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# Insights from the Industry's Energy Efficiency Barometer

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Institute for Energy Efficiency in Production / EEP

Thursday, 01 October 2015

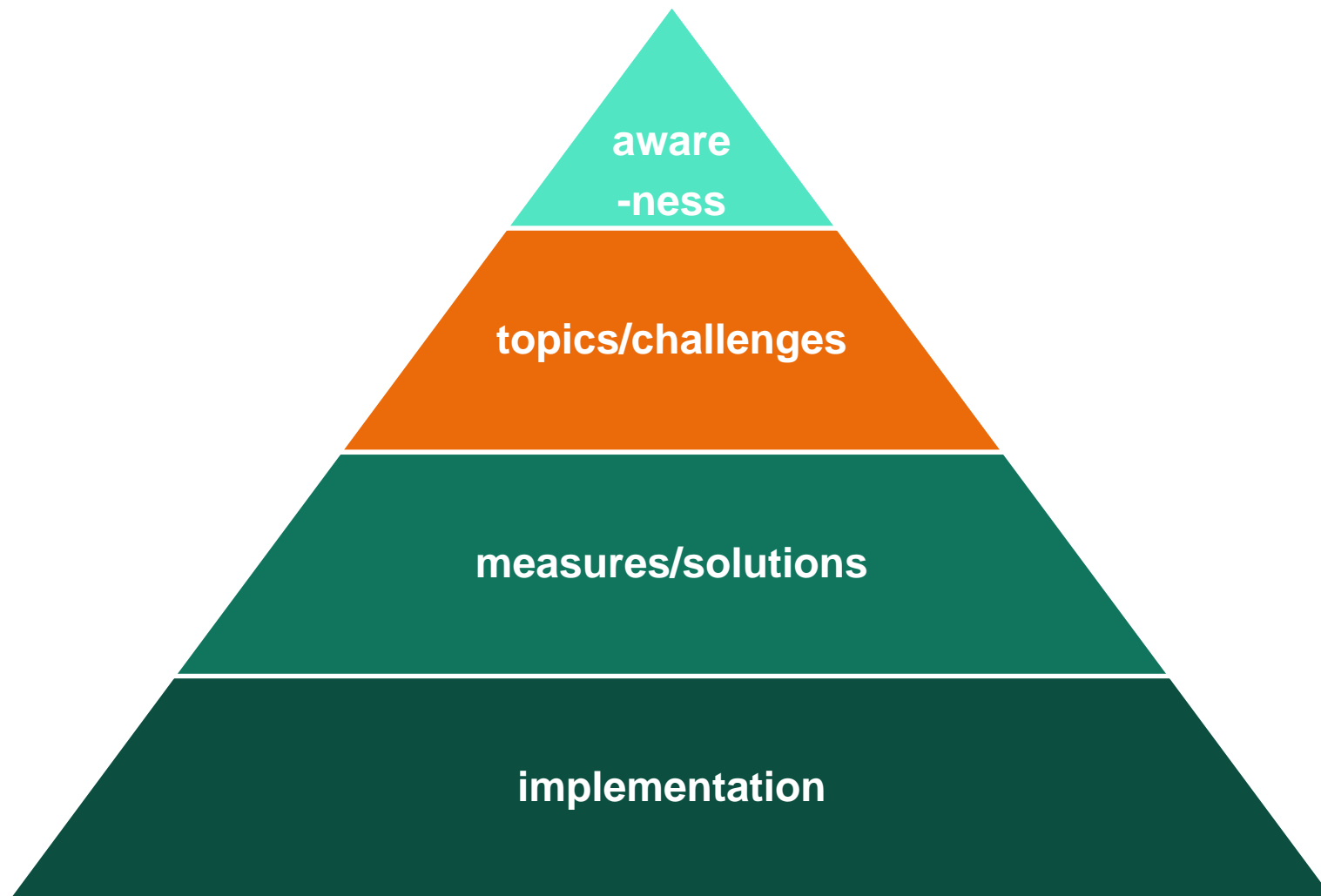


EEP - The Institute for Energy Efficiency in Production

# **A HUB FOR INDUSTRIAL ENERGY EFFICIENCY**

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## Energy-Policy, -Strategy and -Finance

### Energy Efficiency Index/Barometer of the Industry

- informing legislators on instruments
- advising companies
- informing financial institutions
- measuring impact



### International partnership for Energy Efficiency Cooperation

- Indicators and Data
- International Best Practice (Industry)
- EE in Industry and EE Finance

### Energy Efficiency Financial Institutions Group

Drivers for Investment into Energy Efficiency in Buildings and Industry

### G20 Energy Efficiency Action Plan (through ipeec)

- Industrial Energy Management
- Finance
- Electricity Generation

**Sustainable Energy for All**  
Accelerator for Energy Efficiency in Industry

**National Stakeholder Platform Energy Efficiency (PfEE)**



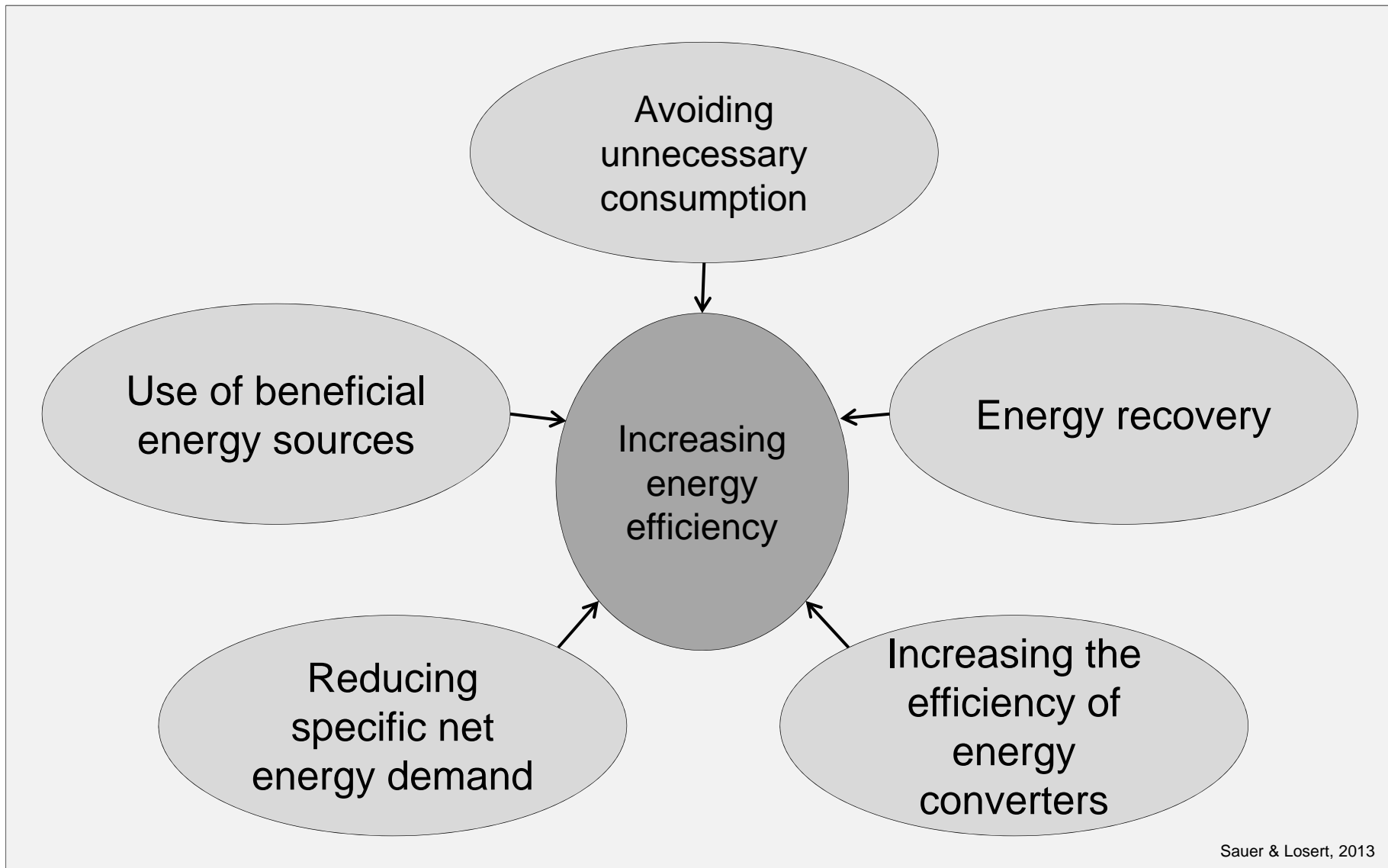
# Driving Energy Productivity, securing energy supply & energy security

