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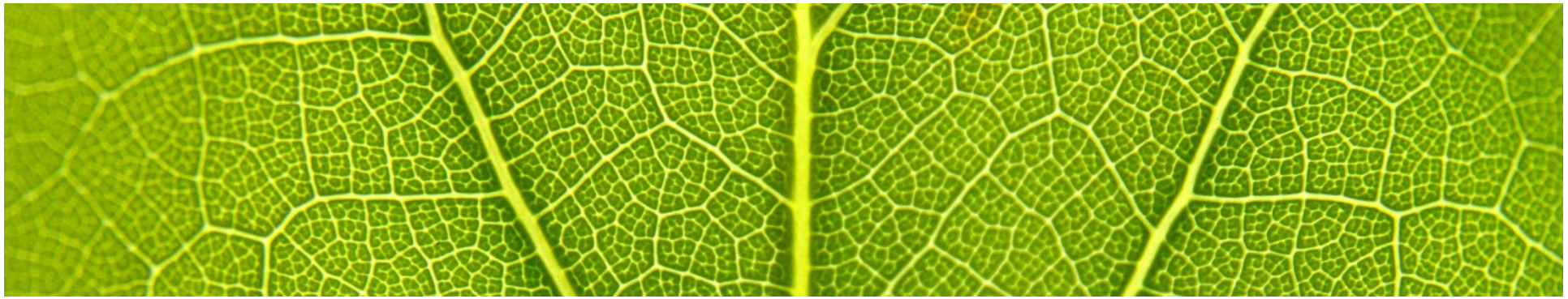


How electricity prices impact industrial energy efficiency

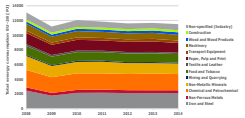
ECEEE – Industrial Efficiency – Berlin 2016

2016-09-15

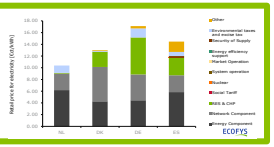
Jan-Martin Rhiemeier

Agenda

Introduction to industrial energy consumption



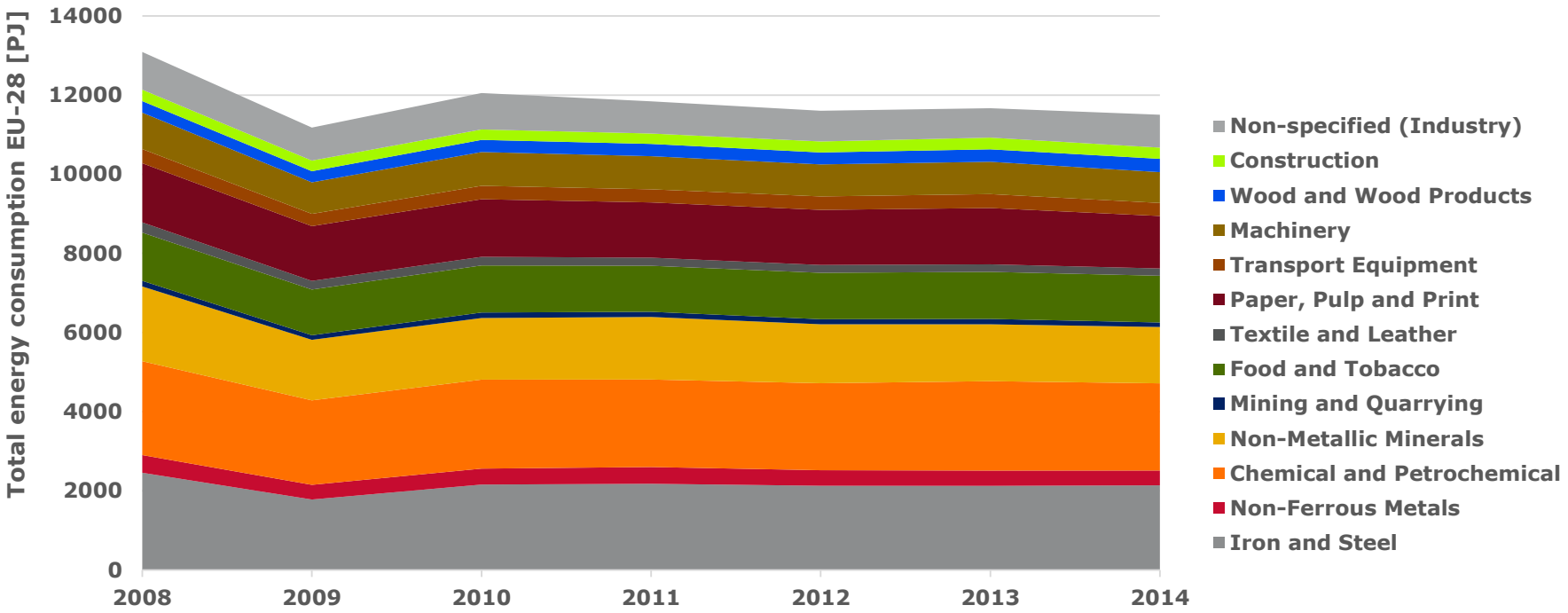
Differences in industrial electricity prices



