

# Evaluation of the impact of obligatory energy audits for large companies in Germany on improvement of energy efficiency

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# Background of the study

## German GHG reduction targets:

- decrease of 40 % by 2020 and 80 to 95 % by 2050 relative to 1990
- annual increase in energy productivity of 2.1%

## Policies concerning industry (among others):

- SMEs: subsidies for audits
- Large enterprises: Emission Trading Scheme, eco-taxation, obligatory energy audit or introduction of a management system



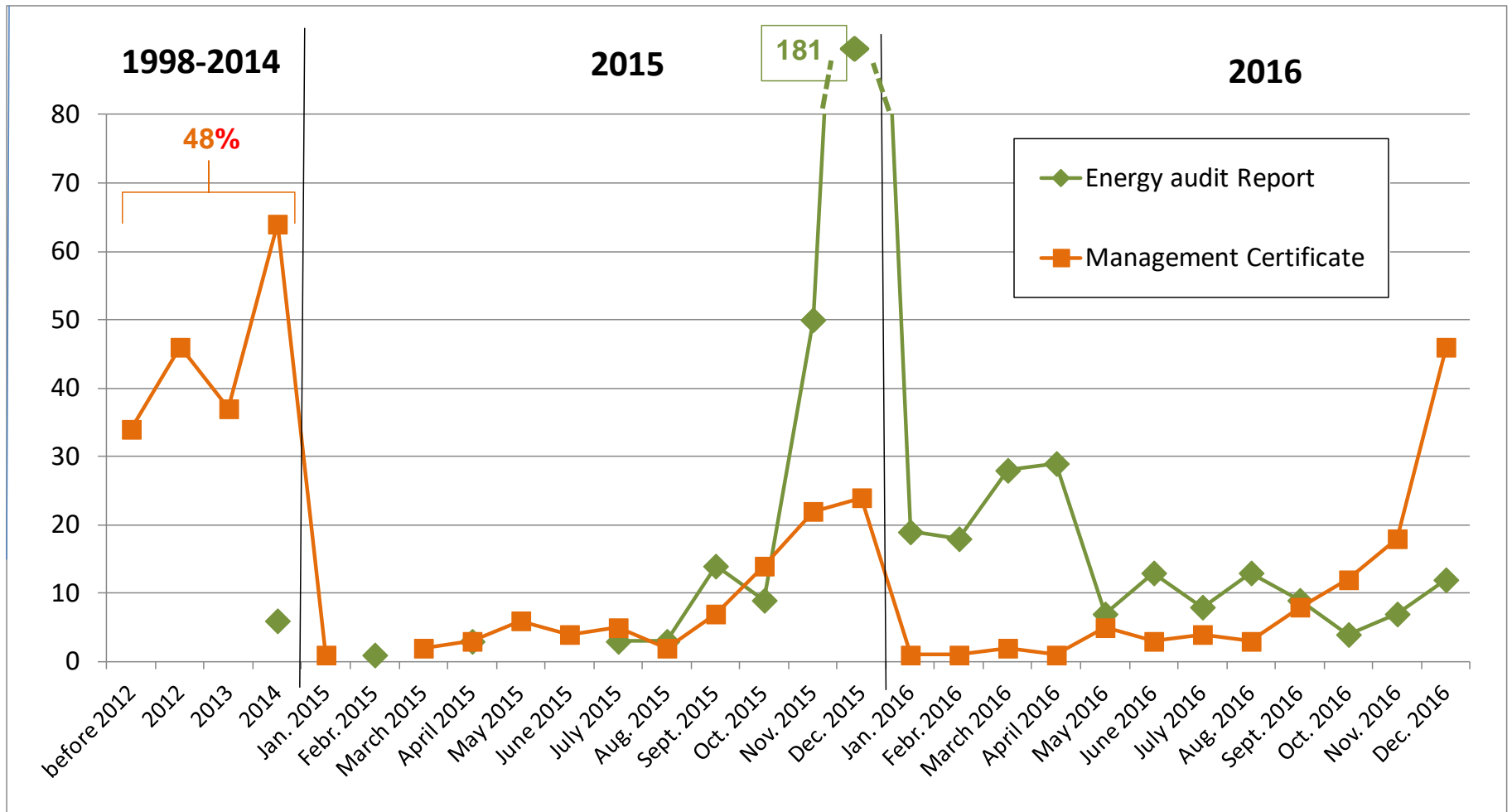
**Entered into force in February 2015**

## Requirements:

- completion of an energy audit by December 5, 2015 or
- introduction on an energy management system by December 2016



