

How to make energy efficiency policies in buildings deliver?

The role of refurbishment companies and skilled craft workers

Sibylle Braungardt, Tanja Kenkmann

IEPPEC

Vienna, 26/06/2018

Motivation

Skilled labour shortage

WIRTSCHAFTSWUNDER WORRY

The flip side of Germany's economic boom: skills shortage

Employers have full order books, but lament the lack of workers. It hurts Germany's economic growth rate and could prompt more businesses to move skilled jobs abroad.

BUSINESS NEWS DECEMBER 20, 2017 | 1:07 PM | BY WOLFGANG

German firms optimistic for 2018, worker shortage main brake

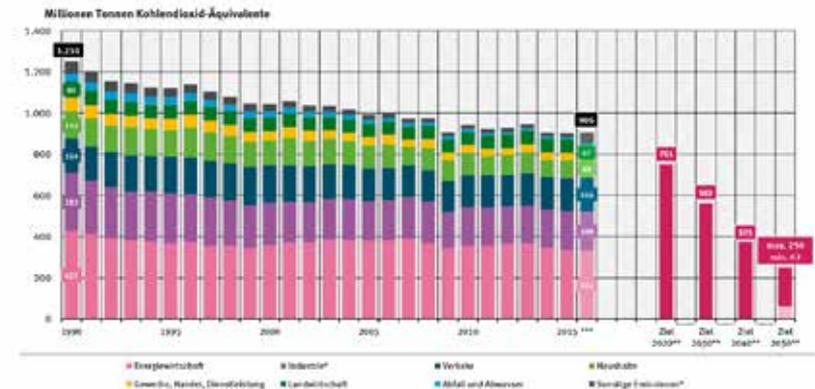
Business Staff

WOLFGANG

BERLIN (Reuters) - More than half of Germany's industry associations have shrugged off worries about U.S. protectionist policies and Brexit, and are more positive about their situation than they were a year ago, a survey showed on Wednesday.

Ambitious targets that would require at least a doubling of retrofit rate

Emission der von der UN-Klimarahmenkonvention abgedeckten Treibhausgase



* Emissionen nach Kategorien der UN-Klimarahmenkonvention: Energieerzeugung, Land-Forstwirtschaft und Fischerei, Industrie, Verkehr und private/öffentliche Gebäude, Luftverkehr und Seefahrt (LAF & S), Sonstige Emissionen Sonstige Emissionen (DF, E.A., Industrie, LAF, Verkehr & Luftverkehr) Emissionen aus Sonstigen (S)

Quelle: Umweltbundesamt, Nationaler Inventarbericht zum Deutschen Treibhausgasinventar 1990 bis 2014 (Stand 31.07.2017) und Mitteilung Nr. 2014 (Stand 31.07.2017)

