

# Effects of the energy audit obligation for large companies in Germany

**Michael Mai and Edelgard Gruber**

**Presented by Oliver Lössch**



# Background

---

## German GHG reduction targets:

- minus 80 to 95 % by 2050 relative to 1990
- annual increase in energy productivity of 2.1%

**Mandatory Energy Audits** for non-SMEs came into force in February 2015 (demanded by §8 EED, implemented in German law on energy services):

- completion of an energy audit in Dec. 2015 and every four subsequent years or
- introduction of an EMS by December 2016

Project partner: adelphi consult GmbH (market analysis)

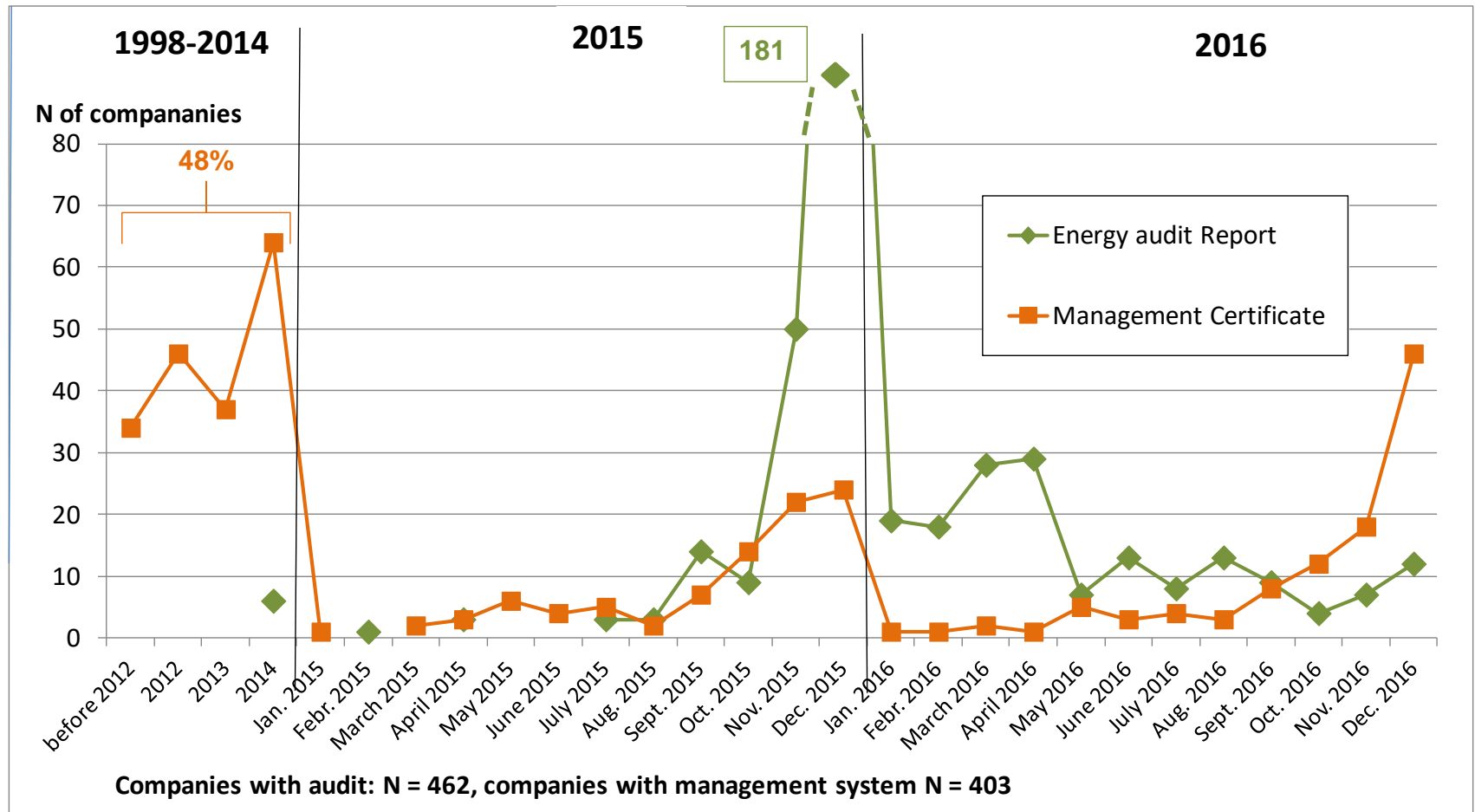
Commissioned by Bundesamt für Wirtschaft und Ausfuhrkontrolle (Federal Office of Economics and Export Control)

