

Assessing developments in a type of German on-site energy consultation for private homes on the basis of evaluations carried out over a set time period

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www.verbraucherzentrale.nrw/enerwin-ezh-evaluation
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Introduction

The Consumer Association in North Rhine-Westphalia (Verbraucherzentrale NRW) has offered energy consultancy products to their customers since 2008 in three different projects. These include an on-site energy audit for private homeowners for a subsidised fee.

An additional thermograph examination was offered in order to reach customers in a different way during several winter periods.

The on-site energy consultation is offered mainly to owner-occupiers with single family buildings, or small to medium-sized buildings with up to six residential units.

Evaluated by ifeu - Institute for Energy and Environmental Research Heidelberg GmbH, Germany

On-site consultation for private homeowners

- To **provide a brief overview** of the building's current **situation** and recommended measures for improving the energy performance of the building. (90 min; 60 euros).
- To **initiate and support private measures** relating to energetic modernisation and an optimised renovation sequence.
- To **motivate to invest** in improved thermal insulation or sustainable heating alternatives

A different target group was attracted by a special offer during several winter periods with an **additional thermographic inspection** of the thermal protection of the building (wall, windows).

Evaluations and effects

Evaluations of the projects MHS (2008 – 2011), KEK (2012 – 2014) and ENerWin (2015 – 2017) have been designed to investigate the implementation of given recommendations and the effects, primarily in terms of energy savings and CO₂ reductions.

Each based on a survey of 500 customers (at least 12 months, and up to a maximum of approximately 4 years, after the date of the consultation).

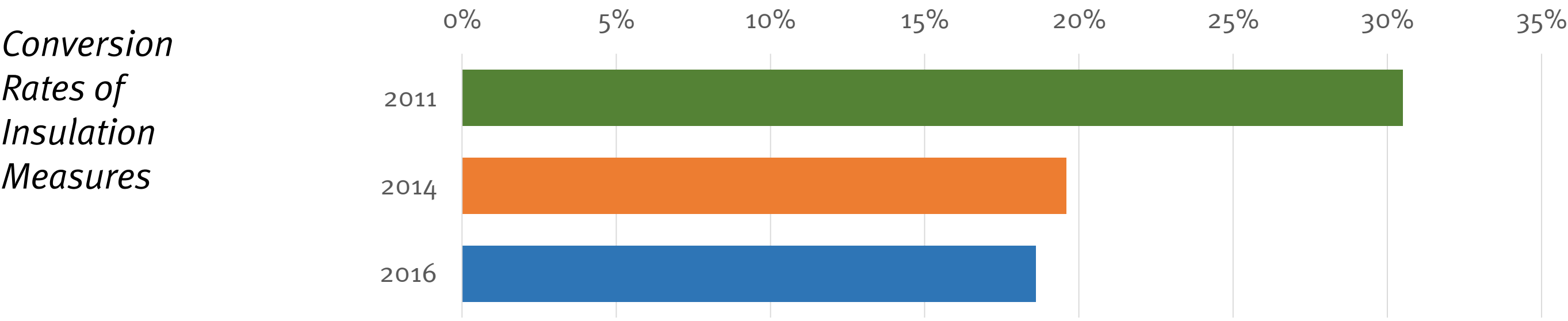
CATI interviews; 20 minutes on average. Samples are similar in relation to building types and the distribution of the years of construction.

Effects

Final energy reductions of around 15% (gross reduction), whereof 4-5% is initiated by the consultation (net reduction) in addition to the owners plan.

	No. of measures (completed & planned)	Net final energy reduction (kWh/a)	Net CO ₂ reduction (kg/a)	Relation Final energy net reduction vs. gross usage
2011 (MHS – n=500)	2.63	1,963	753	not available
2013 (KEK – n=331; without thermography)	2.65	1,746	703	3.9%
2016 (ENerWin – n=500)	2.69	2,076	638	4.6%

Strong decrease in outer wall insulation
became visible in the evaluation from 2014.
Stakeholder interviews cited negative publicity as the main reason.