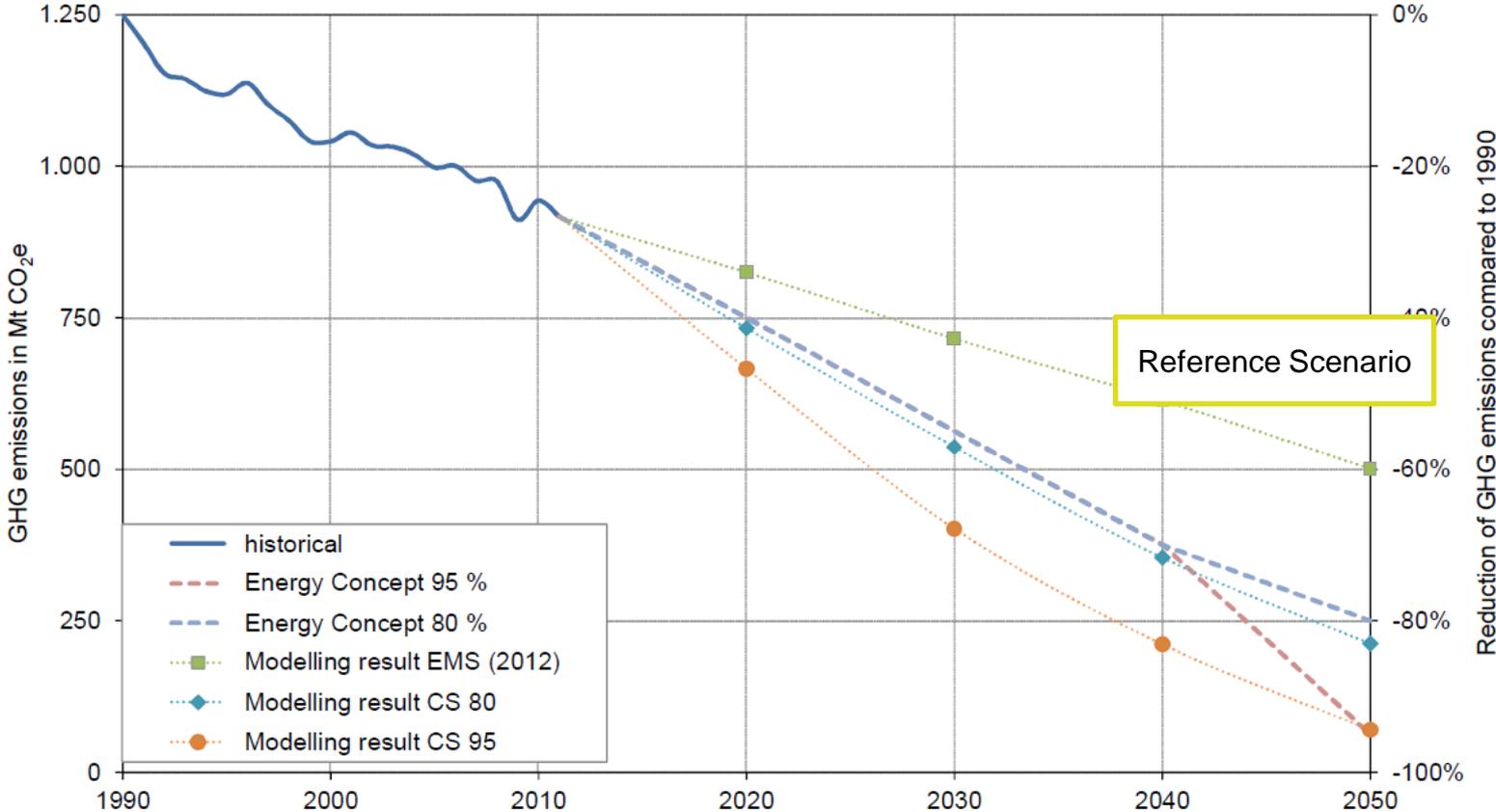
** Ziel 2020 bis 2030: Verpflichtung der Bundesregierung (2016)

