

Efficiency of an Energy Audit Programme for SMEs in Germany – Results of an Evaluation Study

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Overview

- Background and objectives
- Methods
- Main results:
 - ➔ Knowledge and use of the programme
 - ➔ Quality of audits
 - ➔ Overall assessment
 - ➔ Impact
- Conclusions

The Programme

- Subsidies for energy audits since 2008, target group SMEs
- Initial audits (screening) up to 2 days, 80 % subsidy
- Comprehensive audits up to 10 days, 60 %
- Management: KfW (German Promotional Bank)
- Applications, all contacts: regional partners
- Online search for consultants registered by KfW
- Forms for audit reports

Objectives



Objectives of the evaluation:

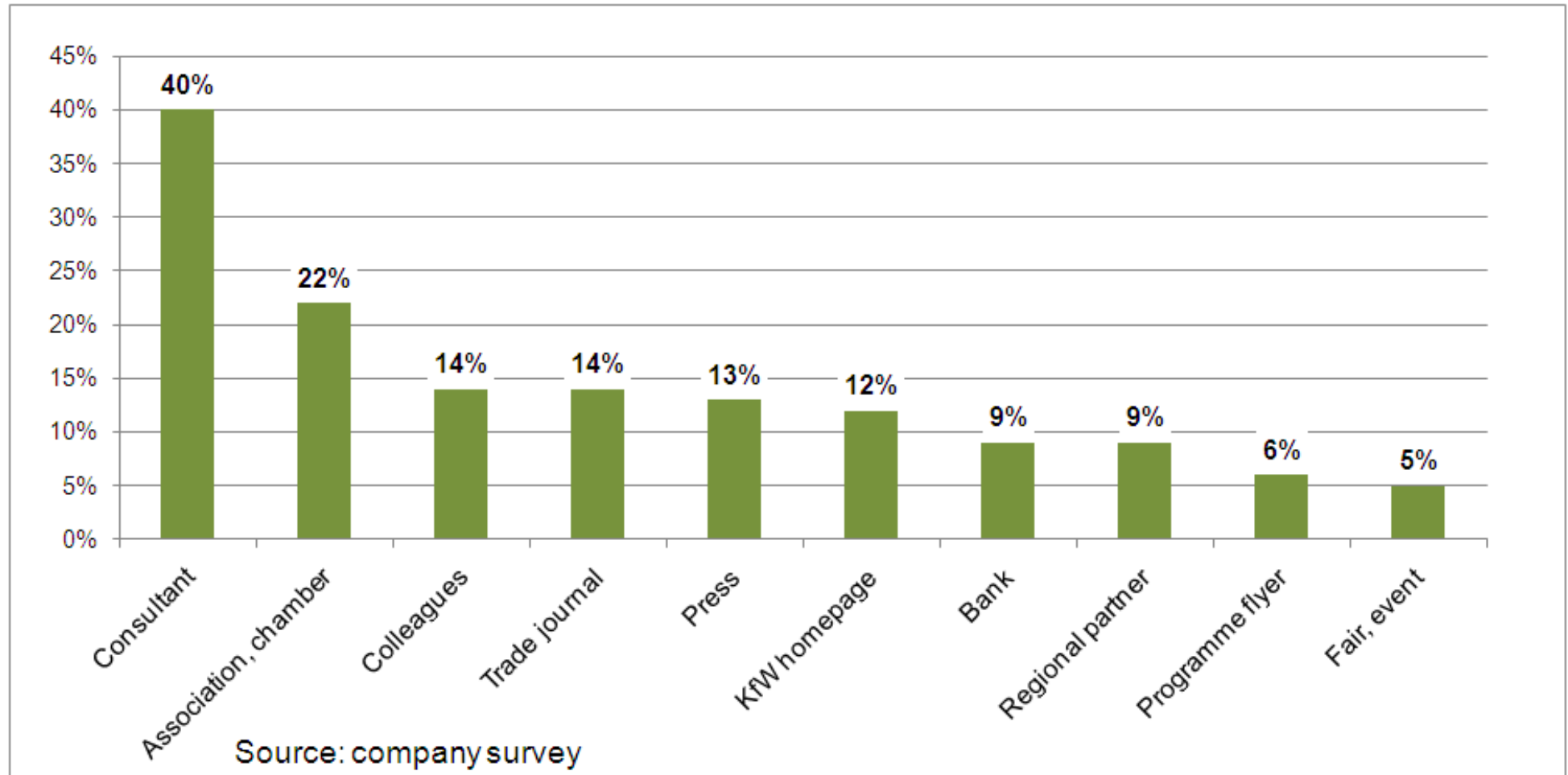
- ➔ performance of the programme
- ➔ measures taken by audited companies
- ➔ energy savings & CO₂ reductions achieved
- ➔ induced investment costs
- ➔ check of quality of audit reports
- ➔ suggestions for optimisation