## Objectives

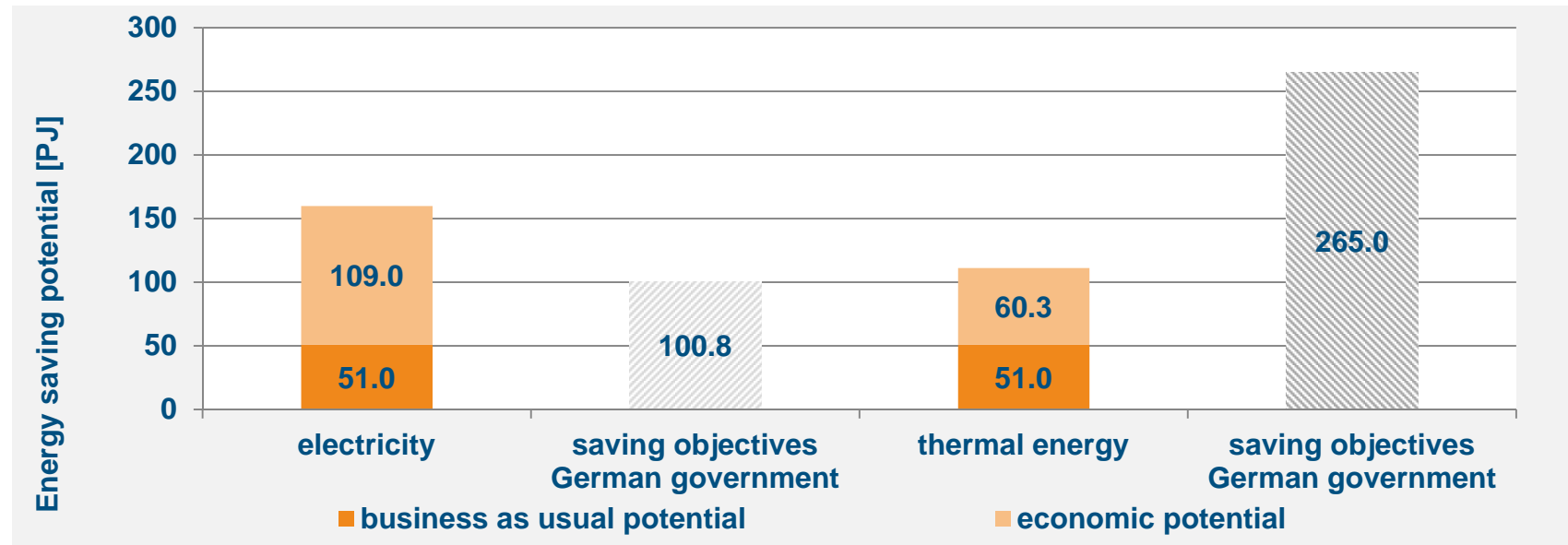
- Clean Air/ Emissions
- Climate Change
- Energy Productivity
- Energy security
- Structural Change

## Topics

- Energy Management
- Data Gap
- Skills
- Finance
- Policy
- Systems & Scale
- Innovation
- Risks
- Shocks
- Culture, Geography



# Energy saving potential of German industry- majority of efficiency potential is left unexploited

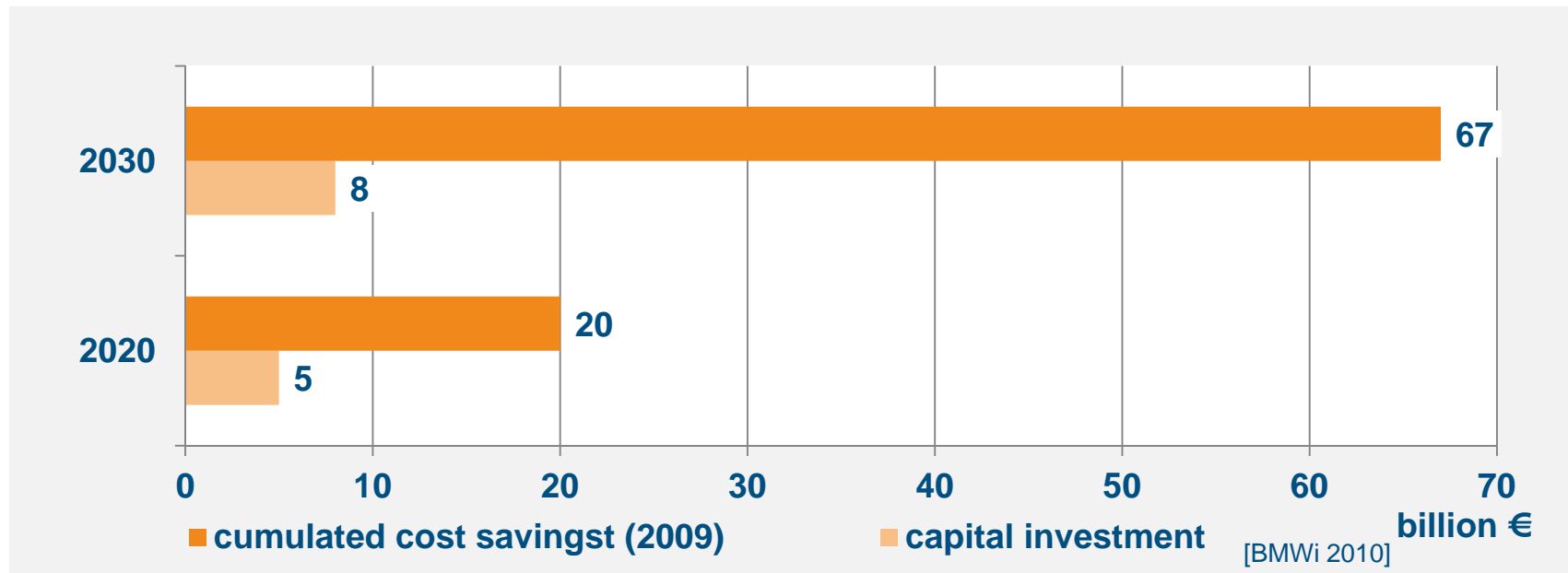


[BMWi 2010 c; Schlomann et al. 2011]

- Current efforts will just induce savings of 51 PJ each electrical and thermal energy
- Overall possible saving potential which can be economically tapped has a value of 160 PJ (electric) and 111 PJ (thermal)

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## Energy saving potentials could lead to high monetary savings



- An investment of 5 billion € would return 20 billion € by 2020, adding another 3 billion € by 2030 would yield total savings of 67 billion €
- Other studies suggest that investments of 24 billion € could induce a return of 100 billion € by 2050



# The Energy Efficiency Barometer of the Industry

## Understanding the demand side of energy efficiency

**Unleashing action towards increasing energy efficiency in industry requires: comparable, objective information to reduce unknowns and to reduce risks**

- To inform companies where they are and what they can do
- To inform legislators if their instruments are effective and what type of instruments are required
- To enable financial institutions to assess risk & potential better and to show up what financial instruments are lacking
- To assess effect of implementation programs & pilot schemes

<http://centaurigw.ipa.fraunhofer.de/teei/questionnaire.php>

## Energy Efficiency Index of the Industry Survey Fall 2015

### General information

What are your answers relating to?

My answers relate to one site.

My answers relate to multiple sites.

Which country do you mainly refer to in your answers:

select one ▼

### Importance of Energy Efficiency

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You **currently** assess the importance of energy efficiency for your company in general as...

...relatively low.

...equally important to the other factors.