Potential effects of energy policy instruments on energy efficiency

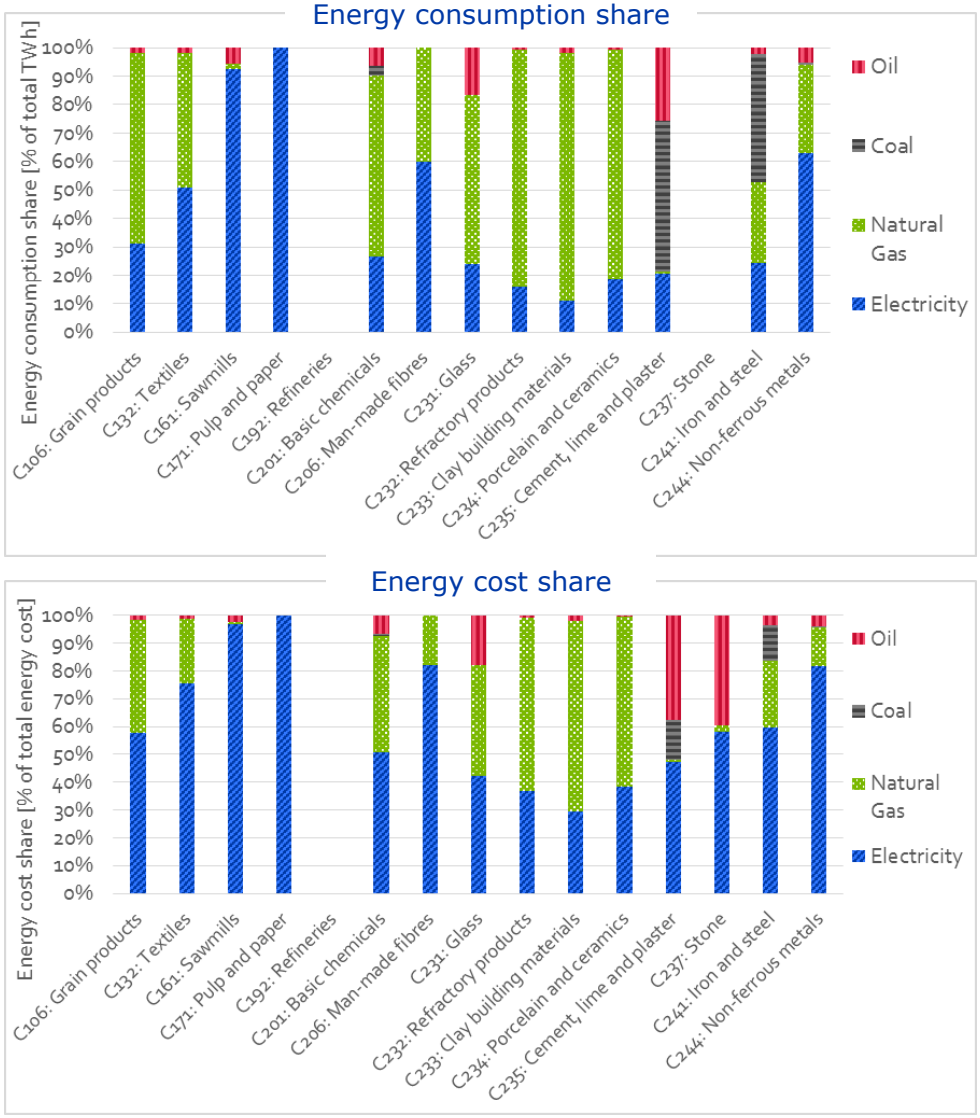
Conclusions

EU industrial energy consumption slowly declining



source: Eurostat table nrg_110a

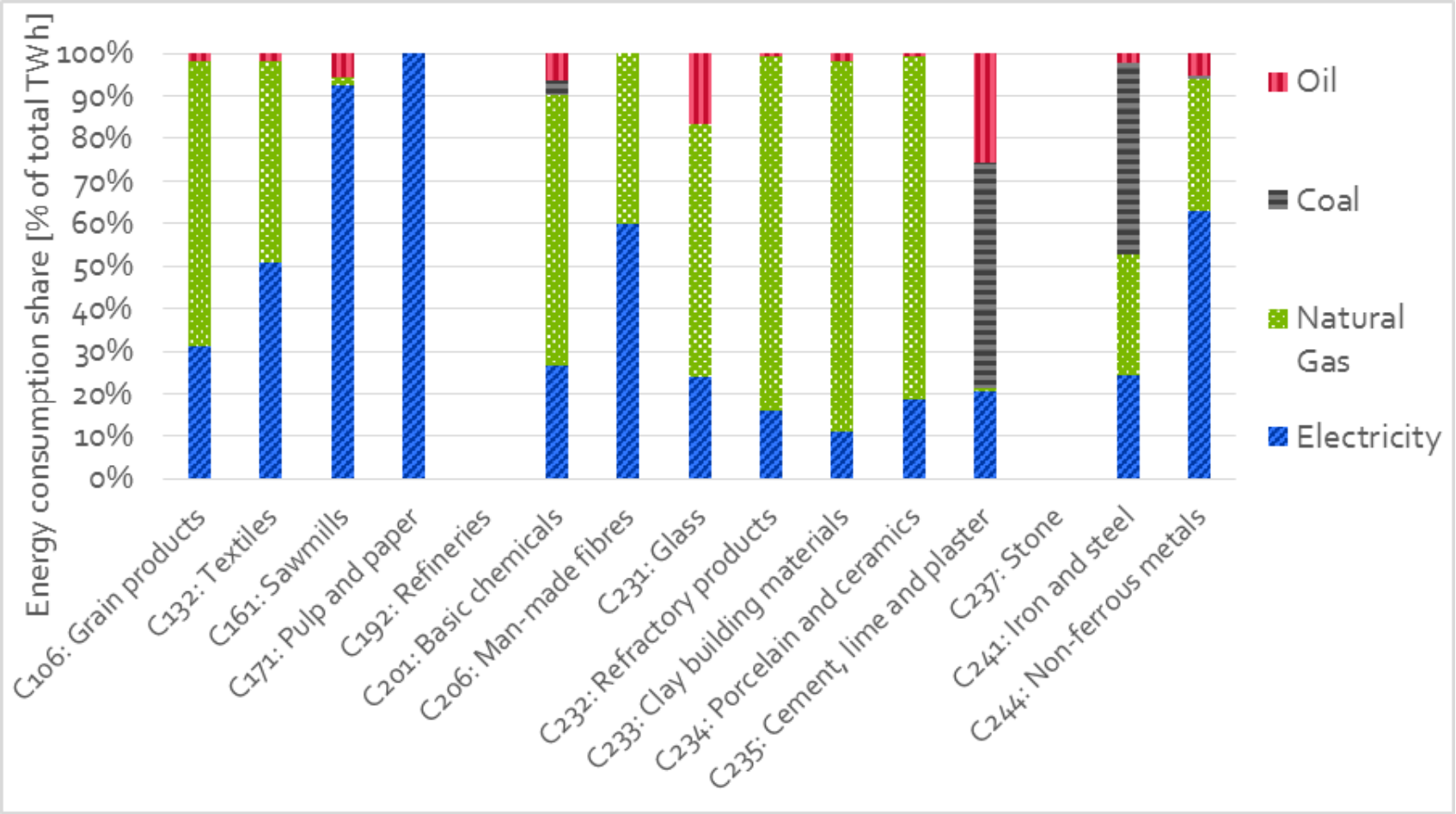
Comparison of energy consumption and energy