# Fulfilment of obligations over time

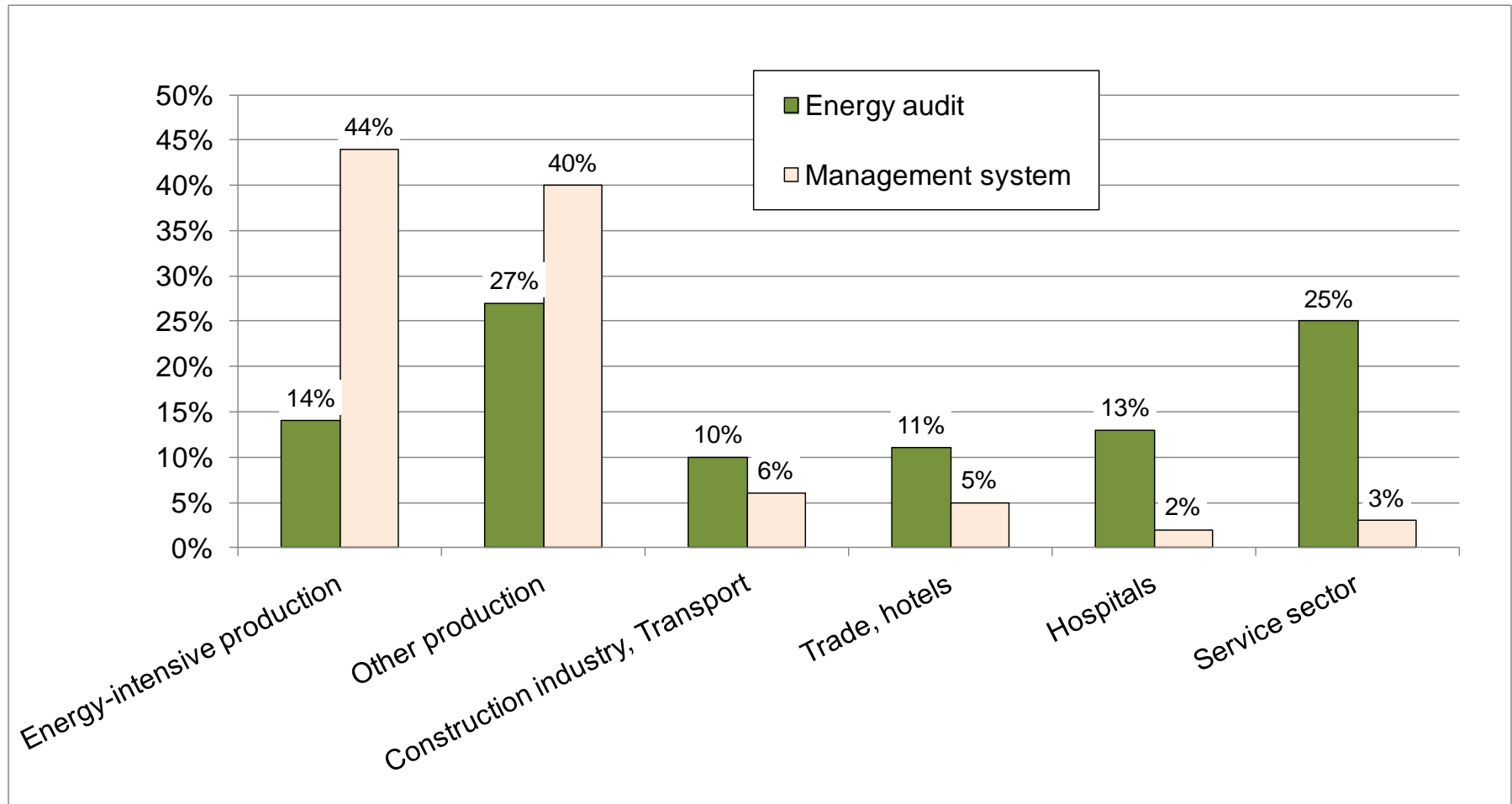


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# Audit or management system by sector



