

energy efficiency monitoring body

Energy audits for households

First plenary meeting, CA ESD II
Warsaw, 25.10.2011

- Energy audits for households are broadly applied in Austria
 - federal provinces
 - energy companies
 - others
- Quality and training standards assured by federal provinces
- Incentive for reporting audits for the NEEAP
- Taking into account soft measures in energy efficiency monitoring

Method (1)



- Developed by the Austrian Energy Agency
- Reasons for national methods
 - ESD: The national energy savings shall be measured as from 1st January 2008
 - monitoring of voluntary agreements
- in cooperation with public authorities and other stakeholders (e.g. energy companies)
- Quality criteria!

Method (2)



- Energy-related audits for private households
 - Carried out by trained energy advisors
 - In the fields of electricity and heating
 - At three quality levels
- Method evaluates savings due to changed behavior of energy consumers
 - Investment measures are captured by other methods
 - no double counting
- Data collection via online data base

Effects of energy counselling



-
- Little evidence on the effects of energy audits in Austria
 - evaluation of programs needed
 - energy efficiency monitoring was one impetus to improve monitoring of energy audits
 - better data for the future expected
 - Basis for saving factors
 - literature review on the effects of soft measures
 - studies with different methodologies

Formula

- $EE_{tot} = [(n_{Q1} - fr_1) \times EEV_{HH} \times e_{Q1} + (n_{Q2} - fr_2) \times EEV_{HH} \times e_{Q2} + (n_{Q3} - fr_3) \times EEV_{HH} \times e_{Q3}] \times rb \times so \times cz$
- $n_Q \rightarrow$ number of audits
- $fr \rightarrow$ free riders
- $EEV \rightarrow$ average energy consumption of a household (electricity, heat or both)
- $e_Q \rightarrow$ savings factor (depending on quality level)
- $rb, so, cz \rightarrow$ correction factors

Formula - example

$$\begin{aligned} \blacksquare EE_{\text{tot}} &= [(n_{Q1} - fr_1) \times EEV_{HH} \times e_{Q1} + \\ & (n_{Q2} - fr_2) \times EEV_{HH} \times e_{Q2} + \\ & (n_{Q3} - fr_3) \times EEV_{HH} \times e_{Q3}] \times rb \times so \times cz \\ \blacksquare EE_{\text{tot}} &= [(1 - 0) \times 22,000 \times 0,0025 + \\ & (1 - 0) \times 22,000 \times 0,01 + \\ & (1 - 0) \times 22,000 \times 0,03] \times 1 \times 1 \times 1 = 935 \text{ kWh} \end{aligned}$$

- $n_Q \rightarrow$ number of audits
- $fr \rightarrow$ free riders
- $EEV \rightarrow$ average energy consumption of a household (electricity, heat or both)
- $e_Q \rightarrow$ savings factor (depending on quality level)
- $rb, so, cz \rightarrow$ correction factors

Quality criteria (1)

| | Quality level 1 (>15 min) | Quality level 2 (>30 min) | Quality level 3 (>60 min) |
|-----------------|------------------------------|------------------------------|------------------------------|
| On site | - | X | X |
| Face to face | X | X | X |
| On telephone | X | X | - |
| On the internet | X | - | - |

- The higher the quality level the higher the documentation requirements

Quality criteria (2)

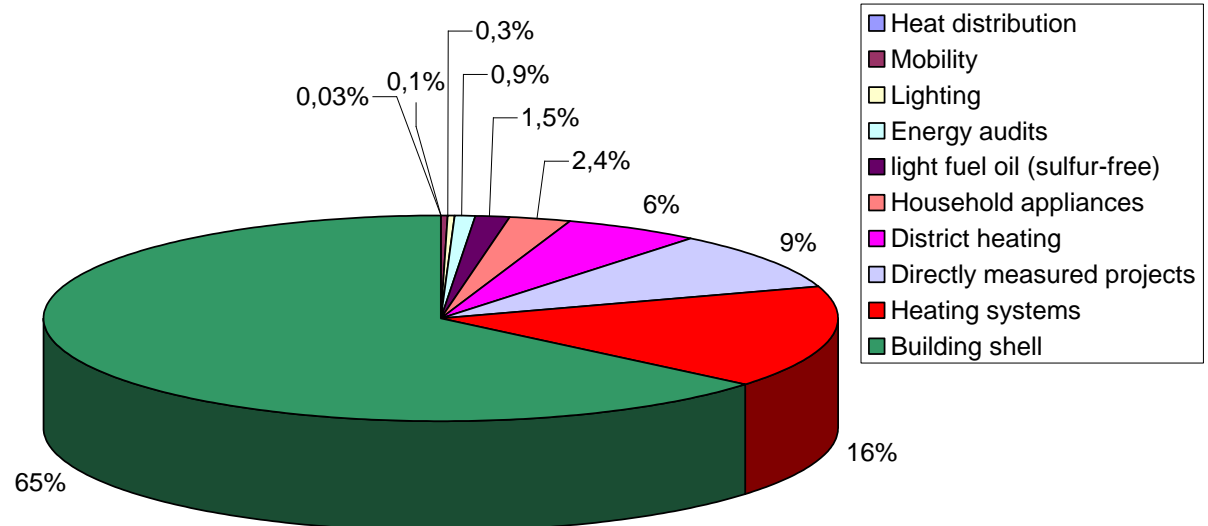


- Quality level 1
 - directly
 - individual analysis of energy consumption
 - >15 minutes
- Quality level 2
 - directly
 - individual analysis of energy consumption
 - >30 minutes
- Quality level 3
 - face to face or on location
 - individual energy concept and report
 - >60 minutes
 - by an independent energy adviser (energy carrier and product)

Results 2011

Share of audits for households in total savings:

- Valid in 2016: 0%
- Valid in 2010: 0,3%



Conclusions



-
- Energy audits important as accompanying measure
 - Should also be reflected in energy efficiency monitoring
 - Direct contribution to national target
 - negligible
 - but synergies with investment measures!
 - Improved evaluation of the effects of energy audits needed

Thank you for your attention



Contact

Gregor Thenius
Austrian Energy Agency
Mariahilfer Straße 136
1150 Wien
AUSTRIA

T: +43 (0)1 586 15 24 - 145

F: +43 (0)1 586 15 24 - 340

e-mail: gregor.thenius@energyagency.at

www.energyagency.at