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Institute for Energy Efficiency
in Production EEP

Identifying what matters

the way forward in energy
efficiency from a demand side
perspective

Stefan M.
Buettner



**We need to look closely
at the demand side, to
understand how people
act, decide, and what
they value.**

SMB

”

The Energy Efficiency Index of the German Industry

Selected results



Regionale Kompetenzstellen
Netzwerk Energieeffizienz



Buckle-up!

a snap-shot of selected results of past years

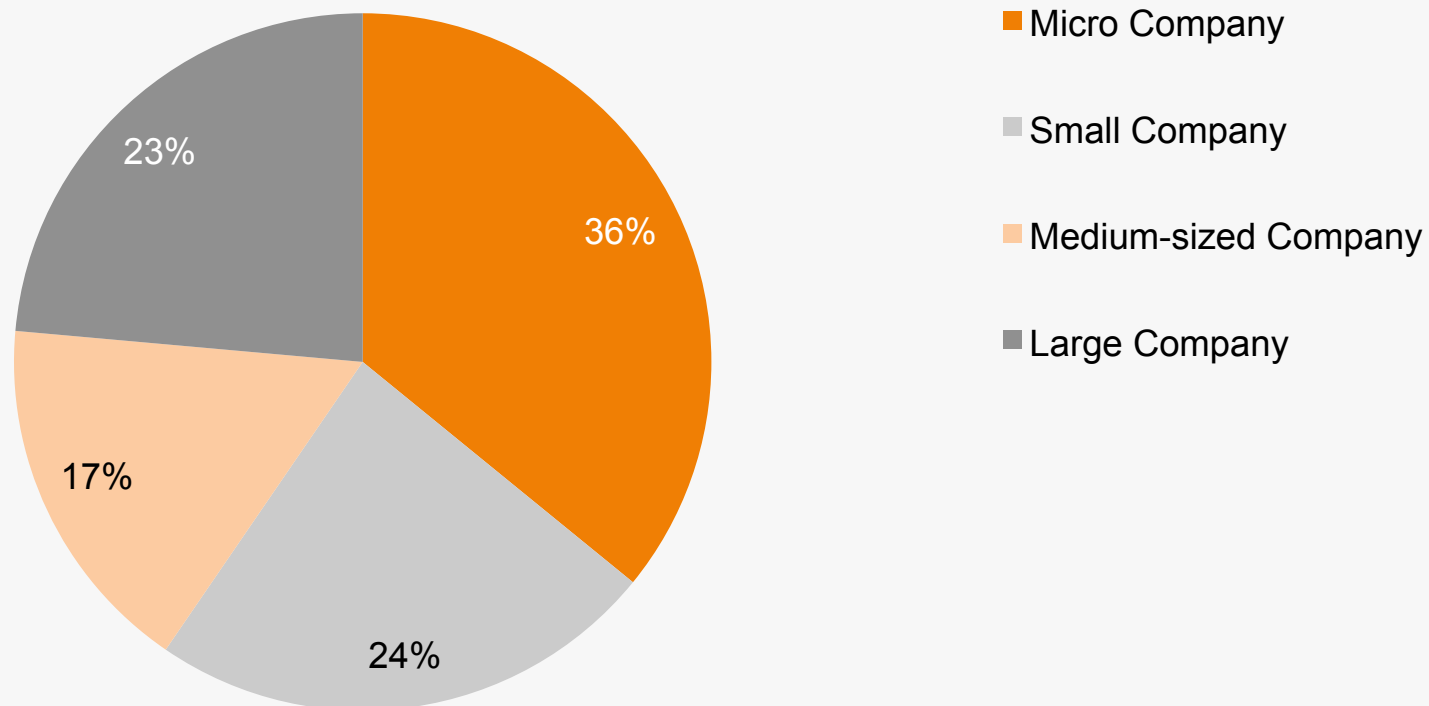


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Composition of Overall sample by Company Size

Special Issue Questions

Company composition German sample (n=1162)

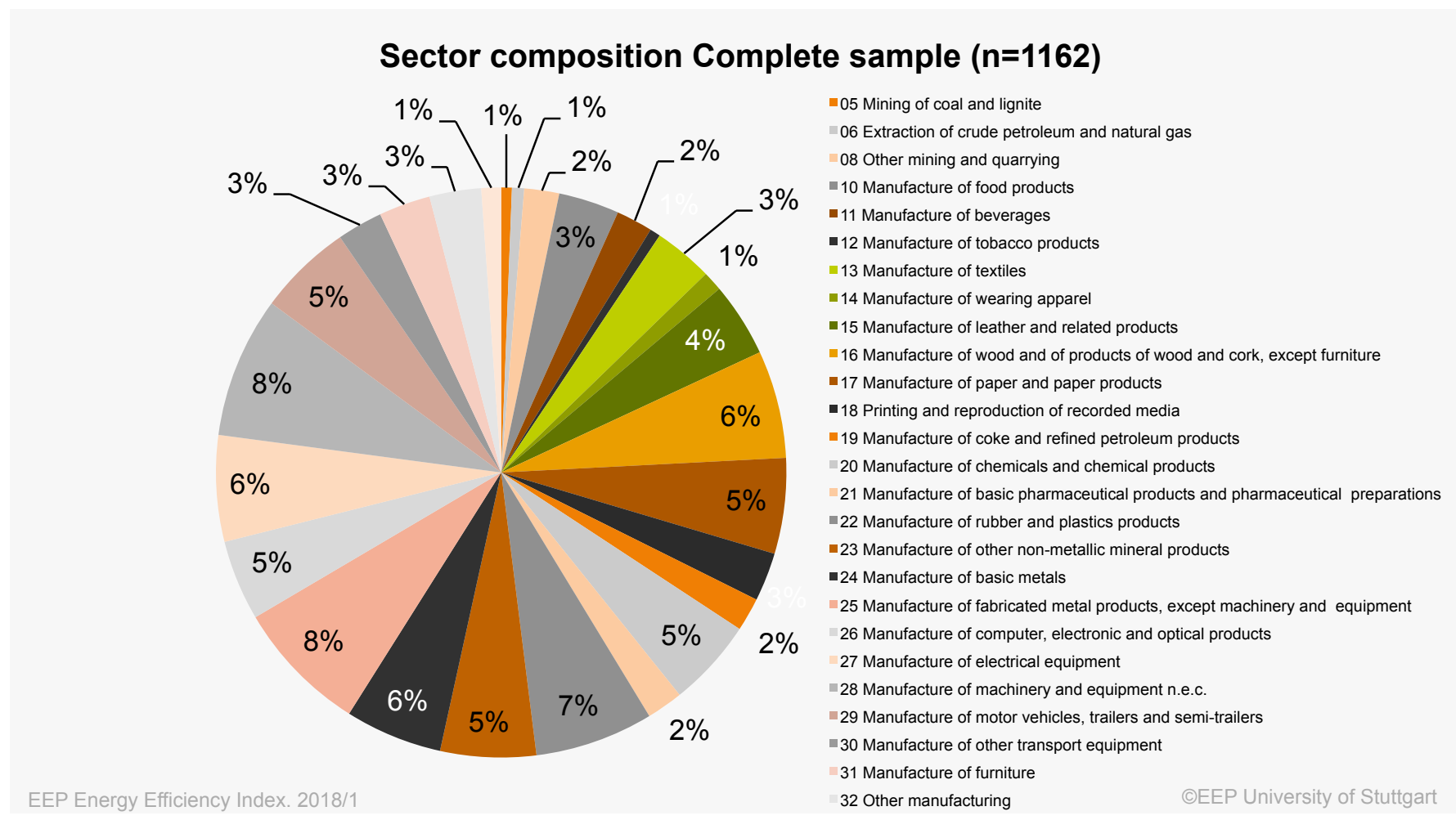


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Composition of Overall sample by sector

Special Issue Questions



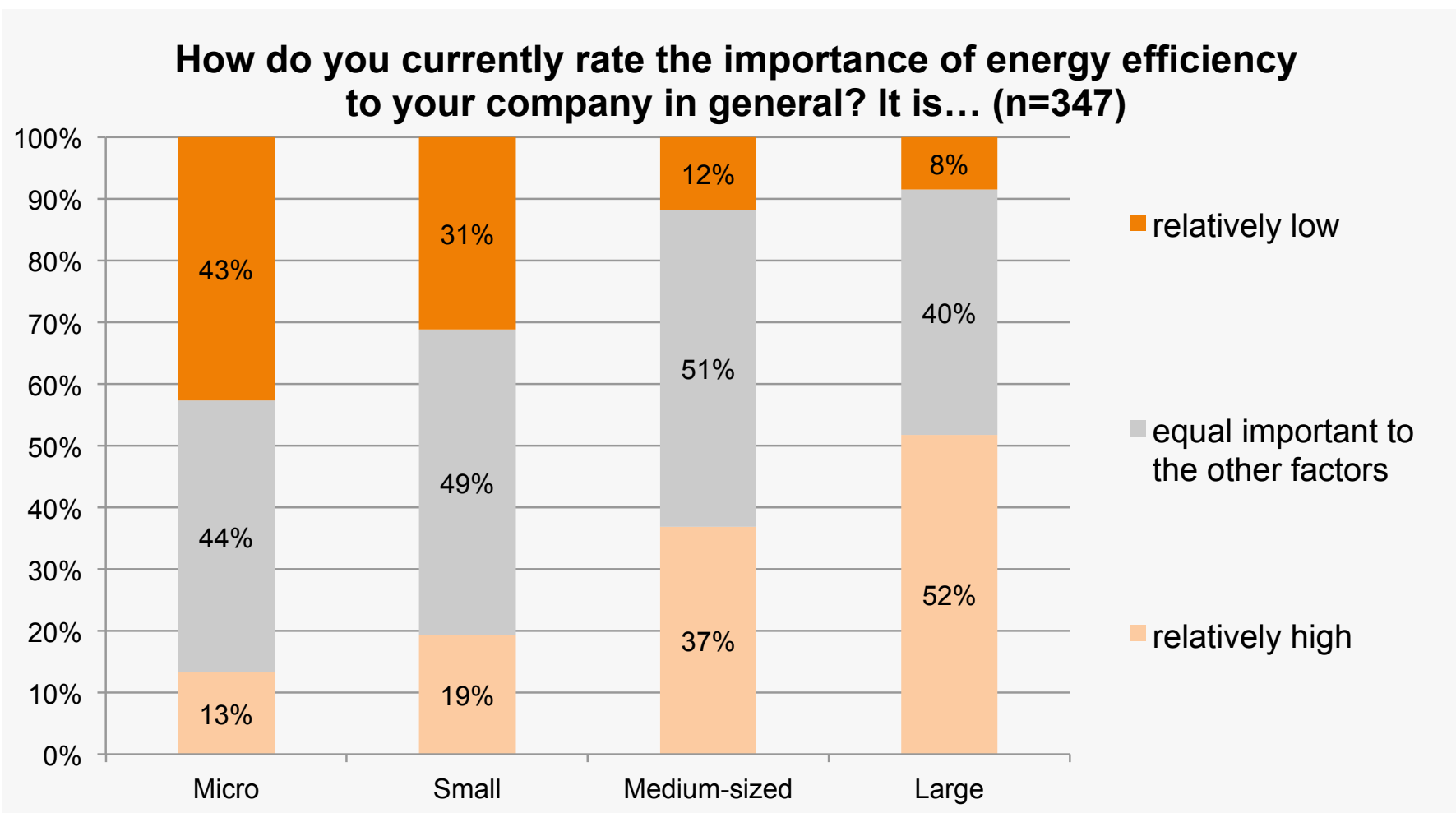
What does efficiency matter?



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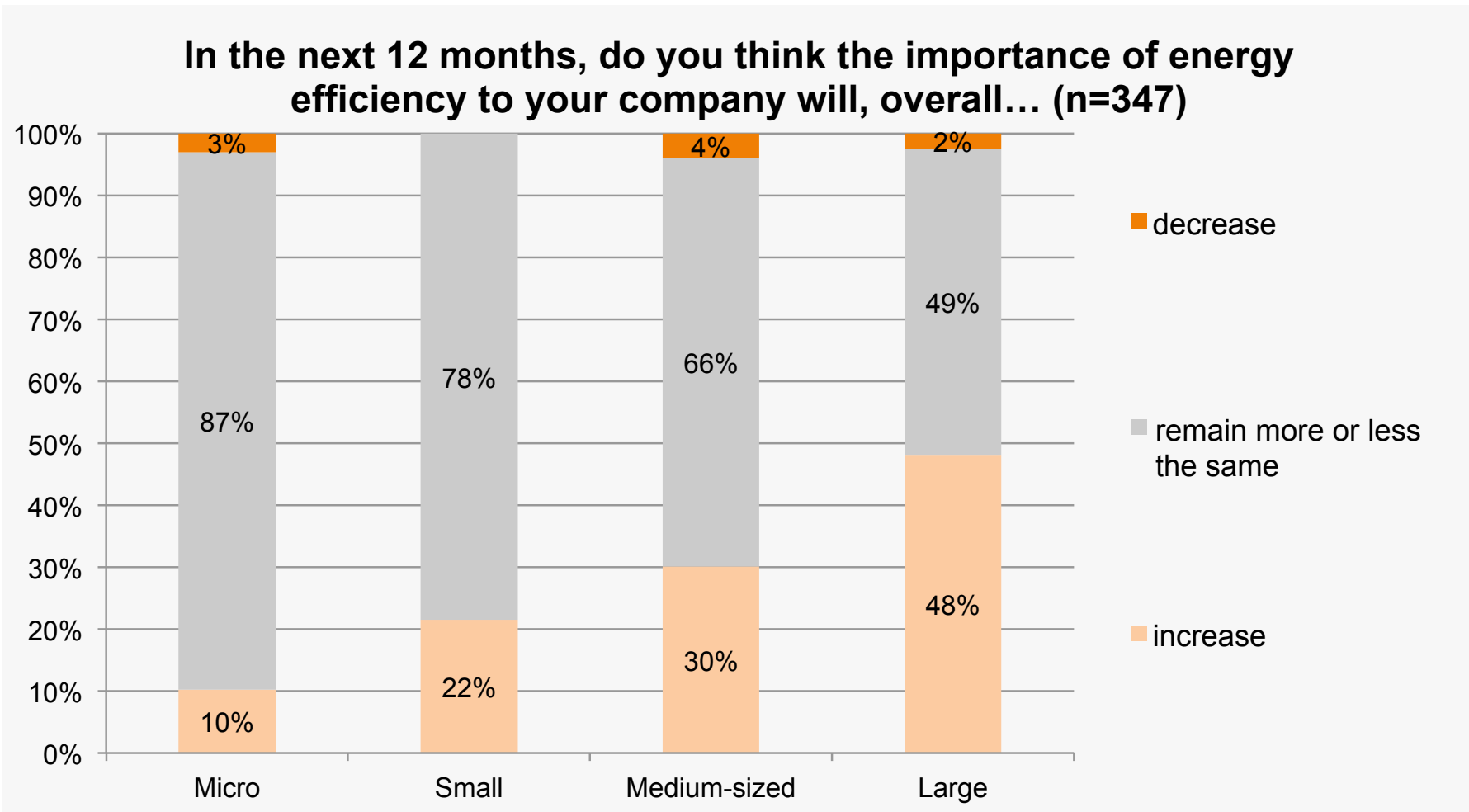
Importance of energy efficiency