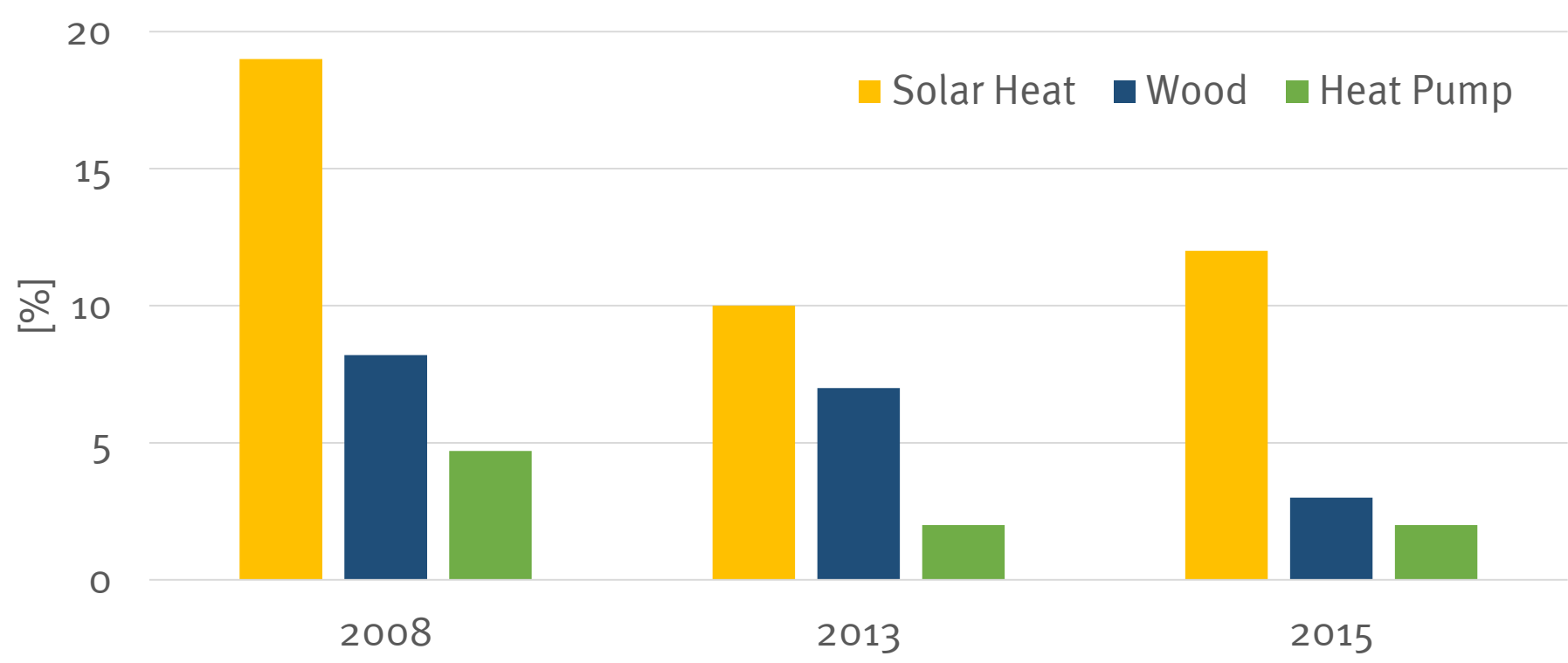
Reasons why outer walls were not being insulated (Survey 2016) :

- too laborious and expensive** (41%)
- worries about the potential negative side effects** (21%)
- would not be effective** in terms of energy saving (20%)