2<sup>nd</sup> Data Collection 2015



**Fraunhofer**  
IPA

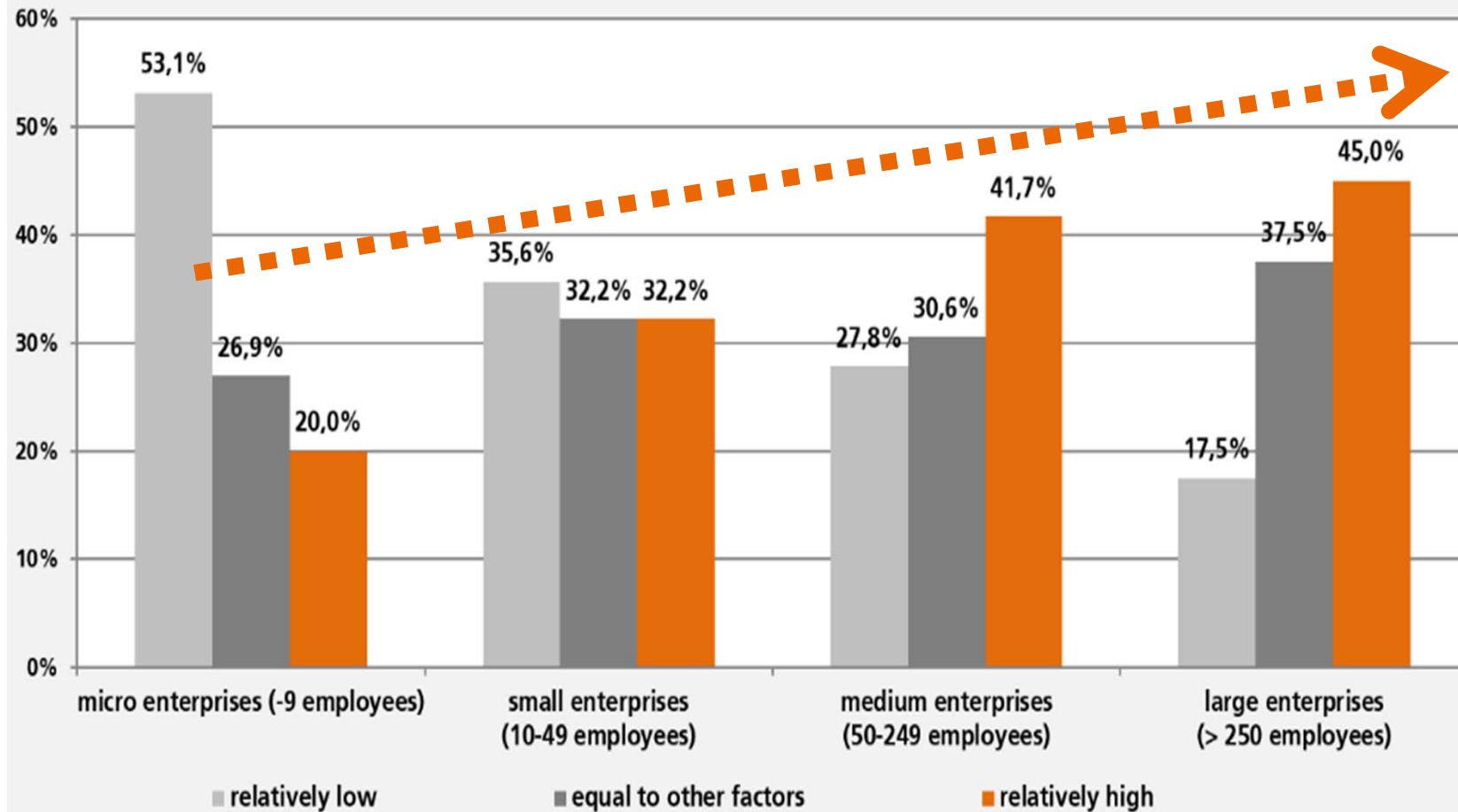
ENERGY EFFICIENCY  
in Industrial Processes

**ALLIANCE**  
TO SAVE ENERGY  
*Using less. Doing more.*

**ecci**  
EDINBURGH CENTRE FOR  
CARBON INNOVATION

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## Importance of Energy Efficiency for the Operations of German Companies

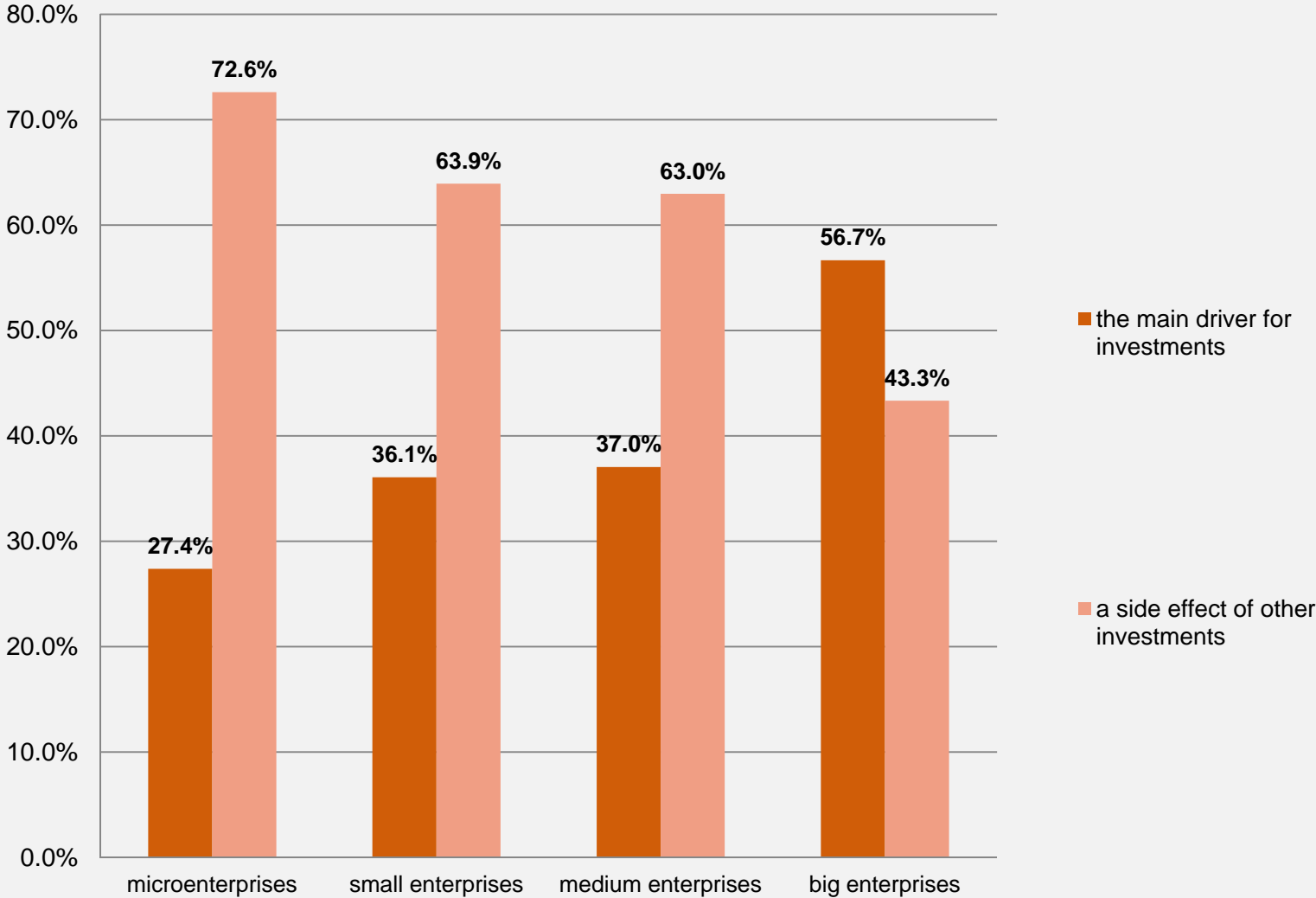


Source: EEP – Energy Efficiency Index 2. Survey 2014

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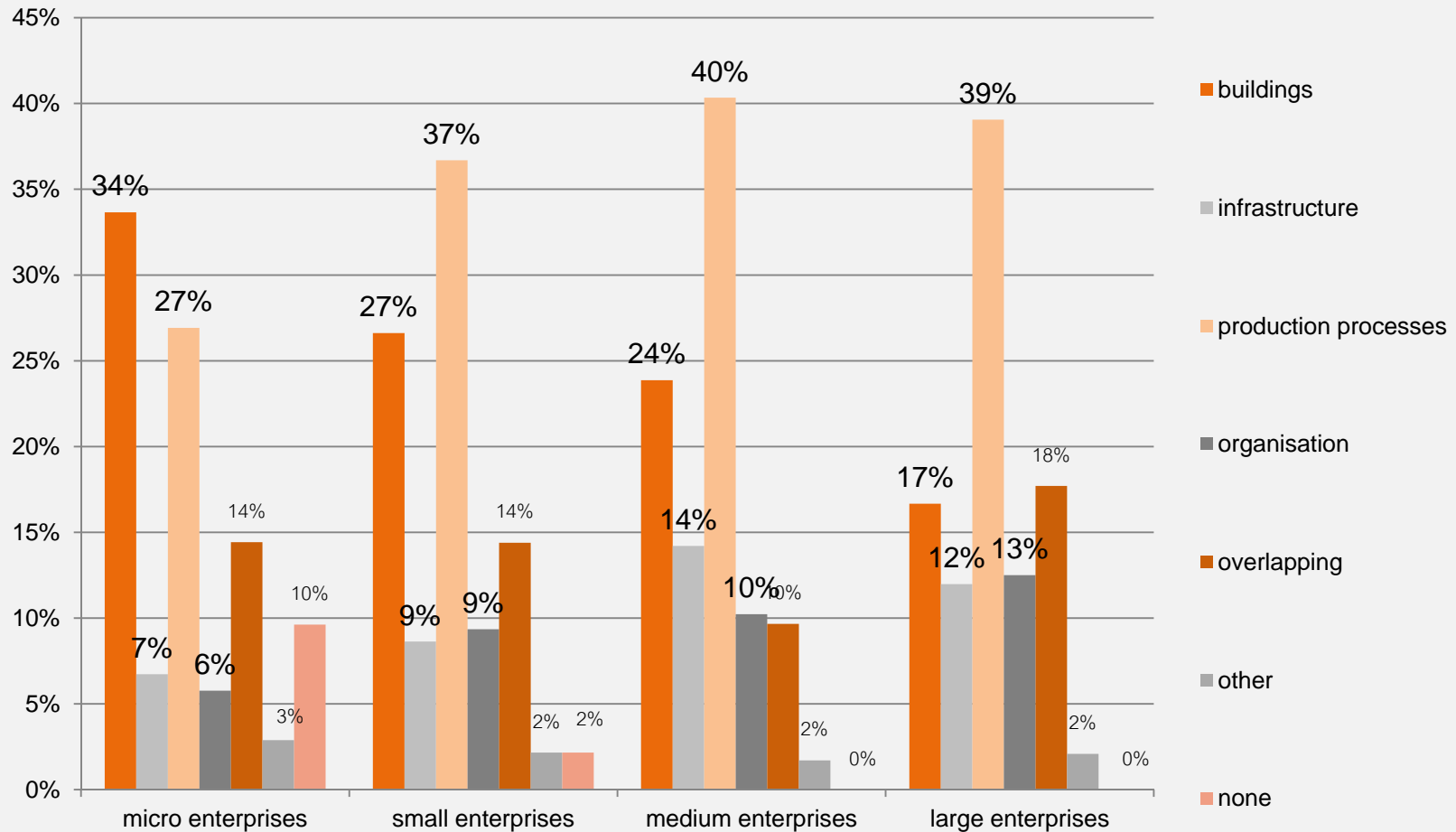
Allocation