With increasing size of the company being energy efficient gains in importance



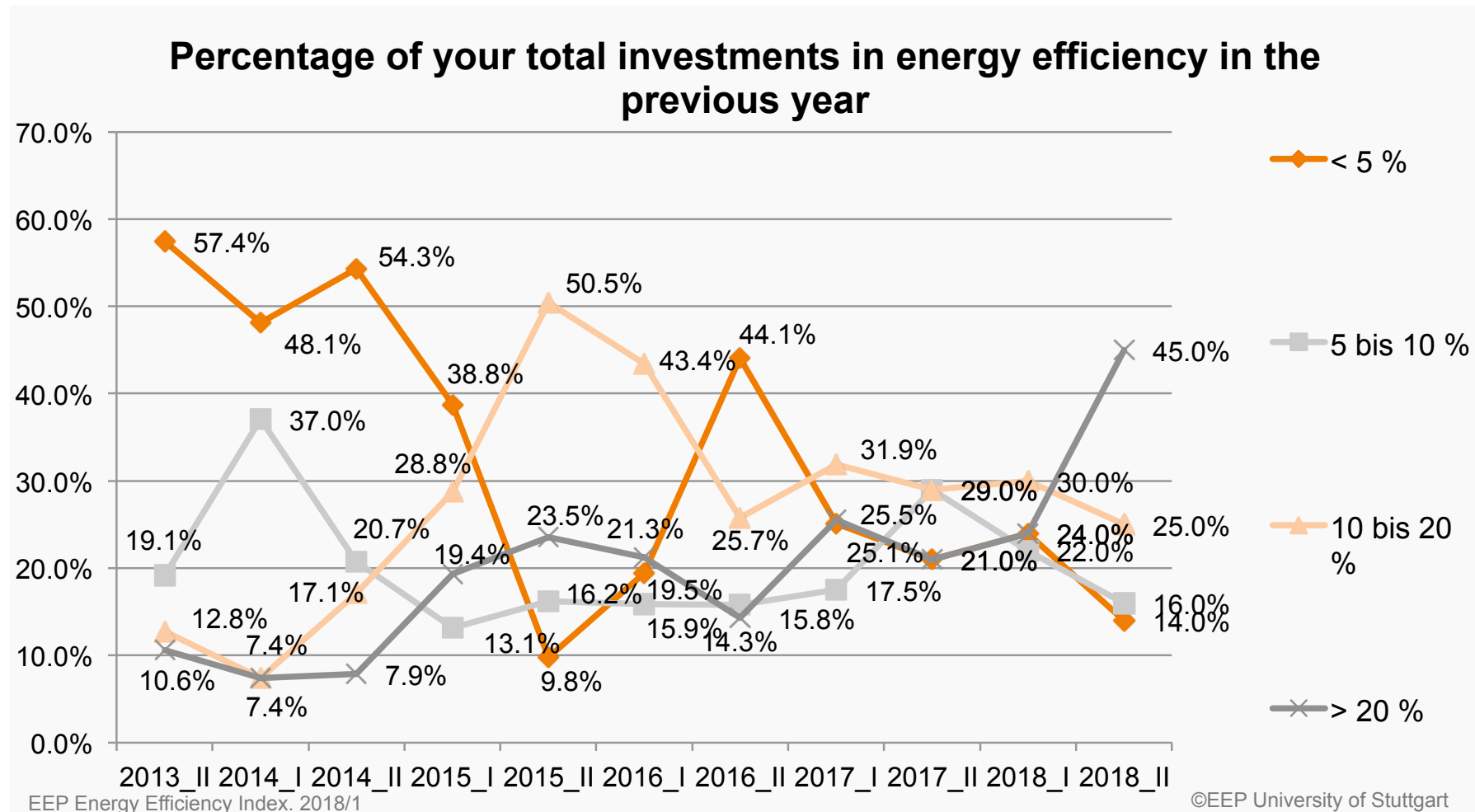
Importance of energy efficiency in the future

With increasing size of the company being energy efficient in the future gains in importance



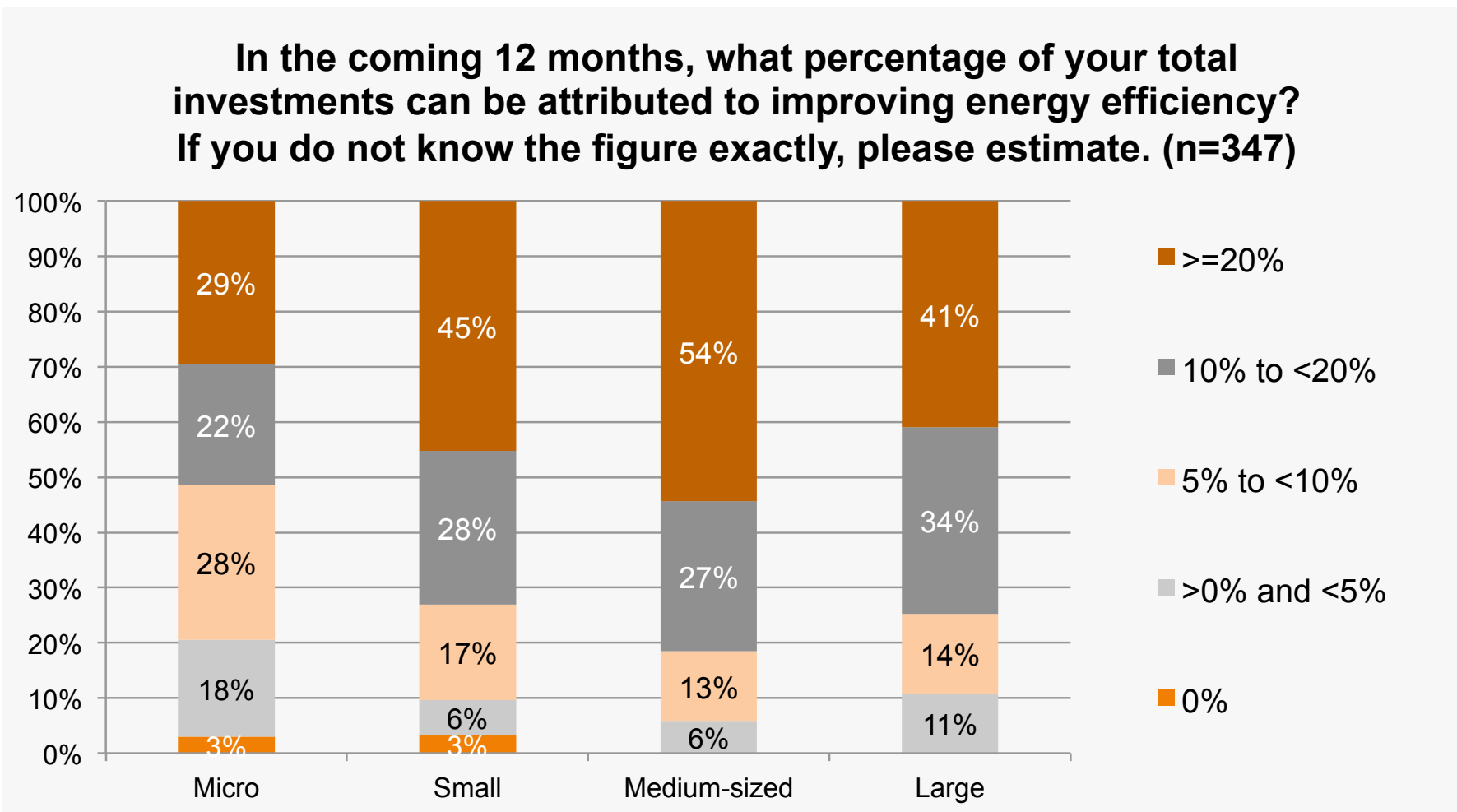
Percentage of your total investments in the previous year

Over the last five years there was a trend towards more investments in energy efficiency



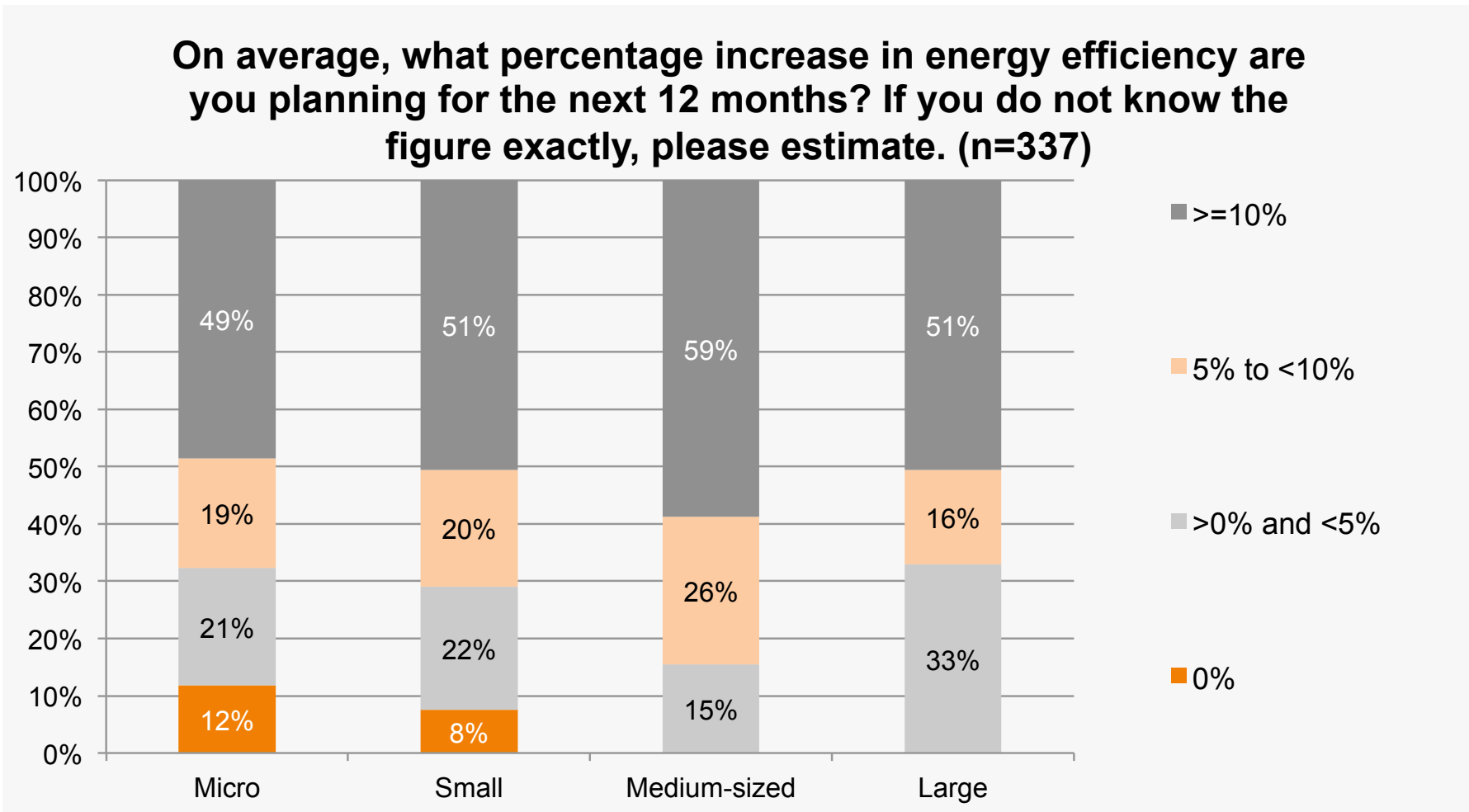
Percentage of your total investments in the future

In the following year 97% of Micro and Small Businesses and 100% of the Medium-sized and Large ones will invest in improving their energy efficiency



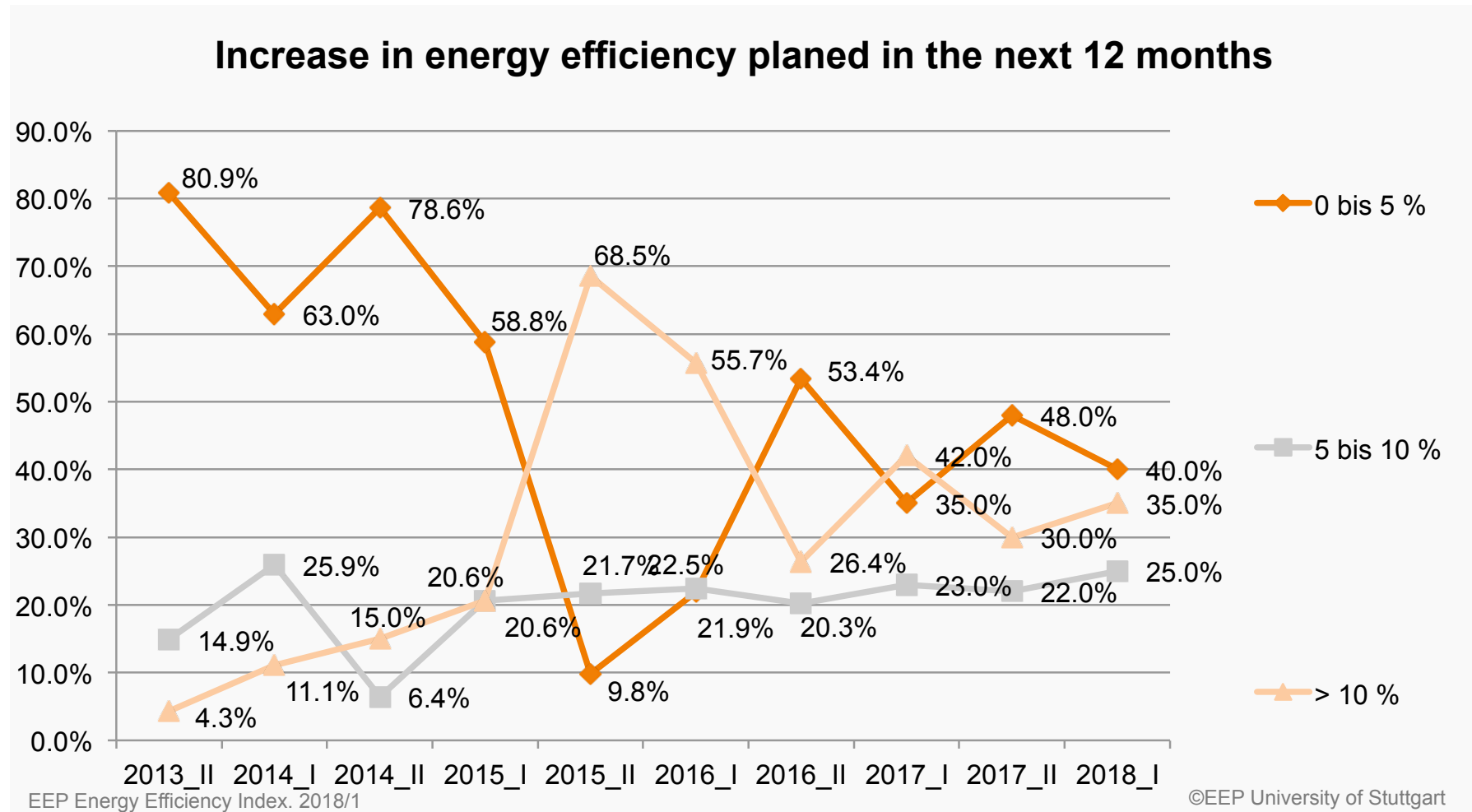
Increase in energy efficiency

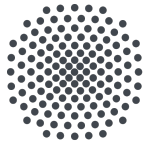
This year 100% of participating medium-sized and large companies plan to increase their energy efficiency, a large proportion of micro and small ones, too



Increase in energy efficiency

Over the last five years, the proportion of companies intending to increase their energy efficiency by 10%+ went up eightfold





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Climate & Industry

The actual view of the industrial
sector regarding energy and
climate action



Long-lasting negotiations to form a new government

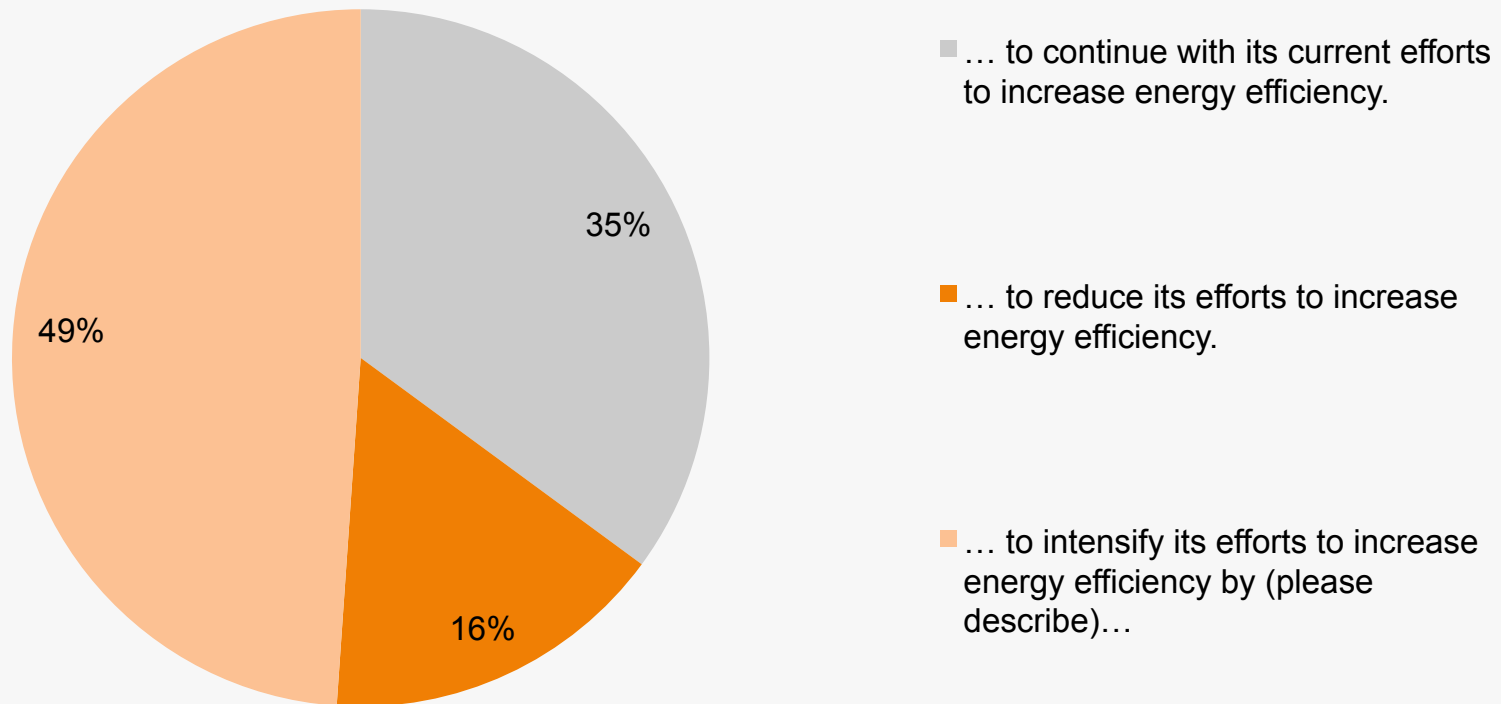


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What action would companies like to see of the Government?