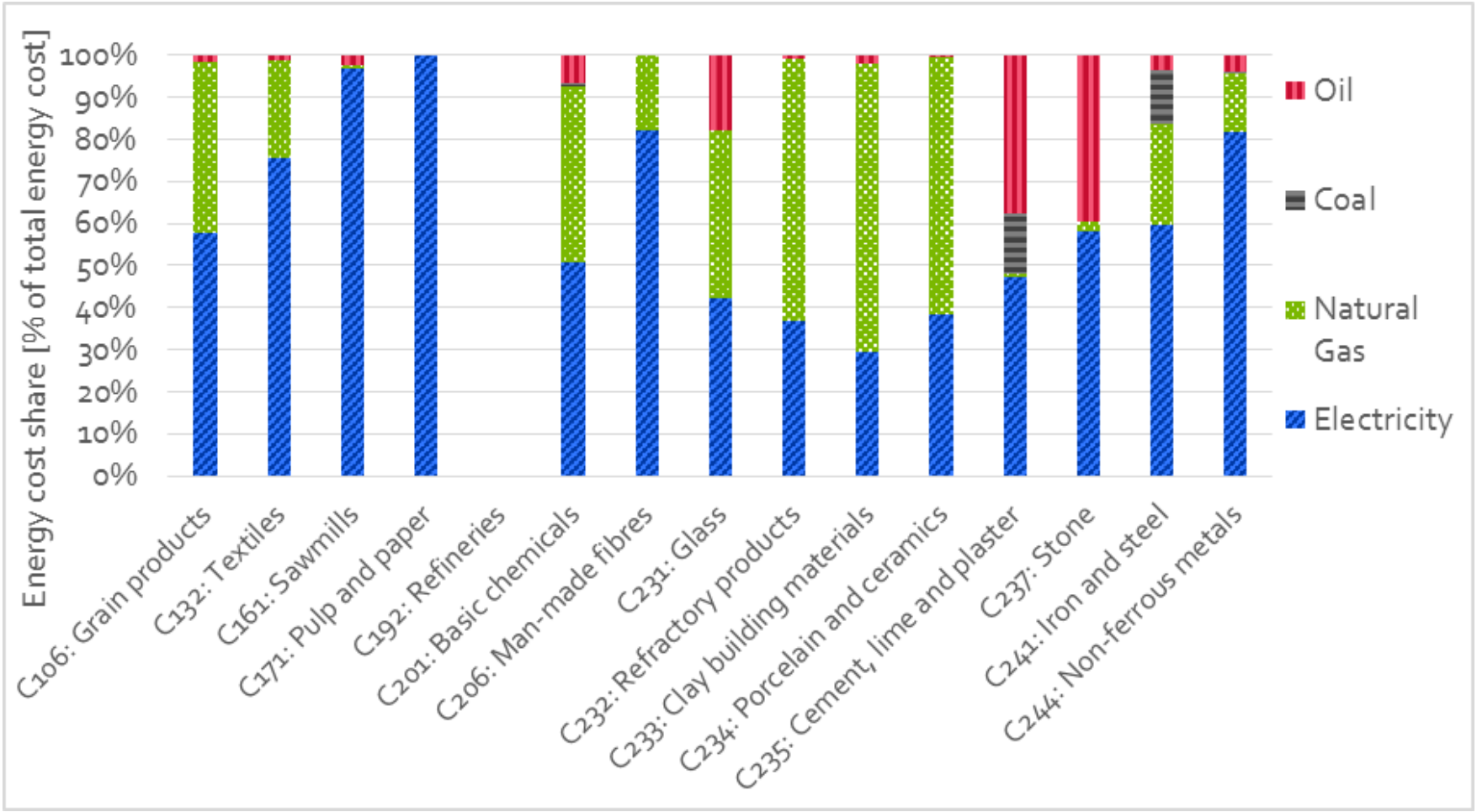
- Natural gas is dominating energy carrier in industry
- Coal is still major fuel in cement and iron and steel
- Electricity plays larger role in energy cost than in consumption