### Energy efficiency is



Source: EEP – Energy Efficiency Index 2. Survey 2014

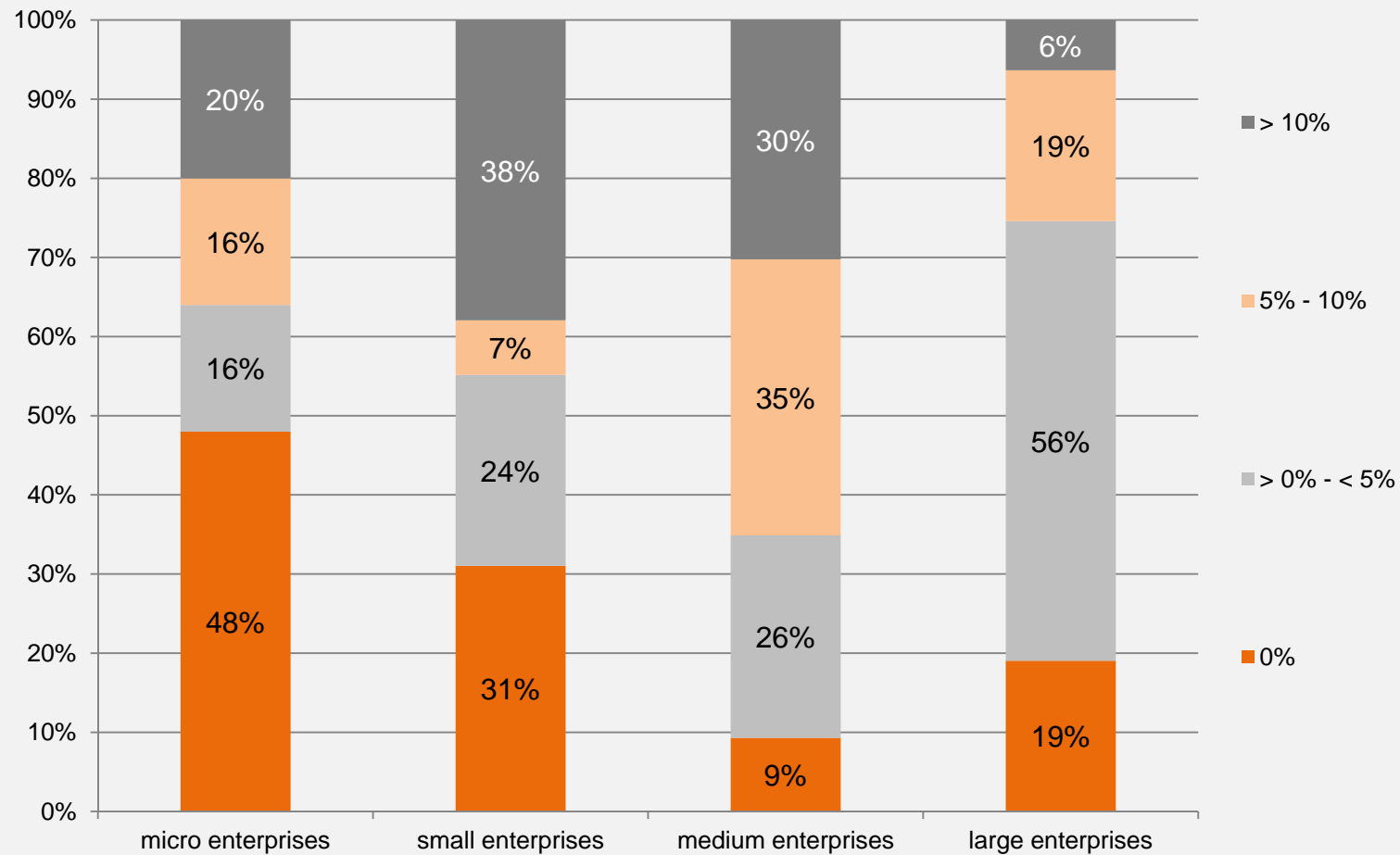
**The main drivers for energy efficiency in your company are: (multiple choice possible: n=367, answers=611)**



Source: EEP – Energy Efficiency Index 1. Survey 2015

Allocation of enterprise size : 17 % micro enterprises, 23 % small enterprises,  
29 % medium enterprises, 31 % large enterprises

## What average percentage increase in energy efficiency do you plan over the next 12 months [%]? (n=160)

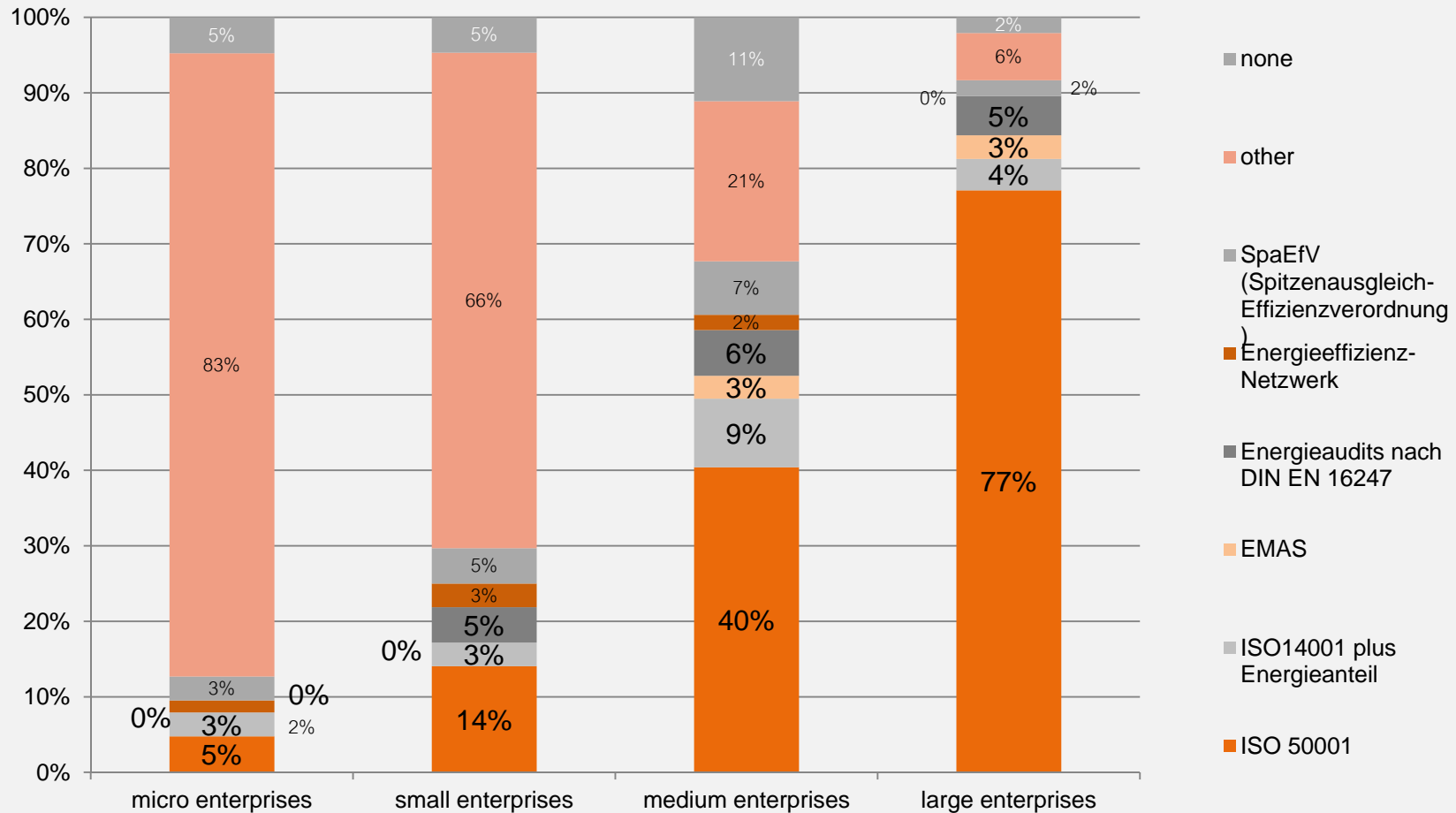


Source: EEP – Energy Efficiency Index 1. Survey 2015

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Allocation of enterprise size : 16 % micro enterprises, 18 % small enterprises,  
27 % medium enterprises, 39 % large enterprises