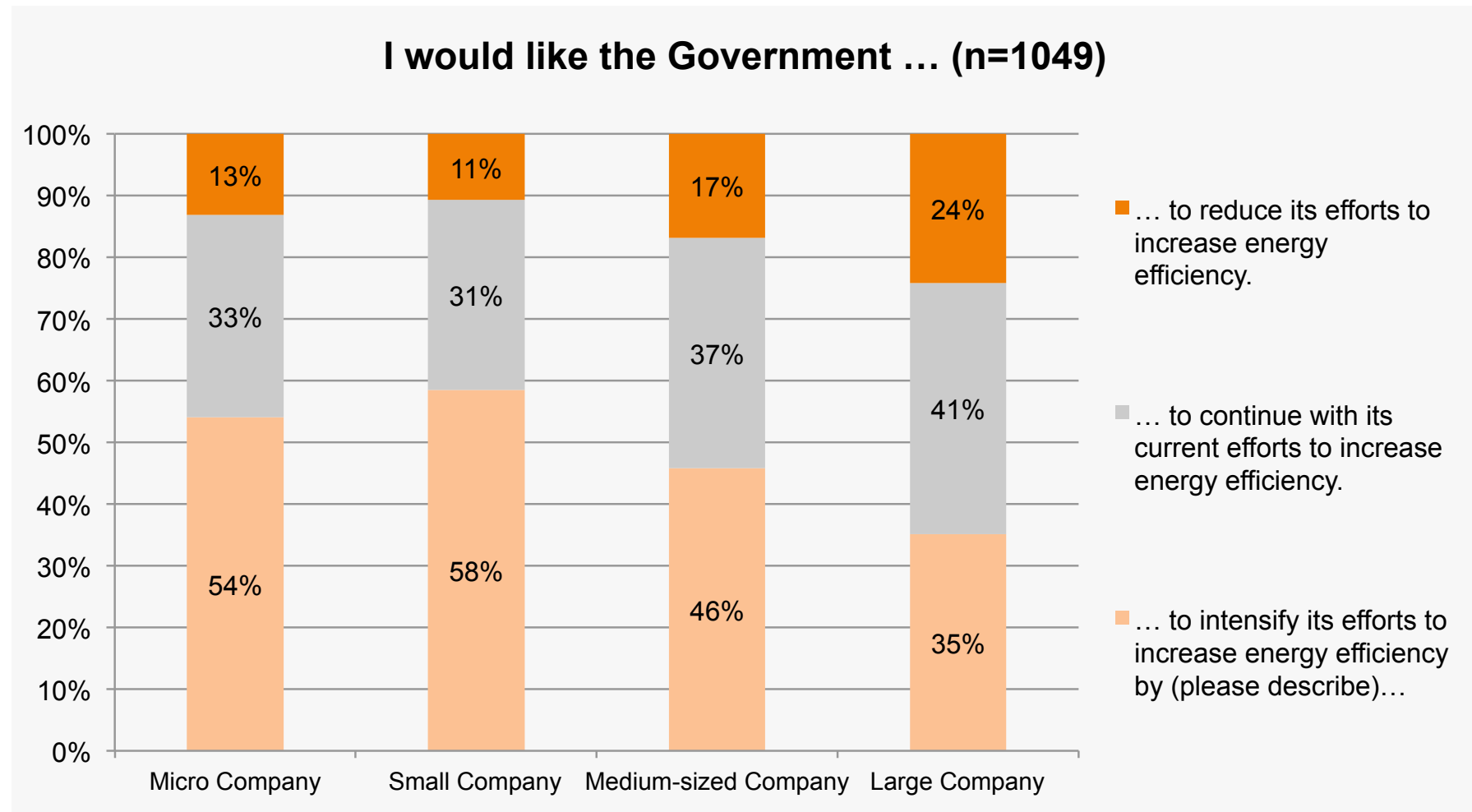
4/5th of companies would like to see the level of ambition and activity at least kept, nearly half even intensified

I would like the Government ... (n=1049)



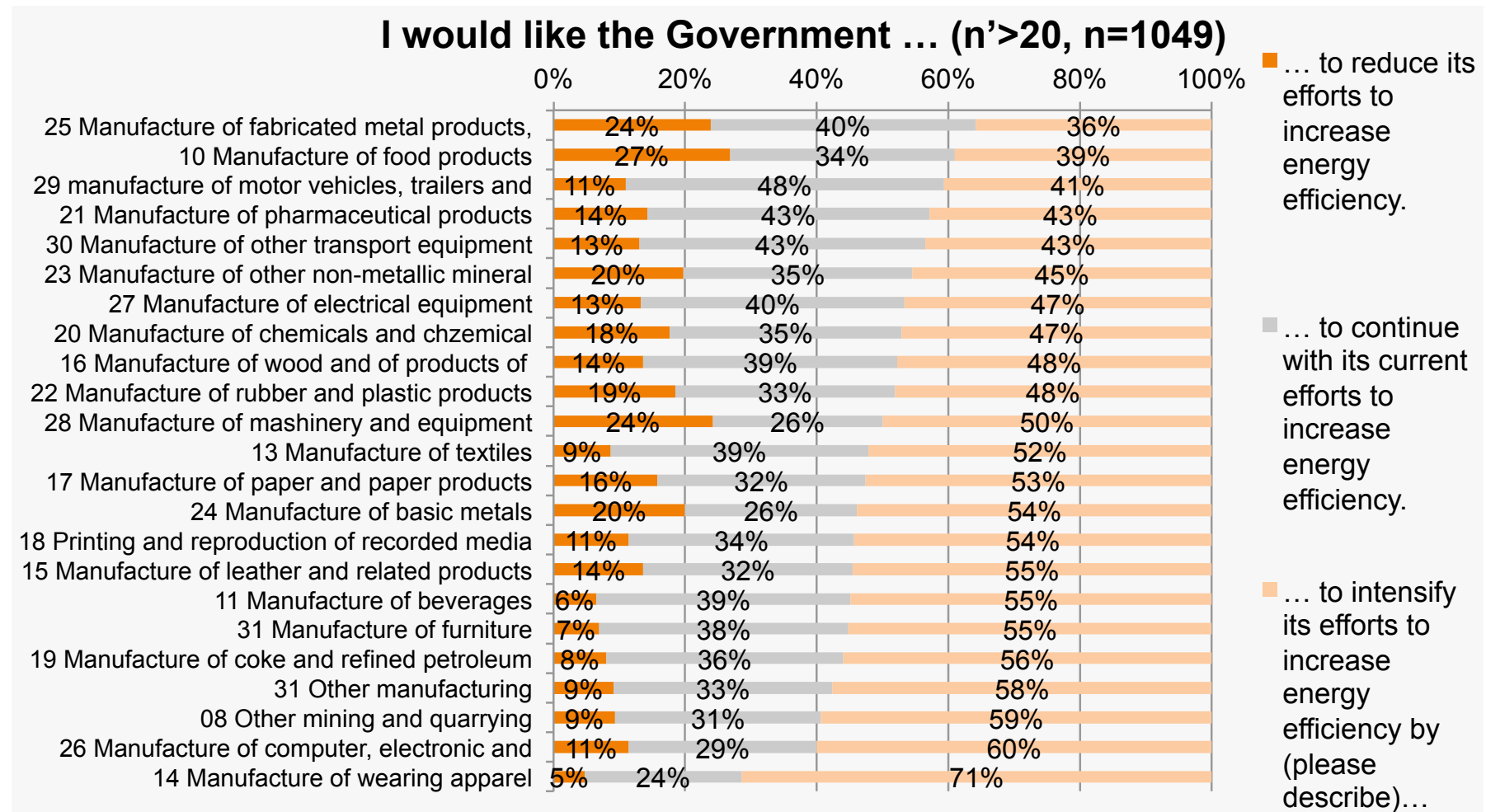
What action would companies like to see of the Government?

Particularly smaller companies demand increasing efforts undertaken by the government



What action would companies like to see of the Government?

Opinions differ a lot amongst sectors



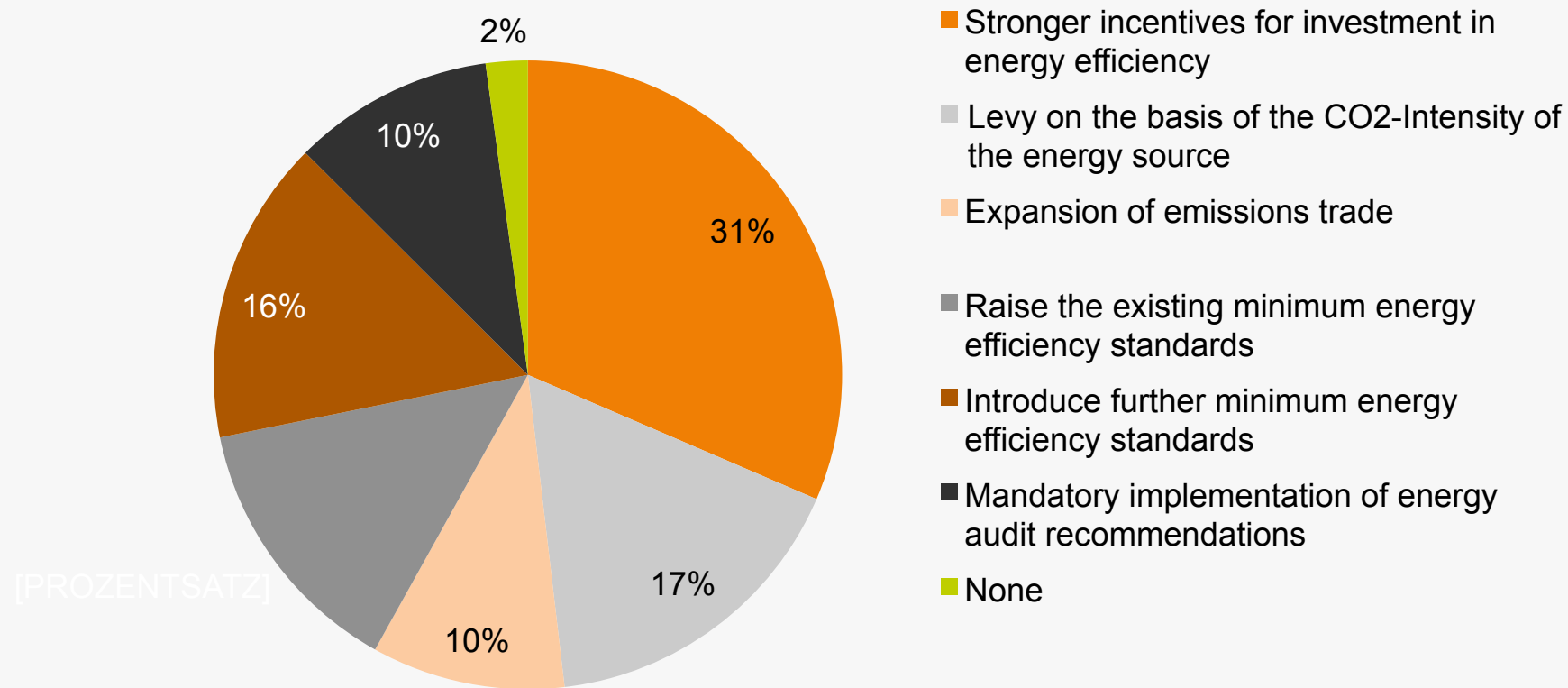
Coalition agreement admits goals will be missed



Closing the existing gap

Almost all companies surveyed support closing the action gap towards achieving energy and climate targets

In your opinion, which measures should be taken to close the existing gap in the energy and climate targets for 2020? (n=1073, n'=2412)

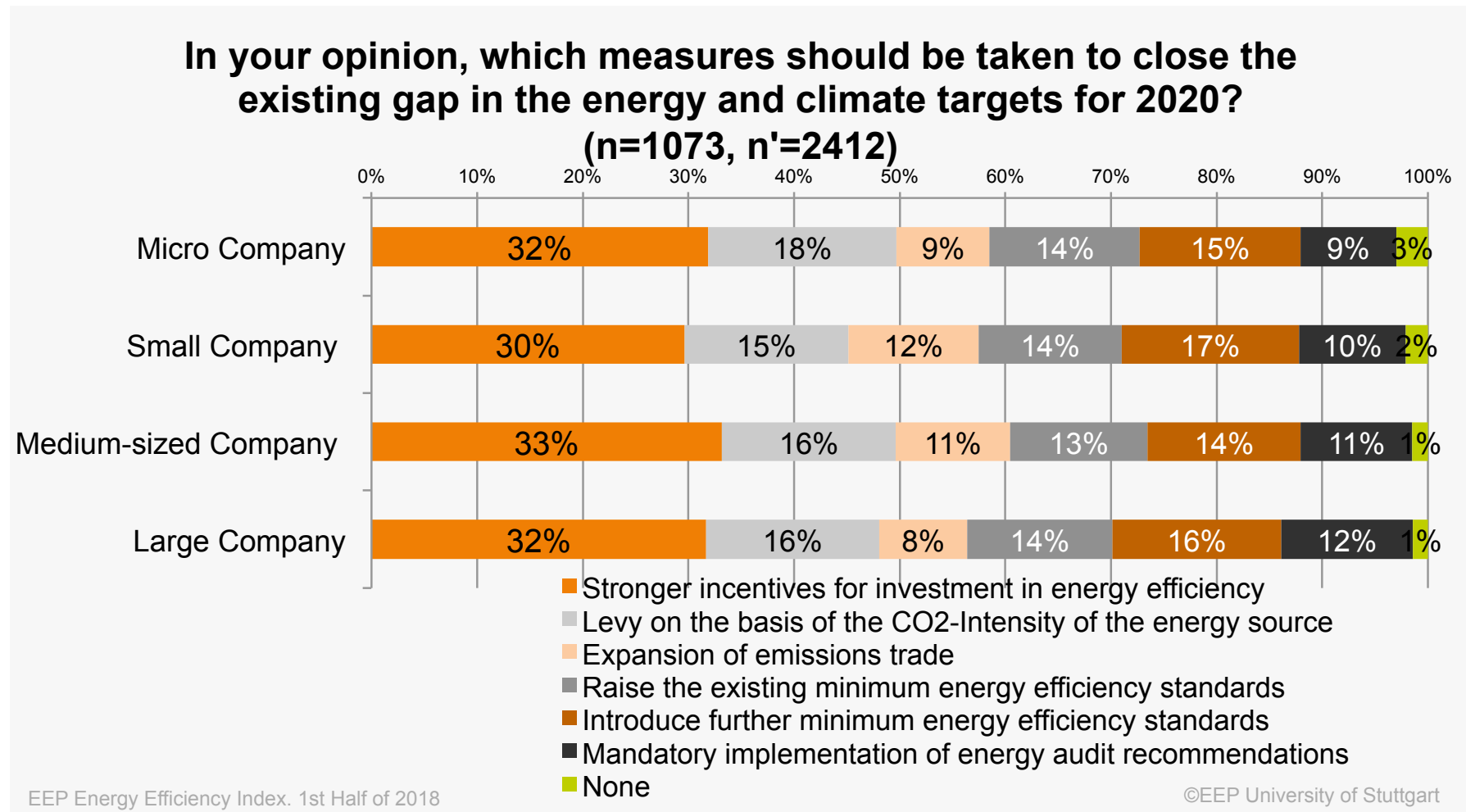


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Closing the existing gap

Regardless of company size, nearly 70% of companies are open to additional requirements to achieve the energy and climate targets



Distribution of answers:

36% Micro Company, 24 % Small Company,
17 % Medium-sized Company, 23% Large Company