source: Ecofys, 2016

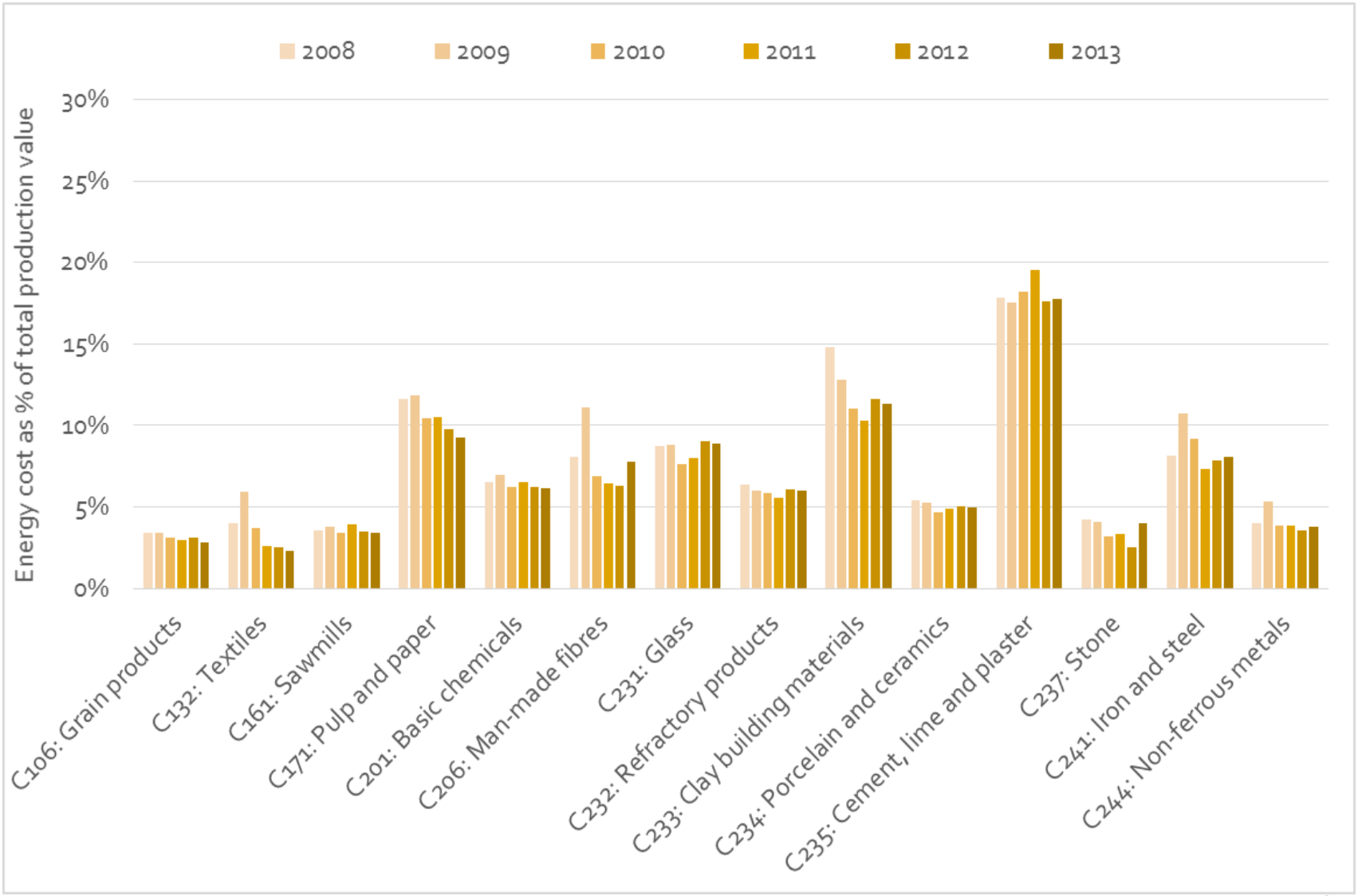
Energy consumption share



Energy cost share



Energy costs as a % of total production costs



source: Ecofys, 2016

Drivers and barriers for energy efficiency

Drivers

- Policy and Programs
- Energy Management System
- Energy and Carbon prices
- International competition
- Transparency and disclosure
- Third party financing

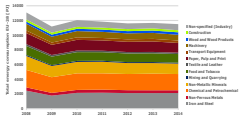
Barriers

- Access to capital
- Technical risks
- Lack of information
- Other investment priorities
- Investment risks
- Weak energy policy frameworks

- High energy costs have always been a major driver for energy efficiency measure in Europe
- How do national policies effect energy prices and what's the impact on potential energy efficiency measures?