## Which approach improving energy efficiency in your company do you apply? (n=322)

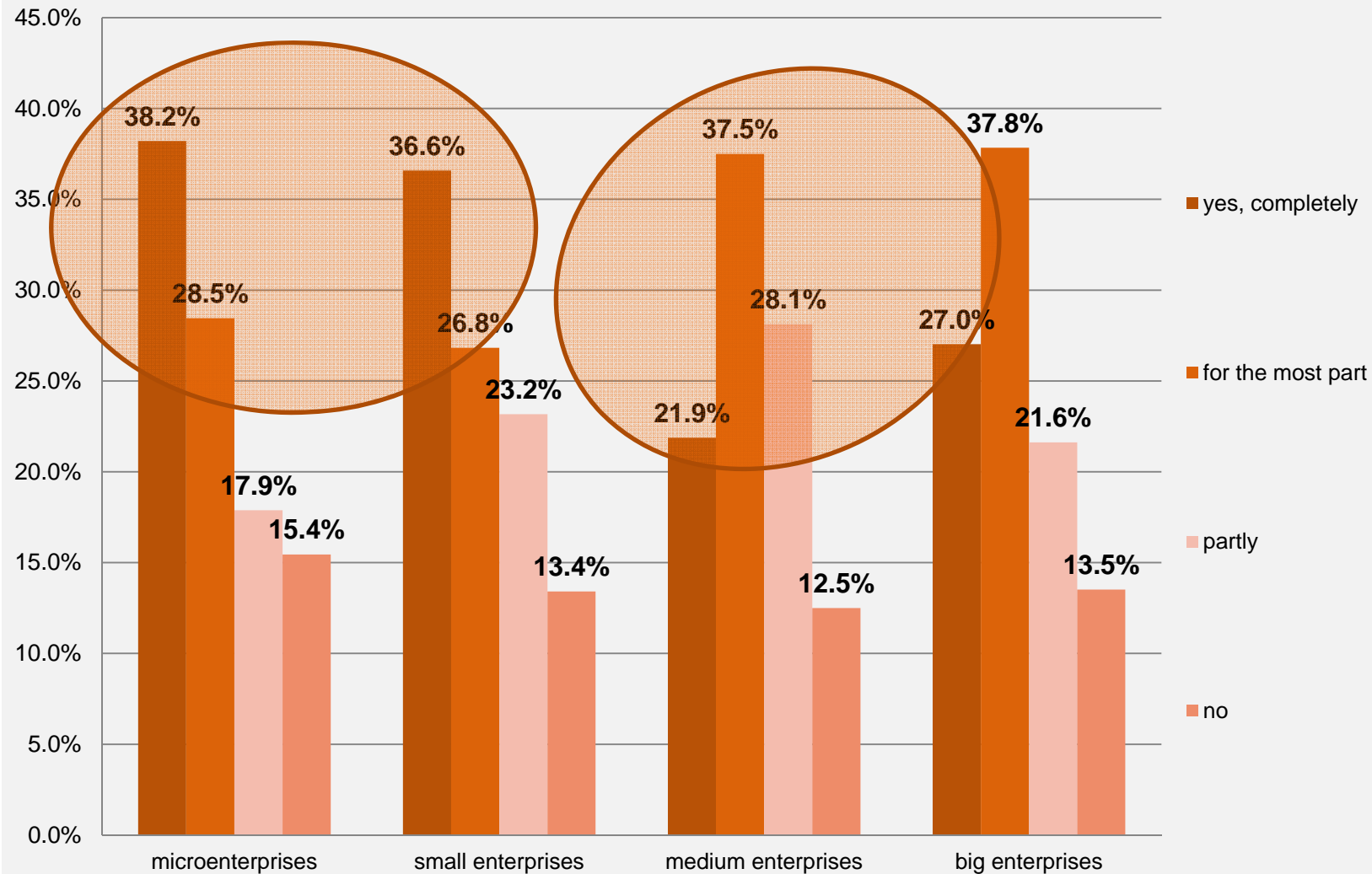


Source: EEP – Energy Efficiency Index 1. Survey 2015

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Allocation of enterprise size : 21% micro enterprises, 24% small enterprises,  
27 % medium enterprises, 28% large enterprises

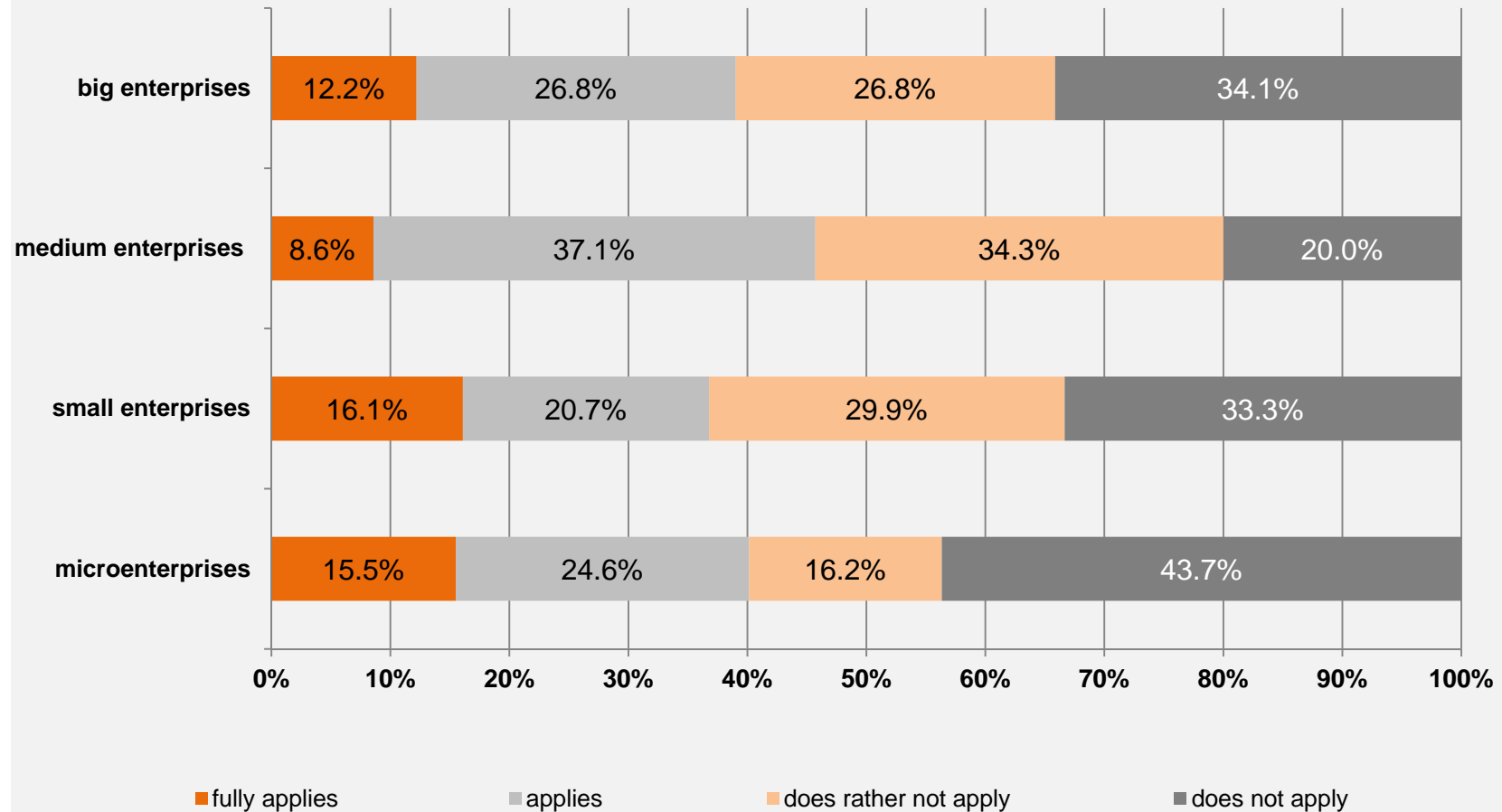
### Did you achieve your efficiency targets in the past?