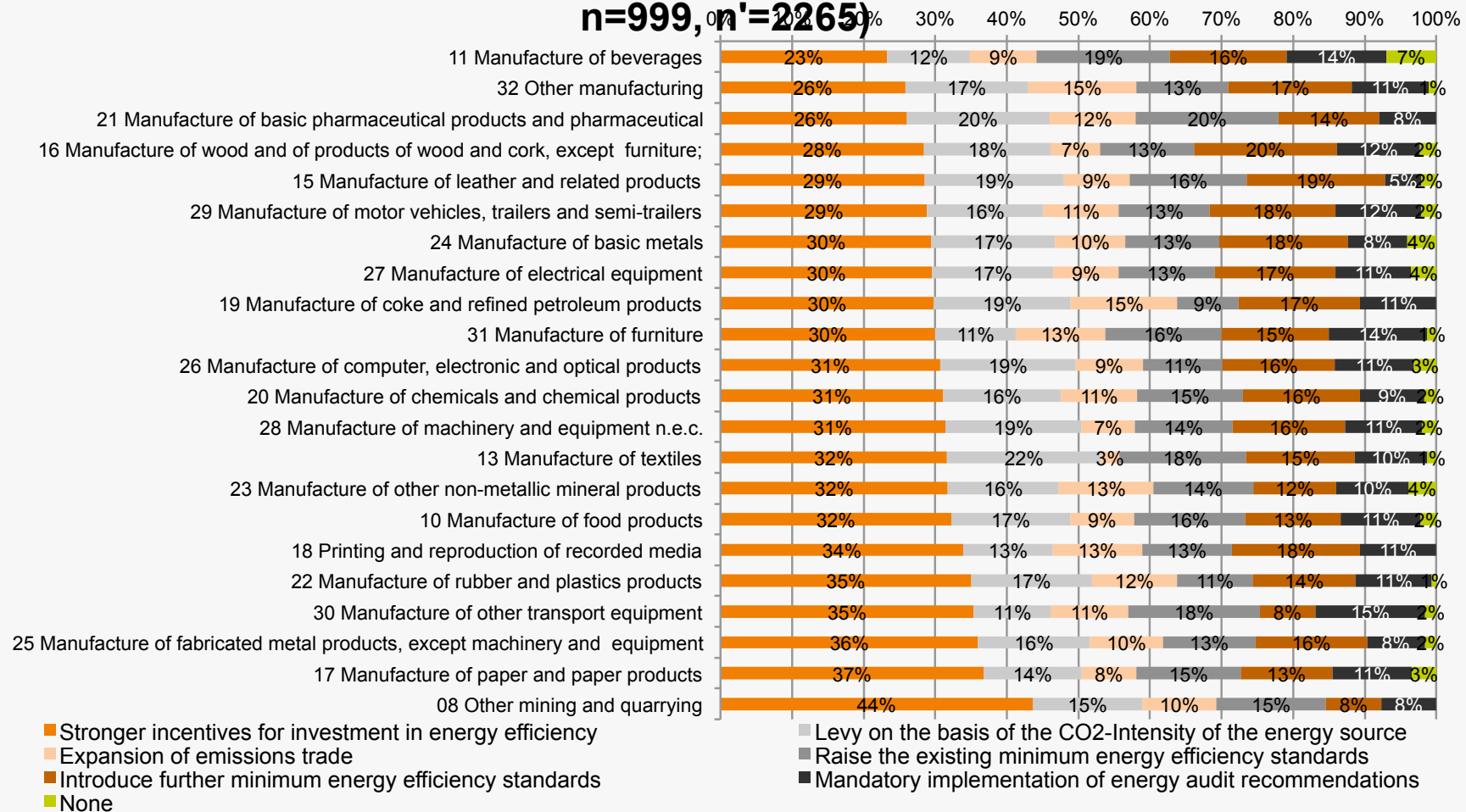


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Closing the existing gap

Preferences vary greatly from industry to industry

In your opinion, which measures should be taken to close the existing gap in the energy and climate targets for 2020? (n>20, n=999, n'=2265)



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Getting it funded

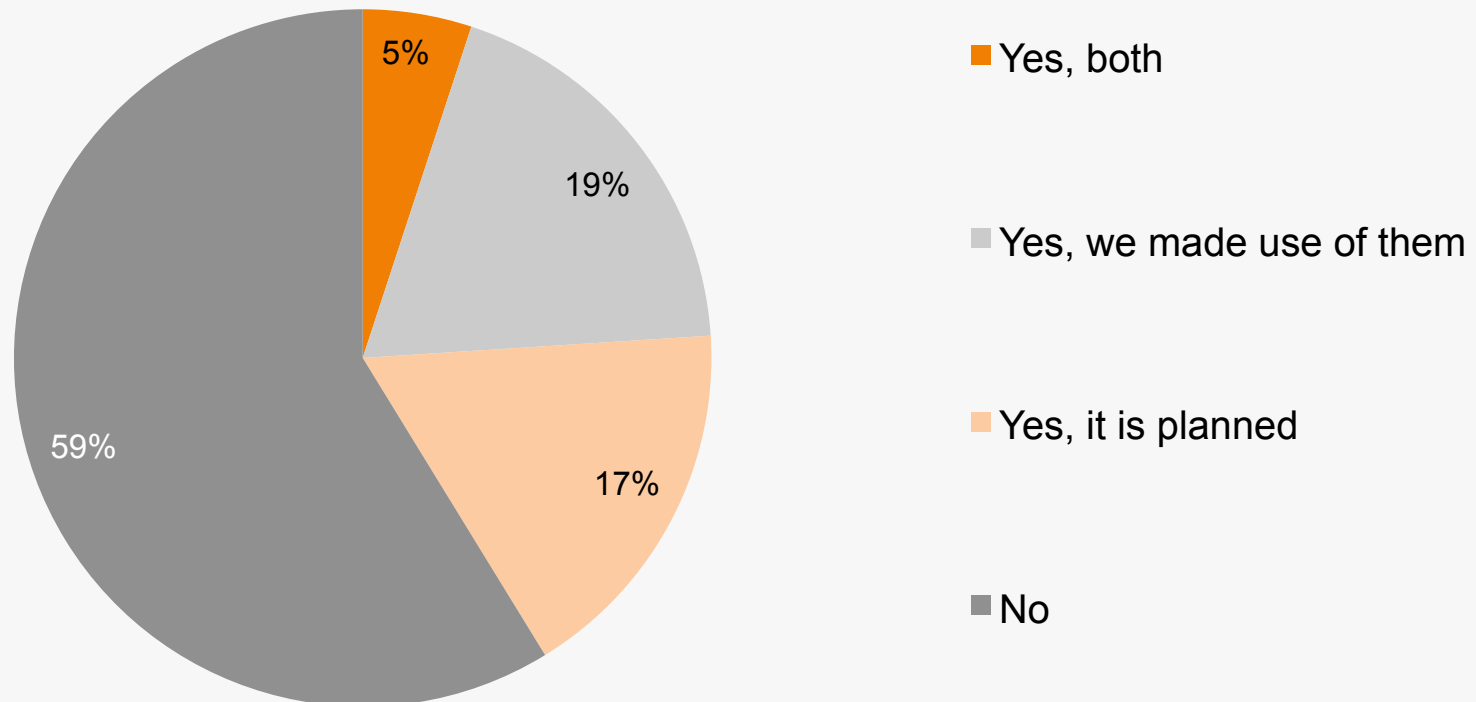


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Use of subsidies

Most companies have not yet made use of any subsidies or public financial support.

Do you already have or are you planning to make use of public subsidies or financial support for the implementation of energy efficiency measures? (n=1130)



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Distribution of answers:

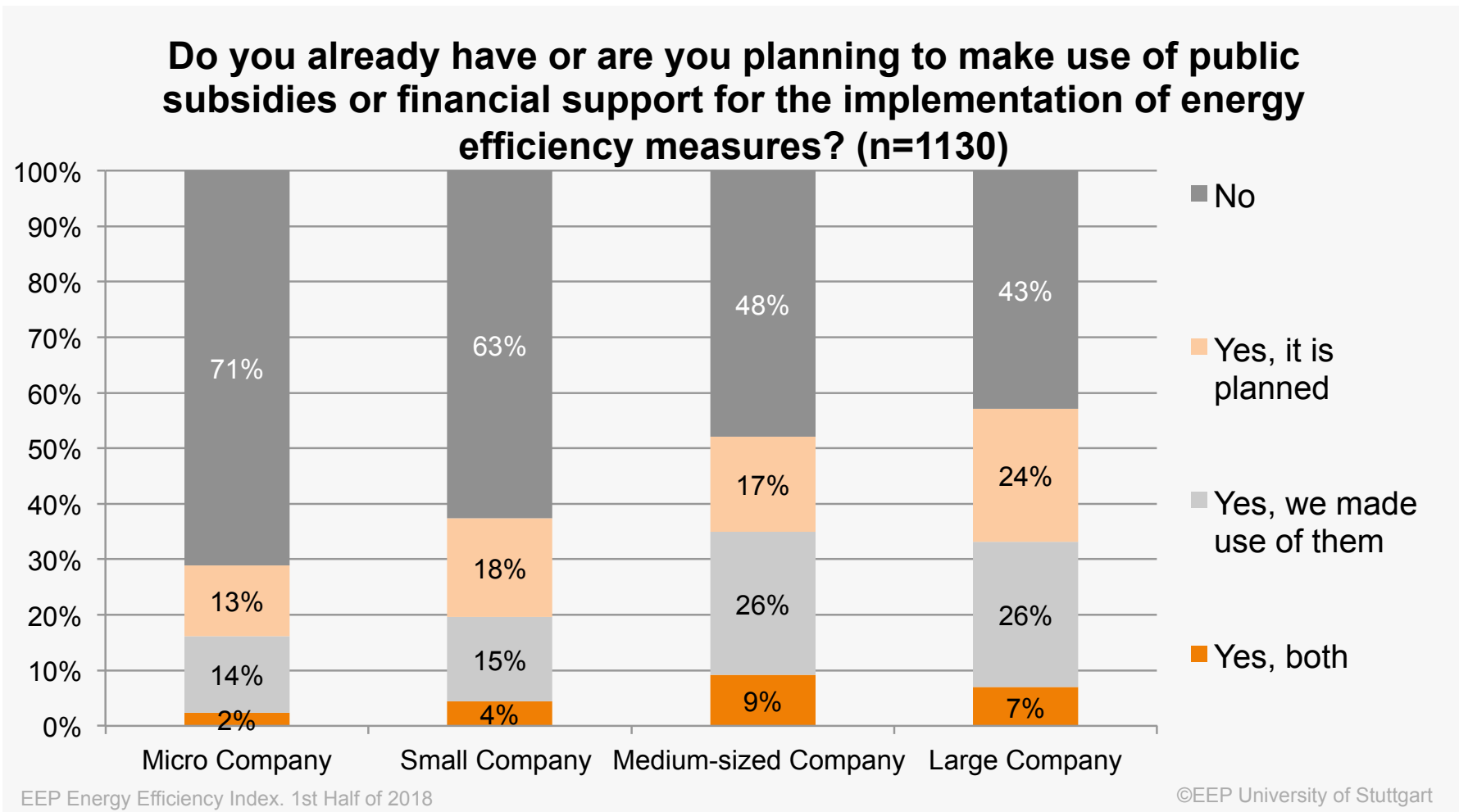
36% Micro Company, 24 % Small Company,
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Use of subsidies

The smaller a company, the less the current portfolio of support mechanisms seems to be adequate / of interest



Distribution of answers:

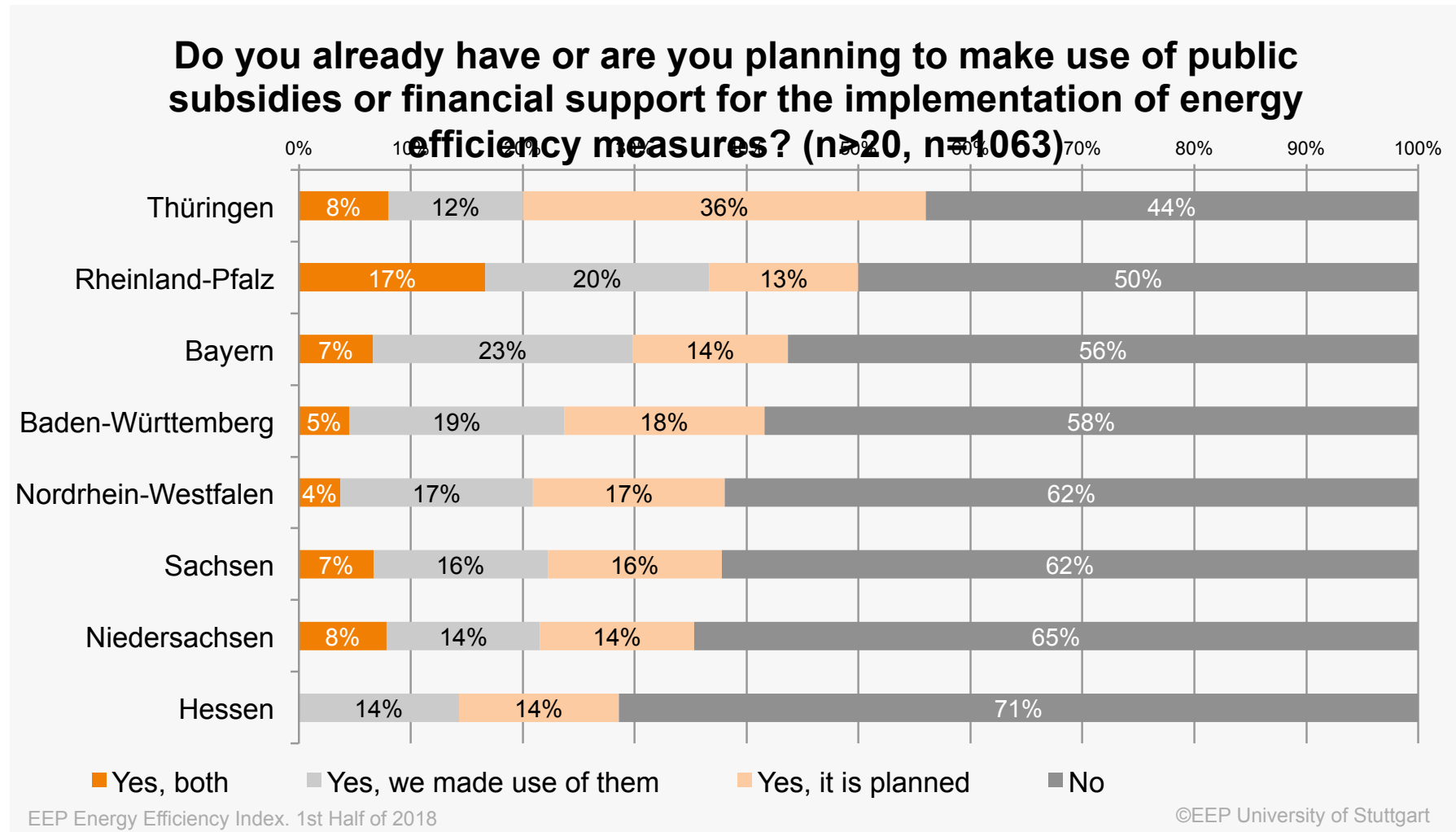
36% Micro Company, 24 % Small Company,
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Use of subsidies

There are very large differences between the federal states



Distribution of answers:

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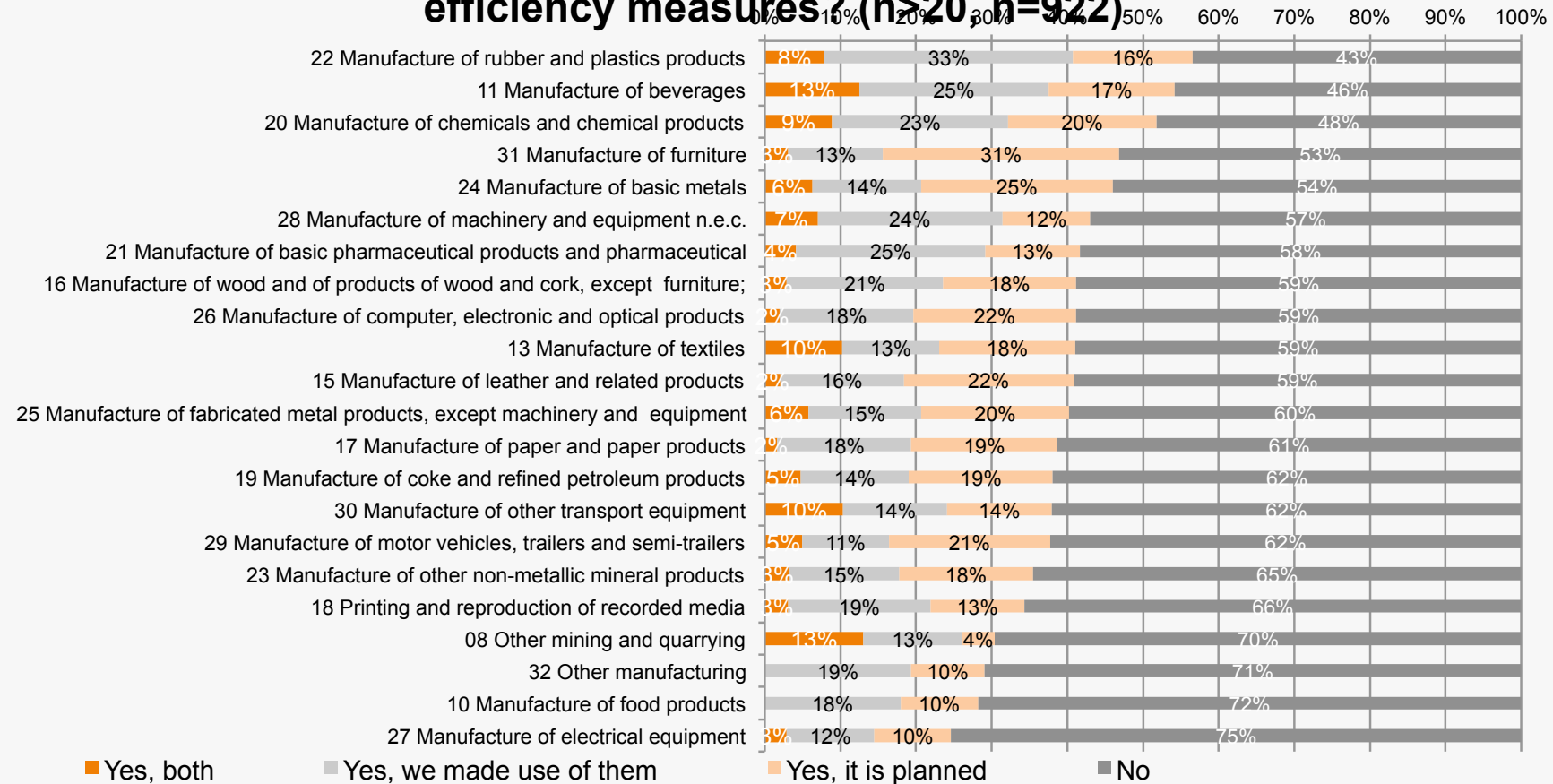


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Use of subsidies

The proportion of companies that do not make use of any subsidies or financial support (regardless of the reason) differs greatly across sectors.

