

## **Future Building**

# **Improving Dwellings by Enhancing Actions on Labelling for the EPBD**

### **Reason / starting point**

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The main objective of the IDEAL EPBD project was to identify the causes of energy performance certificates having motivated homeowners only to a minor degree to adopt measures for increasing energy efficiency. For this purpose in-depth interviews with homeowners were carried out in five EU countries (BE, BG, LV, PT, CZ) and extensive online surveys conducted in five other countries (DK, DE, FI, GB, NL), on the basis of which suggested improvements for the Buildings Directive could be derived.

### **Goal of the research project**

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One of the key goals of the IDEAL EPBD project is to contribute to maximising the effectiveness of the EU Energy Performance of Buildings Directive (EPBD) by elaborating and disseminating policy recommendations. In order to make these recommendations, the key question to be answered is why the introduction of energy performance certificates has had only a minor impact in motivating homeowners to adopt measures for increasing the building's energy efficiency. With the help of different steps, the analysis aims to understand the reaction of the homeowners and identify the reasons for many households not having implemented the recommendations made on the energy performance certificate. For this purpose interviews and surveys were designed as the main analytical module. Interviews were carried out directly with selected homeowners. In addition computer-generated surveys were sent to a large number of homeowners or – as was the case in Germany – a survey was set up online to run for a set period of time.

The statements and responses of the target group helped in finding out what factors and processes could increase or decrease the effectiveness of the EPBD. Furthermore policy recommendations and plans of action for improving energy performance certificates are to be developed on this basis. It is expected that these recommendations can lead to an improvement of the implementation of the EPBD and thereby contribute to the increased energy efficiency of buildings and a change in the behaviour of the occupiers.

These recommendations include aspects from training, education campaigns, provision of information (including advice on energy saving) and financial support. One hypothesis is that homeowners are then more likely to reduce their energy consumption, increase their comfort in the home and improve their living conditions. The energy renovation of existing buildings not only reduces energy demand, it also improves the occupants' comfort and the environmental conditions in municipal areas – this was the starting hypothesis.

The following steps were taken in the analysis within the scope of the IDEAL EPBD project overall:

- An analytical framework was developed which was grounded in theory and based on secondary analyses.
- First experiences with implementation of energy performance certificates were examined in the case of privately owned houses. In this analysis the building stock, current policies and the range of opinions amongst stakeholders and experts were examined and a critical literature review conducted for the participating countries – Belgium, Bulgaria, Denmark, Germany, Finland, Latvia, the Netherlands, Portugal, the Czech Republic and the UK.
- For the above-mentioned countries the analysis also included – as a key feature of the analysis – direct interviews with homeowners as well as computer-generated surveys or an online survey.
- The results are discussed with decision makers and experts in the energy efficiency of buildings, government energy agencies and representatives of associations. For this purpose workshops were held with policy makers and experts in all ten of the countries focused upon in the IDEAL EPBD project.
- Recommendations for improving the EPBD are developed and measures identified for maximising the impact of the EPBD – the development of recommendations is based on a policy analysis conducted for each Member State, workshops, interviews and the survey results. At the end of the project, the results will be made available to all of the other EU Member States.

## Conclusion

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There is little awareness of – or attention given to – EU energy labelling in Germany. The surveys showed that having two different energy performances certificates in Germany (consumption-based and demand-based) leads to confusion. Homeowners should not have freedom of choice in this regard; it should be clearly stipulated which certificate applies to which type of building. Furthermore continued assessment of the building's efficiency in kWh/(m<sup>2</sup>•a) should be replaced by simple efficiency categories from A to G. This improves understanding of the energy assessment and – as shown by the country comparison – tends to motivate homeowners to take the initiative in undertaking energy renovations.

## Key data

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Short title: IDEAL EPBD

Researcher / Project leader (consortium):

Dr. Marjolein de Best-Waldhober  
(ECN, Energy Research Centre of the Netherlands)

Project leader (Germany section):

Dr. Martin Cames  
(Oeko-Institut)

Total costs (consortium): € 1,412,094.00

Costs of Germany section: € 164,479.92

Amount of German government grant: € 66,027.92

Project duration: October 2008 to September 2011 (36 months)