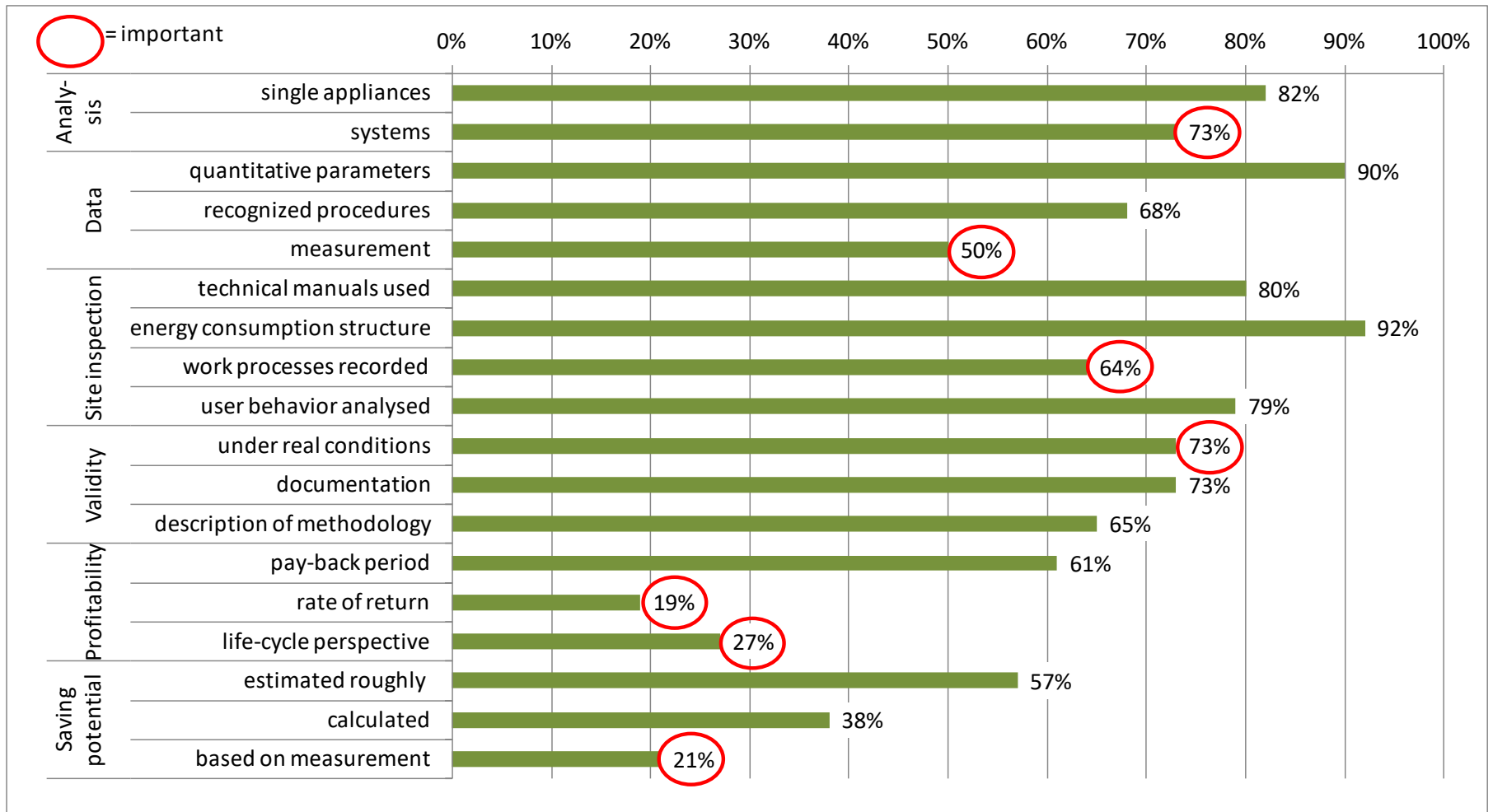
# Structure of the companies

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- 92% of the non-SMEs have more than one site, on the average they have 30 sites.
- Largest number of sites: retailing, hospitality, service companies
- Multi-site audit option for companies with similar branches
- A single energy audit covers only one site, a multi-site audit covers several sites, a management system can cover a whole company.
- Business ownership: about 75% are part of a company group, sometimes with head offices abroad.