Agenda

Introduction to industrial energy consumption



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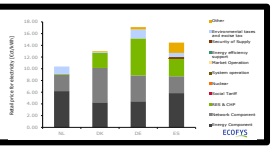
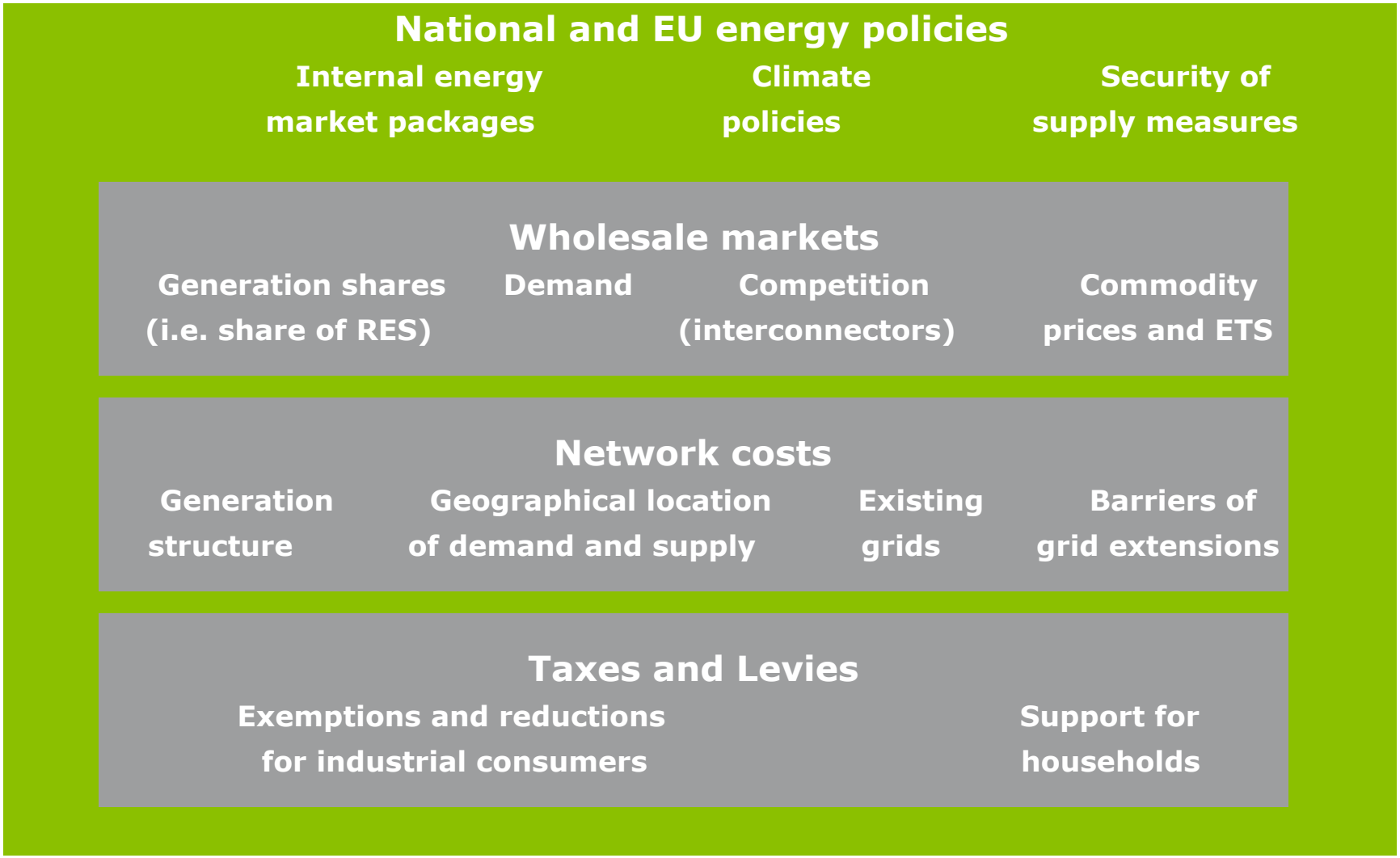


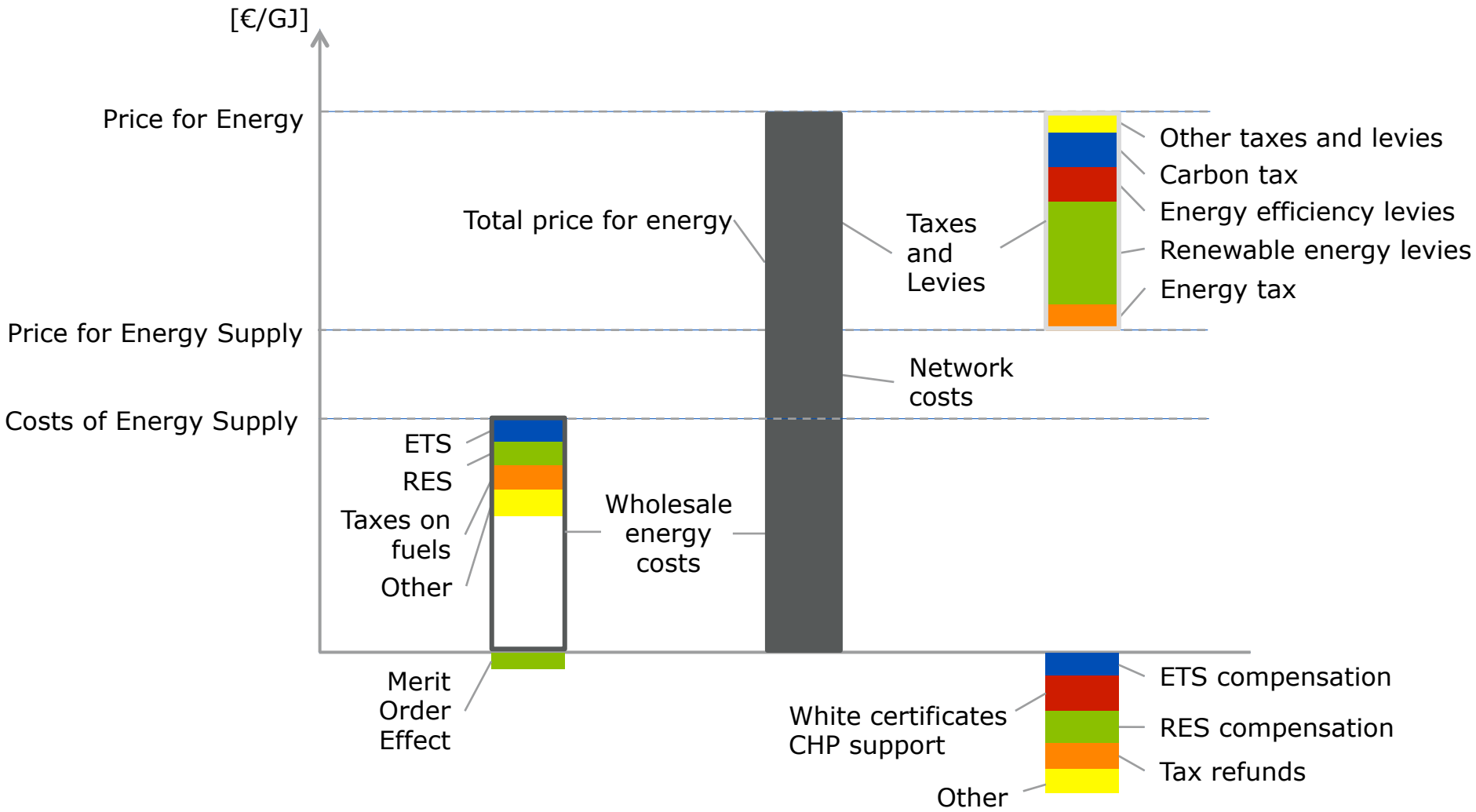
Potential effects of energy policy instruments on energy efficiency