**IMAGES / FIGURES:**

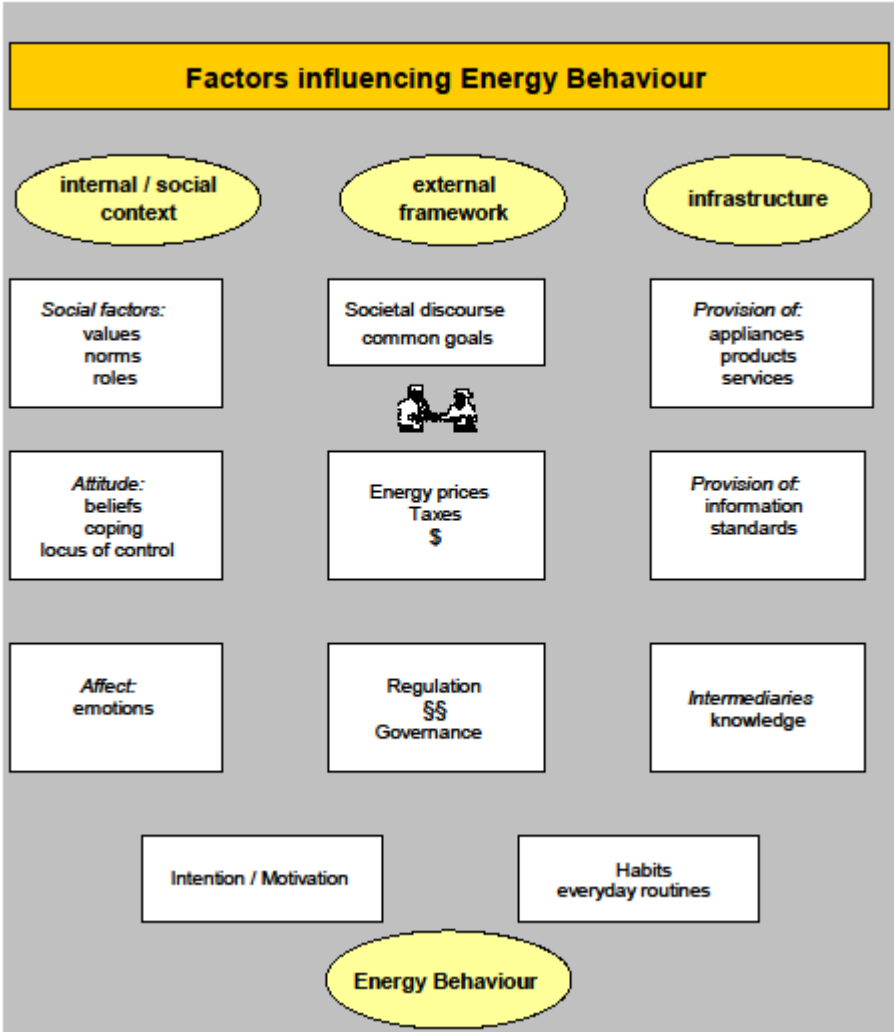


Figure 1: Factors of influence on energy behaviour  
 Source: Brohmann, B.; Cames, M.; Gores, S. 2009: Conceptual Framework on Consumer Behaviour - With a focus on energy savings in buildings. Berlin, p. 17, [http://www.ideal-epbd.eu/download/conceptual\\_framework.pdf](http://www.ideal-epbd.eu/download/conceptual_framework.pdf)

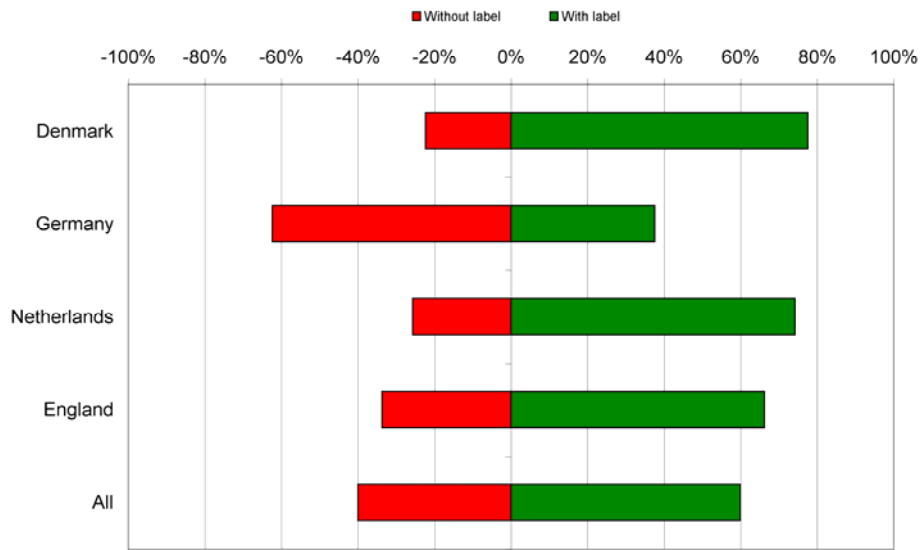


Figure 2: EPC status of homeowners

Source: Adjei, Afi; Lorna Hamilton, Lorna; Roys, Mike 2011: A study of homeowners' energy efficiency improvements and the impact of the Energy Performance Certificate. BRE (Building Research Establishment), Hertfordshire (UK), p. 23, Figure 3, [http://www.ideal-epbd.eu/download/homeowners\\_questionnaire\\_wa.pdf](http://www.ideal-epbd.eu/download/homeowners_questionnaire_wa.pdf)



Figure 3: Why did you get an energy label for your home?