# Indicators for the quality of audits

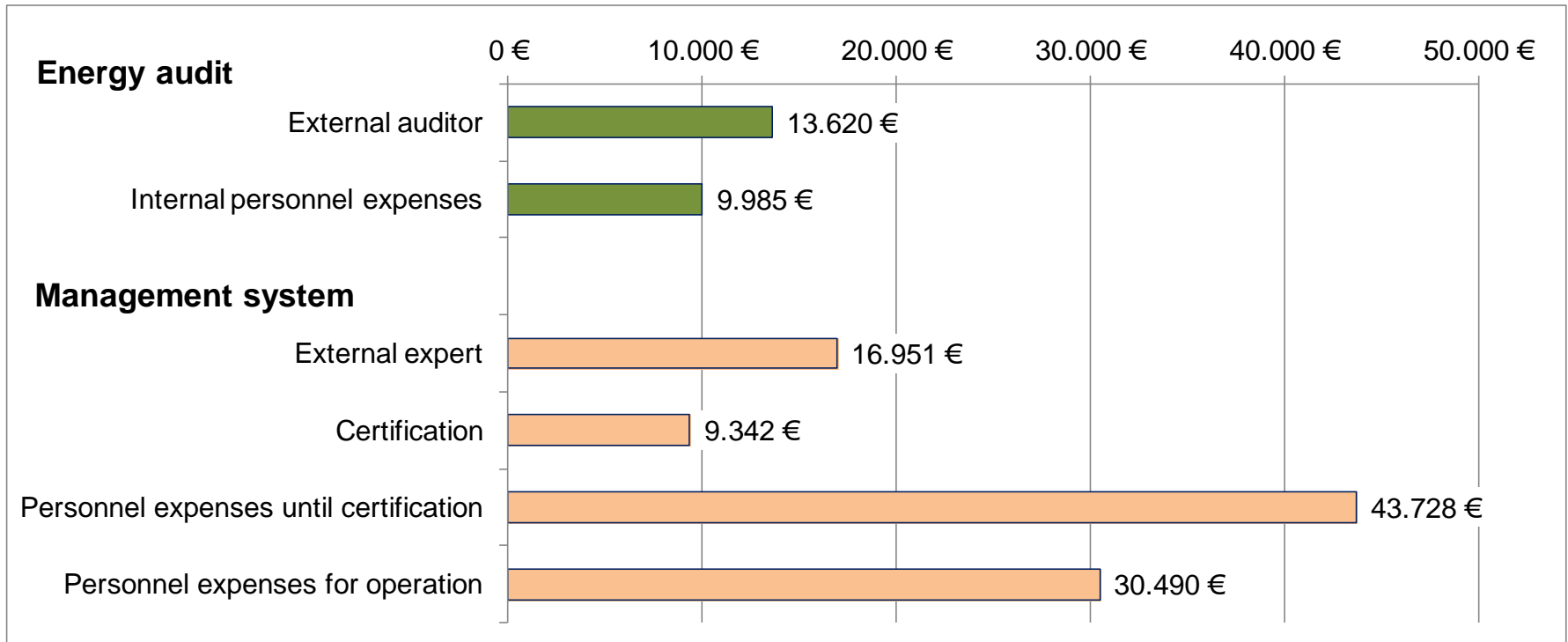