Methodological Approach

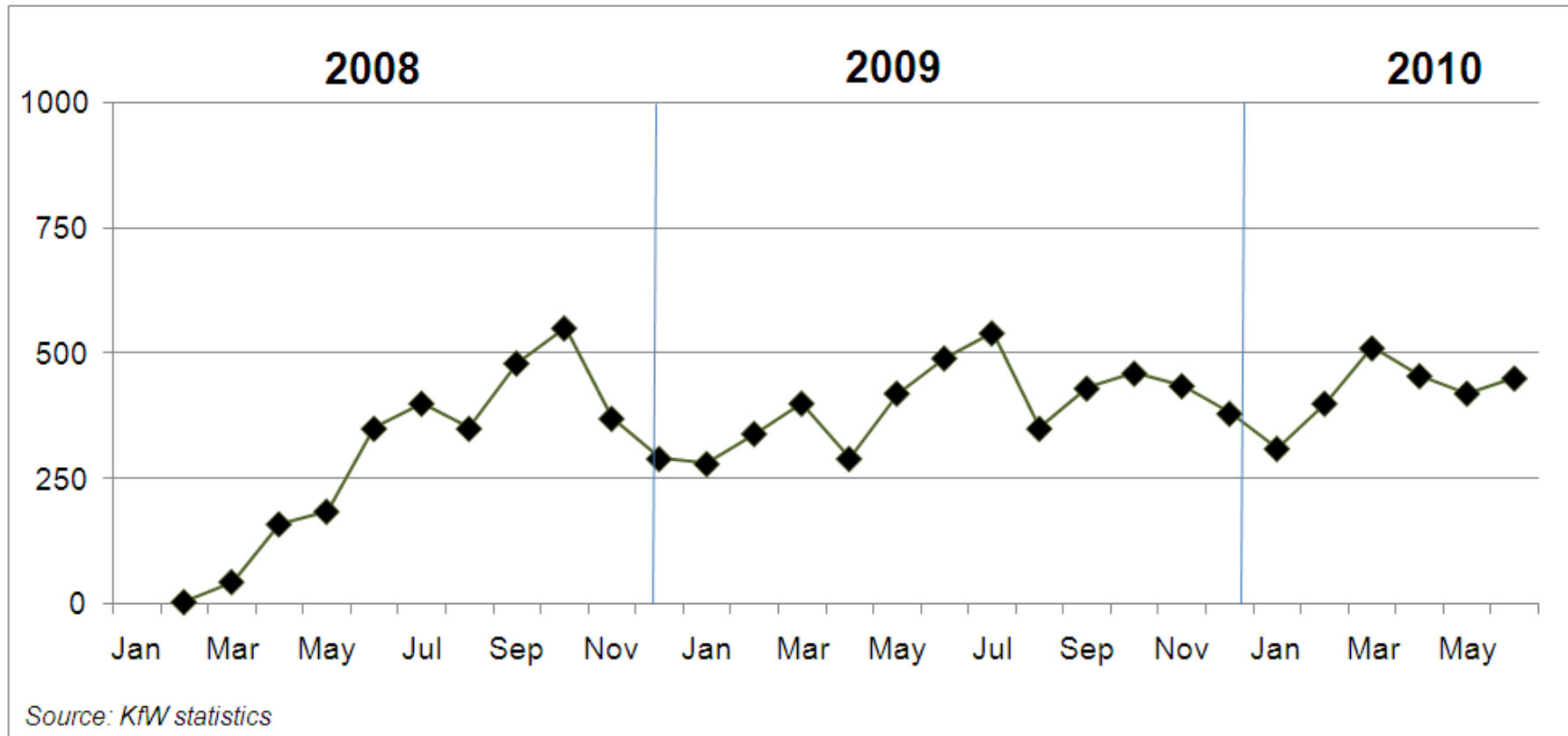


- Evaluation of all application data
- Check of audit reports (107)
- Survey of regional partners (52)
- Survey of consultants (321)
- Survey of companies audited (542)
- Control group (40)
- Assessment of energy savings, CO₂ reductions and investments induced
- Expert workshop

