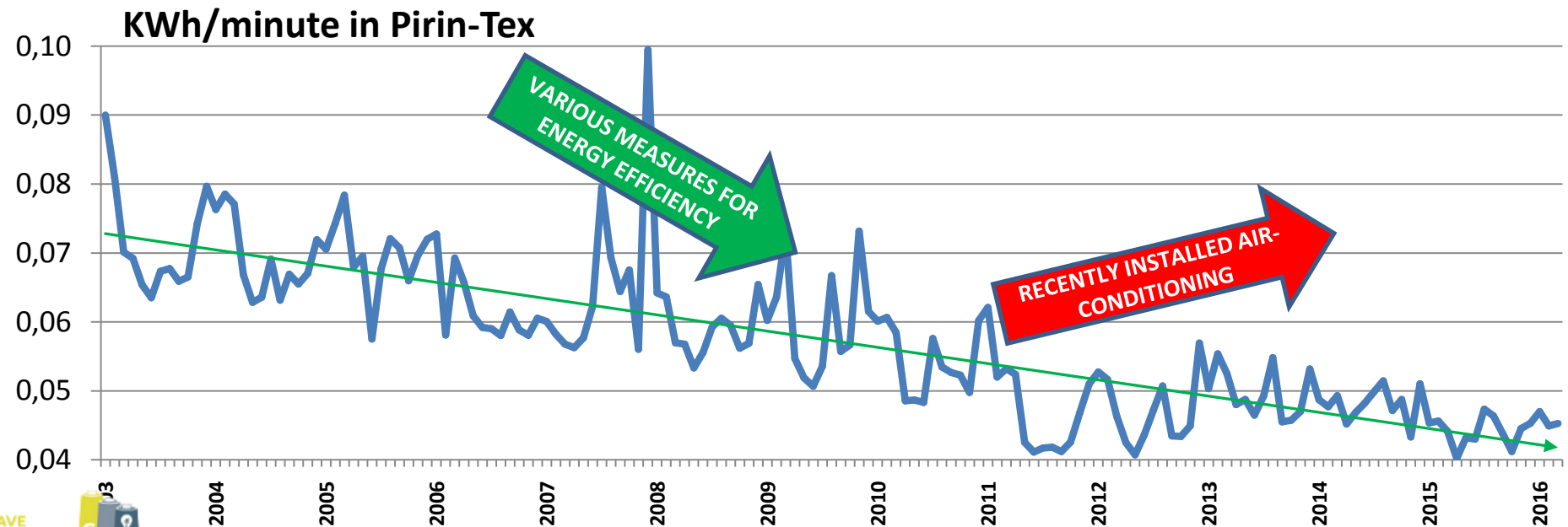
Defining energy efficiency in the company

What is energy efficiency?

EE = Energy input per
production output

How do we measure it?

KWh → Energy input measured in KWh
minute → Production output measured
in standard minutes



Achieving energy efficiency - our experience

Organisational measures:

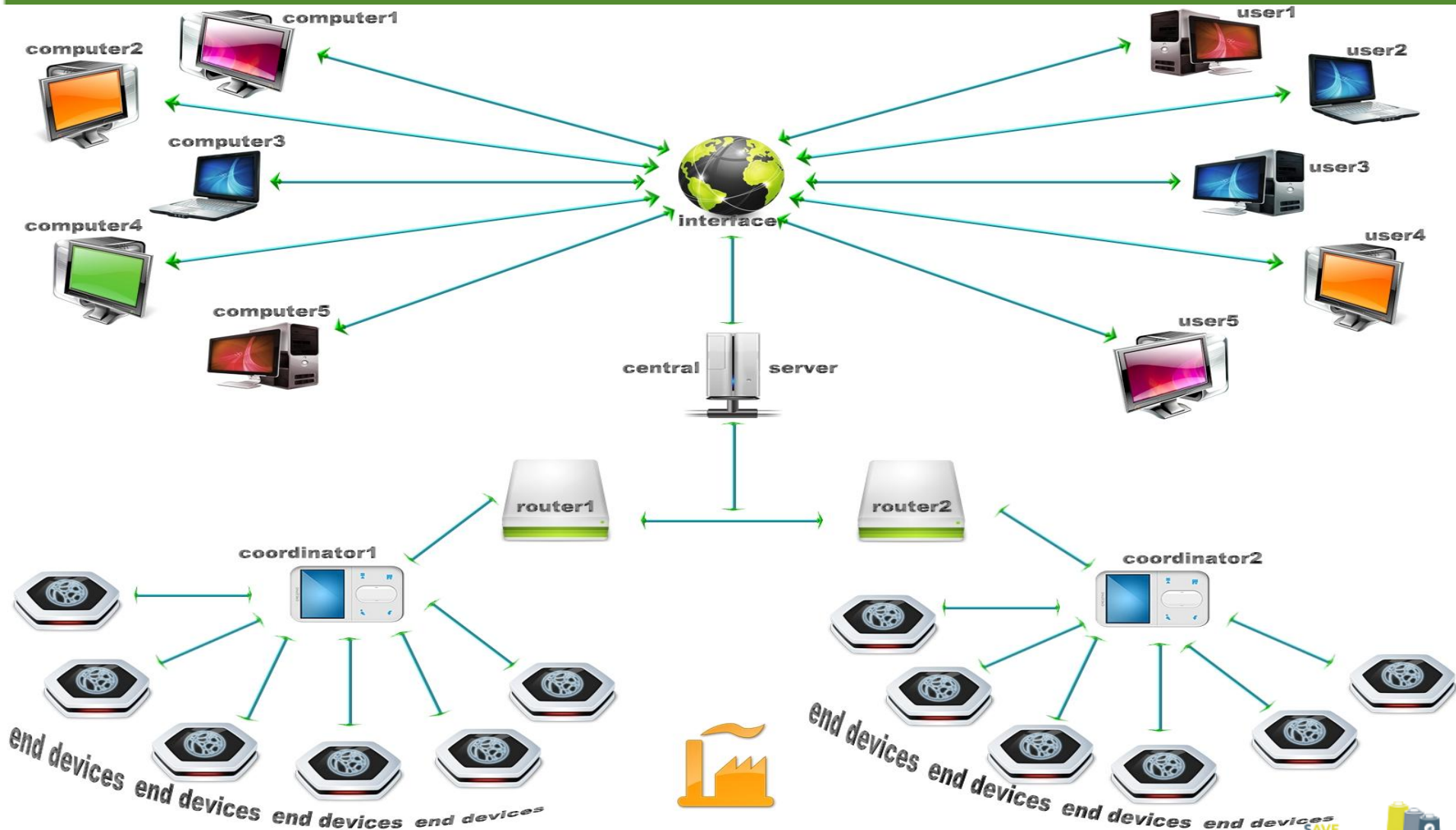
Entering the free
electricity market

Restructuring the fuel
base

Discipline among the
staff regarding energy
use

Constant monitoring
of energy costs

Energy monitoring



Achieving energy efficiency - our experience

Technical measures:

Insulation of hoses and
pressing forms

Correction of oversized
steam boilers and piping

Installing controllers to all
steam-heated machines

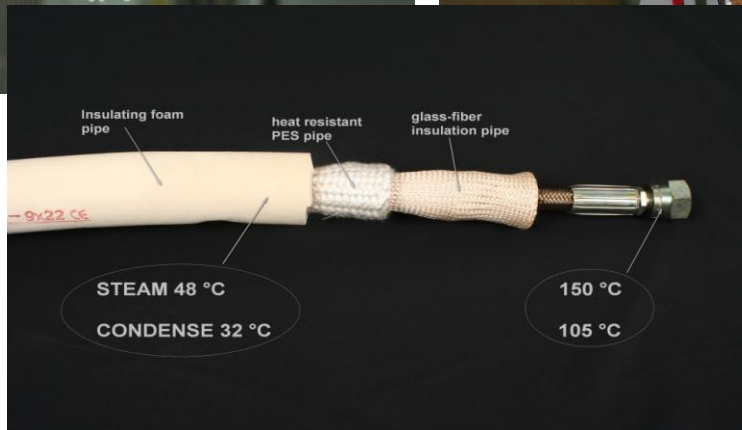
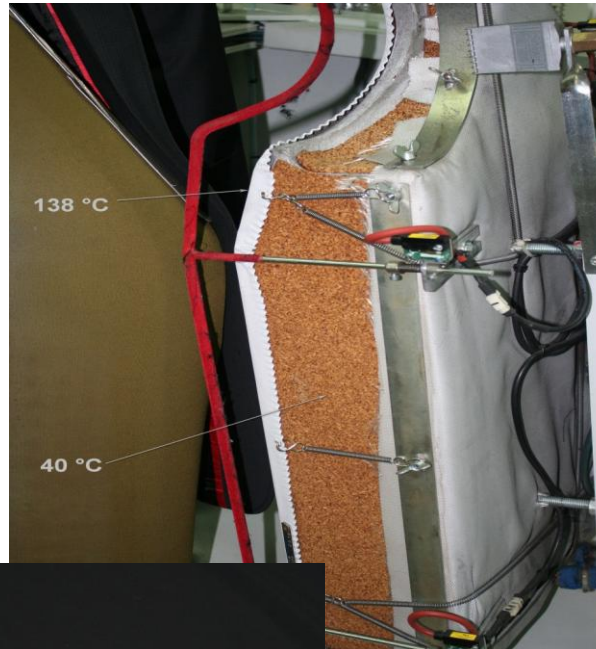
Adjustment of pressing
programmes