Do you already have or are you planning to make use of public subsidies or financial support for the implementation of energy efficiency measures? (n>20, n=922)



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Distribution of answers:

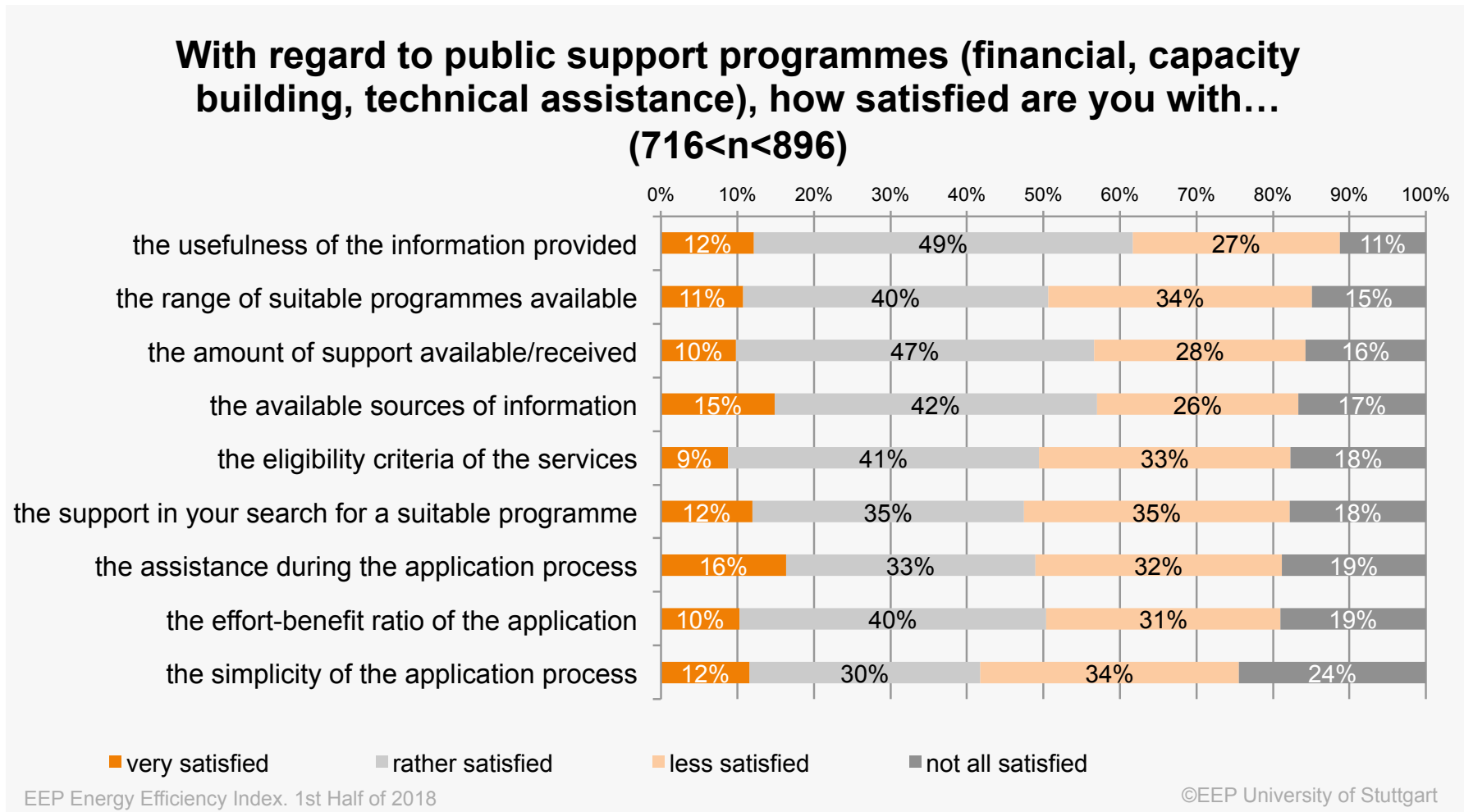
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Satisfaction with public support programmes

The application for public support programmes is seen as the most unsatisfying aspect by companies



Distribution of answers:

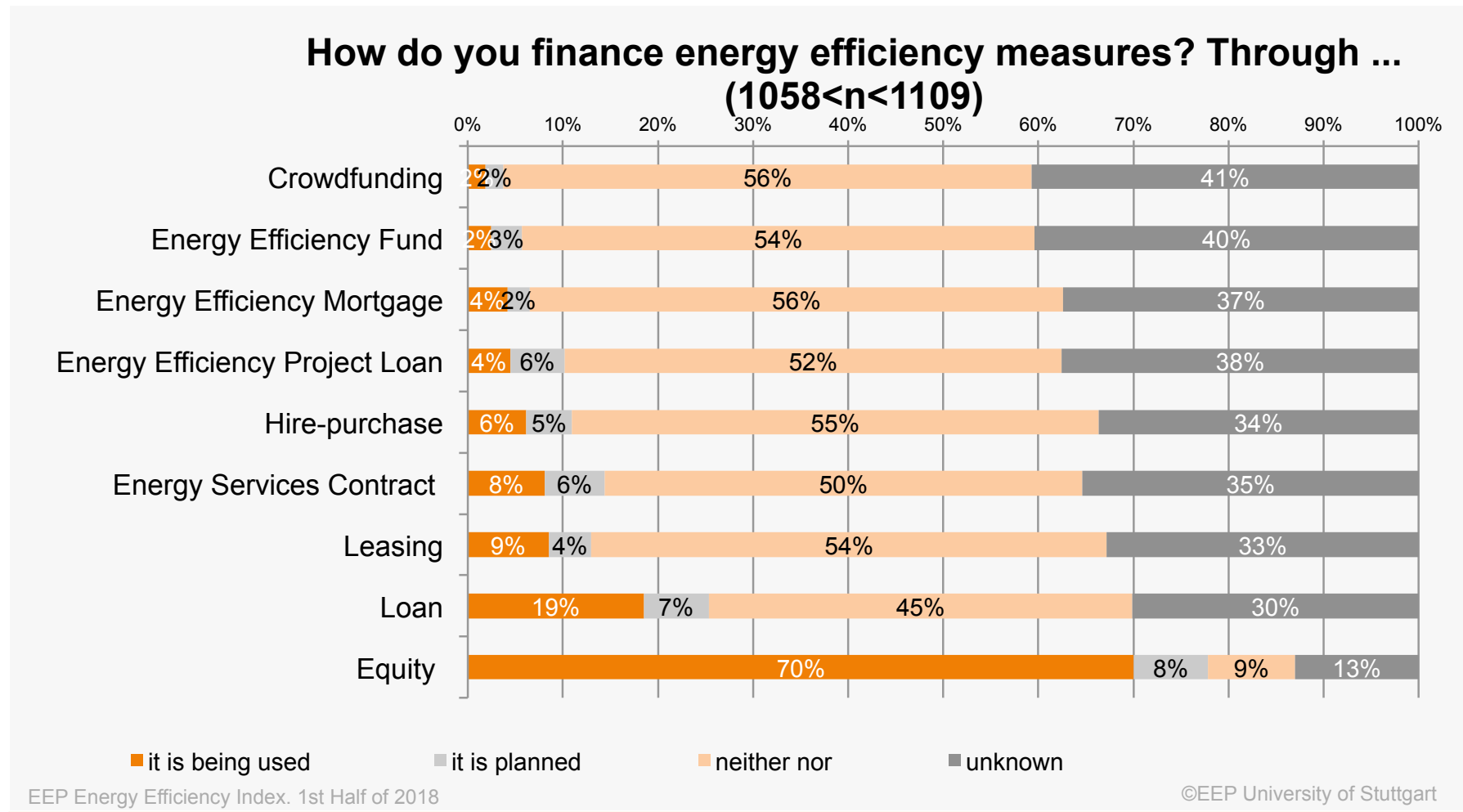
36% Micro Company, 24 % Small Company,
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Financing of energy efficiency measures

So far, alternative methods of financing have hardly been used



Distribution of answers:

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17 % Medium-sized Company, 23% Large Company

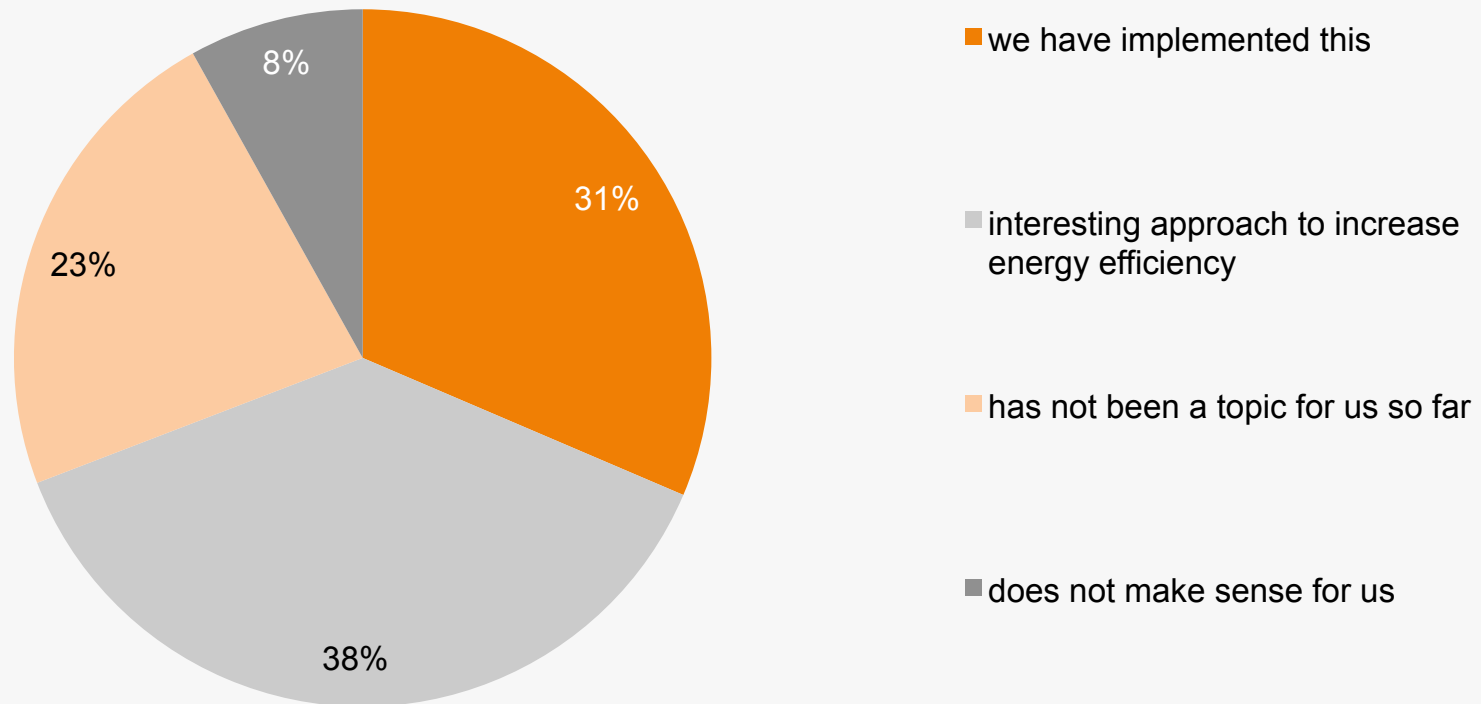


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Merging energy purchase and energy efficiency

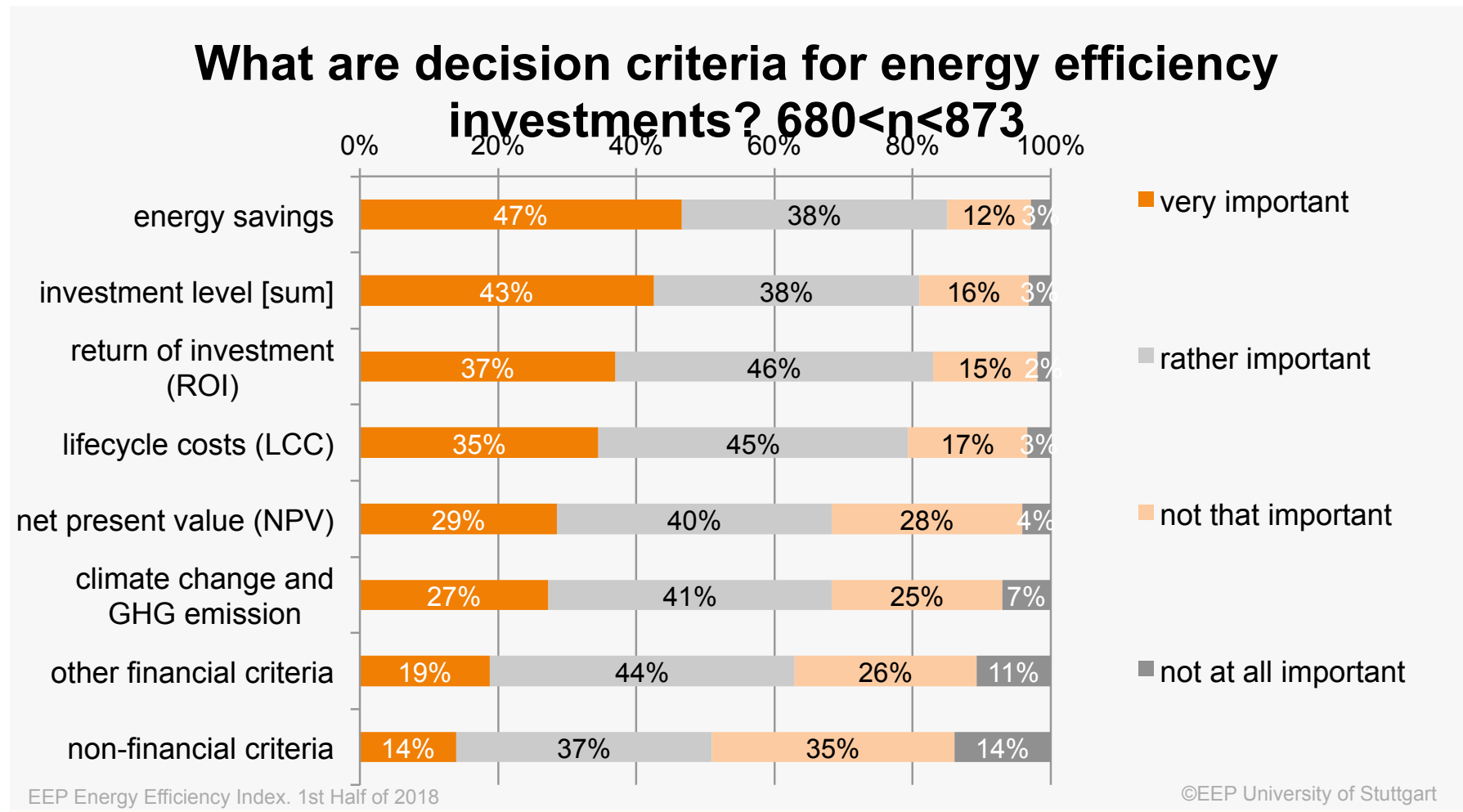
There is big potential and interest but so far little knowledge about it

Thinking of your company only - what is your opinion on an administrative merger of the responsibilities purchasing energy and energy efficiency in one hand? (n=840)



Decision criteria for energy efficiency investments

Regarding the investments economic/financial factors are crucial



Going about it systematically

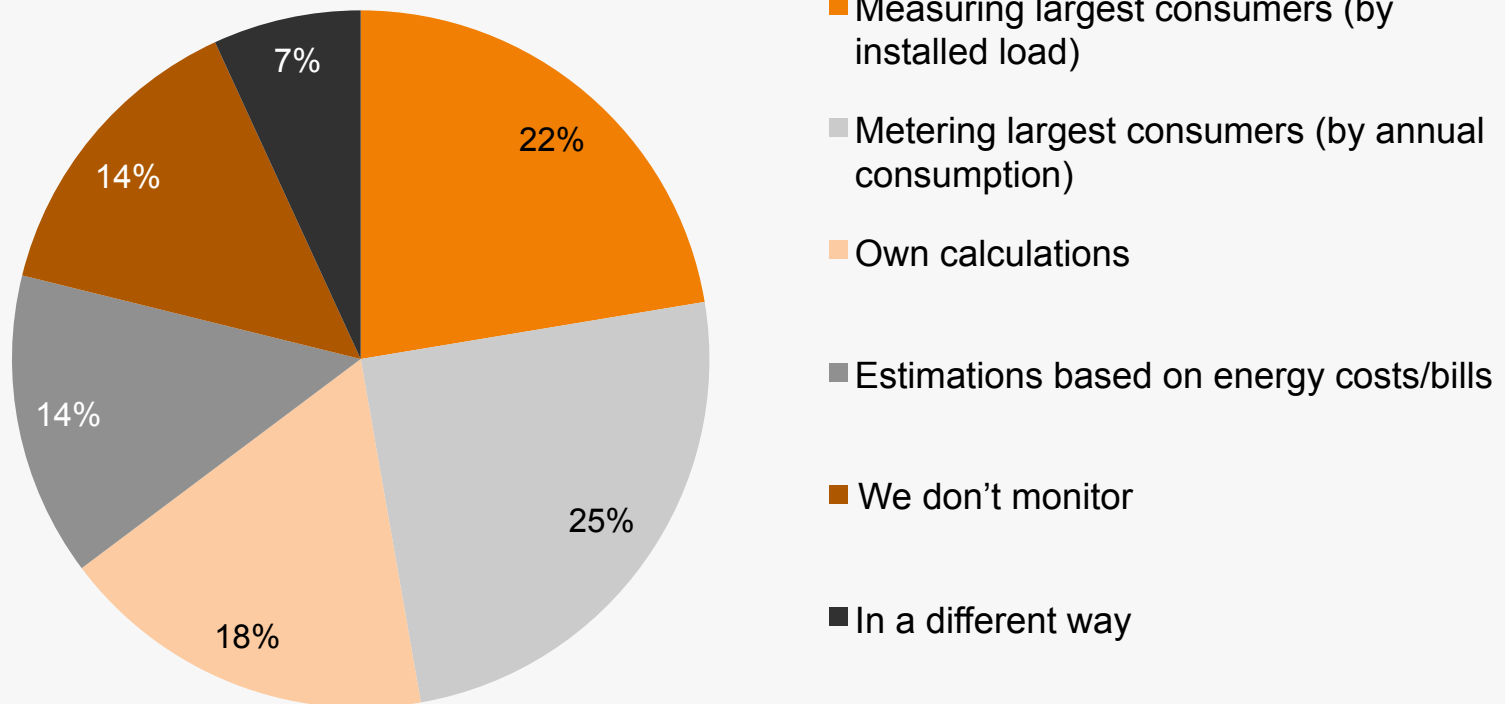


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Systematic monitoring of energy consumption

Almost half of the companies record energy consumption through measurement.

How does your company systematically monitor its own energy consumption? (n=1048)

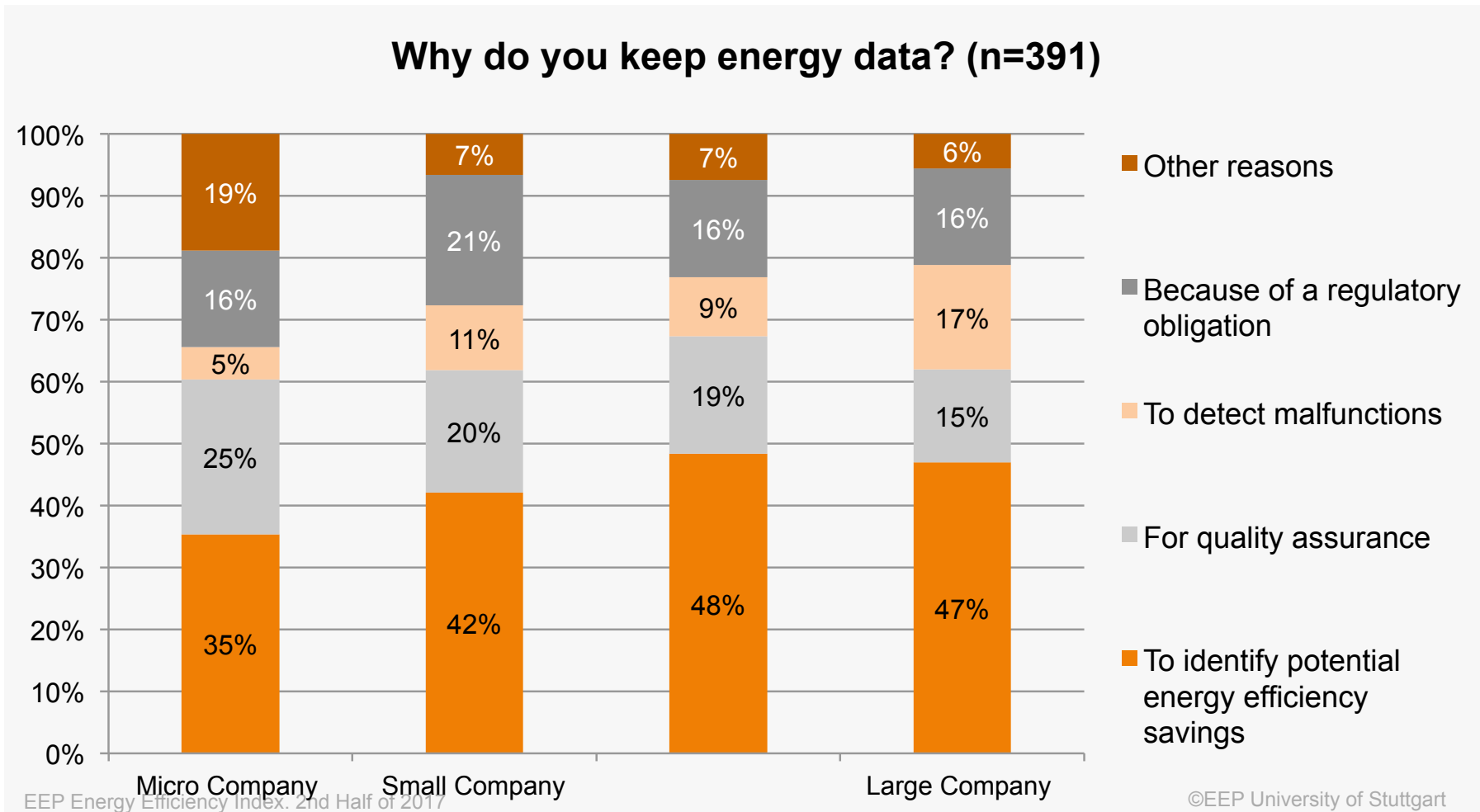


EEP Energy Efficiency Index. 2nd Half of 2017

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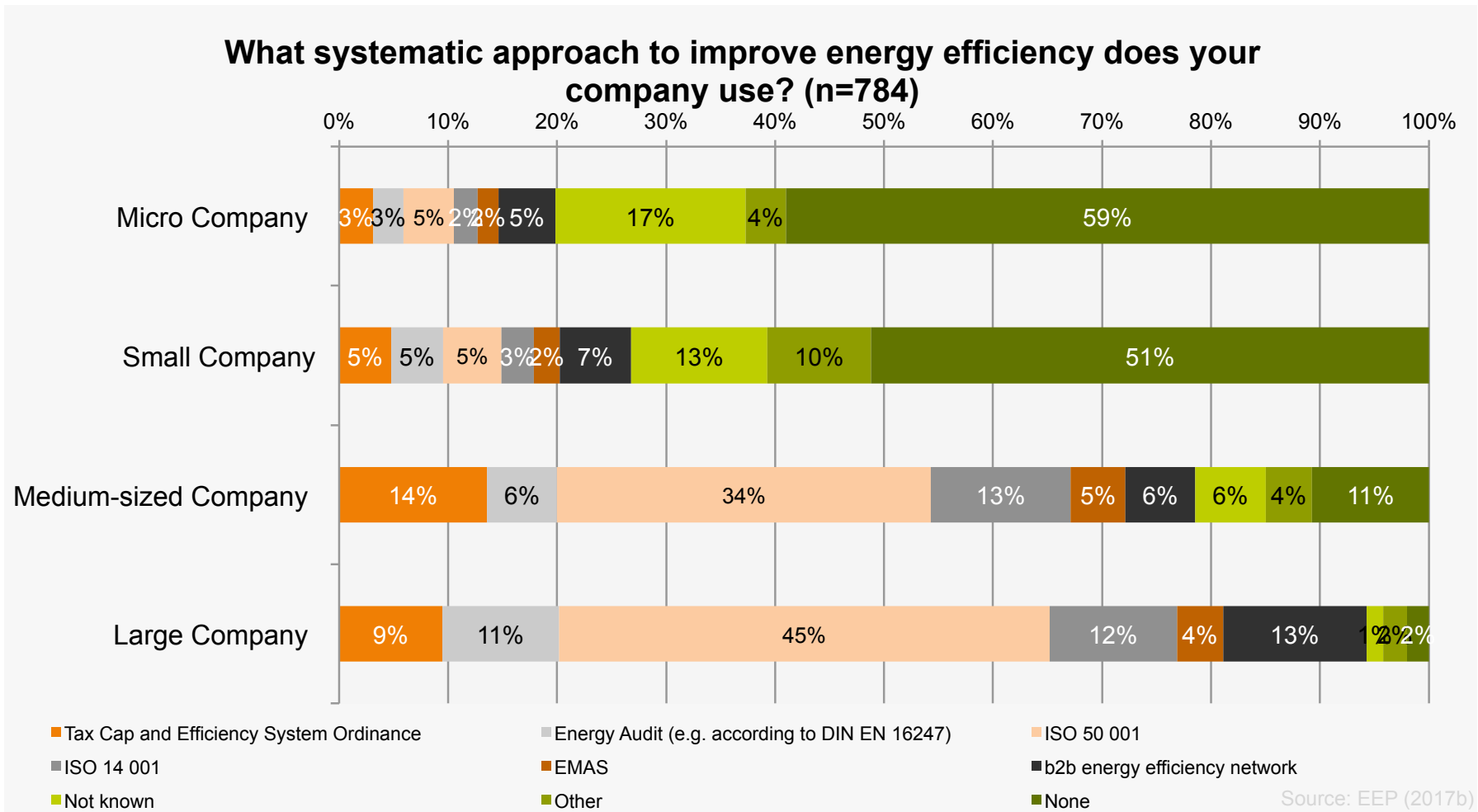
Measurement: reason (multiple choice)

Identifying potential energy efficiency savings is the most important reason. While quality assurance reasons decrease according to the company size, malfunctions detection reasons increase.



Systematic Approach (multiple choice)

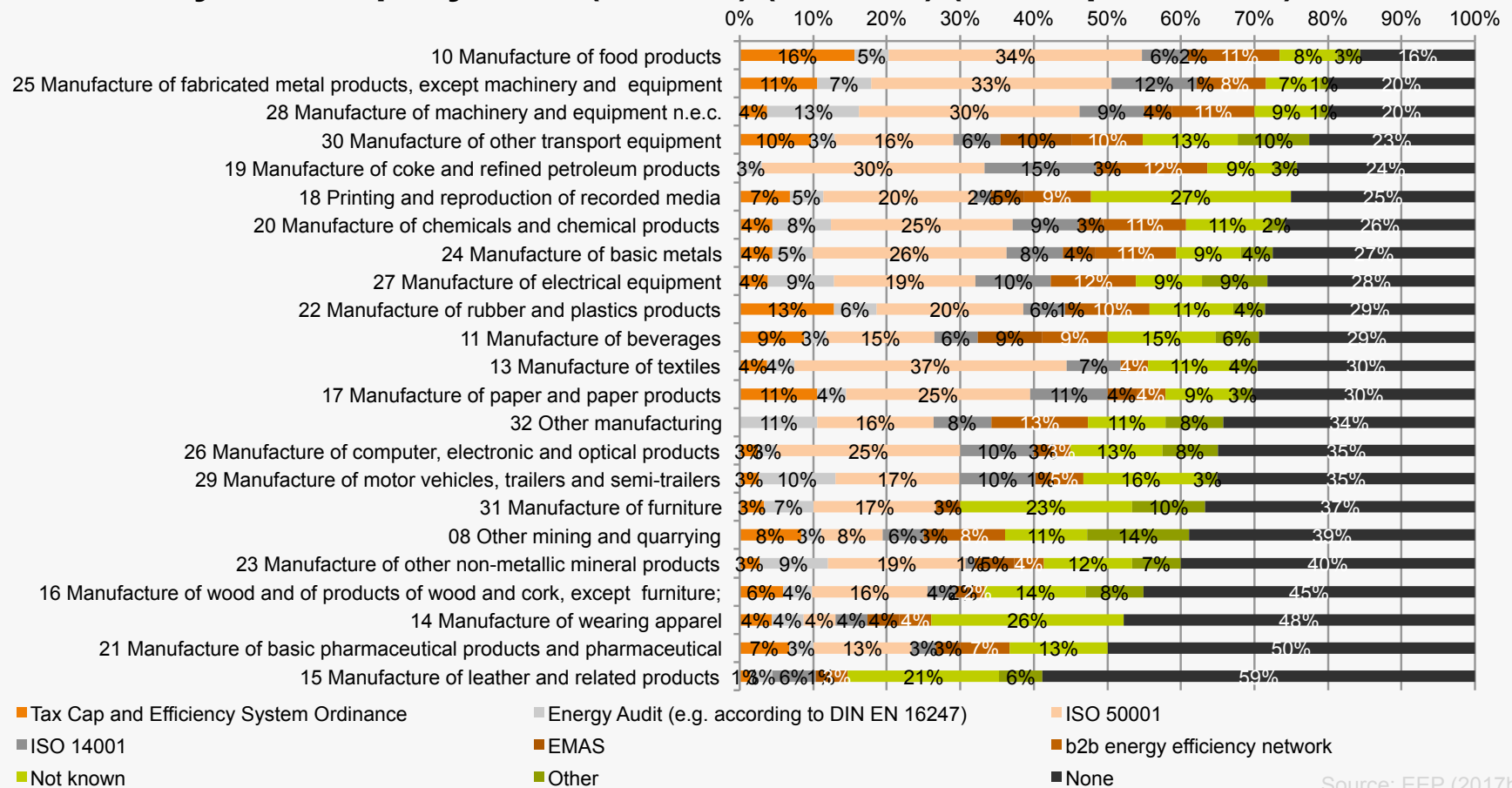
Approx. 60% of micro and small enterprises do not use a systematic approach, the majority of larger companies use ISO 50001.



Systematic Approach (multiple choice)

The share of enterprises using a systematic approach is high in sectors 10 and 25.
50% of companies in sectors 21 and 15 do not use any.