Conclusions

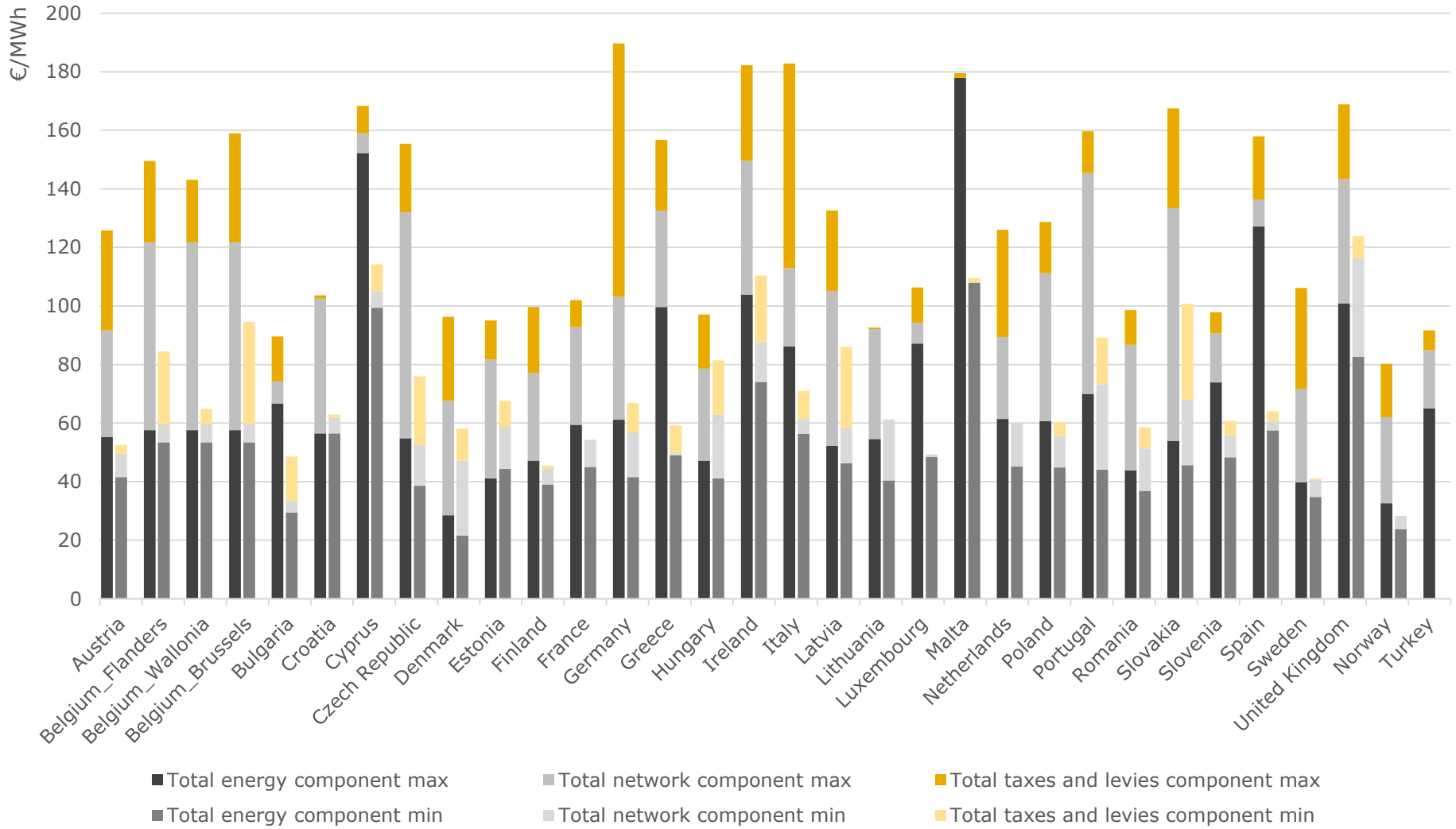
Various policy packages influence wholesale and retail prices for electricity across Europe