*** Zielkennzahl 2050: Emissionen aus Gewerbe, Handel & Dienstleistung in Sonstigen Emissionen enthalten

Outline

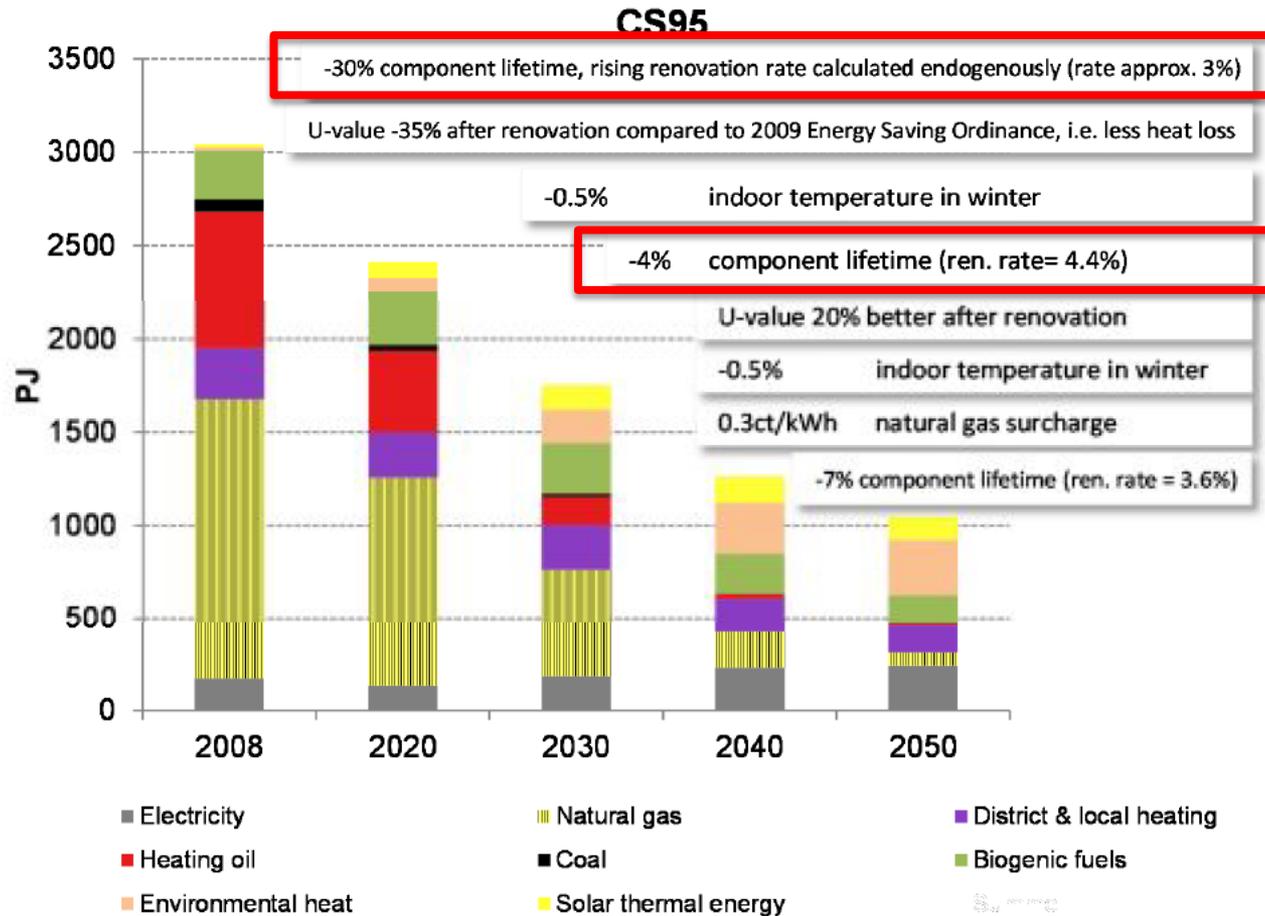
- 1 The role of building retrofit for meeting the German climate and energy targets
- 2 Estimation of additional workers needed
- 3 Impact of skilled labour shortage on current retrofit market