Decrease in heating systems with Renewables

Share of installed & planned heating systems with Renewables

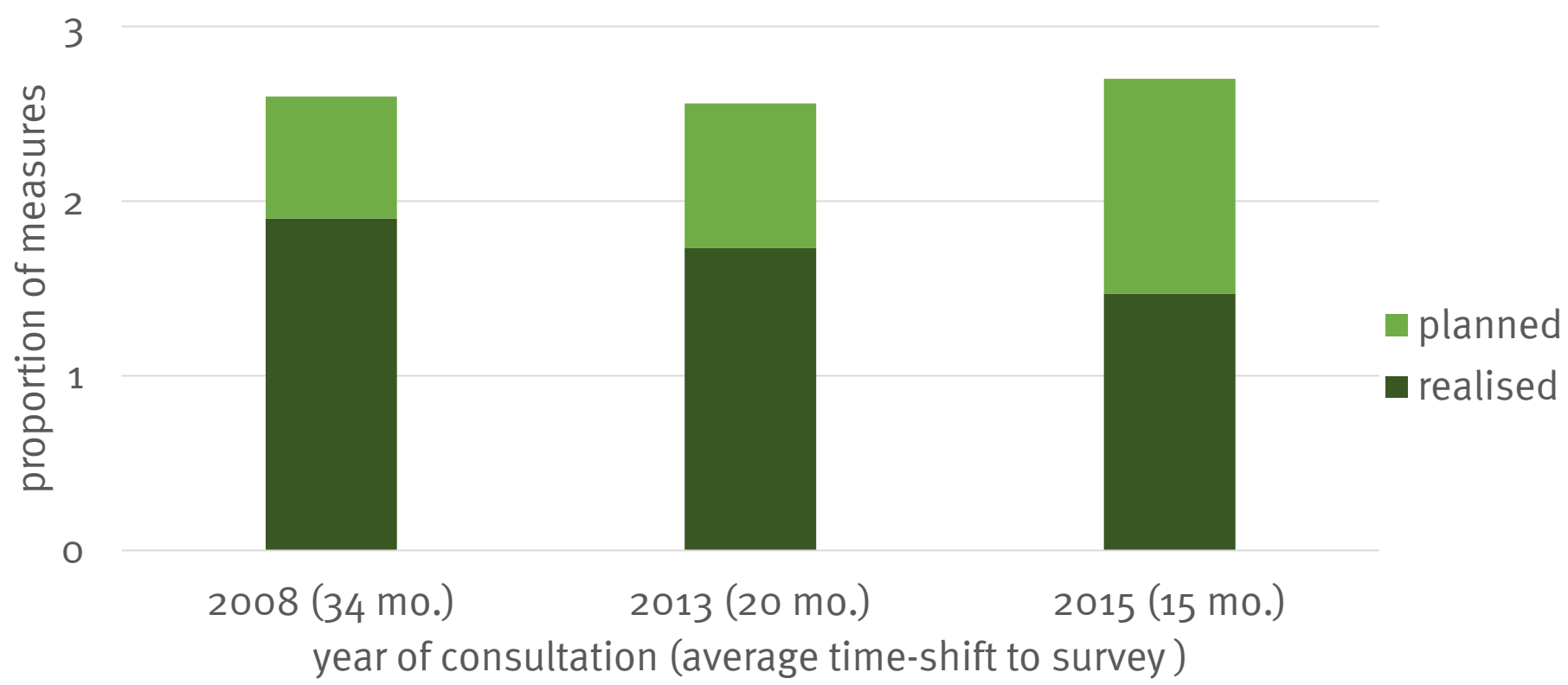
About 40% change their heating system, especially boilers



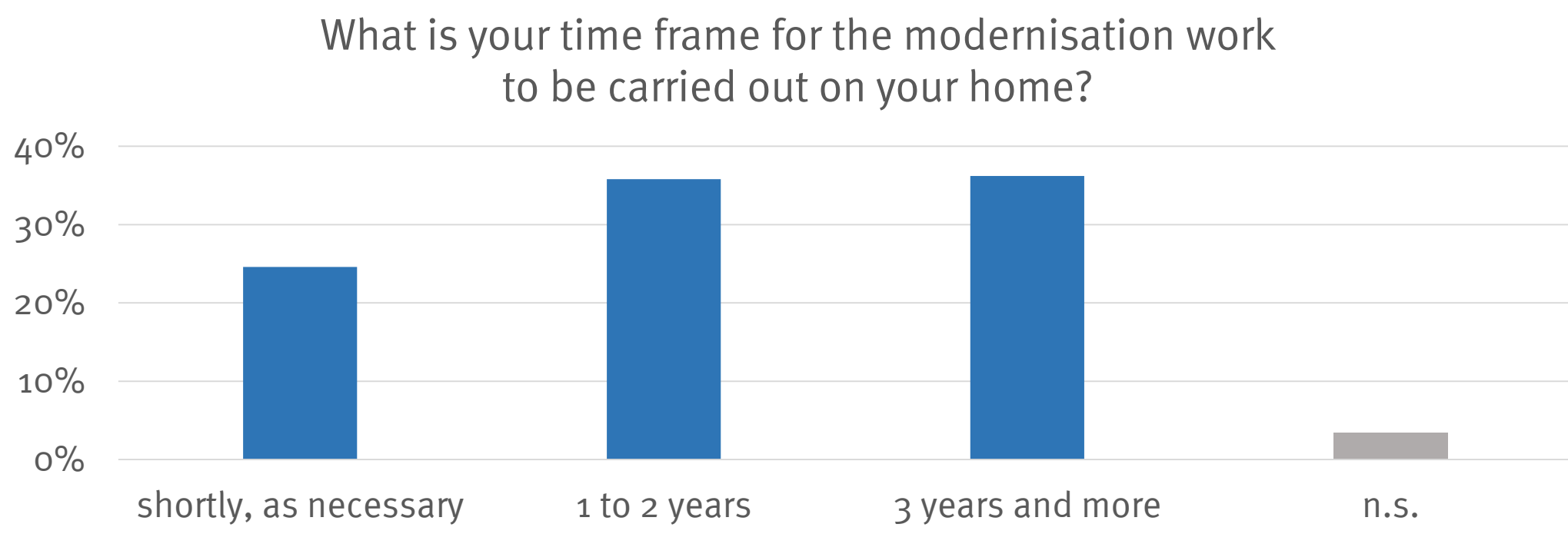
Implementation of measures and effects of consultation