Source: EEP – Energy Efficiency Index 2. Survey 2014



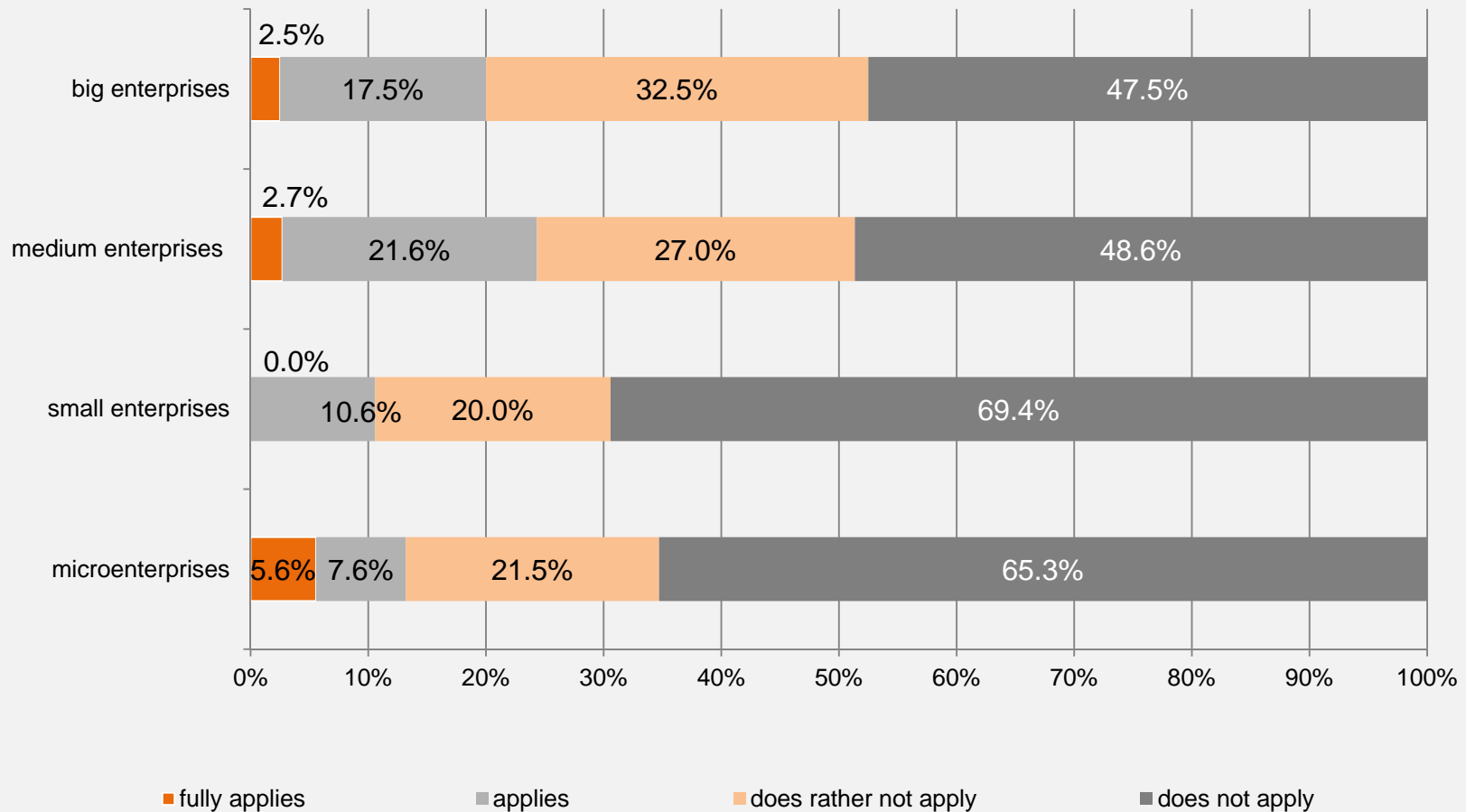
## We do not have any or enough skilled staff for planning and execution



Source: EEP – Energy Efficiency Index 2. Survey 2014

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## Concerns regarding production downtimes and product quality