Scenario projections for GHG emissions

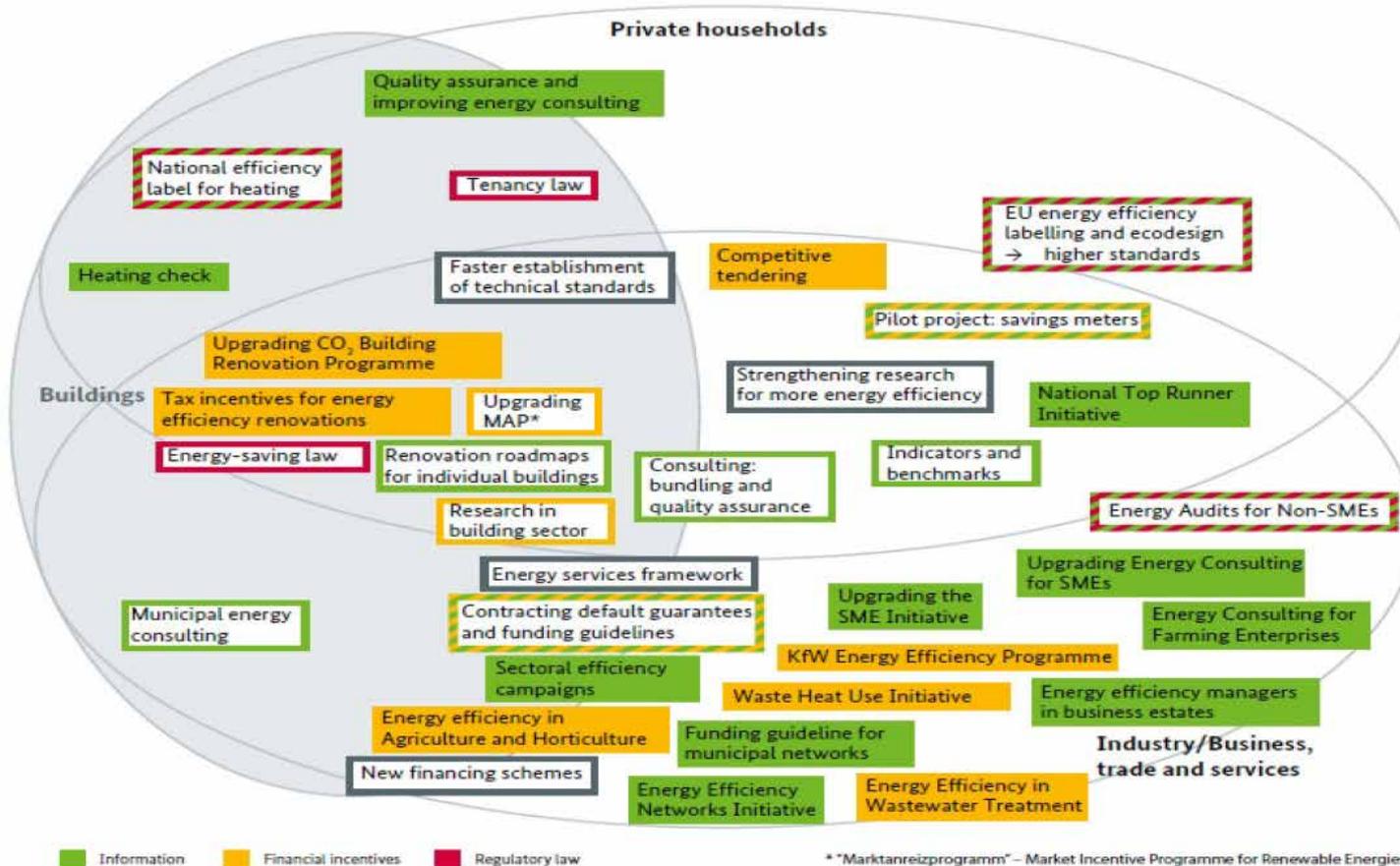


Source: Öko-Institut and Fraunhofer ISI: Climate Protection Scenarios 2050

Thermal retrofit rate of 2-4% needed in order to reach energy targets (current level: 1%)