# Methodological approach

---

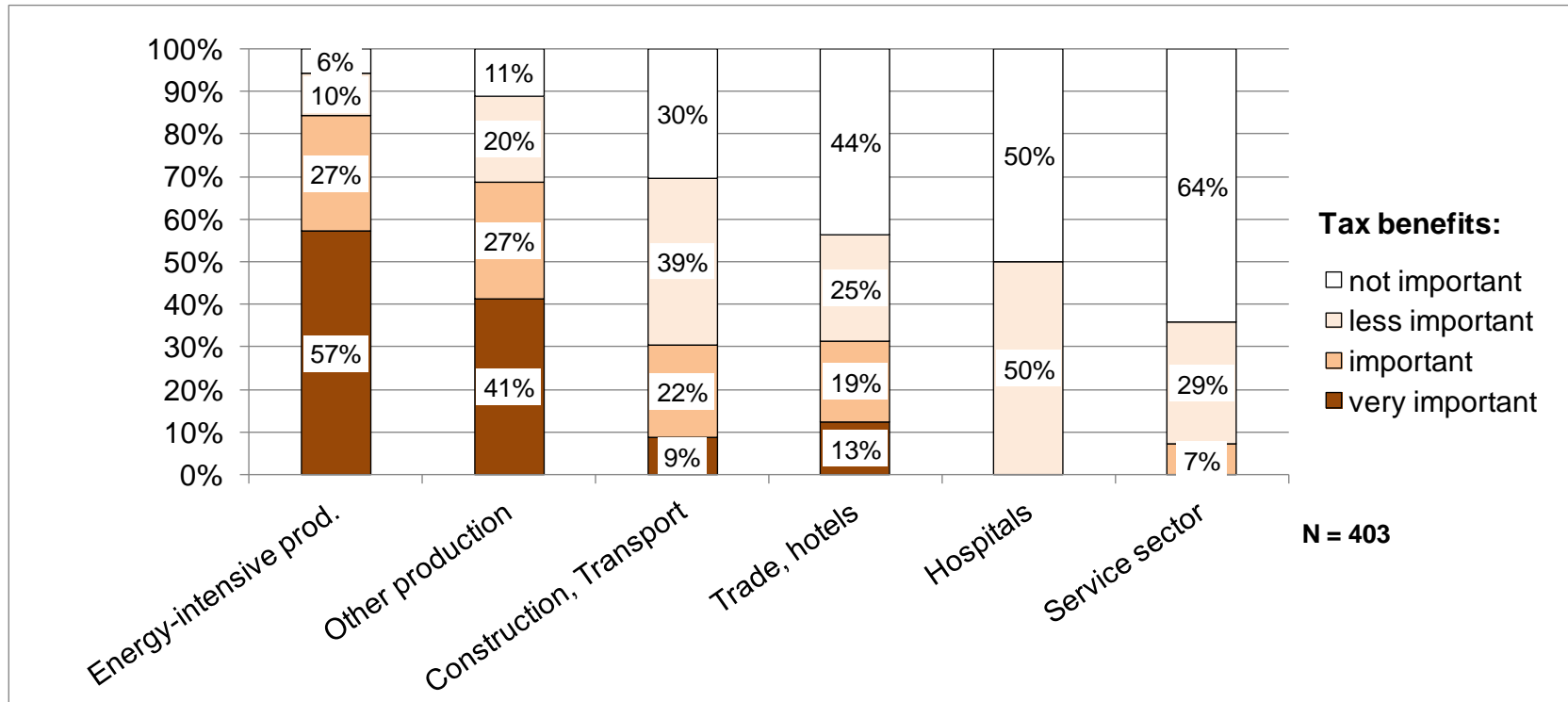
- Online survey of companies concerned (N=900: 462 with audit, 403 with EMS, 35 without action) in Dec. 2016/ Jan. 2017
- Evaluation period: Dec. 2015 – 12/31/2016
- Demanding questionnaire, among others asking for detailed data on energy use, measures (implemented/planned), investments, savings
- Analysis of 13 selected energy audit reports (compliance EN 16247-1)
- Extrapolation of energy saving potentials until 2020 for Germany
- Recommendations for further actions