What systematic approach to improve energy efficiency does your company use? (n=1019) (n'=1280) (Participants ≥ 20)



Source: EEP (2017b)

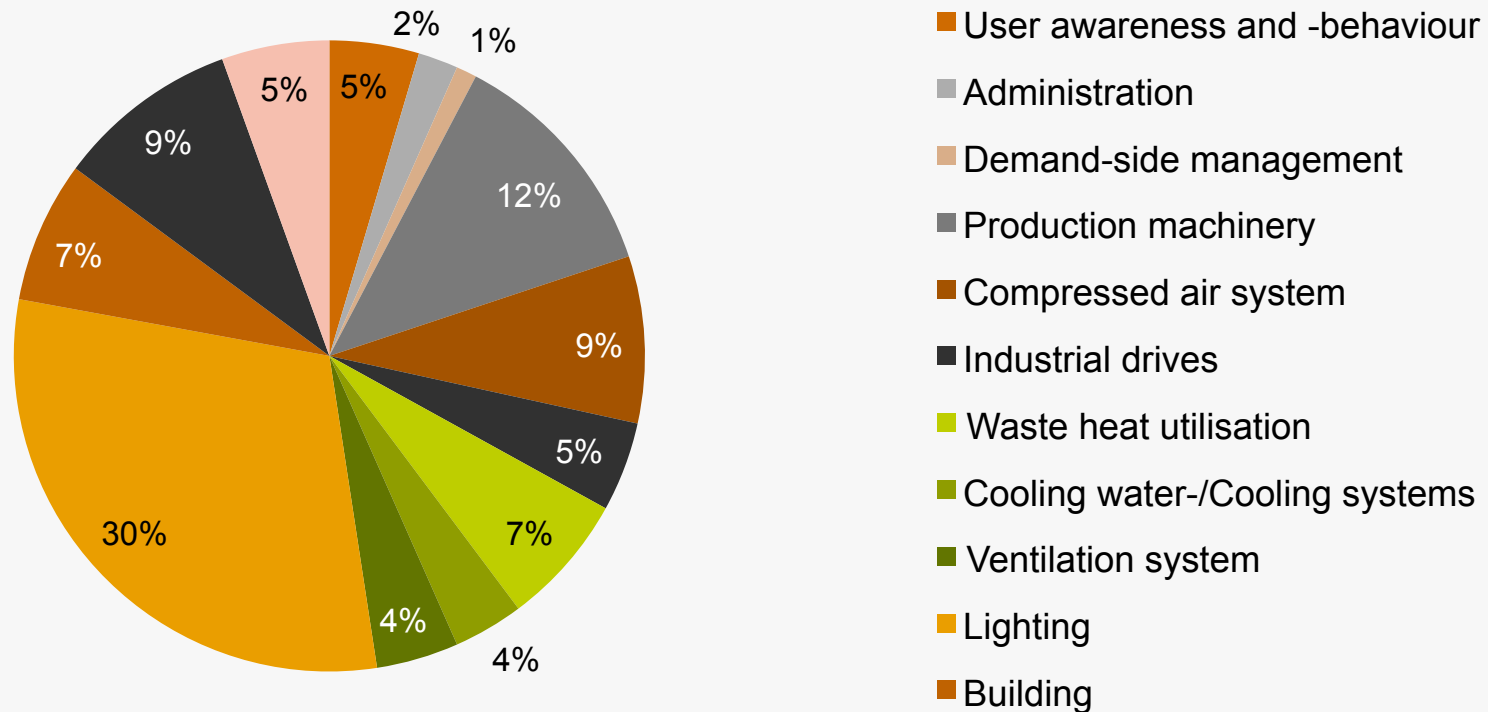


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Areas with largest improvement on EE (multiple choice)

In addition to lighting, the relatively biggest savings were made in production plants, compressed air and heating systems.

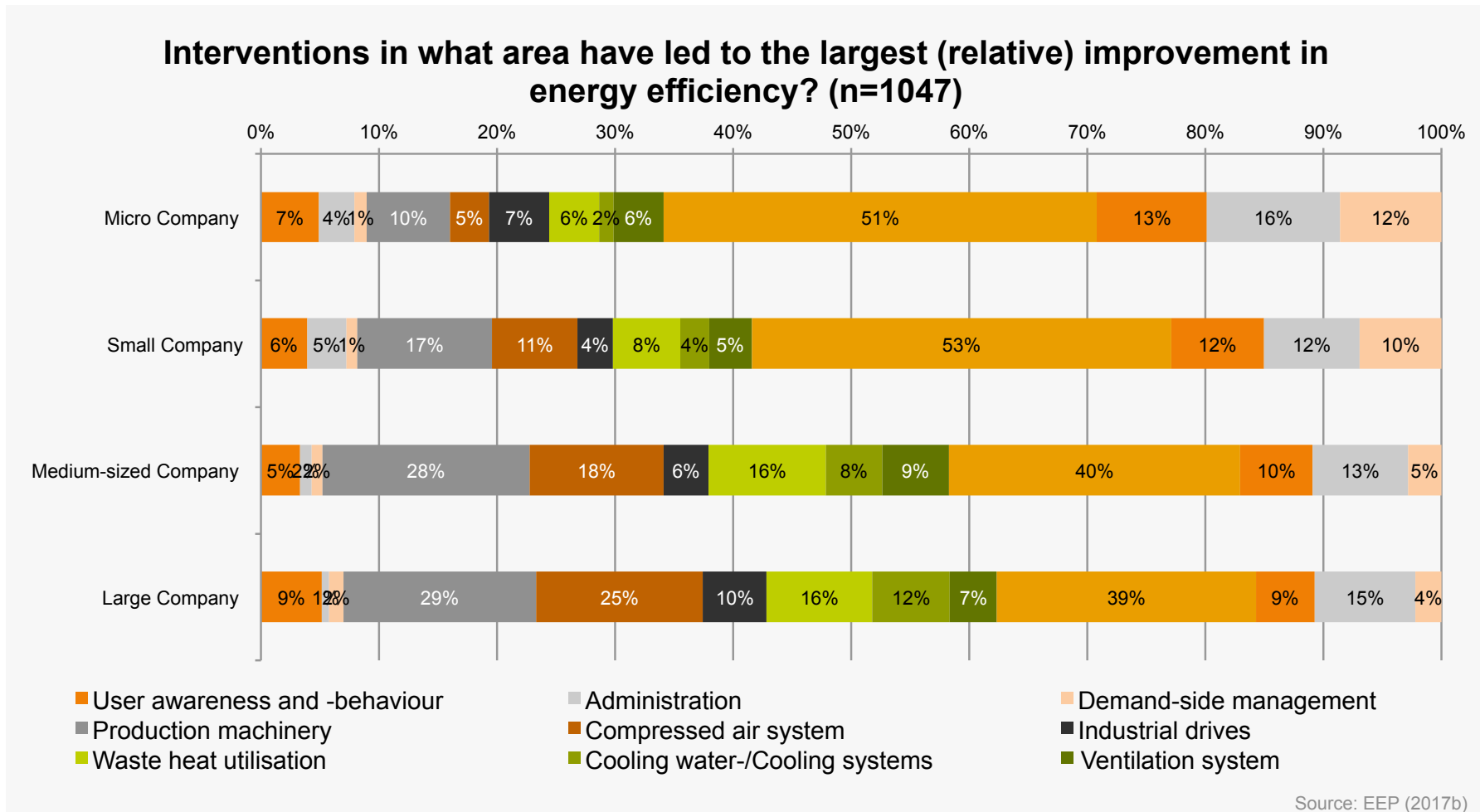
Interventions in what area have led to the largest (relative) improvement in energy efficiency? (n=1047)



Source: EEP (2017b)
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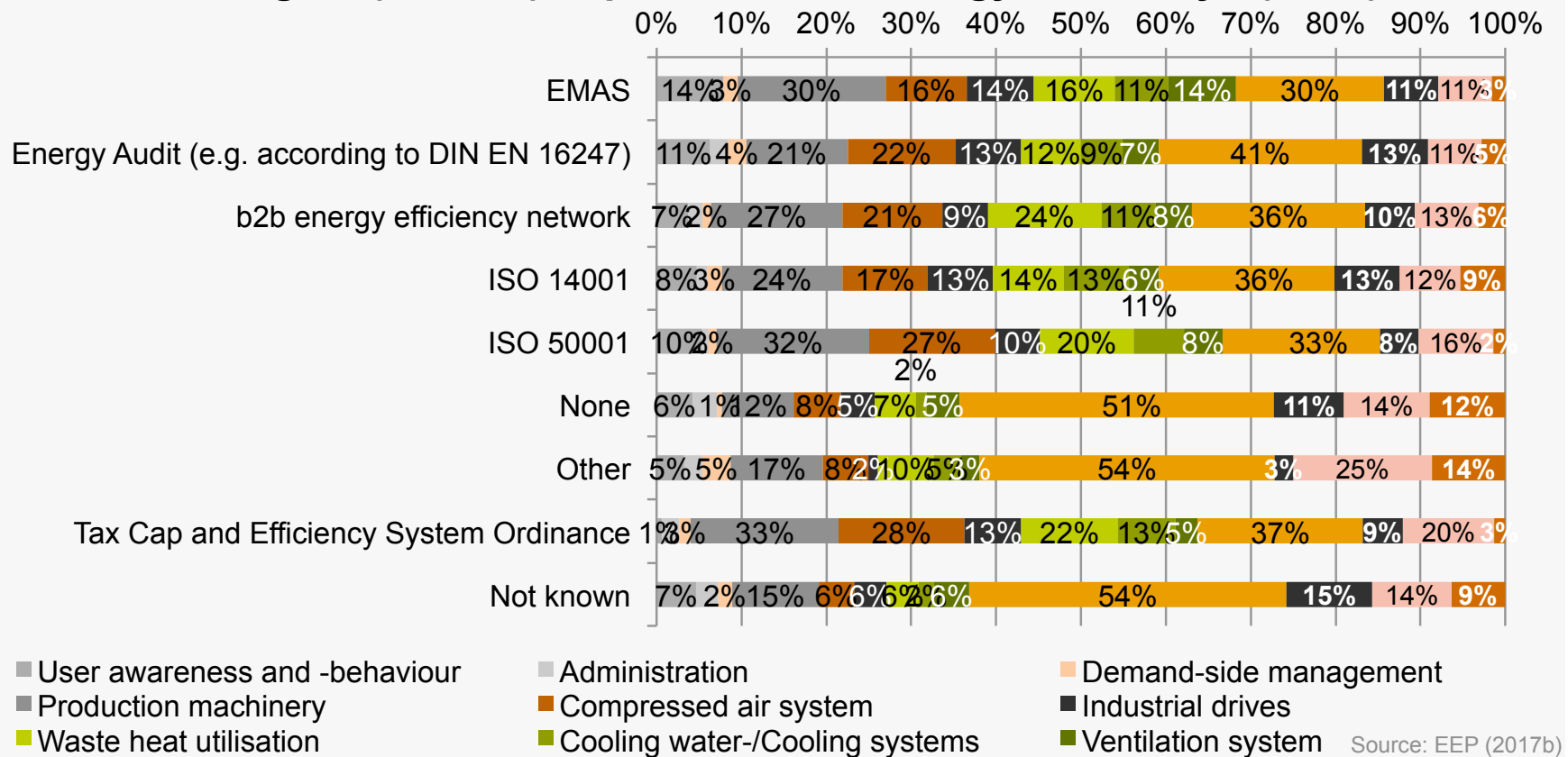
Areas with largest improvement on EE (multiple choice)

For larger companies, above all, relatively largest savings are in production plants and compressed air systems.



Companies with a structured approach towards energy efficiency improvements dare to tackle more complex topics allowing them to access more of their improvement potentials (in contrast to others who can barely access more than just lighting improvements)

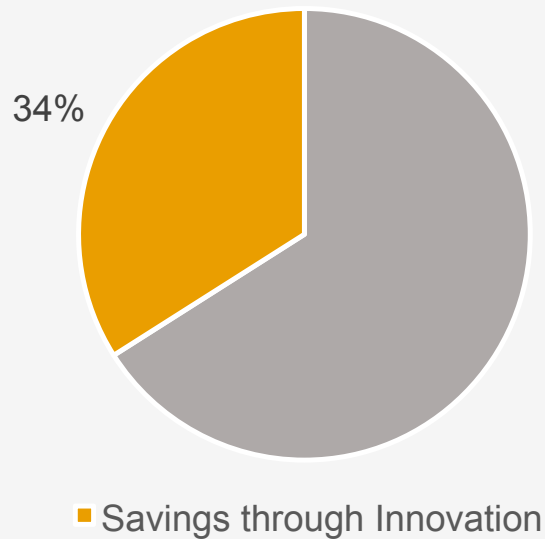
Systematic Approach / Interventions in what area have led to the largest (relative) improvement in energy efficiency? (n=95)



Innovative Approaches to Increase Energy Efficiency

Impact of energy saving potentials in industry

Final Energy Consumption German Industry (2015): 707 TWh



Top 3 Market-ready innovations¹

- 1. High-temperature Heat Pump**
 - Savings potential: 170 TWh (up to 100°C)
 - CO₂: 34 Mio. t/a
- 2. Intelligent Drive Technology**
 - Savings potential: 26,7 TWh
 - CO₂: 12,6 Mio. t/a
- 3. Optimizing Energy Network Systems**
 - Savings potential: 33,4 TWh
 - CO₂: 6,9 Mio. t/a

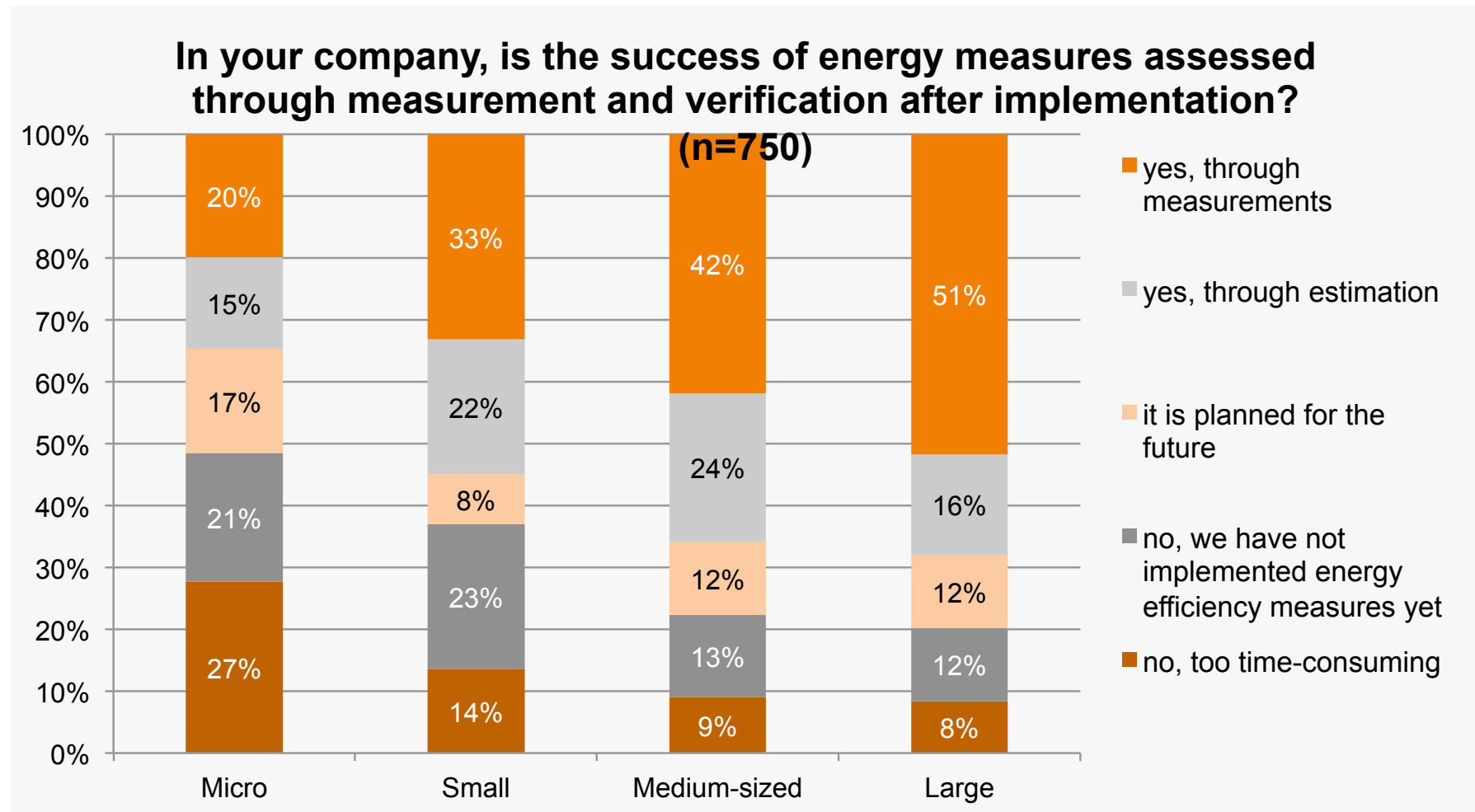
➔ Market-ready innovations allow for **significant reduction of industrial energy consumption** and hence also significantly contribute to **reducing CO₂-emissions**

Source: BMWi Studie (2017): Marktverfügbare Innovationen mit hoher Relevanz für die Energieeffizienz in der Industrie