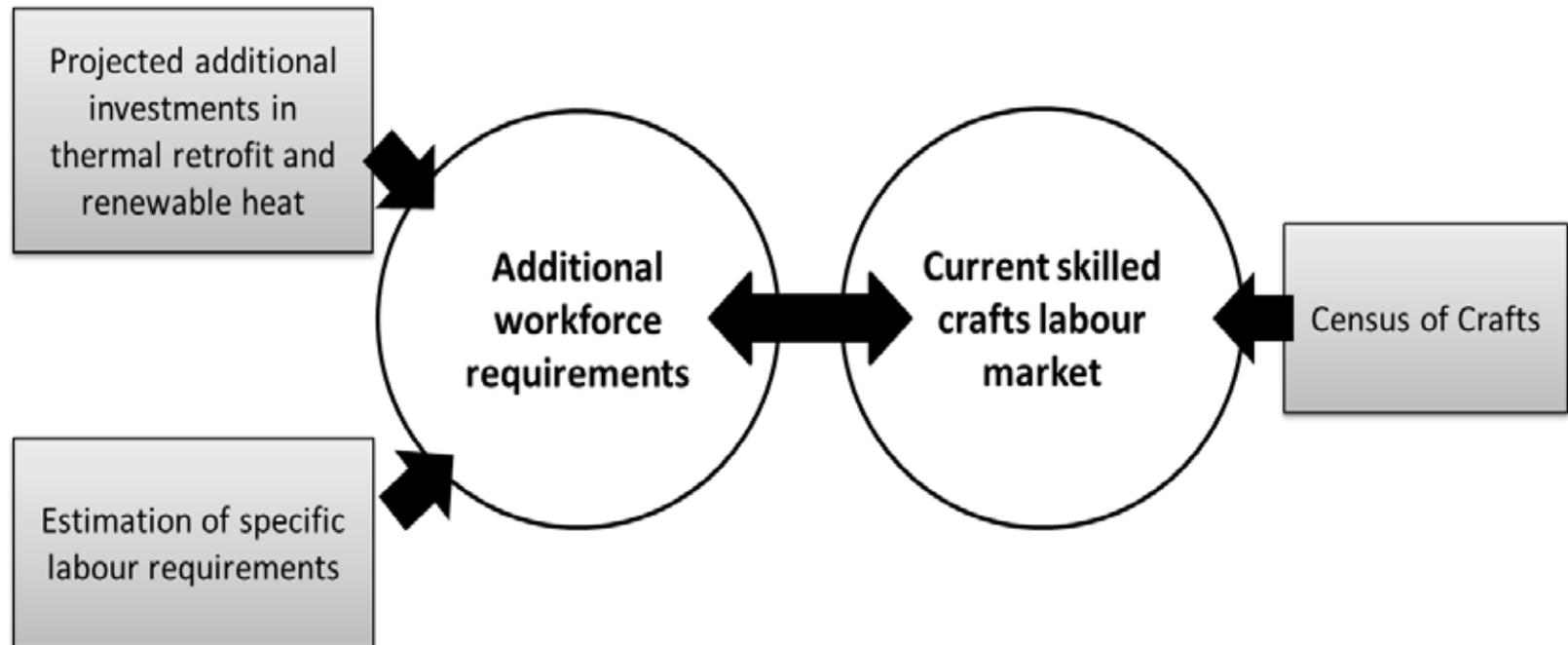


Policy framework to encourage building owners to perform thermal retrofit measures



Source: National Action Plan on Energy Efficiency

How many additional workers would be needed to achieve the required retrofit rates?



Development of the number of employees in selected trades relevant for building retrofit

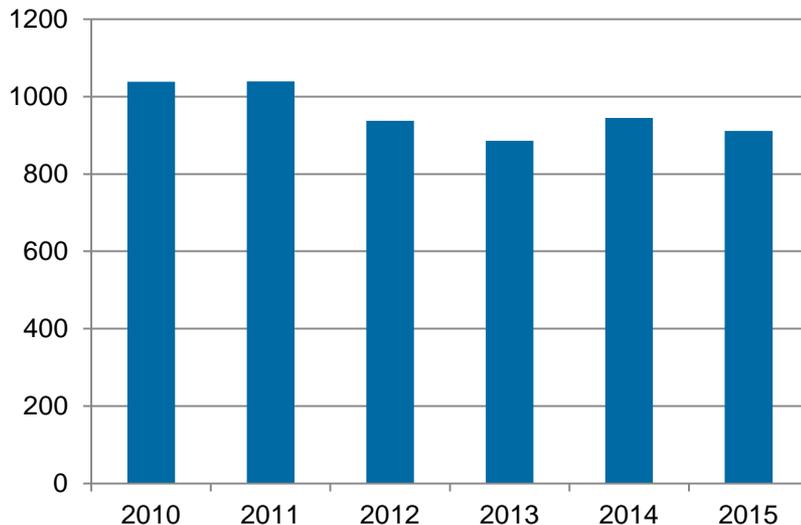
	Installations of gas, water, HVAC	Stucco working and plastering	Glazing and painting
2009	307,433	36,206	166,533
2010	309,974	35,932	166,832
2011	311,852	36,463	168,899
2012	317,529	36,798	166,372
2013	320,401	37,093	164,457
2014	322,253	39,785	171,920
2015	321,616	39,476	170,093