# Fulfillment of obligations over time

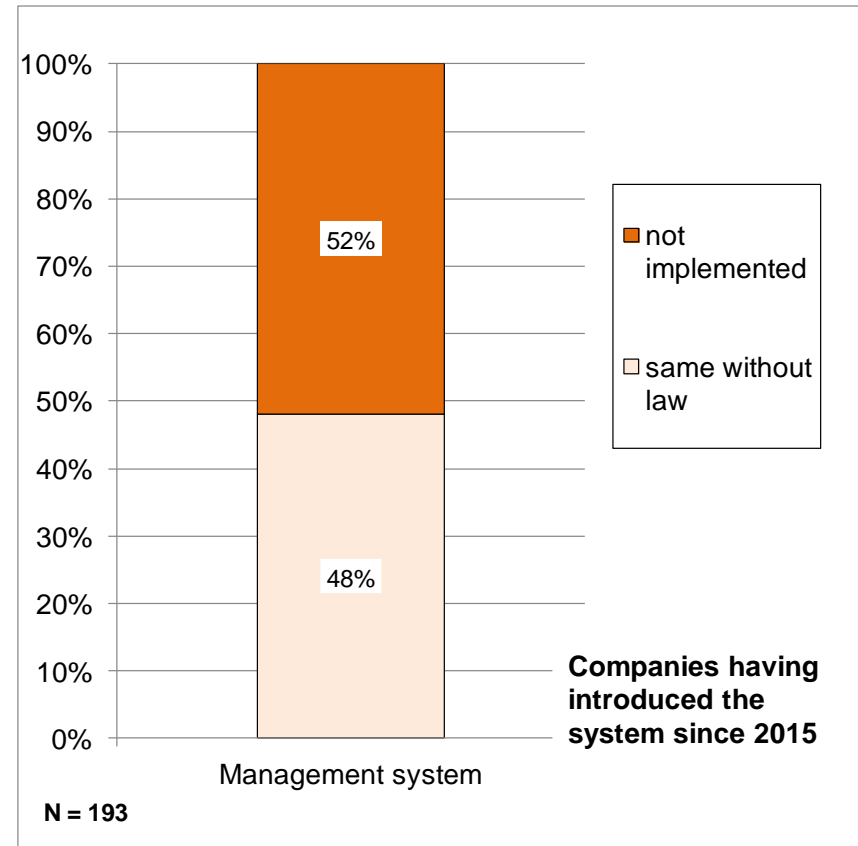
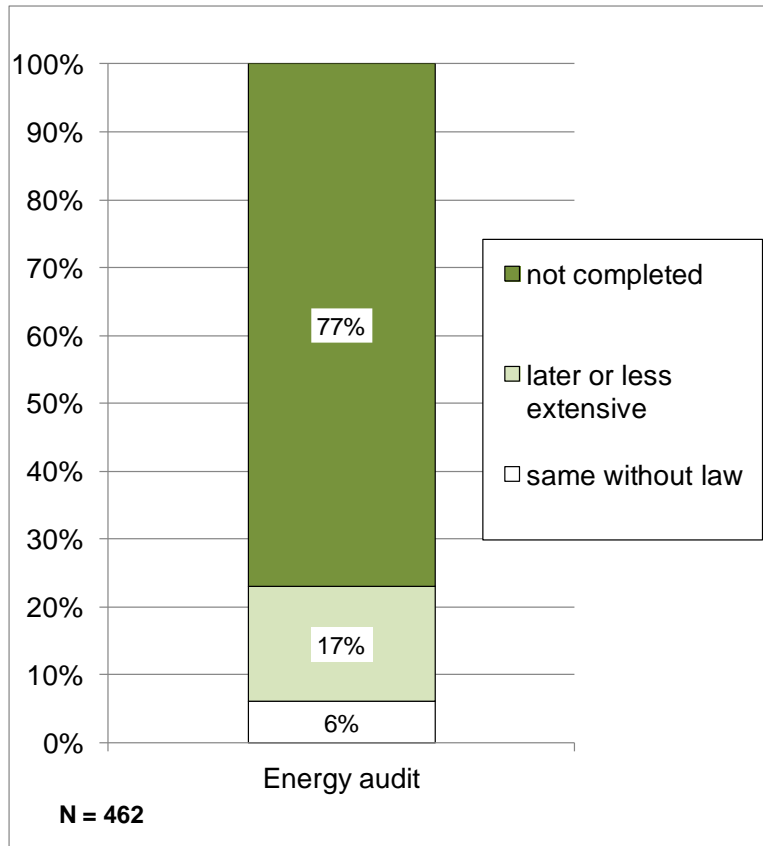