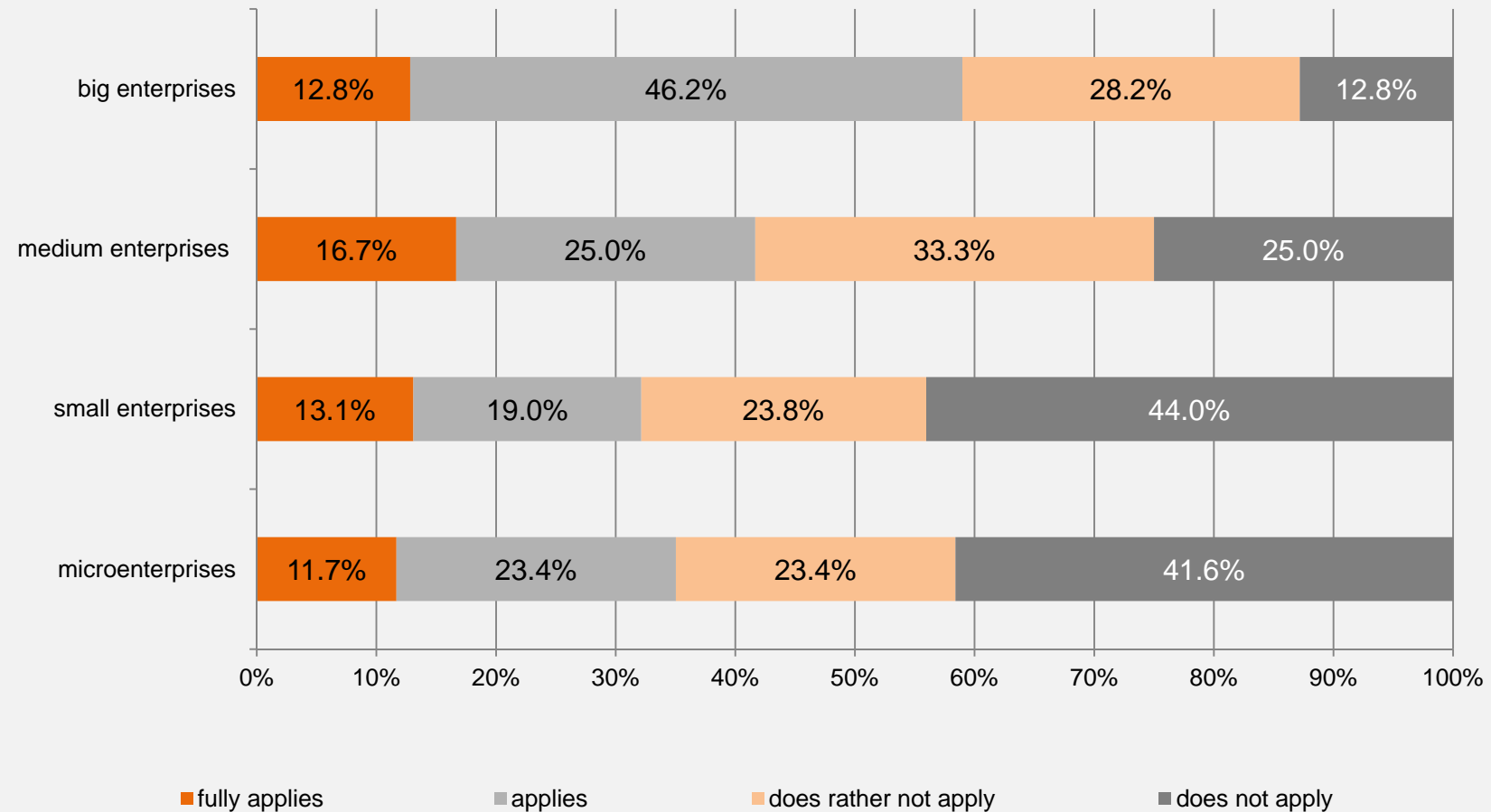


Source: EEP – Energy Efficiency Index 2. Survey 2014

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Allocation

## The payback period is too long

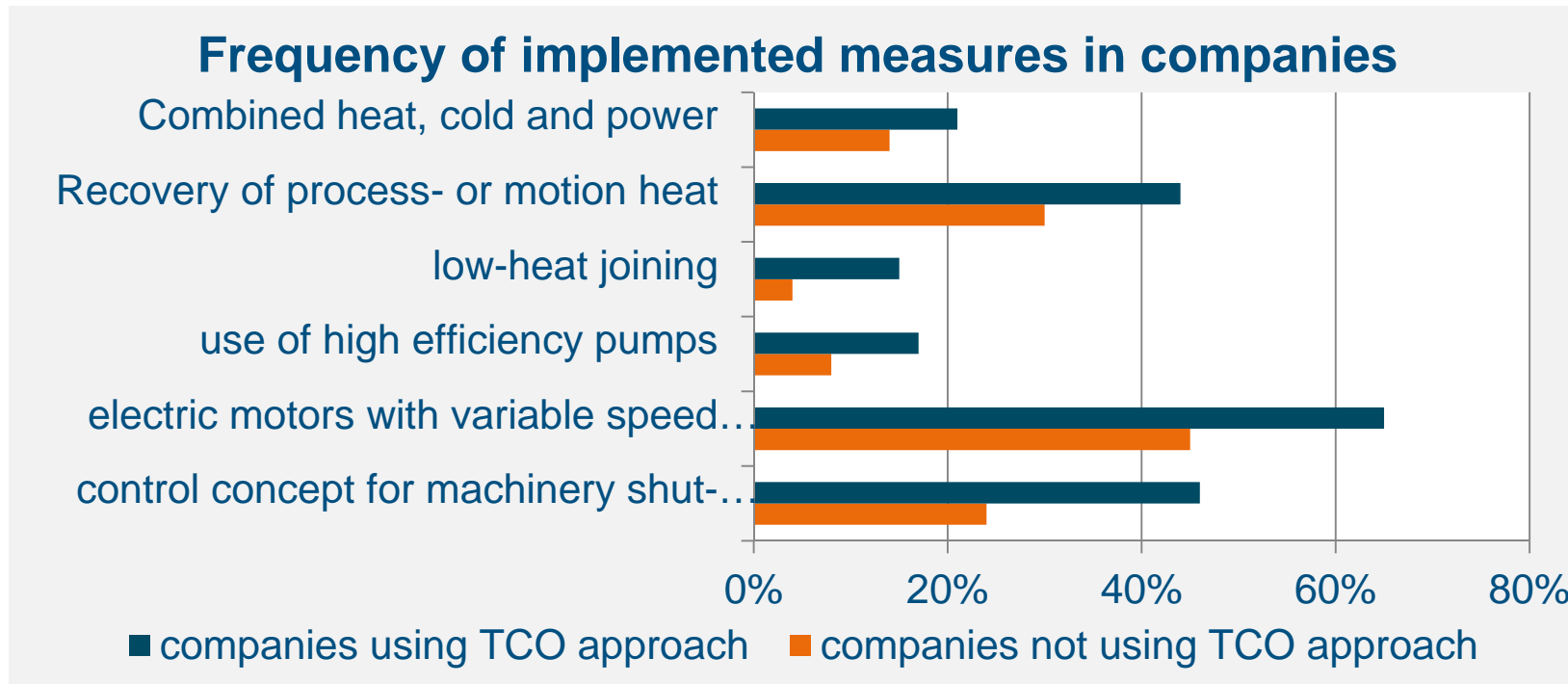


Source: EEP – Energy Efficiency Index 2. Survey 2014

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Allocation

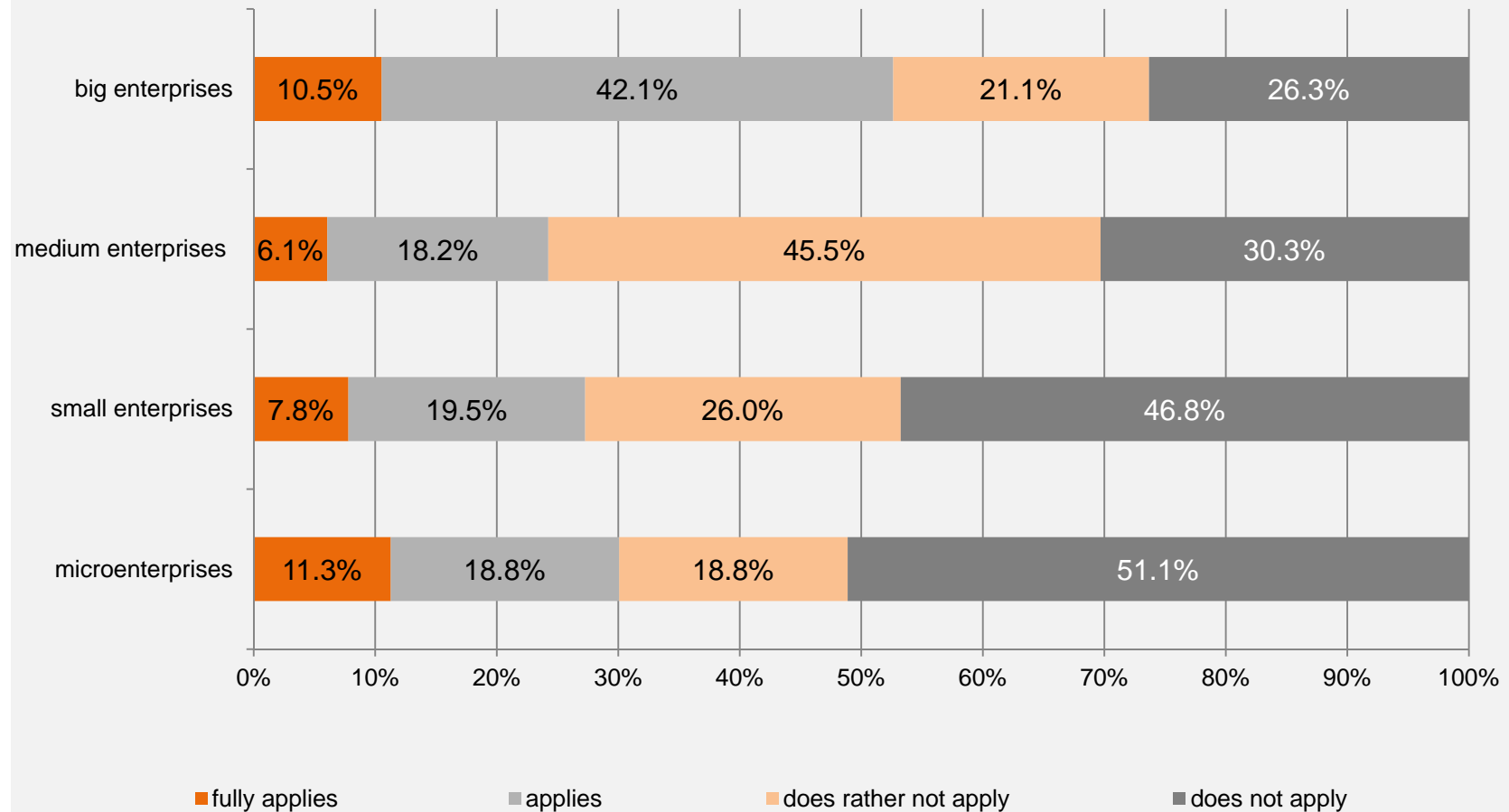
# Industry – life cycle calculation as an alternative



Diffusion Kostenmodelle [vgl. Schröter et al. 2009]