Estimation of additional workers that would be required to meet targets

Additional employees per € invested

X

Additional investments required to meet targets

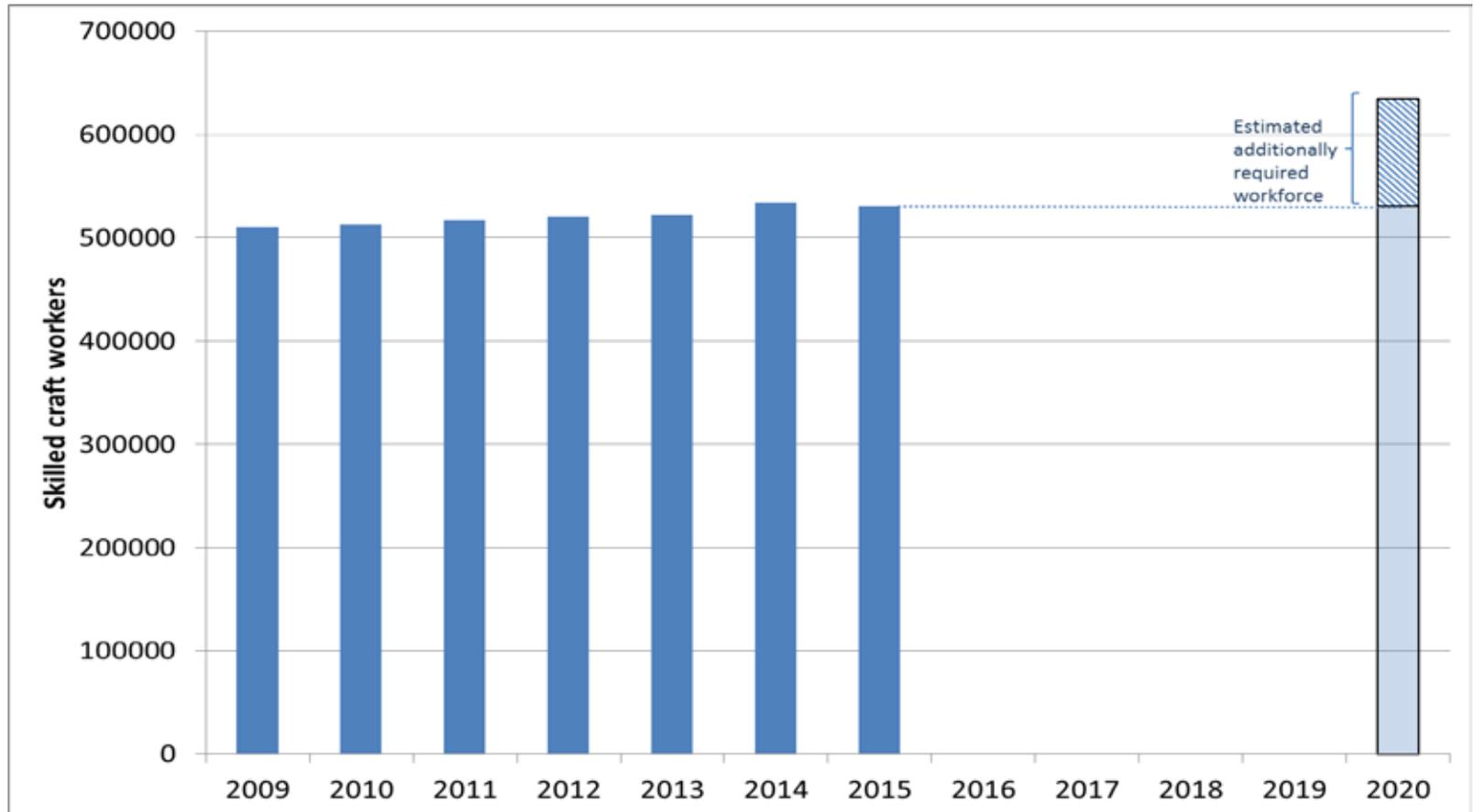


Estimated average annual additional investments needed to achieve the energy and climate goals: 12 Billion € (Dena 2017)

Investments are calculated with respect to a reference scenario

Additional employees per 100 Mio € invested.
Source: Evaluation of the KfW retrofit programs

