

CSO housing market study

Executive Summary



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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. The target group of the project consists of end users on the demand side of products and services and SMEs on the supply side.

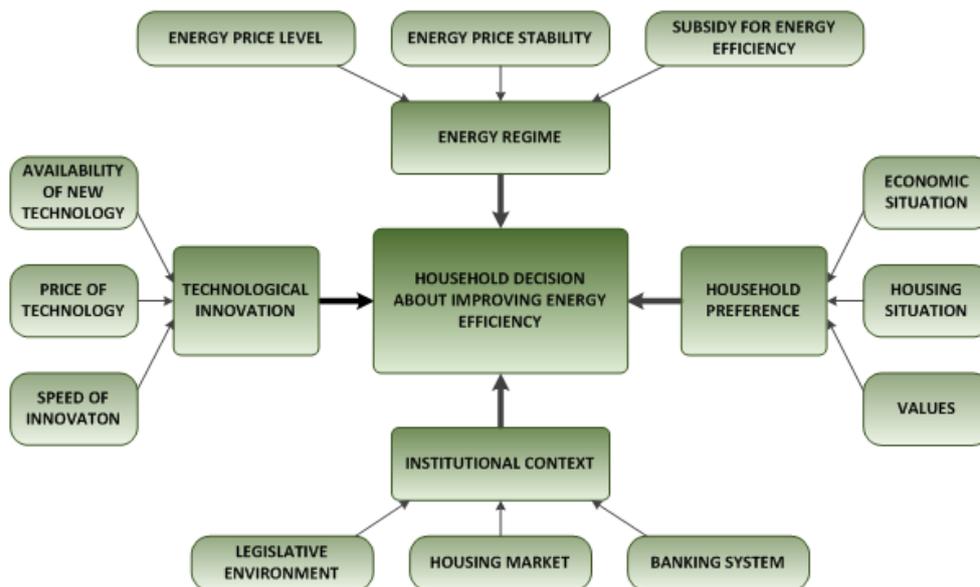
In order to find opportunities in Europe for CSO housing in general and in particular for SMEs involved, a housing market study was carried out. It focused on the analysis of recent changes and short-term predictions about the European housing and energy markets. While doing so it employed the central concepts of Proficient: Collective Self-Organised (CSO) housing, district level intervention and the role of ESCO companies. **The study sought to understand the dynamism of the post-crisis European housing market and to specify under what circumstances households opt for energy efficient solutions and green values dominated refurbishments of their existing homes or decide to build a new one according to these principles.** The housing study was predominantly a desktop research combining literature review with data analysis for the EU28 countries. Whereas the data for the housing sector was mainly based on the data provided by the Eurostat, the analysis of the energy sector was using different policy papers as its main source.

The main aim of the study was to create a housing market and energy market review and forecast that can become the foundation for a CSO business concept and model. The particular housing market segments that were singled out and analysed in the Housing Market Study form the basis of these business models, and they provide an appropriate orientation for the target groups in the different countries and regions of Europe.