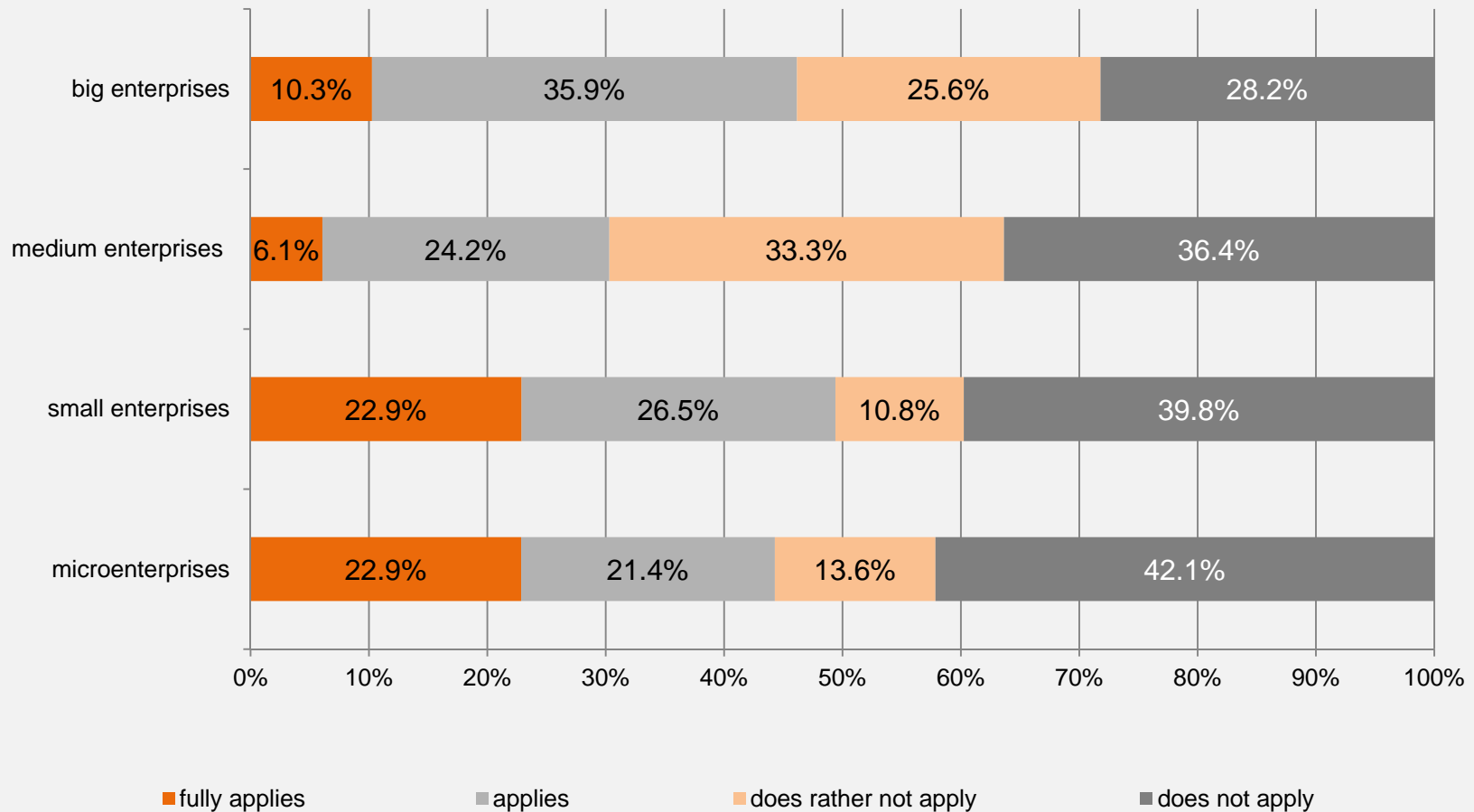
- Companies that use the total cost of ownership (TCO) as evaluation criterion implement significantly more efficiency measures

### Lacking subsidy programmes



Source: EEP – Energy Efficiency Index 2. Survey 2014

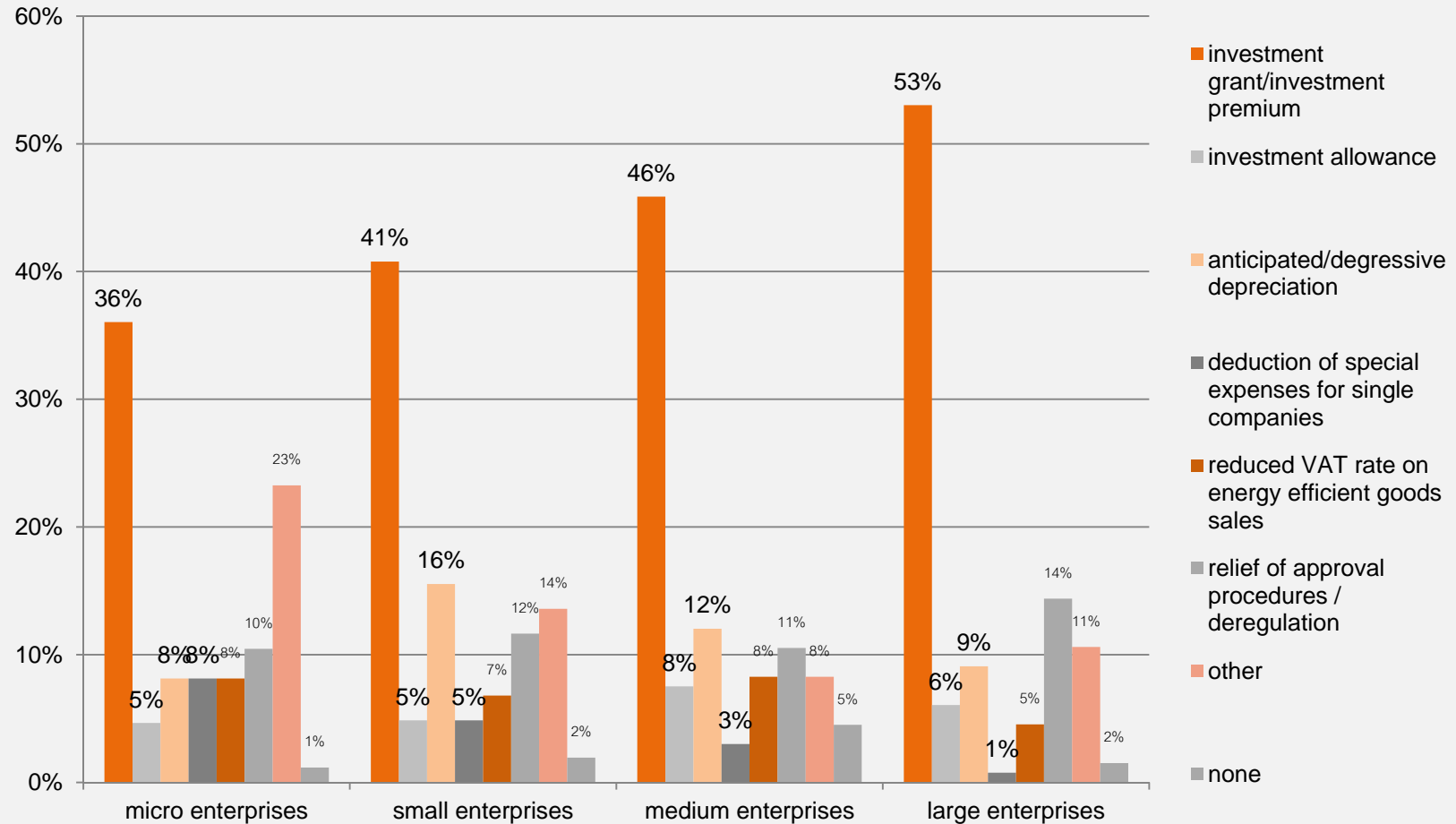
## Application process for subsidies is too complicated and time consuming



Source: EEP – Energy Efficiency Index 2. Survey 2014

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## Which type of incentive could motivate you most likely to invest in energy efficiency measures? (max. 2) (multiple choice possible: n=319, n'=454)



Source: EEP – Energy Efficiency Index 1. Survey 2015

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Allocation of enterprise size : 19 % micro enterprises, 23 % small enterprises,  
29 % medium enterprises, 29 % large enterprises

## Describing the ways forwards to drive industrial energy efficiency:

- Describing actual energy efficiency potentials and lifting them through policy, entrepreneurial and financial interventions more and more accurately
- Comparing performance of sectors across geographies rather than accumulated country data.
- Reducing unknowns, risks & uncertainty in relation to energy efficiency interventions enabling sector-specific cross-country analyses
- Equipping companies and legislators with insights on how and where to act
- Making financial institutions & service providers aware of feasible projects and required funding mechanisms and services



# Thank you very much for your attention!

## Contact details

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# Backup

EEP - The Institute for Energy Efficiency in Production

# **A HUB FOR INDUSTRIAL ENERGY EFFICIENCY**

# Positioning of the Institute

## Energy Efficiency in Production

### MISSION

Development, Optimization and Evaluation of Technologies for the Implementation of Energy Efficiency Measures in Production, in Elementary Research and in the Industrial Application

### SERVICE TO SOCIETY

Educating the society and politics on the basis of numbers, facts and figures

Promote the implementation of technologies to increase energy efficiency

Development of technologies for implementation of energy efficiency measures in industry

*EEP was established and is supported by*



# EEP – The Hub for Energy Efficiency in Industry

## Efficiency Technologies

- CHP-integrated technologies
- Storage technologies
- DSM-able technologies

## Industrial Smart Grids

- Energy efficient and energy flexible systems
- Integration of controls, generation, distribution, storage and use

## Urban Production

- Energetic interconnection of production and districts
- Energy concepts & strategies for industry estates

## Energy-Policy, -Strategy and -Finance

- Energy efficiency index/barometer of Industry
- Financing EE / Business models for EE
- National & International Engagement

## Energy-Policy, -Strategy and -Finance

- Policy- and strategy advice (local, regional, international):
- Optimization of supply- and regulation: evaluation and suggestion of precisely fitting policy-, financing- and risk hedging measures to enhance energy efficiency in the industry
- Optimization of demand: impact analysis of energy efficiency enhancement programmes in the industrial context in order to develop feasible business- and financing models
- Providing an objective as well as comparable transnational and cross sectoral decision base for governments, NGO's, companies, etc.
- Accompanying of stakeholder processes of energy efficiency
- Assessing impact of pilot and implementation schemes