Source: Adjei, Afi; Lorna Hamilton, Lorna; Roys, Mike 2011: A study of homeowners' energy efficiency improvements and the impact of the Energy Performance Certificate. BRE (Building Research Establishment), Hertfordshire (UK), p. A263, Table D12, [http://www.ideal-epbd.eu/download/homeowners\\_questionnaire\\_wa.pdf](http://www.ideal-epbd.eu/download/homeowners_questionnaire_wa.pdf)

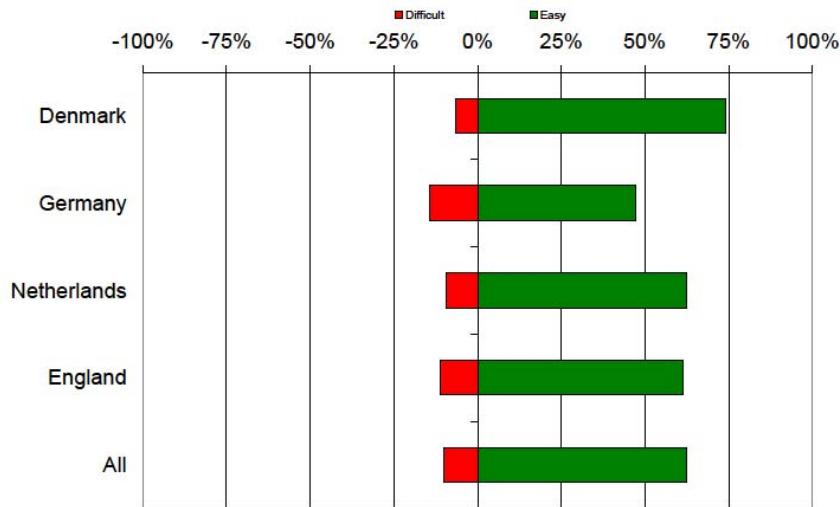


Figure 4: Overall how easy is it to understand the Energy Performance Certificate?  
 Source: Adjei, Afi; Lorna Hamilton, Lorna; Roys, Mike 2011: A study of homeowners' energy efficiency improvements and the impact of the Energy Performance Certificate. BRE (Building Research Establishment), Hertfordshire (UK), p. A275, Table D39, [http://www.ideal-epbd.eu/download/homeowners\\_questionnaire\\_wa.pdf](http://www.ideal-epbd.eu/download/homeowners_questionnaire_wa.pdf)

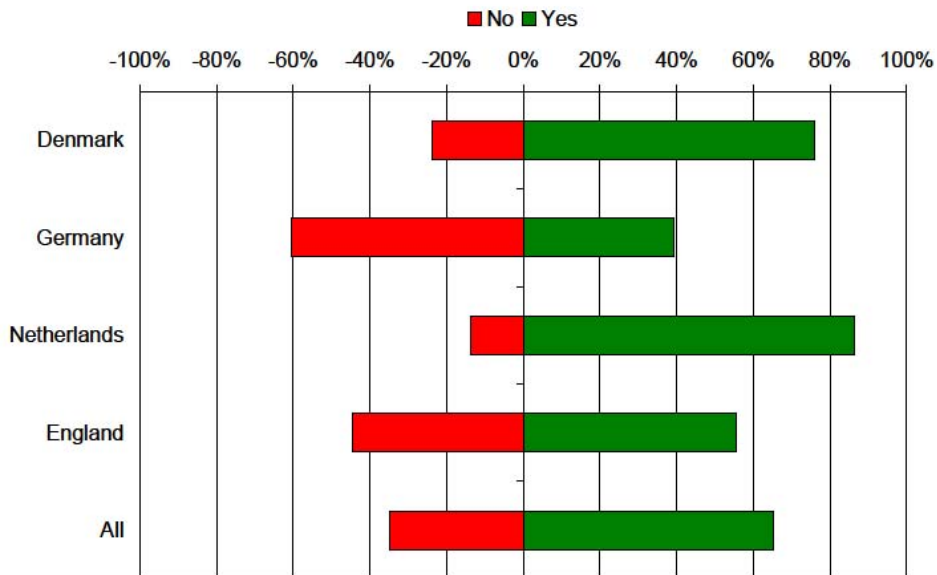


Figure 5: Can you remember the energy rating of your home?  
 Source: Adjei, Afi; Lorna Hamilton, Lorna; Roys, Mike 2011: A study of homeowners' energy efficiency improvements and the impact of the Energy Performance Certificate. BRE (Building Research Establishment), Hertfordshire (UK), p. A267, Table D22, [http://www.ideal-epbd.eu/download/homeowners\\_questionnaire\\_wa.pdf](http://www.ideal-epbd.eu/download/homeowners_questionnaire_wa.pdf)

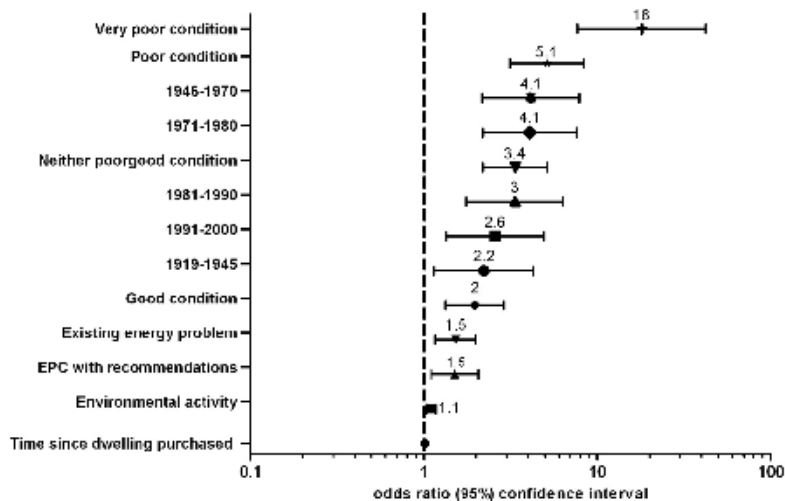


Figure 6: Factors affecting the energy efficient behaviour of all homeowners  
 Source: Adjei, Afi; Lorna Hamilton, Lorna; Roys, Mike 2011: A study of homeowners' energy efficiency improvements and the impact of the Energy Performance Certificate. BRE (Building Research Establishment), Hertfordshire (UK), p. 98, Figure 65, [http://www.ideal-epbd.eu/download/homeowners\\_questionnaire\\_wa.pdf](http://www.ideal-epbd.eu/download/homeowners_questionnaire_wa.pdf)

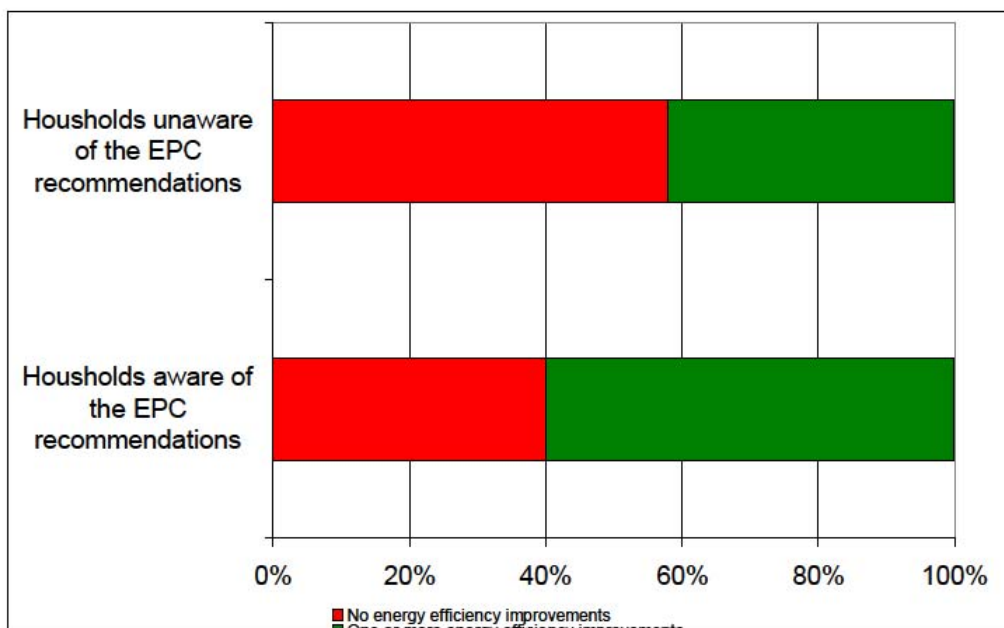


Figure 7: EPC recommendations and energy efficiency behaviour  
 Source: Adjei, Afi; Lorna Hamilton, Lorna; Roys, Mike 2011: A study of homeowners' energy efficiency improvements and the impact of the Energy Performance Certificate. BRE (Building Research Establishment), Hertfordshire (UK), p. 25, Figure 4, , [http://www.ideal-epbd.eu/download/homeowners\\_questionnaire\\_wa.pdf](http://www.ideal-epbd.eu/download/homeowners_questionnaire_wa.pdf)