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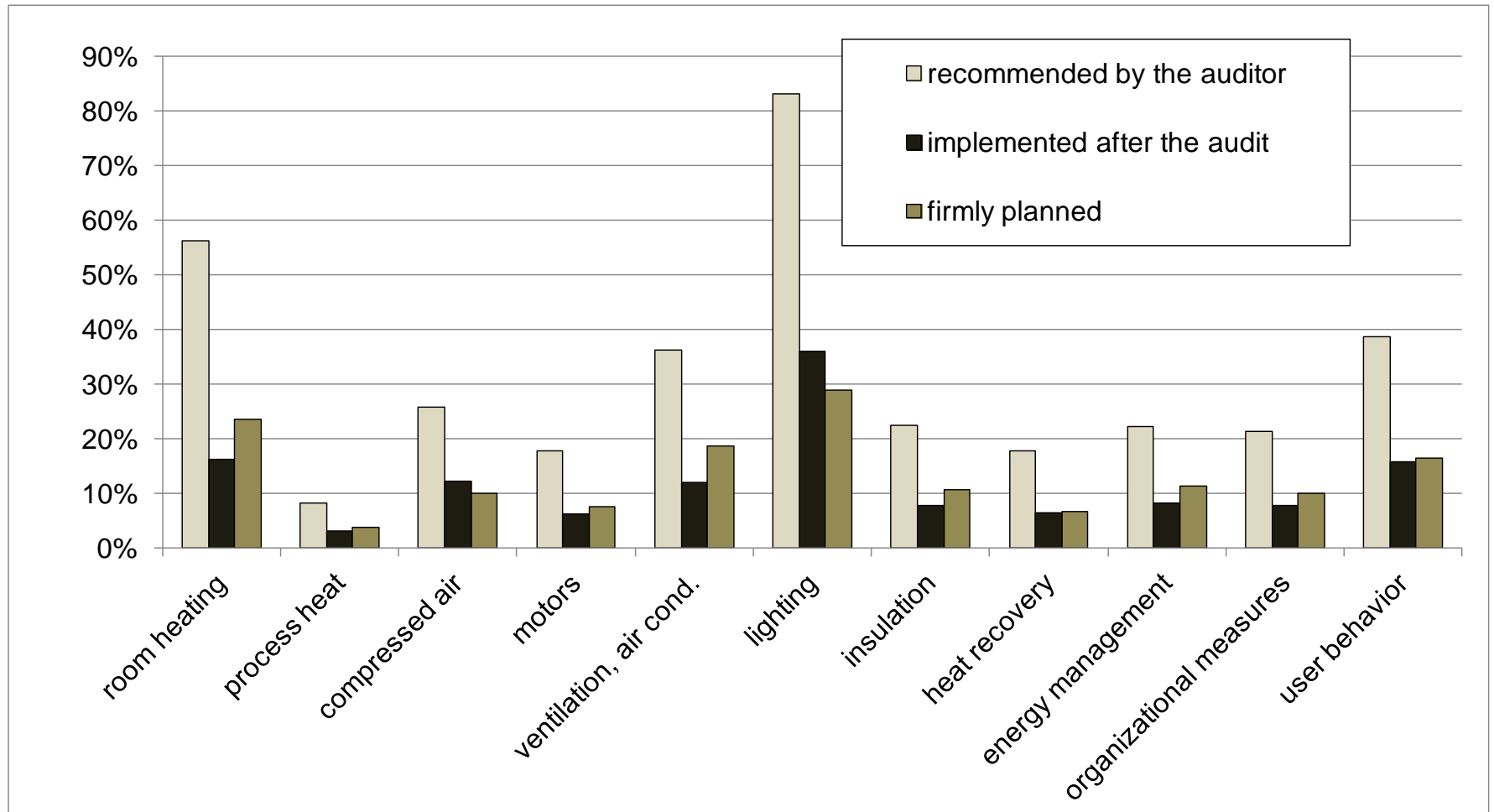