# Tax benefits

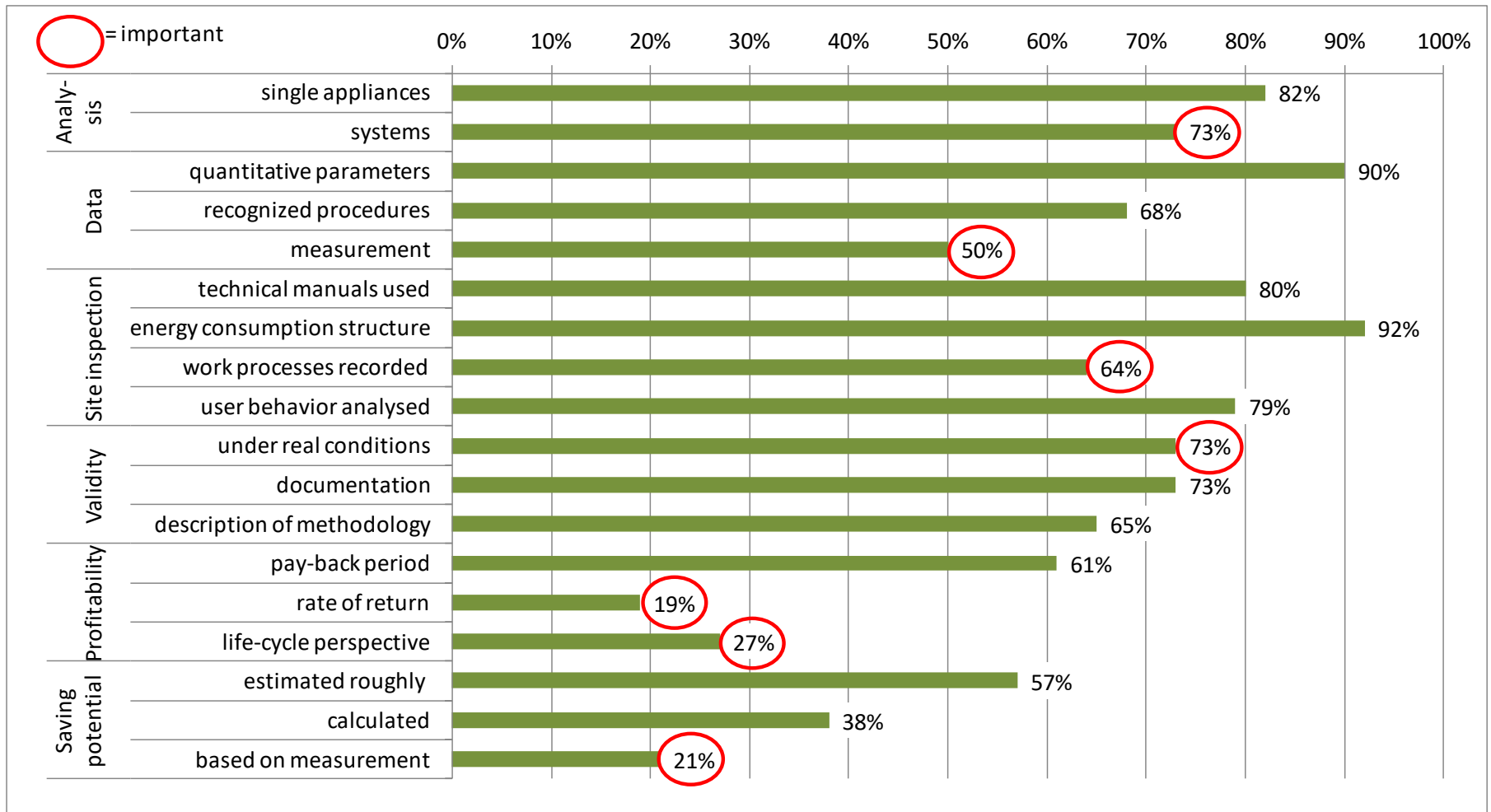
The higher energy-intensity is the more tax benefits were a main reason for companies to introduce a management system.