1.1 The focus of the analysis

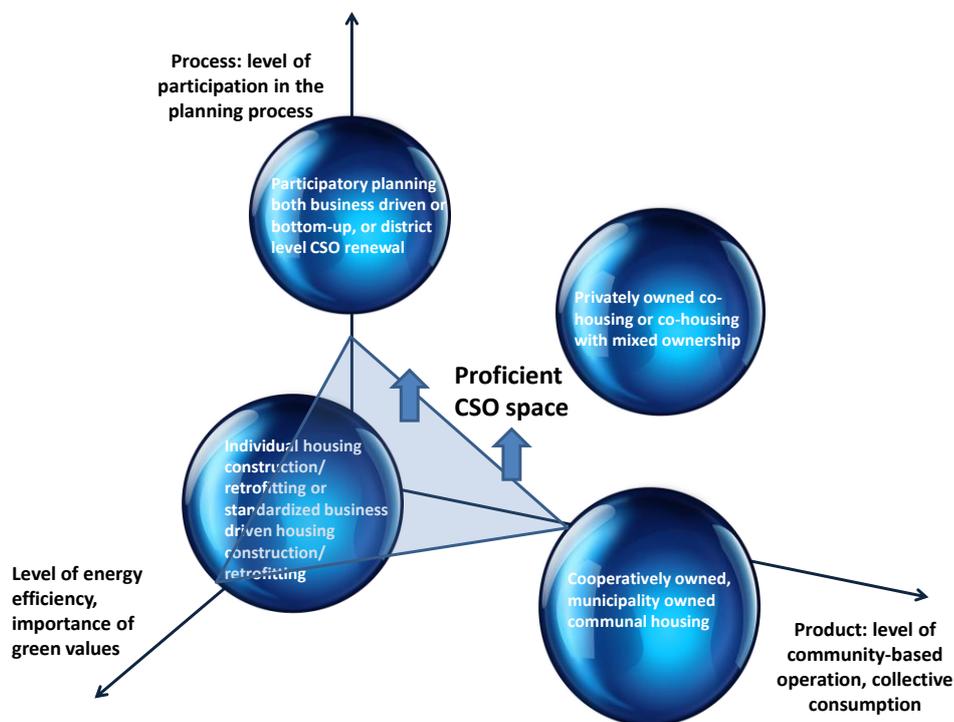
The European energy market was analysed with the help of the terms **energy gap** and **energy regime**. Whereas the first one reflects the difference between the actual energy consumption and the theoretically satisfactory level of energy consumption, the second one embeds energy consumption in its social context. It means the array of rules and regulations and the institutional context on a national level that strongly influence how households behave, how much energy they consume and how likely they will engage in any kind of energy efficient intervention. An overview of factors influencing household decisions on energy efficient housing interventions is shown in Figure 1 below.

Figure 1. Factors that influence household decisions on energy efficient housing interventions



Furthermore, CSOs, as a growing and innovative housing market segment were paid special attention to, and the term “CSO space” was developed. **CSO space incorporates both the fields of CSO new construction and retrofitting, emphasising the three main components that set CSOs apart from the regular housing market. These are 1) the particular planning process (the importance of participatory design and self-organisation), 2) the importance of community and communal living arrangements as defining feature of the final product and 3) energy efficiency.** The following figure shows, how these variables define CSO housing opposed to regular housing, delineating a special market for SME business aiming to enter the field. The different spheres on the figure represent different forms of CSOs, with the exception of the bottom left one, which represents the regular housing sector that can also entail CSO elements. Proficient is mainly interested in those two spheres, where participatory planning and community life are important, and the level of energy efficiency in investments is substantial.

Figure 2. The CSO space defined by the three axes of participation in the planning process, communal level and energy efficiency



1.2 Housing market trends and CSOs

Locality emerged as a key concept in the housing market study. **In the post-crisis era we cannot talk about a general perspective for the European housing and energy market. Rather, the outlook depends on a set of locally and nationally determined circumstances, which can change within a fairly short distance and also within a limited amount of time.** It was established that:

- Although the European housing market is a predominantly owner occupied one, the importance of owner occupation is transforming. Although the share of owner occupation is still increasing slightly, public thinking about it has changed. There is much more talk about the importance of a good rental market, especially in countries like Spain or Hungary that were hit harder by the real estate crisis.
- After the housing market crash of the late 2000s the recovery has been slow and sporadic. While certain countries – like Germany, Austria or Norway – have been doing particularly well, many seem to be lagging behind, like those in the Mediterranean and some Central European member states. Metropolitan regions seem to follow a pattern of their own, increasing even in areas with no national growth – like Paris – and remaining untouched by their national turmoil, like London.

- Despite the existence of some major common trends it makes sense to talk about a segmented European housing market, with very different national and local forecasts for growth. The housing markets are embedded in their sub-national contexts, where demographic movements, the economic and political importance of a settlement in the regional/national/international context profoundly influence how they develop. Settlements can outperform their countries and vice versa. And even within these settlements there is no homogeneous real estate market.