Information sources about the programme

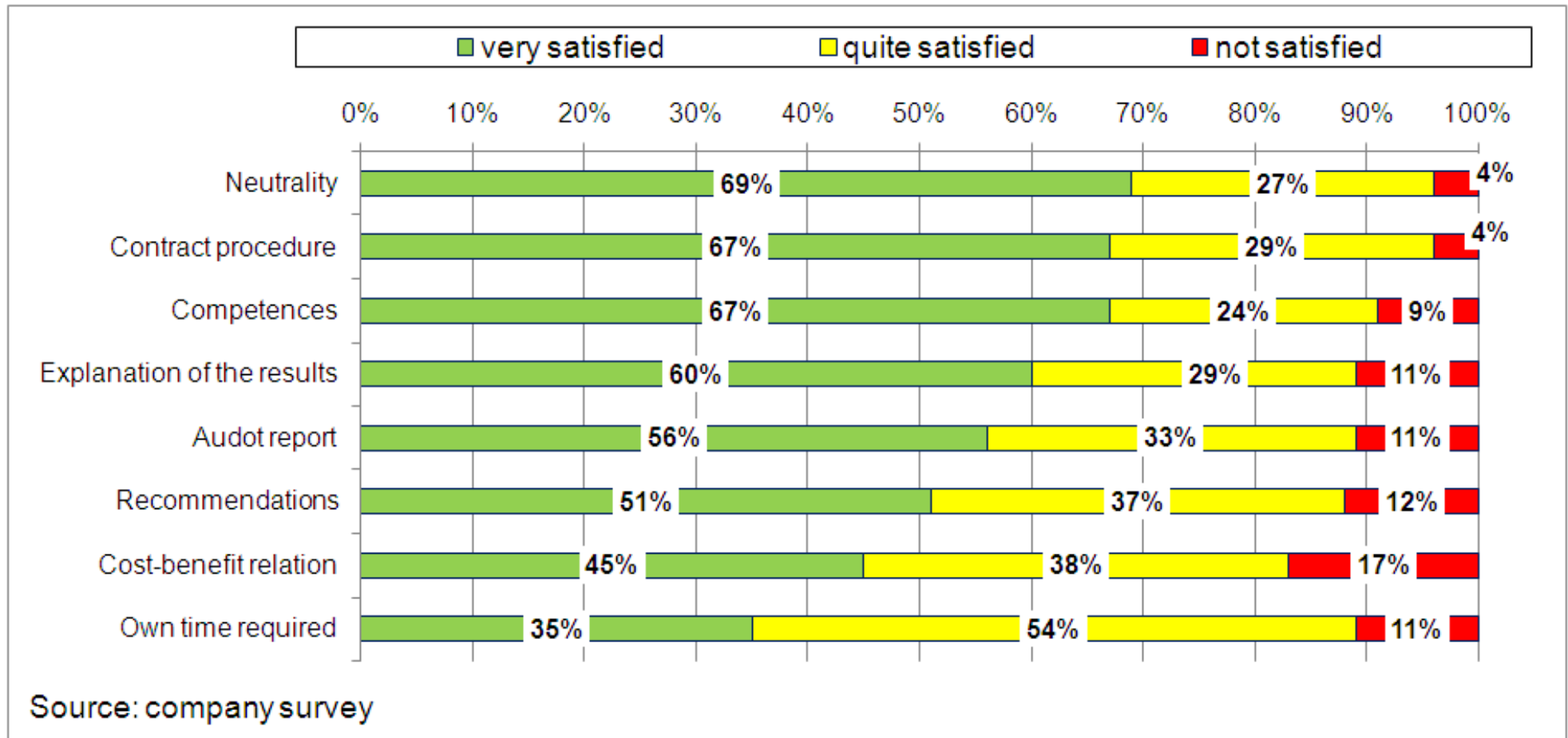


Programme not yet known enough



- 80 % screening audits, 20 % comprehensive audits
- In total 10.400 applications approved

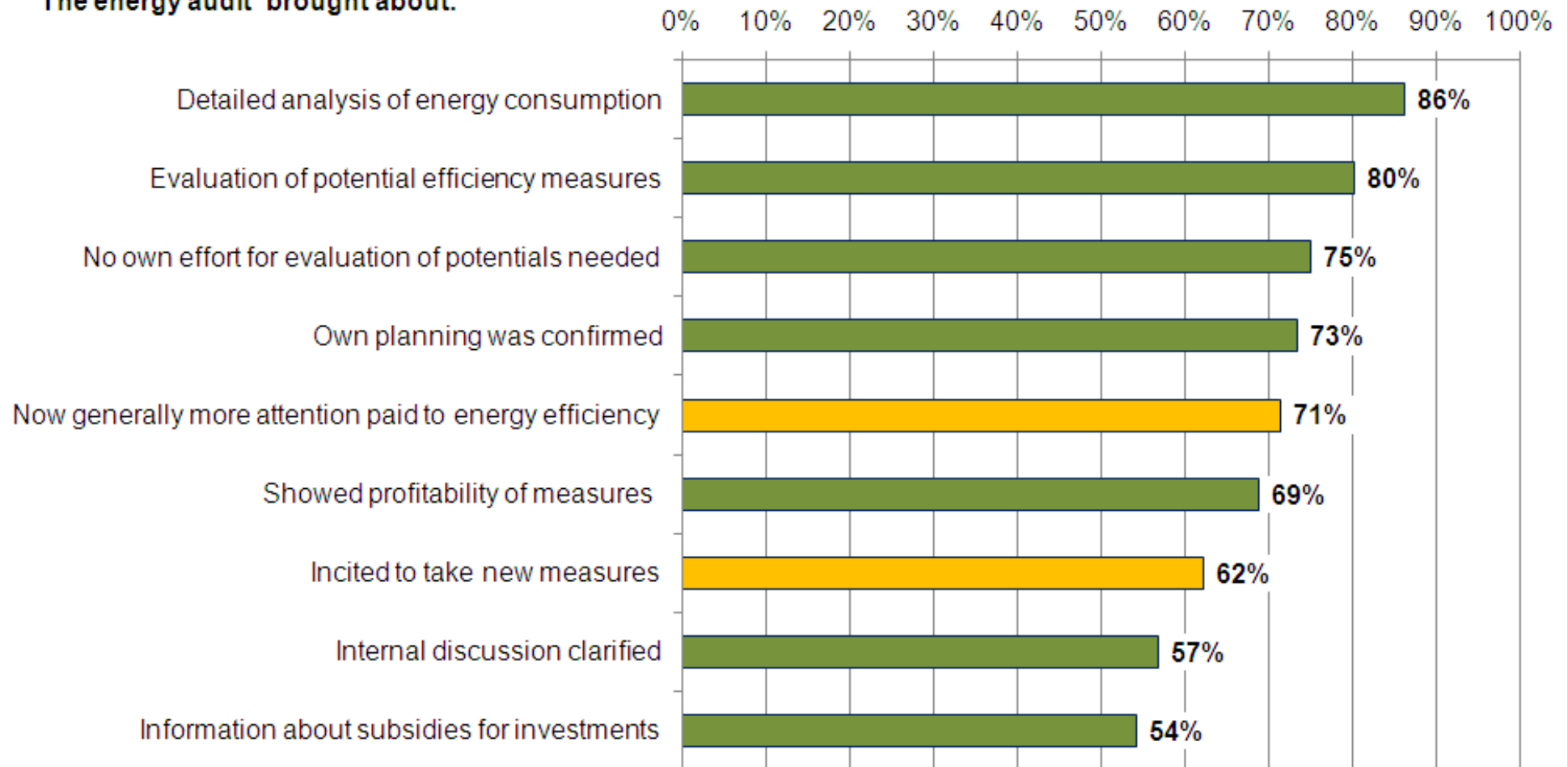
Customer satisfaction concerning the audits



- Evaluation of reports by experts: good quality

Impact for the companies audited

The energy audit brought about:

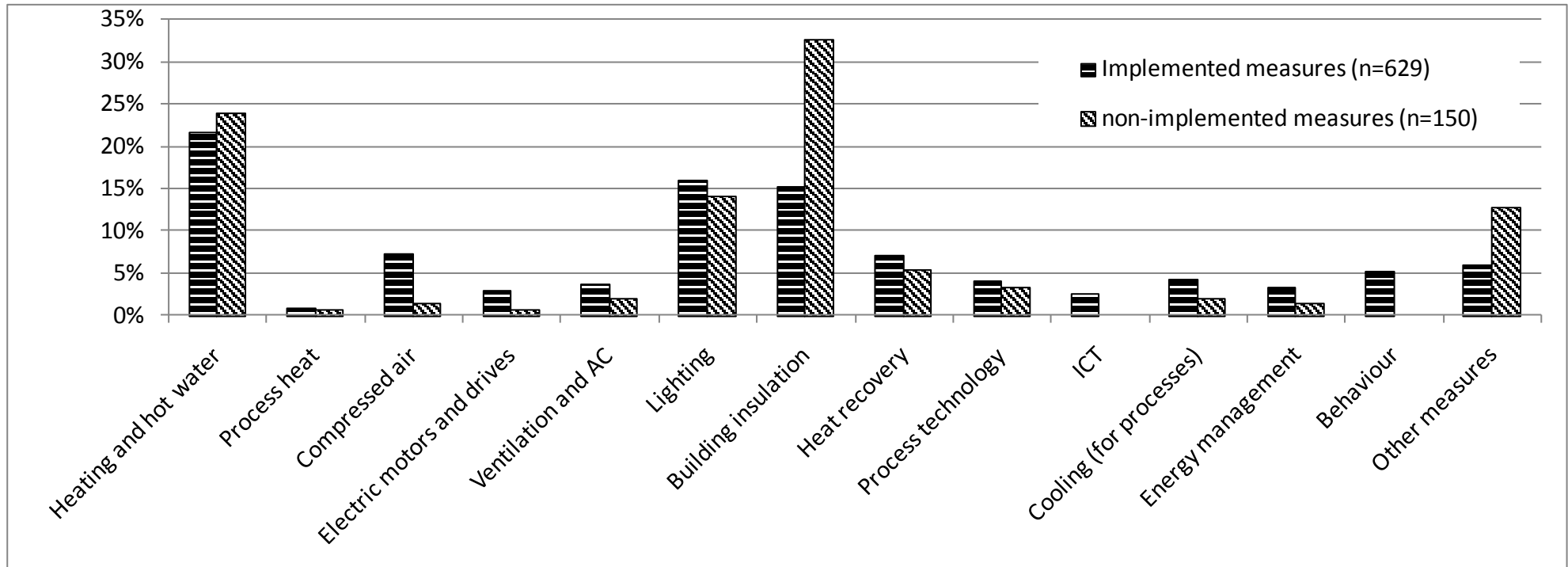


Source: company survey

Quantitative impact on two levels

- Singular measures: insulation, improved lighting system, heat recovery, ...
- Extrapolation for all applications approved
- „Free riders“ excluded
- Measures included which are planned determinately for the next future (short time between audit and interviews), otherwise effect underestimated

Measures implemented and not implemented



Energy savings: ca. 70 MWh per measure, 25 % electricity, 75 % fuels

Investments: ca. 23,000 € per measure (processes 50,000 €, lighting 5,000 €, compressed air 7,000 €, behaviour & small investments 400 €)

Payback period: 6.1 years on the average (0 – 32 years)

Indicators for the cost-effectiveness of the programme

	Low	High
Total energy savings	29 TWh	38 TWh
CO ₂ emission reduction	9,000 kt CO ₂	11,000 kt CO ₂
Programme costs per € investment induced	0,03 €	0,03 €
Programme costs per energy saved	0,7 € / MWh	0,5 € / MWh
Programme costs per CO ₂ reduction	2,1 € / t CO ₂	1,6 € / t CO ₂

for the period 2008 to 2029, two scenarios.

- low: 10% discount rate, 15 years average lifetime, low energy prices
- high: 6% discount rate, 20 years average lifetime, high energy prices

Conclusions

- ➔ Good image of the programme
- ➔ SMEs of all sizes and sectors use it
- ➔ Audits reveal considerable energy efficiency potentials
- ➔ Customers are satisfied, many of them follow the suggestions
- ➔ Success factors:
 - high percentage of subsidies
 - activities and personal contacts of regional partners
 - quality of the audits
- ➔ Optimisation:
 - improved search process to find consultants, quality control of consultants
 - Improved forms for reports to give more specific information

The programme promotes the market of energy efficiency technologies and contributes significantly to establishing a large pool of qualified energy efficiency consultants in Germany.

Thank you very much for your attention!



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