Proportion of completed and planned measures

Shift depending on the different time delays between consultation and survey interviews.



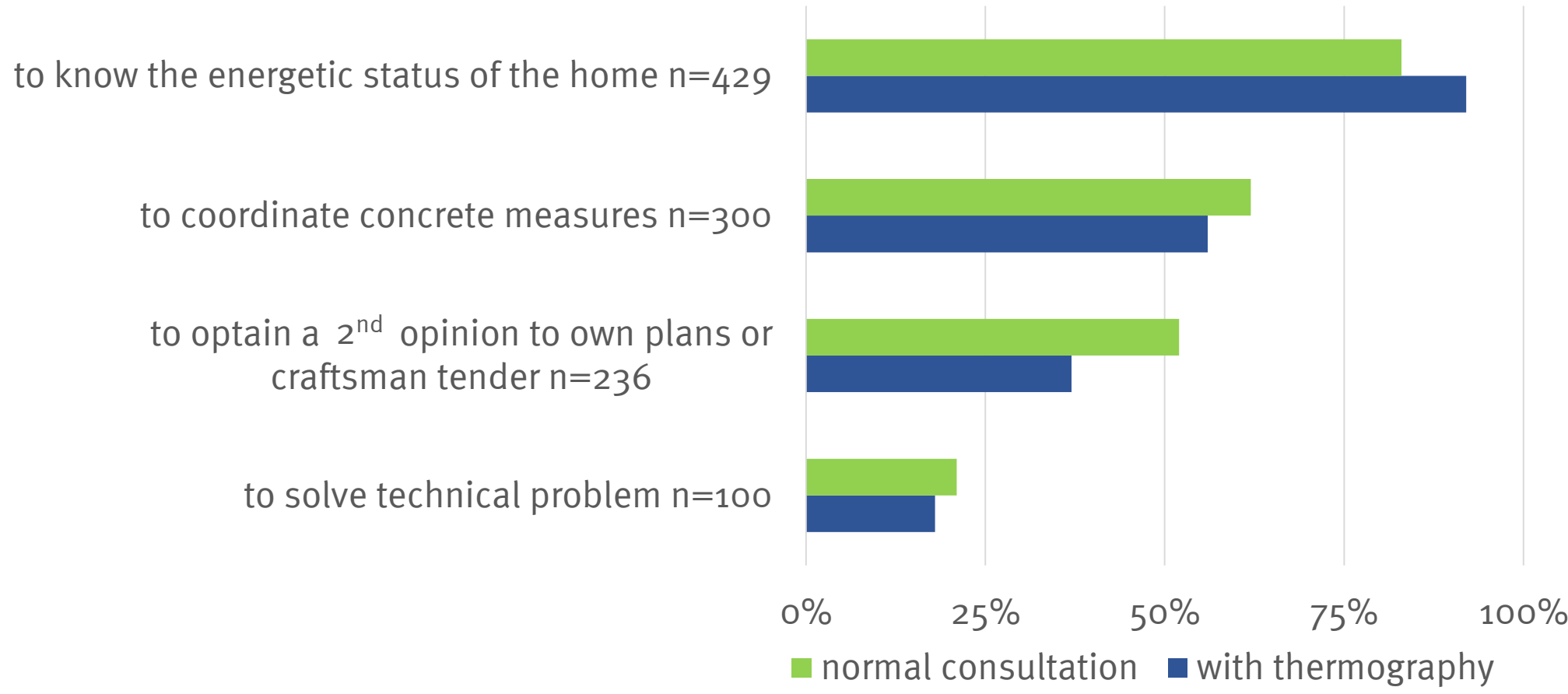
Individual time frame between 1 year and a few years