With regard to CSOs in particular it was established that the new construction sector is very different from a retrofitting one. CSO in new construction means that the future residents have a substantial role in deciding the architectural concept and actual realization of the building. As the data suggests the **CSO new construction sector is a niche market, and its national prevalence is determined by country specific values, traditions and the institutional support**. The share of CSOs can only be statistically measured in four countries of the EU (Denmark, Germany, Netherlands, Sweden), but even there it is less than 5% of newly constructed dwellings. There are few dozen examples in other countries like Italy, France, Spain, Belgium, UK, which can be characterised as upcoming markets. However, in most East and Central European countries CSOs scarcely exist in the new construction sector. All that said it was also established that **CSOs in the new construction sector can be very important in a local context**. In and around some cities – e.g. Berlin, Hamburg, Freiburg, The Hague - CSOs have become a relevant part of the new construction industry on which it is worth to establish a business and public policy framework, offering opportunities for SMEs. **The share of residential communities that can be considered CSOs is substantially bigger in the already existing stock**. All those dwellings belong to this category where the residents (being mostly owners but sometimes tenants as well) have the right to express their wish directly or through an institutional framework (like general assemblies, committees of owners, etc.). The dwellings are mostly multi-family buildings, but single family housing can also become the subject of CSOs in the retrofitting process if owners cooperate on a block level or even district level to implement a coordinated energy efficient intervention. CSOs in the already existing stock do not necessarily carry those features - strong community commitment, strong green values and sharing of infrastructure and facilities – that characterize them in the new construction sector.

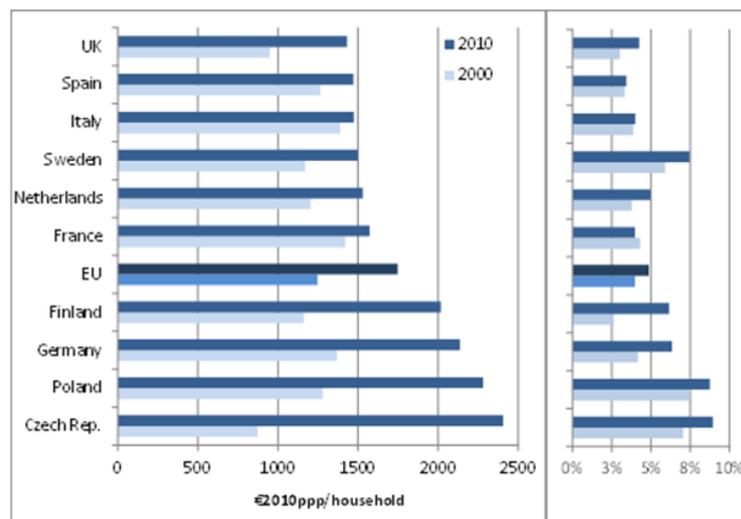
Multi-family houses are more likely to be tenant based in Western and Northern Europe (residential blocks owned by public or private bodies), while they are more likely to be owner occupied in Southern and Eastern Europe. In the latter case, 30-60% of the housing stock could be considered as a CSO, while it can be 5-30% in the former case. As a result, **energy efficient retrofitting of the existing housing stock happens mostly in the CSO sector in Southern and Eastern-Europe, and it is more common in the tenement sector in Western and Northern-Europe**.

1.3 Energy market trends

In order to understand how and why households might consider investments into energy efficiency, the study focused on understanding how energy markets functions. It found that:

- Price increases since the 2000s have affected household energy expenditures in Europe, which have increased by about 40% since then, although the dwelling consumption has decreased significantly, with approximately by 10% during the same time. Particularly hard hit were those countries, where spending on energy consumption was the lowest. Among those the Czech and Polish households stand out, but British households started to spend significantly more as well.