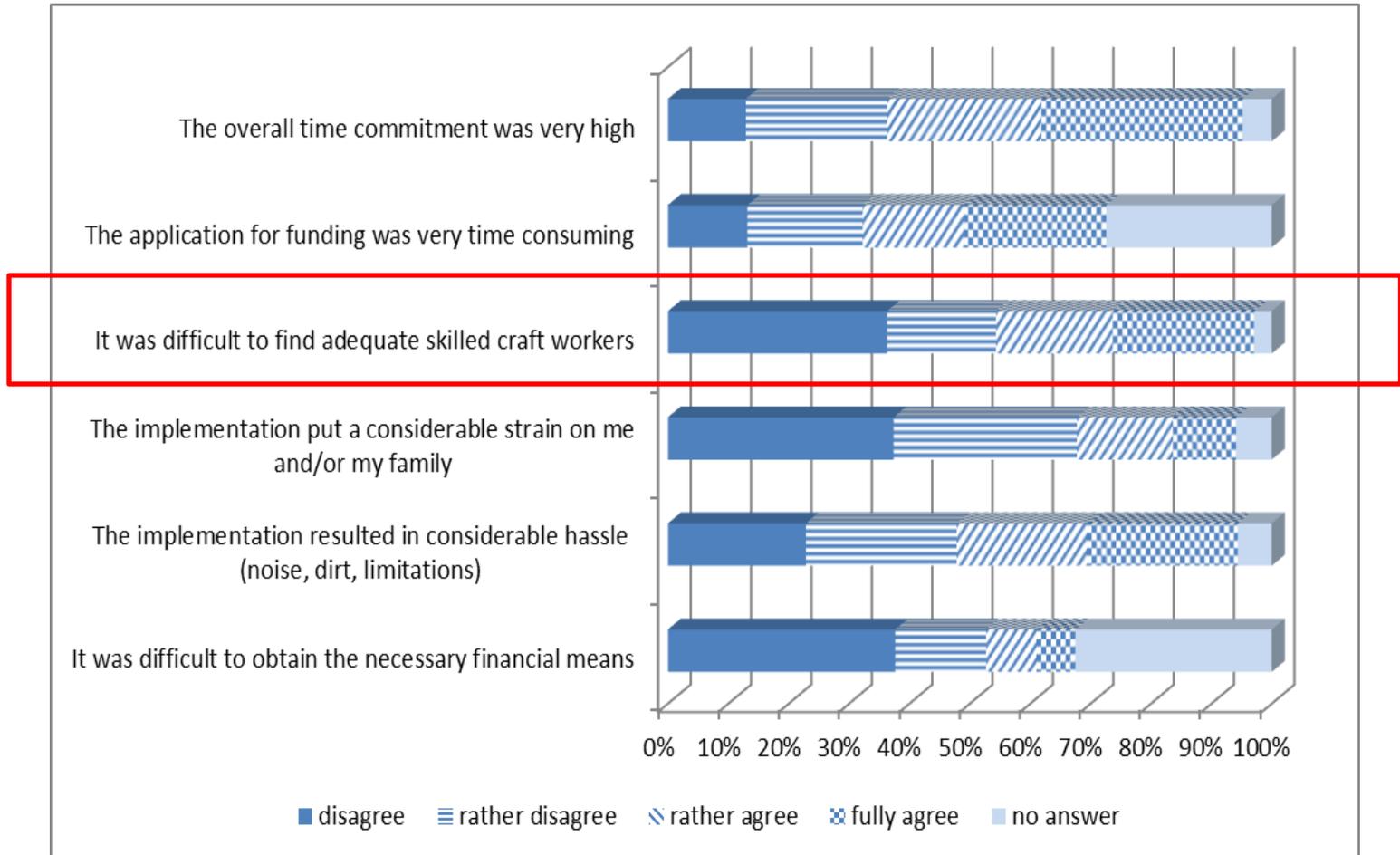
Around 100000 additional workers would be required to meet the targets