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# Average Cost

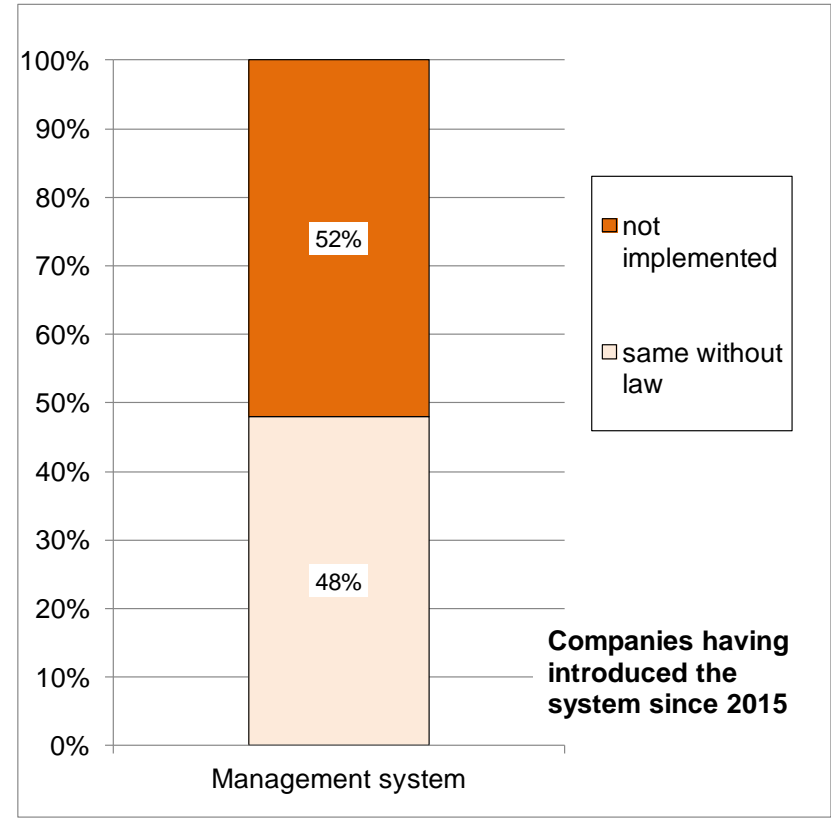
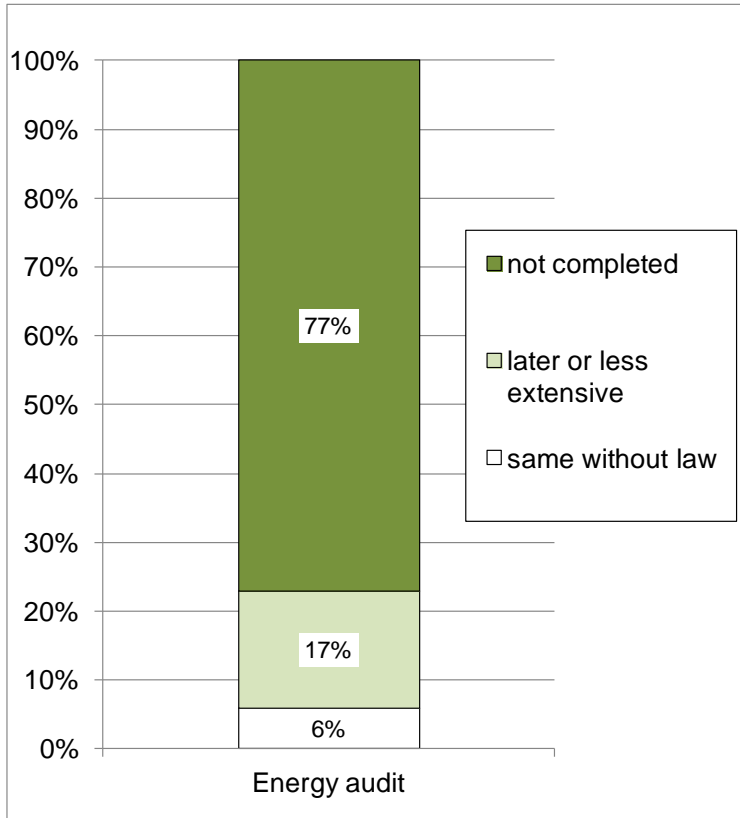