1: figures for Germany

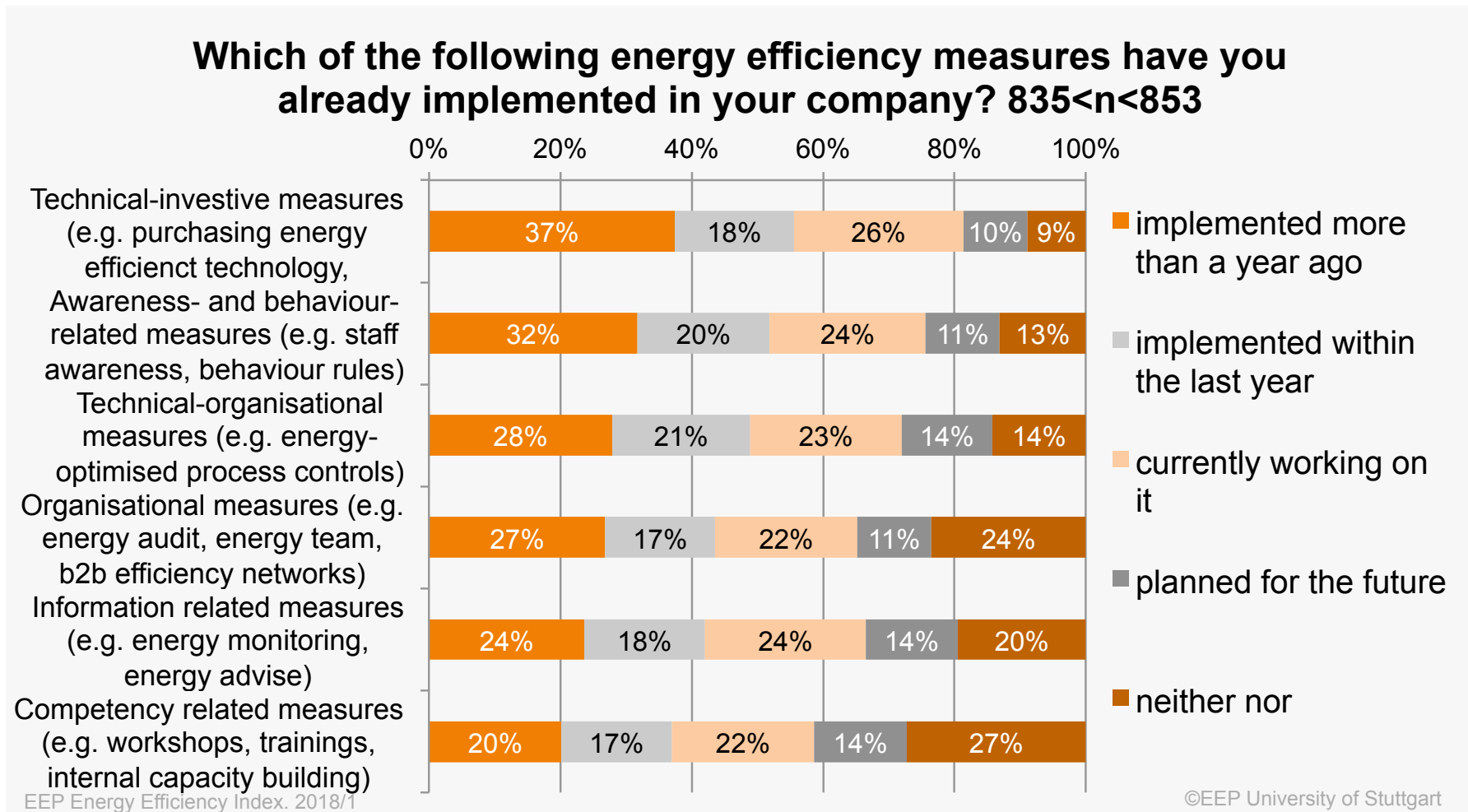
Use of Measurement & Verification (M&V)

The smaller a company the lower the probability of it using M&V measures



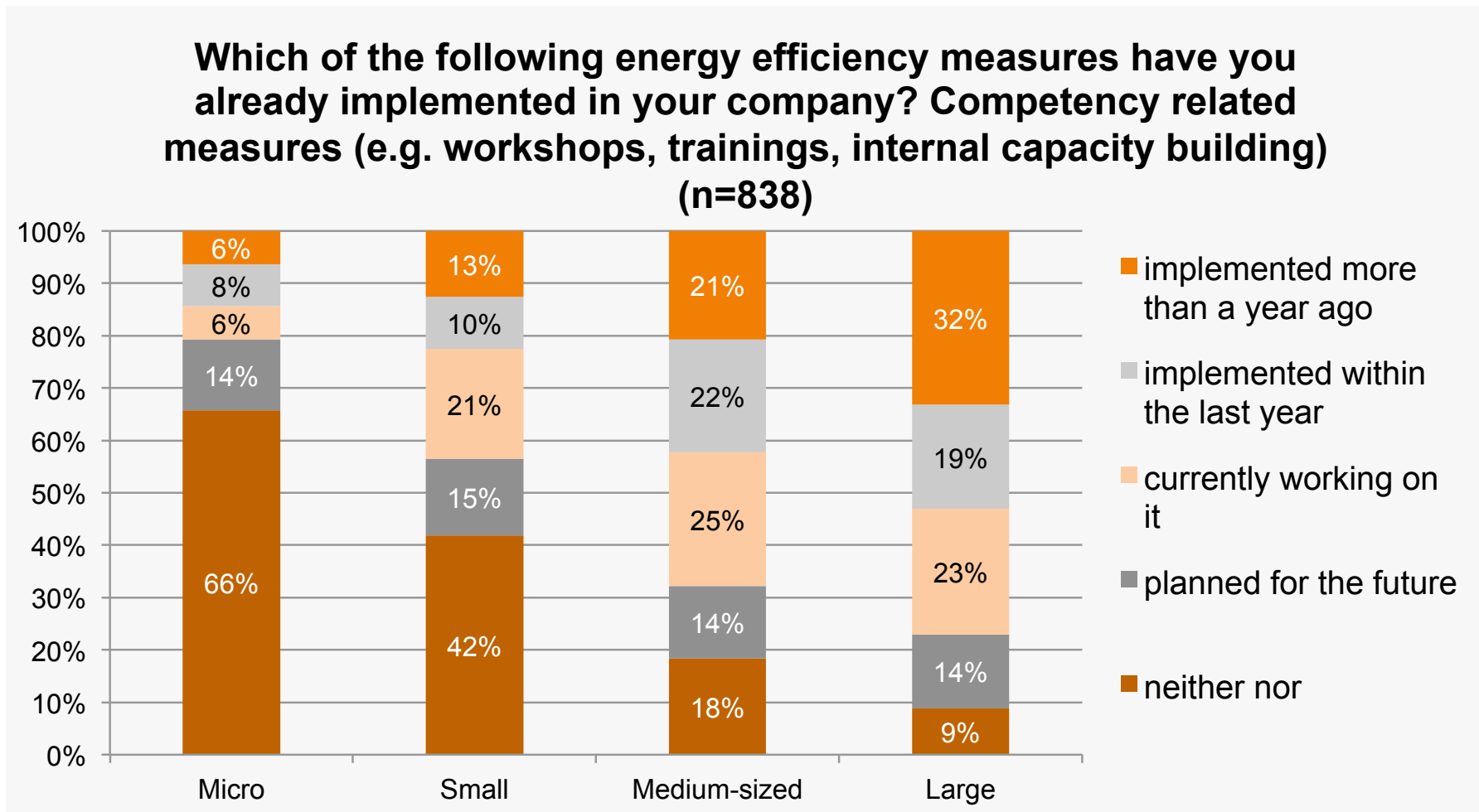
What type of measures have companies implemented?

Competency related activities lag significantly behind other areas of intervention – result of late-mover disadvantage?



Implementation of competency related measures

There is a big deficit for micro and small companies, especially in relation to the bigger ones



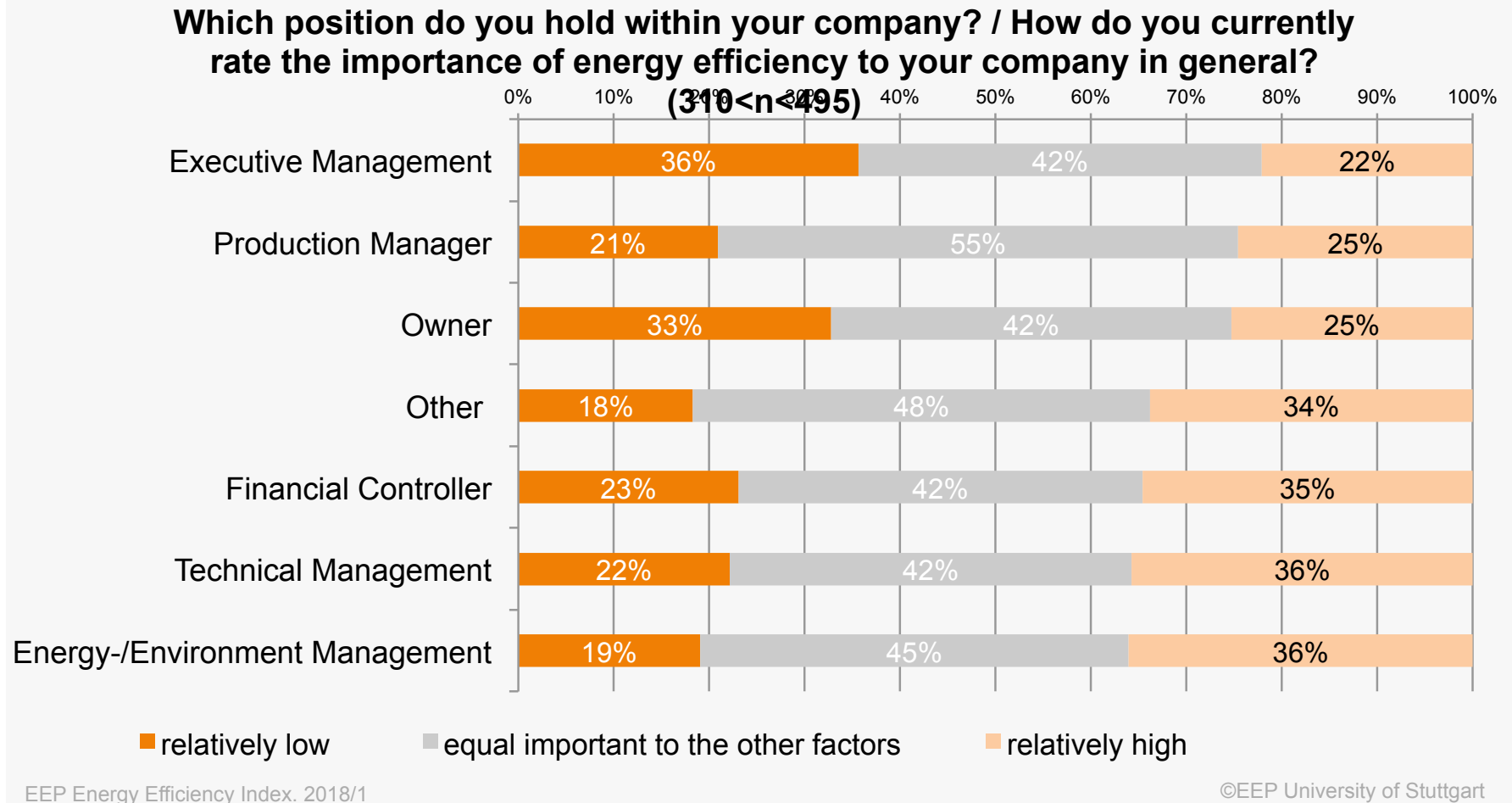
Who needs nudging?



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The importance of energy efficiency in relation to the role in the company

The share of responders attaching a relatively low importance to energy efficiency compared to other topics is considerably higher amongst executive management and owners. Also, along with production managers they least often consider EE as important.



Not just for us



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The
#EEBarometer is
covering 88
countries in their
10 native
languages

United Kingdom:



Italy:



Associazione dei costruttori e distributori di impianti di cogenerazione

Germany



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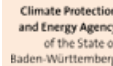
TÜV Rheinland
Precisely Right.



THE-CO FIRM



Expense Reduction
Analysts



REZ
Dezentrale Energiesysteme
und Energieeffizienz



BDI
The Voice of
German Industry



Sweden:



Latvia



Poland



Slovenia



Spain:



Austria:



World:



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Fraunhofer
IPA



Expense Reduction
Analysts

ENERGY EFFICIENCY
in Industrial Processes



English · Spanish · French · Russian ·
German

Canada



United States



Mexico



Barometer

established Country

partners Language

partners

Partnership under investigation

Target country group A

(G20+EEA) Target country

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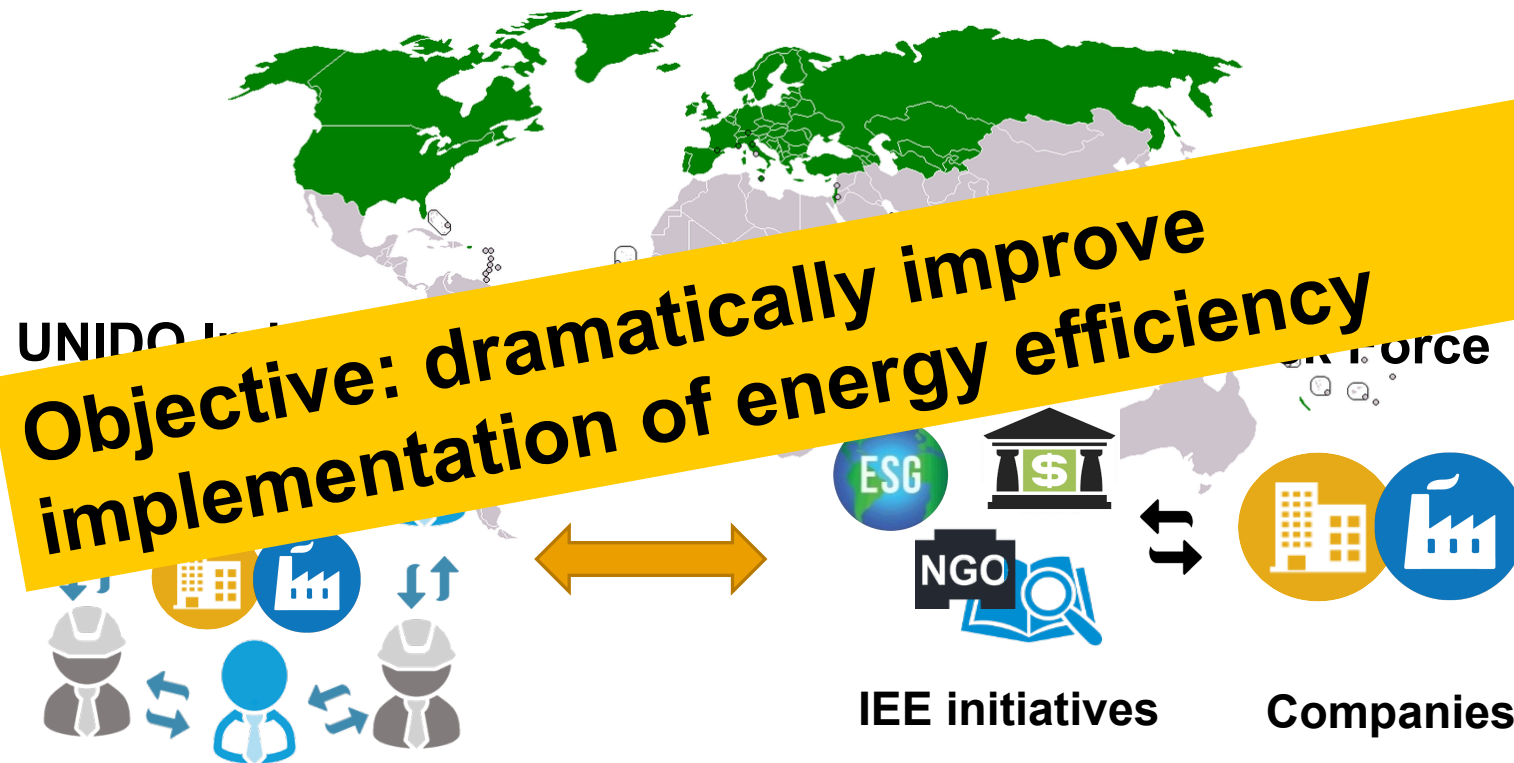
Triggering the decision for energy efficiency



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UNECE Industry Efficiency Task Force

Efficiency is not difficult, just complicated



Facilitating implementation action

**We're in a race against
time – all is at stake**

Let's get on with it!

together.

now.

Thank You!

Dipl.-Volkswirt
Stefan M. Buettner

Head of International Affairs & Strategy
Institute for Energy Efficiency in Production

Chair
UNECE Task Force for Industrial Energy Efficiency

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