Regulatory components in electricity prices



Electricity retail prices for industries vary across but also within countries



Agenda

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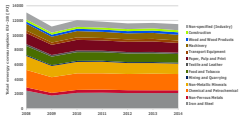

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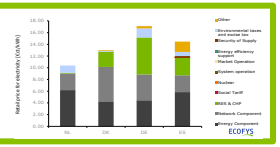


Potential effects of energy policy instruments on energy efficiency

Conclusions

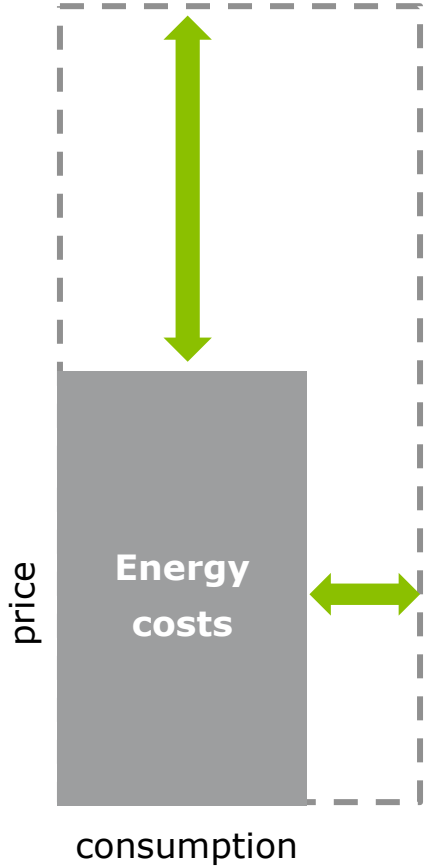
Incentives for energy efficiency need to remain

Energy costs are determined by prices and consumption

> High energy prices promote energy efficiency

Energy intensive industries often pay low prices due to exemptions from taxes and levies

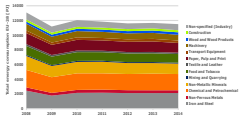
> Need for EE less important?



Exemptions need to be bound to mandatory energy efficiency actions by industries (i.e. mandatory EnMS)

Agenda

Introduction to industrial energy consumption



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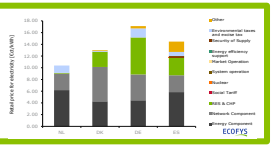

Potential effects of energy policy instruments on energy efficiency

Conclusions

Conclusions

- Energy costs are determined by prices and consumption
- High prices incentivise energy efficiency
- Large energy intensive consumers are paying low prices
- Energy efficiency needs to be incentivised by exemption and reduction schemes for taxes and levies, i.e. by requiring energy management systems
- A level playing field in energy costs for industries in Europe requires a level playing field in energy prices

Thank you

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Table 2: Barriers to energy efficiency (Trianni et. all 2013)

Origin	Actor/Area	Barriers
External	Market	Energy prices distortion
		Low diffusion of technologies
		Low diffusion of information
		Market risks
		Difficulty in gathering external skills
	Government/Politics	Lack of proper regulation
		Distortion in fiscal policies
	Technology /Services Suppliers	Lack of interest in energy efficiency
		Technology suppliers not updated
		Scarce communication skills
	Designers and manufacturers	Technical characteristics not adequate
		High initial costs
	Energy suppliers	Scarce communication skills
		Distortion in energy policies
		Lack of interest in energy efficiency
	Capital suppliers	Cost for investing capital availability
		Difficulty in identifying the quality of the investments
Internal	Economic	Low capital availability
		Hidden costs
		Intervention-related risks
	Behavioral	Lack of interest in energy-efficiency interventions
		Other priorities
		Inertia
		Imperfect evaluation criteria
		Lack of sharing the objective
	Organizational	Low status of energy efficiency
		Divergent interests
		Complex decision chain
		Lack of time
		Lack of internal control
	Barriers related to competences	Identifying the inefficiencies
		Implementing the interventions
	Awareness	Lack of awareness ignorance

source: https://www.politesi.polimi.it/bitstream/10589/71904/3/Tesi%20Marchesani_Spallina.pdf