# Audit: measures implemented or planned

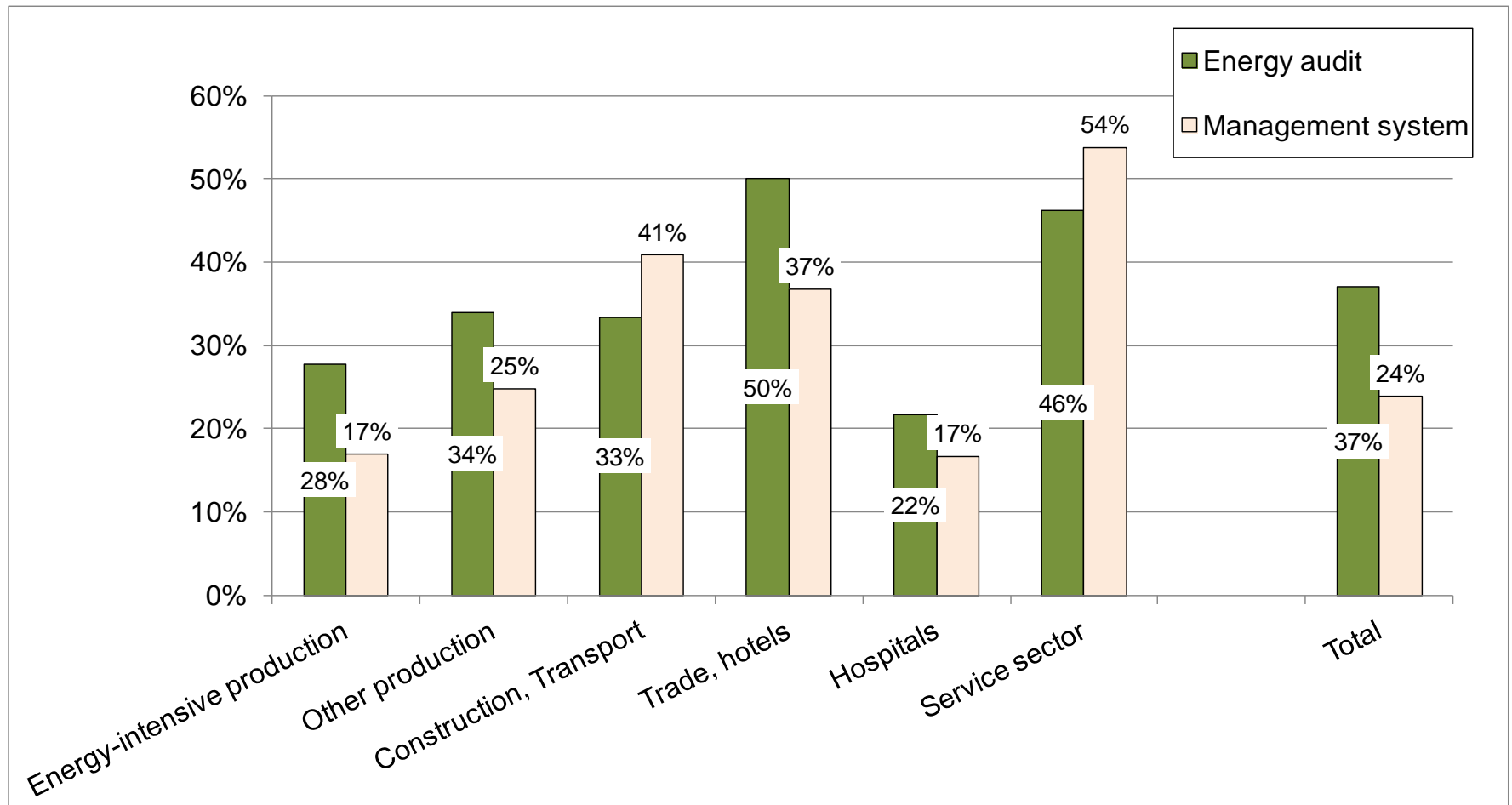




# “Freerider effect”



# Obstacle: rented premises



# Final quantitative results

Saving potential: 3.9%  
 Achieved by measures implemented: 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



# Opinions about the law

- About 70% of the respondents are satisfied with the law with respect to its effect on energy efficiency improvement.
- Points of discussion:
  - Level of energy demand as a criterion for companies' size instead of number of employees or turnover
  - Other criteria for the service sector, administration departments, etc. (poor benefit-cost ratio)
  - Energy management systems better than audits
  - Obligation to implement profitable measures
  - Complaints about the quality of audits and auditors (also supported by the analysis of reports and expert interviews)

# Recommendations

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- Minimum energy demand of 100,000
- 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.
- Audit reports should be prerequisite for the utilization of subsidies.
- All audit reports should be sent to the Authority.



# Remarks on methodology

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- Very long and detailed questionnaire, for an extrapolation exact data necessary
- Many companies cancelled the interview because the search for data required too much effort.
- For others not sufficiently specific, company not adequately portrayed. More details would have enlarged the questionnaire even more.
- Effects cannot be measured, collected only indirectly through statements of the respondents.



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# Thank you very much for your attention!

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Cooperation partner: adelphi consult GmbH (market analysis)  
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