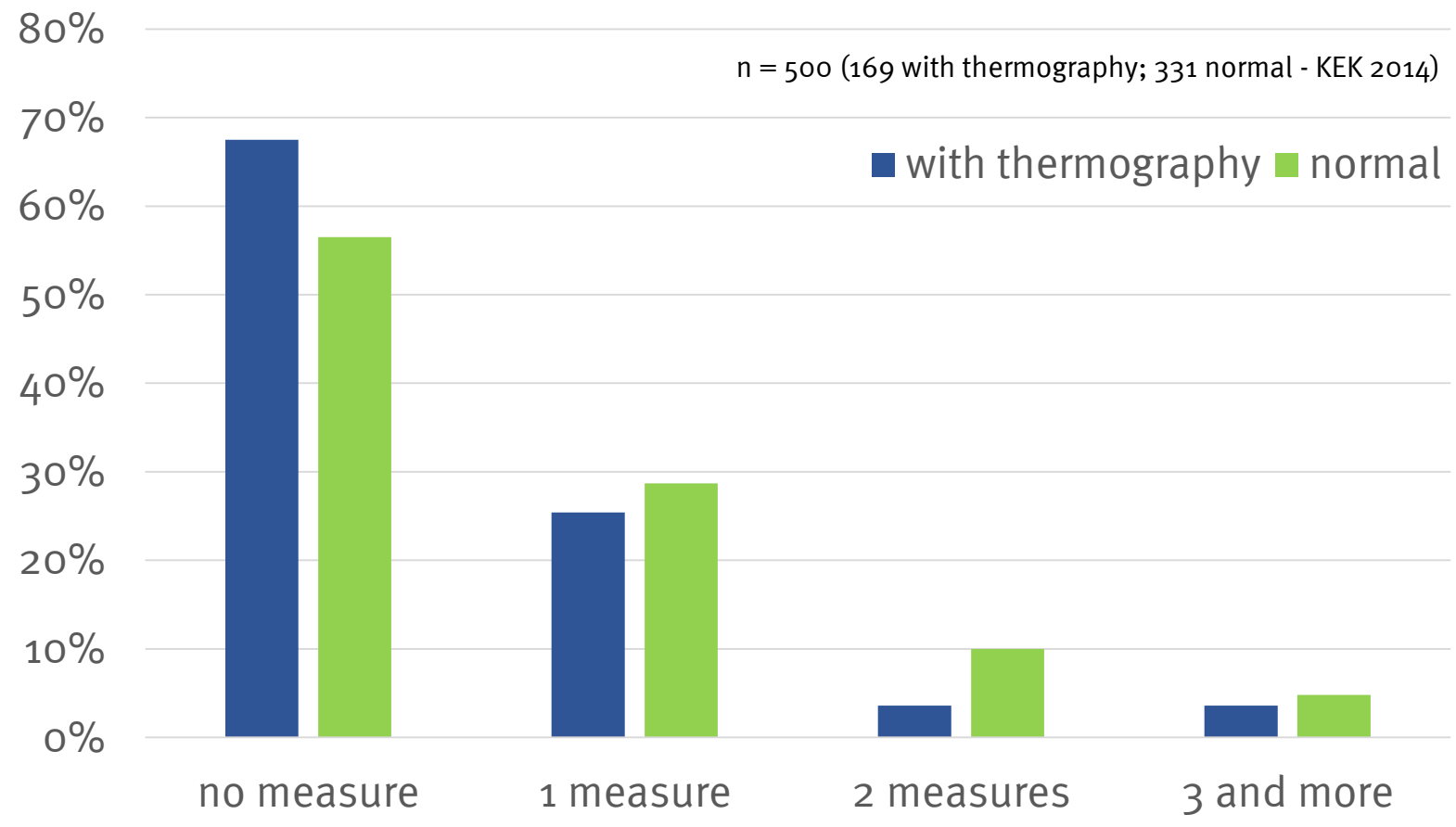
Comparison between the target groups: energy consultation with / without thermographic inspections (KEK 2014)

Different reasons for requesting on-site energy consultation

(n = 500 : 169 with / 331 without thermography; – multiple answers)



Number of measures already planned prior to the consultation



Conclusion

Development in renovation behaviour

Insulation

less outer wall renovation with insulation
(-25 % in 2013, still remaining)

slightly more renovation of other building components

Heating

less new oil-fuelled systems
more gas-fuelled systems

less usage of Renewable Energies

Differentiation in targeting

different methods of acquiring and addressing for different types of customers and their varying attitudes towards renovation work

Das **PROJEKT ENERGIEWENDE** der Verbraucherzentrale NRW wird gefördert durch:

