Proficient

Review of existing loans, incentives, subsidies

Executive Summary

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PROFICIENT; SME network business model for collective self-organised processes in the construction and retrofit of energy-efficient residential districts
The Proficient project is co-financed by the European Commission under the seventh research framework programme (FP7-2012-NMP-ENV-ENERGY-ICT-EeB; GA No. 312219)

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Executive Summary

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Colophon

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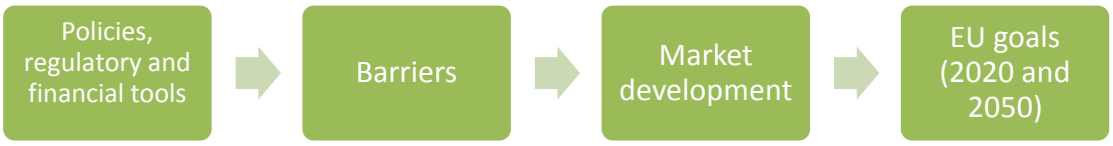
Publishable executive summary

The aim of the **Proficient** project, funded under the FP7 programme 'Energy efficient Buildings' (EeB), is to facilitate and promote Collective Self-Organised (CSO) housing for energy-efficient neighbourhoods. In CSO housing, a group of individuals organize themselves within a contractual agreement on a collective level for the realization of their settlement, either newly built or retrofitted. In order to find which kind of financial instruments could be successful in promoting CSO housing in Europe, a review of existing loans, incentives and subsidies was carried out.

The importance of energy efficiency in the residential sector for meeting The European Union's Europe 2020 Strategy for sustainable growth is clear (Amstalden et al., 2007). Nearly 40% of total energy consumption and 36% of greenhouse gas emissions are from buildings. Wesselink et al. (2010) found that the introduction of energy saving measures in both residential and non-residential buildings to be the most cost-effective means of delivering on EU targets of 20% emission reductions. Grubb (2004) propounds that only by the take-up of innovative technologies will the EU targets be met.

Linking policy, regulatory and financial tools to EU goals:



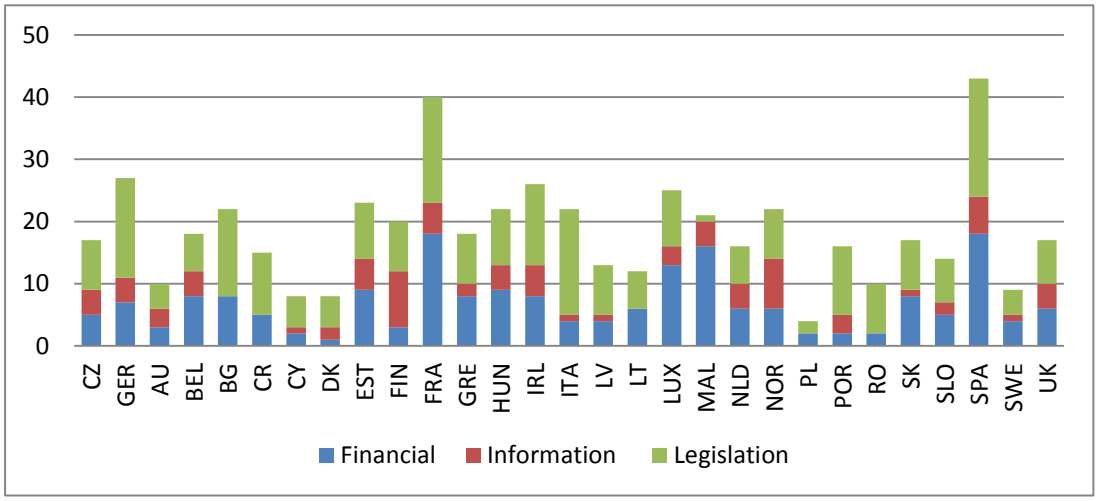
Evidence has shown, however, that a range of barriers to the adoption of energy efficient measures in the sector remain. Through an analysis of the literature, we have identified a number of categories of barriers to be overcome. The figure below outlines existing barriers by category, linking them to a range of policy instruments to address these.

Major barriers to Energy Efficiency in the building sector and possible policy instruments to reduce them:

Type of barriers	Definition and examples	Possible policies
Financial barriers	Lack of appropriate financing for the long-term benefits, higher-upfront cost for EE improvement, lack of internalization of environment, health, and other external costs, energy price subsidies.	Financial instruments, tax rebates, subsidized loans, subsidies to energy efficiency improvements, regulations, removal of energy price subsidies, market-based mechanisms.
Cost competitiveness	Cost differentials between new and existing technologies can present barriers to take-up of new technologies	Appliances standards, building codes, subsidies, tax rebates to energy efficiency decisions.
Technological barriers	Technological obstacles related to research, development and demonstration energy efficiency measures.	Subsidies, loan for research and development, information instruments, market-based mechanism.
Behavioural barriers	Tendency to ignore small energy saving opportunities, organizational failures, tradition, behavioural and lifestyle.	Support, information and voluntary action, voluntary agreements, information and training programs, market-based mechanism.
Administrative barriers	Lack of support at the regional and local levels to stimulate the energy efficiency improvement.	Creation of local agencies to promote energy efficiency projects, financial incentives, command and control instruments.
Political and structural barriers	Lack of political motivation to support the market initiatives needed for the improvement of energy efficiency, slow process of drafting local legislation, gaps between regions at different economic levels, lack of detailed guidelines, tools and experts, lack of incentive for investment, and lack of equipment testing/certification.	Enhanced implementation of command and control mechanism, policy incentives to encourage energy efficiency building design, enhanced international cooperation and technology transfer, public leadership programs
Information barriers	Lacking awareness of consumer, building managers, construction companies, and politicians of the opportunities and benefits of energy efficiency improvement.	Awareness raising campaigns, training of building professionals, command and control instruments,

A range of policies have been introduced across the EU-27 countries to address these barriers. We have used the concepts of hard and soft policies (Young, 2001) to distinguish between legislative and regulatory compulsion (push factors) and incentivising schemes (pull factors). Hard policies include Building Energy Codes for new builds and retrofits. Soft policies include public information, subsidies, grants and soft loans. The use of these policy tools varies across the EU-27 countries. In the figure below, the range of push and pull factors used across the EU are outlined.

Types of policy:



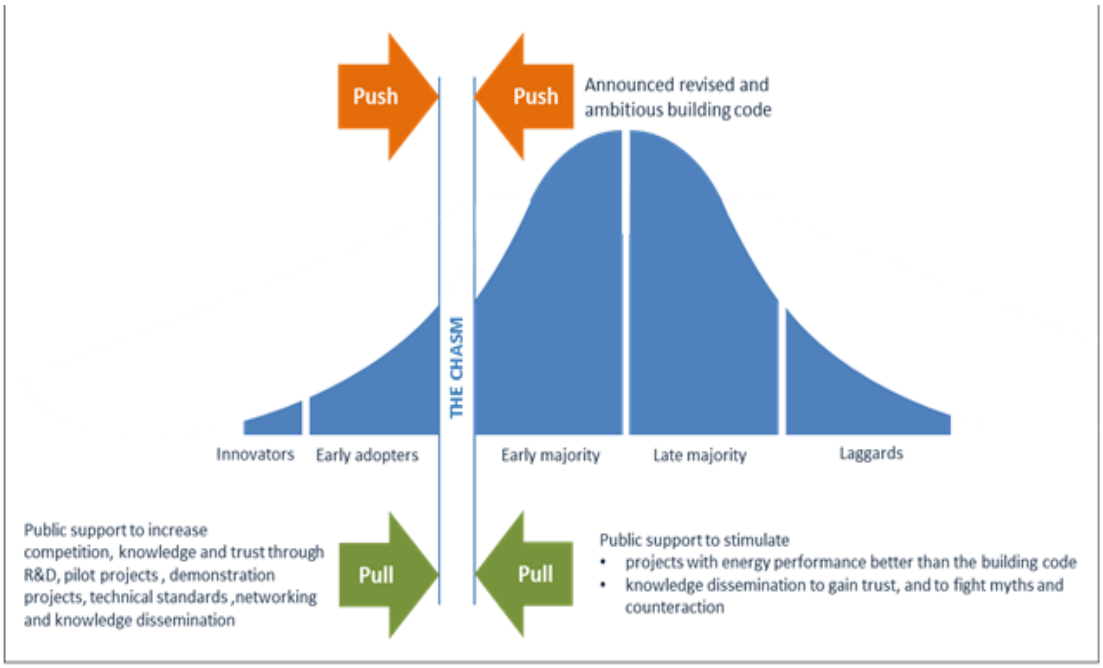
Note: y-axis represents the total number of policies introduced by each type of policy.

In part this variety in approach by country is due to the differing starting points of different member states, in terms of the existing efficiency of the housing stock, traditional uses of different energy efficiency technologies and the energy efficiency of the existing infrastructure. Other factors identified in this study include climate differences between states and the length of time energy efficiency has been a political priority for particular countries. Socio-technical regimes (Geels, 2004) have been used as a conceptual tool to understand the dynamic interactions between these institutional fields and arrangements. We have identified that policy instruments need to address both the production domain (incorporating the design, production and installation of energy efficient technologies) and the user domain (incorporating the end-users and cultural framework of energy efficiency and new technology adoption).

This process has been theorised here as path dependency (Rogers, 2003). Path dependency also highlights the importance of early adopters, demonstration projects and early growth adopters in gaining majority acceptance of new solutions. This concept explains the heterogeneity of approaches and levels of adoption across the EU and emphasises the importance of individual psychographic factors in the adoption process. These factors can be seen as just as important as technical or financial instruments in encouraging the adoption of

energy efficient technologies or lifestyle practices. The importance of pioneering actors to develop ambitious and innovative approaches to residential energy efficiency is highlighted. Moore (2014) suggests that a chasm exists between such pioneering adopters and majority adoption. The figure below outlines the combination of push and pull factors necessary for market development in this area.

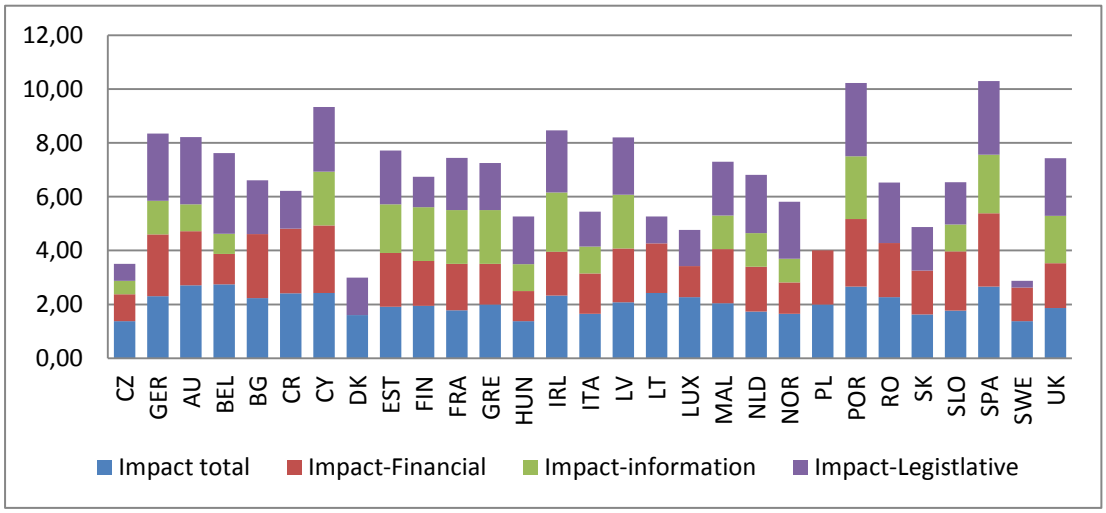
Strategies for speeding up market change: (Push and pull factors needed to close the gap between early adopters and early majority)



This report has found a range of policies have been particularly effective. Hard policy initiatives or push policy (legislation and regulation) have shown the greatest impact where these address the thermal envelope of the new and existing building stock. Soft policy initiatives or pull policy (information, financial and fiscal) have been less effective, where these measures have not been adequately tailored to the existing socio-technical regimes. Soft measures directed at the production domain are overall more effective. Where direct financial instruments for retrofitting have been directed to householders this has been effective on the whole, although take-up as a percentage has been lower than could be hoped for. Financial instruments directed at improving the thermal envelope and space heating requirements of multi-household and apartment buildings have been particularly cost-effective, as they reduce overall consumption for a number of households. The effectiveness of these measures indicates that similar measures for CSO (collective self-organised) housing will be similarly positive. It is apparent from the evidence that the majority of high impact financial interventions are in the form of grants, which appear to overcome a number of barriers to adoption as

highlighted in this report, namely credibility and trust; economic non-market failure or market barriers, economic market failure and behavioural barriers.

Policy impacts:



Note: y-axis represents a semi-quantitative expert judgment distinguishing between three impact levels: low, medium and high (For more information please refer to http://www.odyssee-mure.eu/).

Taking into consideration the findings of this report, we offer two tools for evaluating the effectiveness of financial policy instruments and the development or tailoring of specific interventions. Firstly we offer a template which will allow the barriers to take up of collective self-organised housing approaches to energy efficient buildings to be clearly identified. Secondly we offer a diagrammatic tool to help identify barriers from a socio-technical perspective that concentrates on the social networks where barriers occur. These recommendations entail further research during the lifespan of the PROFICIENT project and can inform the final report under WP5. Drawing on the notion of path dependency we offer a framework to assess effectiveness and impact using both hard and soft policy instruments.