Changeover to LED-
lighting

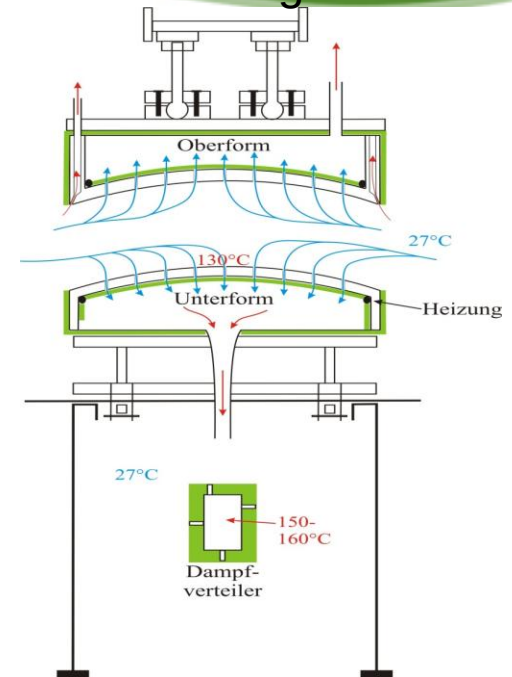
Use of residual heat

Insulation steam pipes and steam machines

Insulation of ironing forms

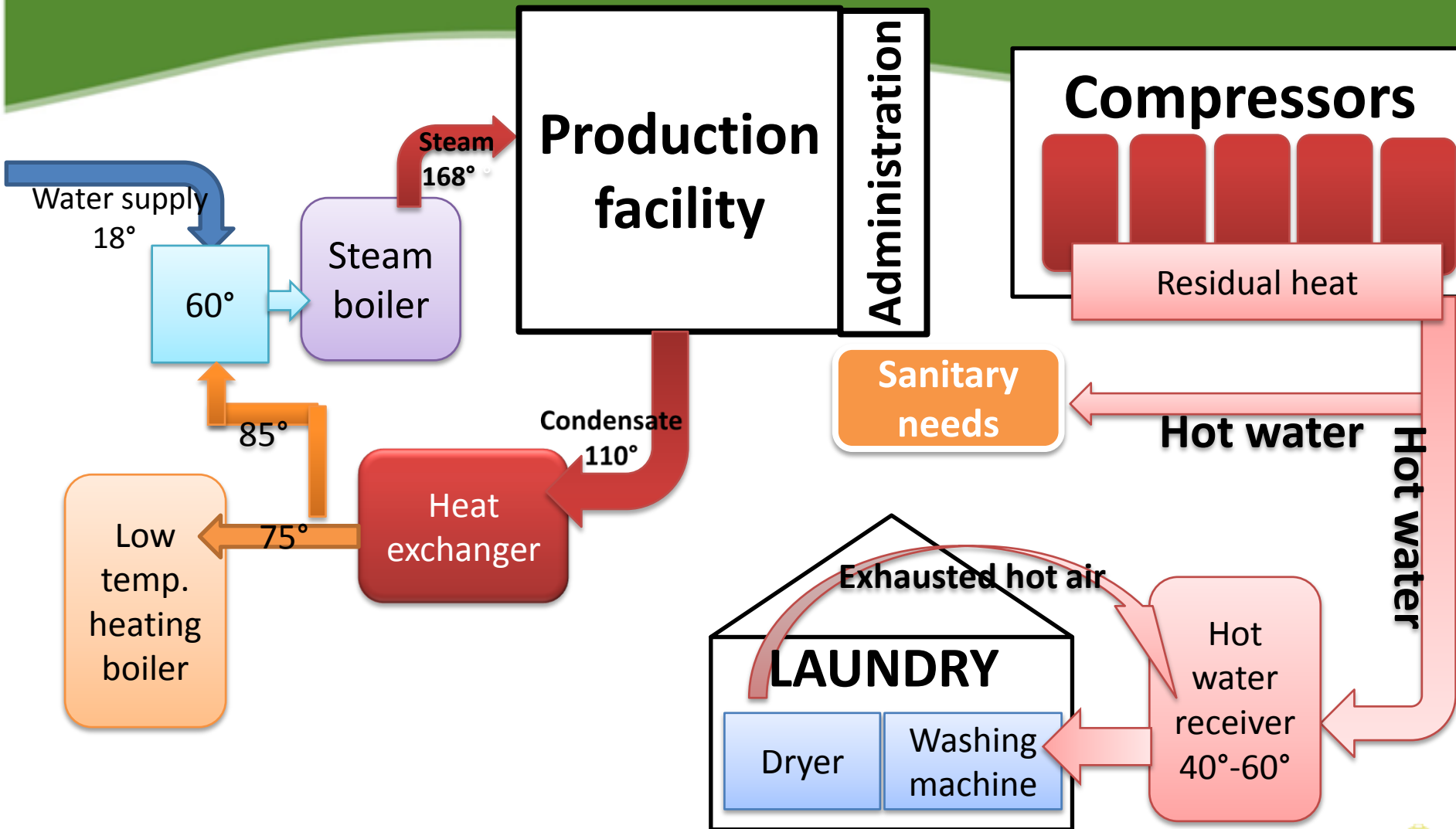


Insulation scheme forms of ironing



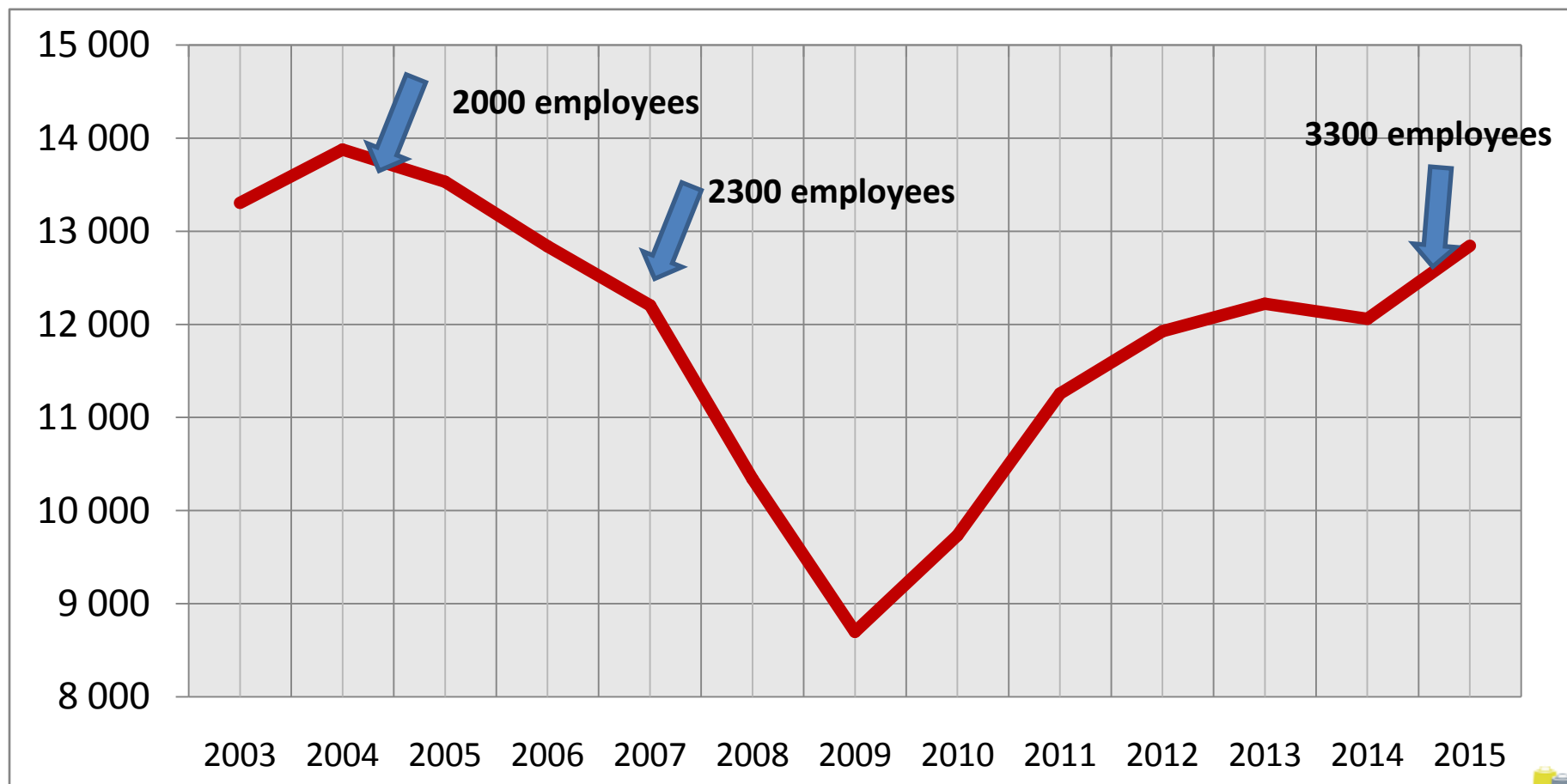
Insulation of pipes

Energy efficiency through residual heat



Energy consumption trend – Savings achieved

MW/h per year



What savings we have made

Measure	Saved amount for the period (2008-2014)	Amount saved on average per 1 year	Yearly amount saved on average per 1 worker
Changing the energy source	910 000 €	130 000 €	39,40 €
Installing of controllers to all steam-heated machines	1 102 500 €	157 500 €	47,70 €
Entering the free electricity market	805 000 €	115 00 €	34,90€
<u>TOTAL:</u>	<u>2 817 500 €</u>	<u>402 500 €</u>	<u>122,00 €</u>

Lessons learnt



Keep energy accounting!

E.g. through the SESEC/SET tool



Regularly monitor and analyze your energy consumption and energy costs



Spot the leaks and take measures to save energy

Not necessarily financial investments

The SESEC project

- ❑ Started in 2012 by industry incentive
- ❑ Aimed specifically at the garment industry
- ❑ Part of the “Energy made-to-measure” campaign across the European T&C industry



SESEC & SET projects



**Clothing
industry**



**Textile
industry**



COMMON PLATFORM: www.em2m.eu

An easy way to improve your energy efficiency



PLAN

- **“Energy made-to-measure” online platform**

CHECK

- **Audit internally your current energy stand**

ACT

- **Apply the recommended best practices**



Thank you for your attention!

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