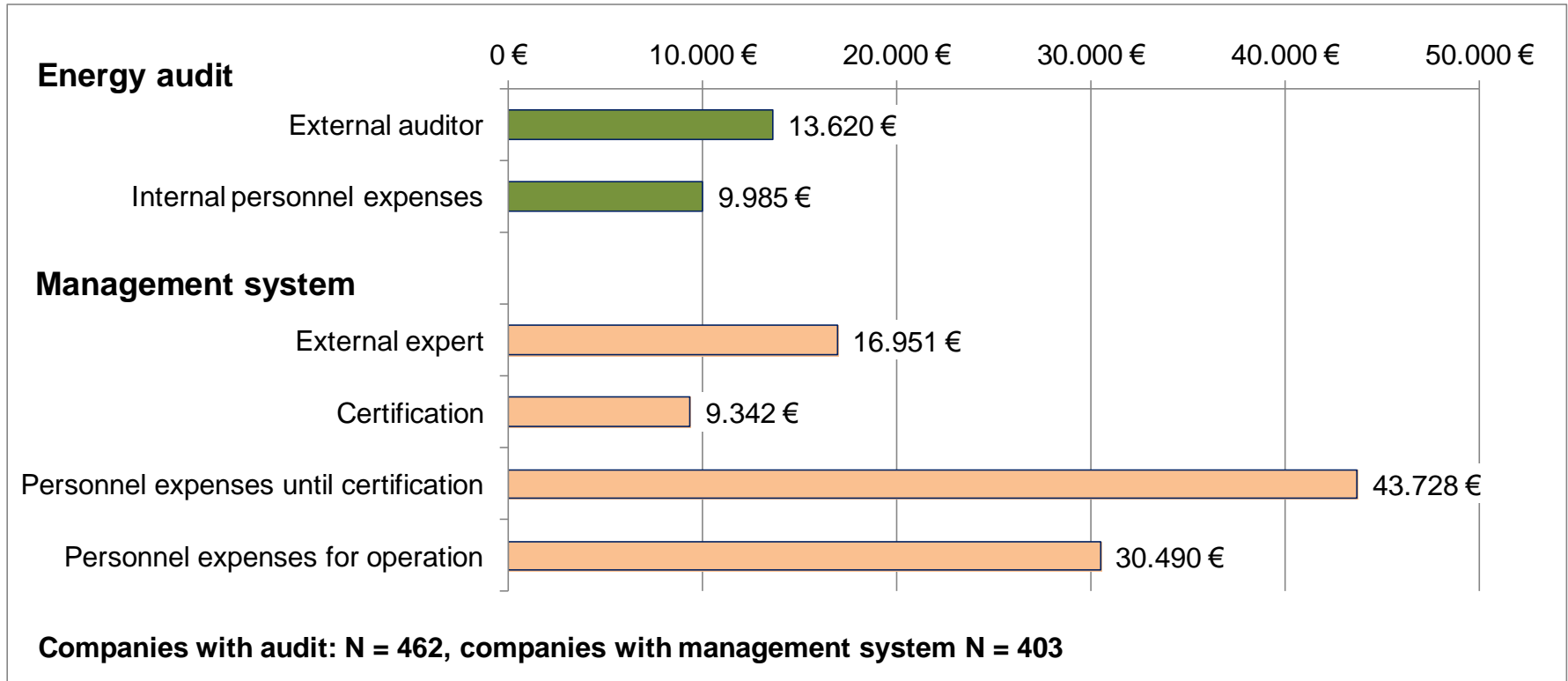
# Audit / EMS EED §8 implementation effect



# Fulfillment of audit quality criteria

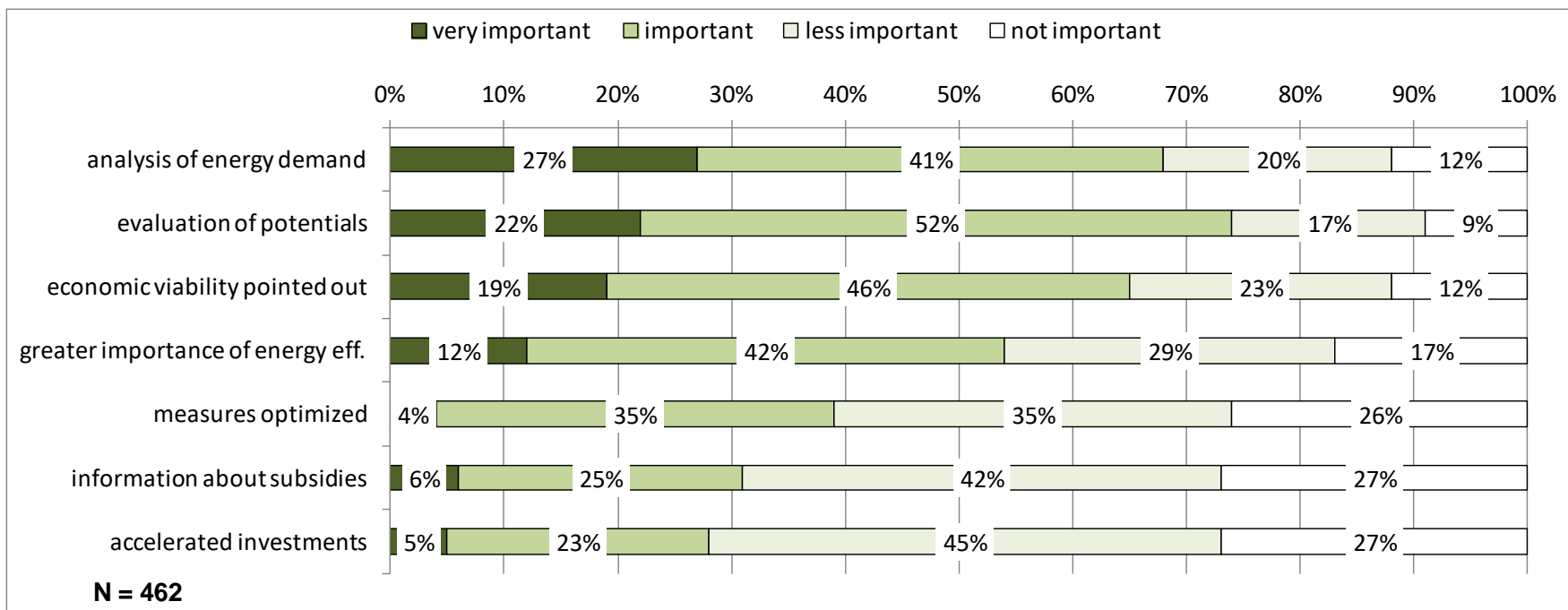


# Average Cost Audits / EMS

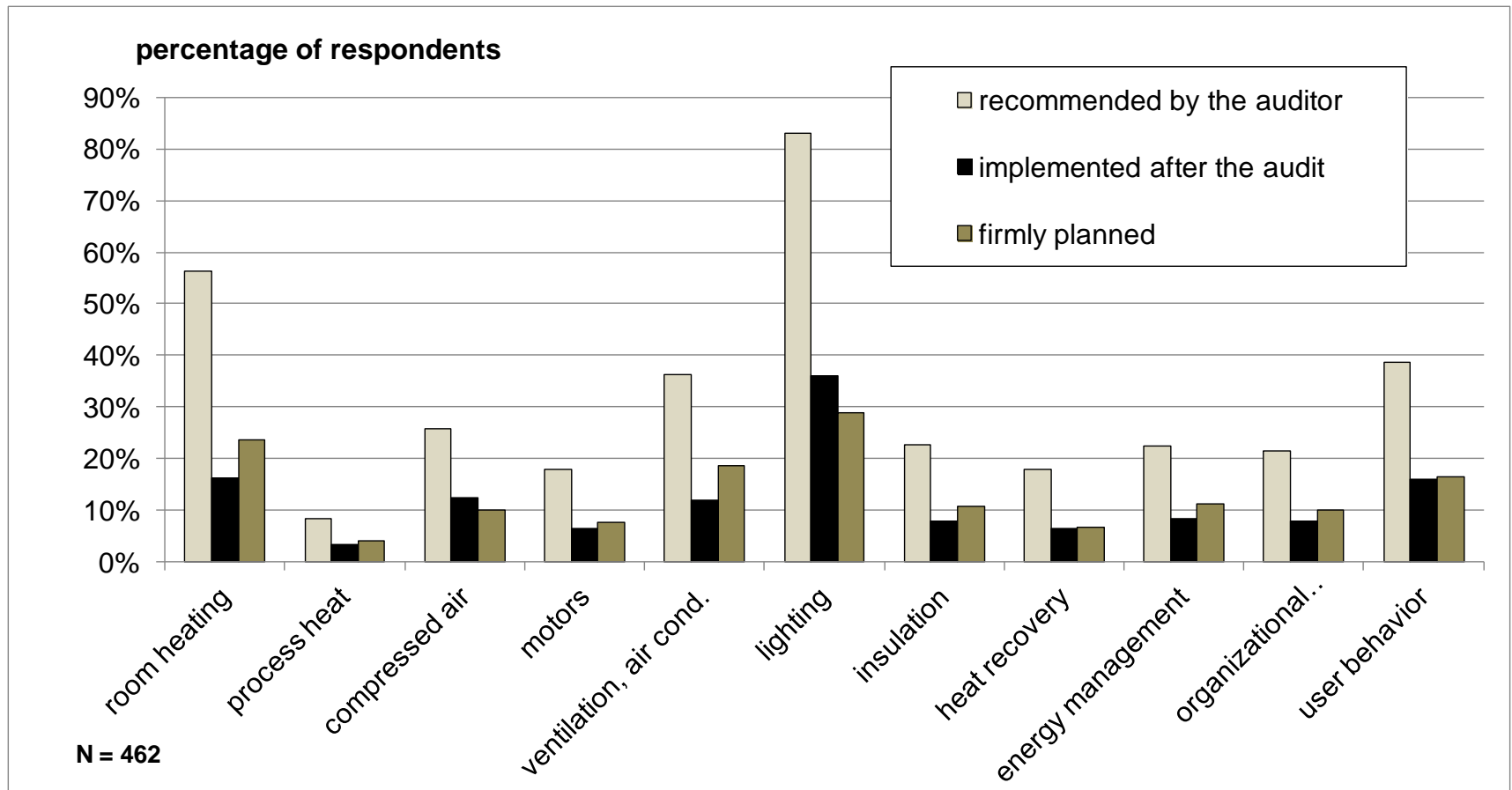




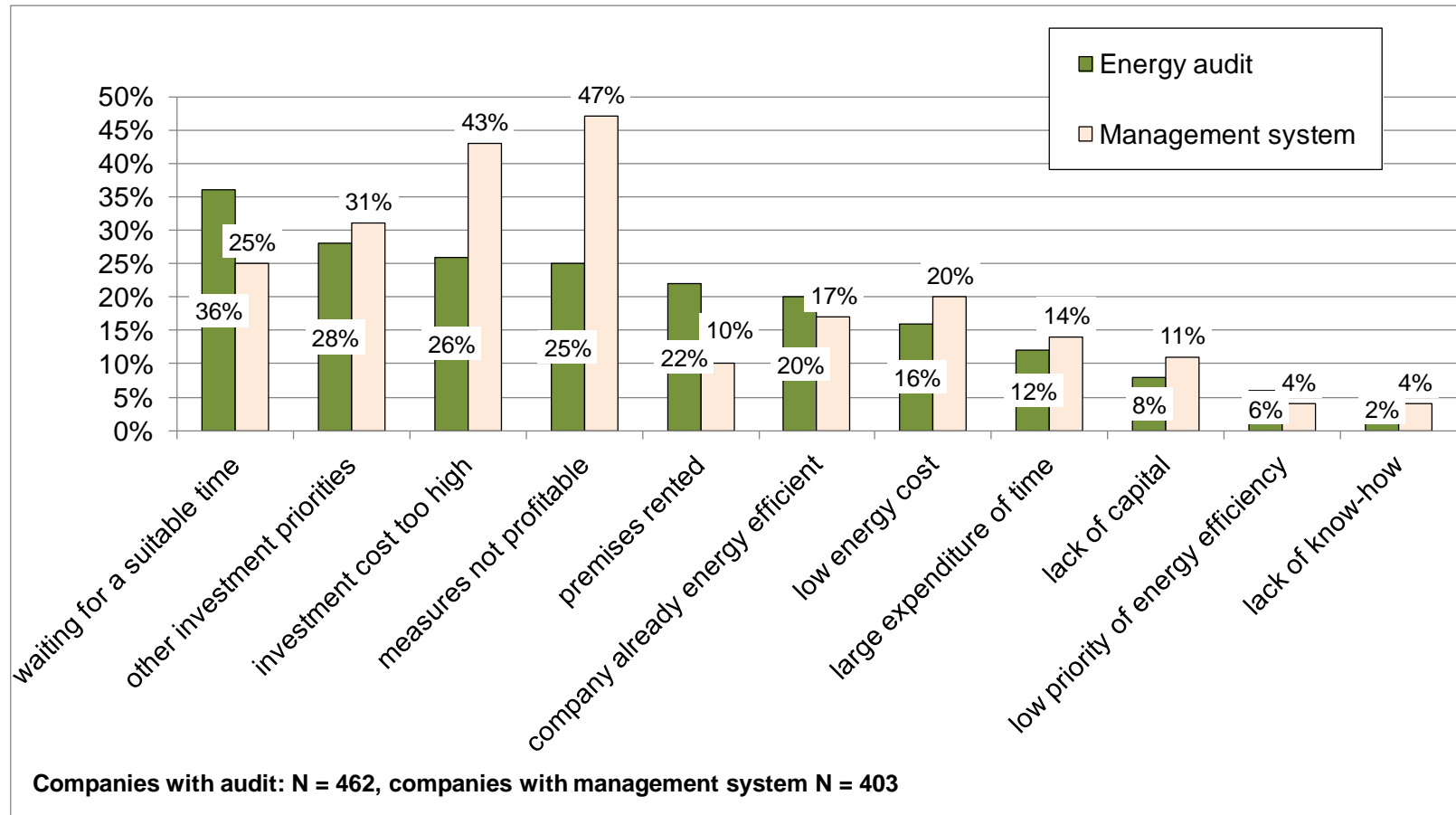
# Statements on qualitative audit impacts



# Audits: measures recommended, implemented, planned



# Obstacles for implementation of measures



# Final quantitative results

Saving potential based on measures: 3.9%  
Achieved by measures implemented/firmly planned: 3.4%

	2016 – 2020 5 years	2016 – 2020 4 years and next audit 2019
Savings (PJ)	113.06	145.90
./. autonomous progress	84.32	84.32
Result	28.74	61.58
Effects of other policies (50 %)	14.37	30.79
Final savings (end of 2020)	14.37	30.79

# Recommendations

---

- Criterion of minimum energy demand (e.g. 100 MWh /a) instead of number of employees or turnover to defined obliged companies
- Extended period of time for audits to avoid a concentration every four years
- Enforced requirements and further training for auditors, e.g. on life-cycle analysis
- Auditors should consider energy services such as contracting
- All audit reports should be sent to the responsible agency
- More reports should be checked by the agencies independent experts

---

# Thank you very much for your attention!

## **Project Manager:**

Dipl.-Ing. Michael Mai  
IREES GmbH  
Karlsruhe, Germany  
E-Mail: [m.mai@irees.de](mailto:m.mai@irees.de)  
[www.irees.de](http://www.irees.de)

## **Presentation:**

Dipl.-Phys. Oliver Lösch  
IREES GmbH  
Karlsruhe, Germany  
E-Mail: [o.loesch@irees.de](mailto:o.loesch@irees.de)  
[www.irees.de](http://www.irees.de)

Project partner: adelphi consult GmbH (market analysis)  
Project commissioned by Bundesamt für Wirtschaft und Ausfuhrkontrolle  
(Federal Office of Economics and Export Control)