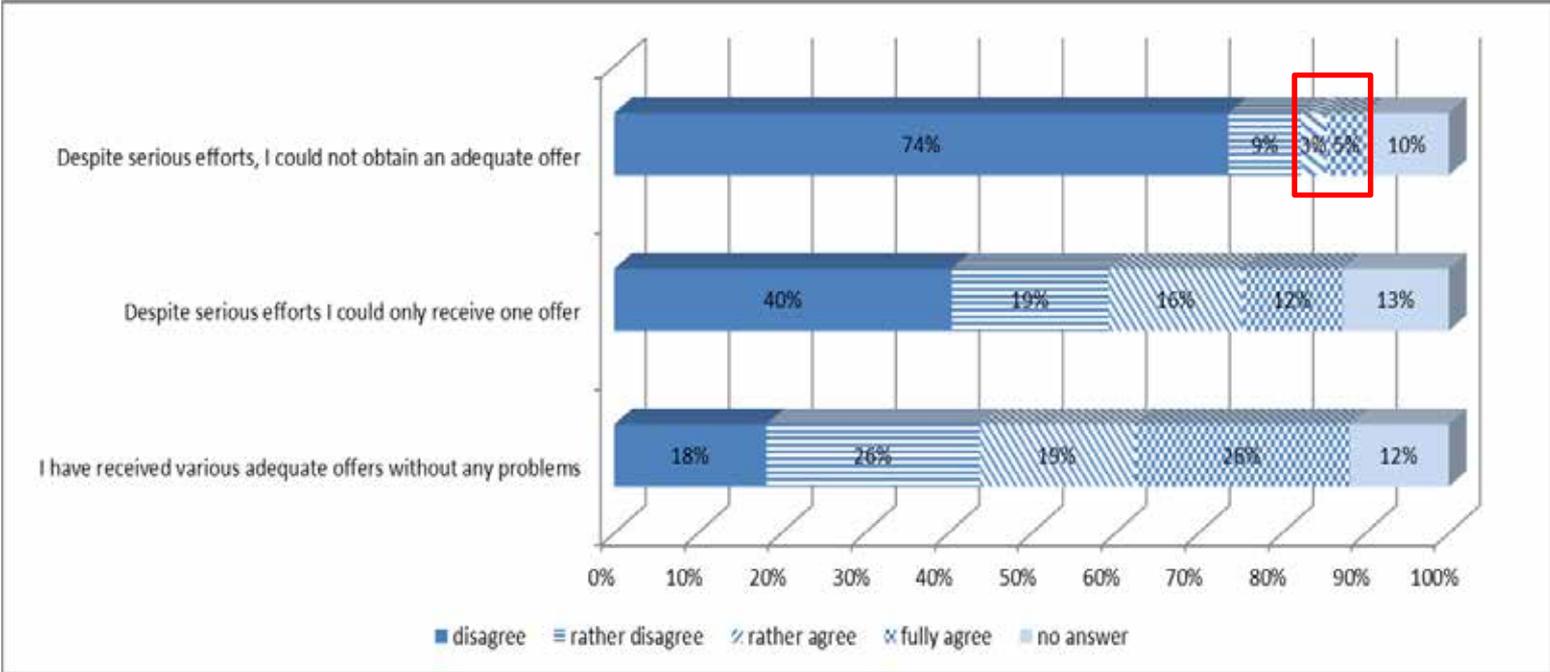
Skilled labour shortage from the building owner's perspective

- Survey with homeowners conducted in October 2017
- Implemented via computer assisted web interviews using a panel of owners of single-family and two-family homes in Germany provided by co2online
- The questionnaire was completed by 300-350 participants after applying a filter question to only select homeowners that had contracted or had tried to contract skilled craft companies to perform thermal retrofit measures within the past five years

Barriers in the implementation of the measures



Experiences with obtaining adequate offers from skilled craft professionals



Conclusions

Germany cannot reach its energy and climate targets in the building sector without addressing the shortage of skilled crafts professionals.

Meeting the targets would require at least a doubling of the current refurbishment rate, leading to a considerable demand for skilled craft workers.

The current policy measures to increase the rate of refurbishment cannot achieve the desired effect if the skilled craft professionals are unavailable as implementers.

Chicken-and-egg-problem: The retrofit market can only develop with a stable policy framework – policies can only deliver if implementers are available

Discussion

How to make energy efficiency policies in buildings deliver?

Chicken or egg? How fast could the retrofit market respond to ambitious and stable policy framework?

Which policies could help to drive retrofit even with a limited retrofit market (e.g. new business models, industrial production, ...)

Thank you for your attention!

Contact: S.Braungardt@oeko.de