Figure 3. Households' energy expenditures in some European countries and share in their income



Source:

<http://www.leonardo-energy.org/what-future-housing-energy-expenditures> and Enerdata, <http://www.enerdata.net/enerdatauk/knowledge/subscriptions/database/energy-market-data-and-co2-emissions-data.php>

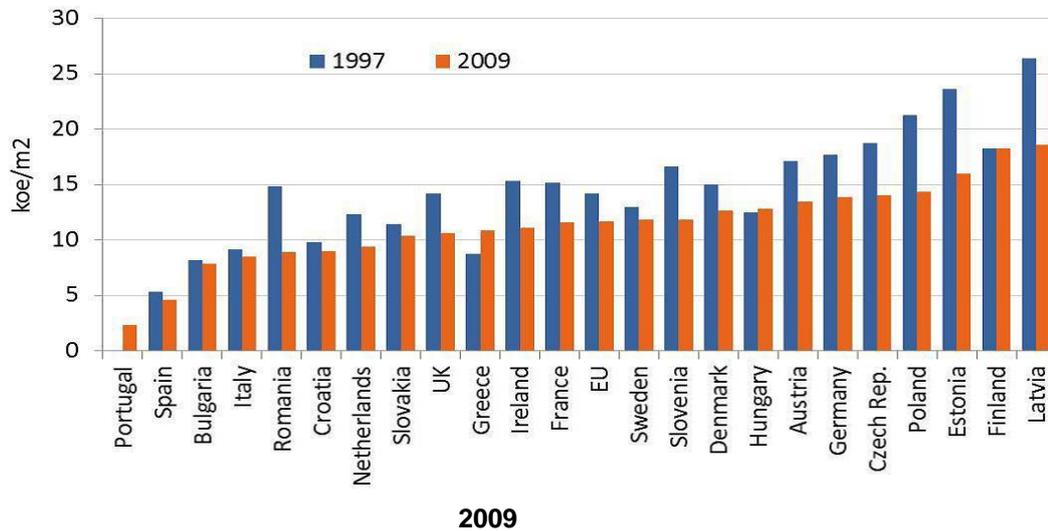
- The trends concerning the energy price estimates for the next 10-15 years are rather uncertain. Nevertheless, there has been a constant growth of energy price levels during the last decades, which is likely to continue in the near future. This is likely to happen despite the increasing recovery of large scale shale gas/oil resources, the growing energy efficiency and the decreasing cost of renewables. The reason for the expected rise in energy prices is that the demand for energy is expected to strongly increase as a result of economic development in Asia, which will increase energy prices worldwide and thus has a serious impact on the heavily import dependent European energy market.

- According to those projections, that count with the rise of the energy price for the coming decade, by 2030 households' energy expenditures are going to rise by 15% on average in Europe. The same estimates suggest that the introduction of a carbon tax could lead to a significantly sharper increase in energy expenditures, reaching even 30%, which can only be partially mitigated by a cut in the energy consumption of dwellings.
- The share of renewables in the energy mix is increasing in Europe and the EU2020 goal on the 20% of renewable by 2020 seems to be realistic. However, further increase is questionable because of its cost implications and the long term contracts and investments (like nuclear power plants) in some countries.
- The influence of the nation states on the retail energy prices is increasing (the wholesale prices are liberalized in Europe), which makes them less predictable in the future causing uncertainties for households in deciding about the energy efficiency interventions.

Based on these, the following trends about energy efficiency in the new construction and retrofitting sector were established:

- Despite the growth of energy efficiency and the increasing importance of energy efficiency investments in the residential sector, **the per capita energy consumption has been increasing in Europe (except for the period of the economic crisis)**. This is a trend that will most likely continue in the next 10-15 years as well as a result of growing consumption in general. (On the other hand the proportionate energy need for producing the GDP is steadily decreasing.)
- The energy used for space heating is steadily decreasing in nearly all member states, as illustrated in Figure 44, but a nation's specific energy use is strongly influenced by climatic factors and the energy regime

Figure 4. Energy use for space heating per m² in dwellings between 1997 and



Source: Energy Efficiency Trends in Buildings in the EU (2012). <http://www.odyssee-indicators.org/publications/PDF/Buildings-brochure-2012.pdf>, p. 27

- This decrease of energy use is only partly due to the high quality of new constructions (the decrease is explained by new construction up to 50% in Germany and Slovakia, 35% for France and Netherlands, 27% for Sweden, while around 10% in Ireland), as most of the energy saving comes from energy efficient retrofittings.
- The technical standards of new construction are steadily rising/improving?. According to European regulations, all new construction must be of ‘nearly zero-energy’ (the phrase should be defined by the member states) by 2021. In several regions of Europe passive house is already the standard for new construction.

Currently it is more cost effective to “save” one MWh by retrofitting measures than by creating new capacities of fossil and moreover renewable resources. Thus the Europe 2020 environmental goals could be reached most cost effectively by retrofitting. There are several support schemes available in the member states for subsidizing energy efficient new construction and most retrofitting measures. These schemes may include tax deductions, interest rate subsidies and grants. **The housing market seems to be very sensitive to these subsidies: large scale interventions are hardly initiated without making use of any kind of subsidy. Among energy efficient interventions district level interventions seem to be more and more common, but they are still mostly in a pilot level phase.**

In connection with the role of ESCO companies it was discovered that **they typically have a very low share in energy efficient retrofitting interventions and constructions regarding the housing sector, as this sector has high transaction costs which reduce the profit expectations.** The rental housing sector could operate with less transaction costs than the

owner occupied one (because of the centralized ownership and management), thus it incorporates the ESCO concept more easily. However, this sector does not belong to CSOs, thus is not in the focus of Proficient. Despite these statements, there are some trends that may promote an increase of ESCO participation in the housing sector: higher technical standards in new constructions and retrofitting, support schemes tied to the measured result of the interventions, a recovering bank sector that can provide more loans under better conditions, and assistance of the European Union with special EIB (European Investment Bank) schemes.

1.4 Consequences of the housing market trends to market segmentation and business opportunities

One of the main research questions of the housing market study was to define the size of the market segment for 'energy-efficient CSO residential neighbourhoods' in the EU. As mentioned above, it was found that the market segment for energy efficiency interventions is quite relevant and its share is growing as the technical standards are rising and subsidy schemes are being created to support these activities. Furthermore, the share of CSO activities is substantial in the retrofitting sector, while below 5% in case of new construction even in those countries where CSO's were found at all. Finally, ESCO and district level interventions are only in a piloting phase and rarely happen. **So the adequate answer to this research question is that according to the current market processes the market segment for energy-efficient CSO residential neighbourhoods' is very limited. The question is what can be expected in the future, how the current trends can be changed?**

1. A slight increase of CSOs in the new construction sector can be expected as a result of:
 - community and social values: growing need for looking after the elderly; decreasing time for work thus increasing time for community activities,
 - economical operation of infrastructure by means of sharing economy/collective consumption: growing need for commonly operated facilities (like cars, sports, recreational, child care facilities),
 - green values: growing environmental consciousness,
 - the opportunity to create your own house at a reduced cost.

2. District level interventions such as the use of ESCO solutions can be more frequent in the future than currently as they can provide real economic advantages over the individual retrofittings.
 - a. Nevertheless it is probably unrealistic to expect that district level CSO energy efficient interventions (even without ESCO solutions) will ever be part of the mainstream market.

- b. However innovative business models can help to increase their market share and that is one of the goals for Proficient to elaborate.

SME opportunities in the Proficient new construction market:

The CSO new construction market is by definition a niche market as currently its share is marginal. This means that innovative business solutions/models can flourish here favouring SMEs. However, the housing market study found that price minimization is a crucial demand of the end-users and end-users take up business roles in order to control the processes and keep the costs down. Thus, **this market segment presents a business opportunity for**

- a) **small enterprises** (mainly for small architectural companies, social mediators) that can help organising the process and elaborate the technical plans,
- b) **network of SMEs** which are able to coordinate/control the CSO process from the beginning till the end, providing semi-standardised and streamlined solutions both concerning the planning process and the architectural and social content of the product.

SME opportunities in the Proficient retrofitting market:

The energy efficient retrofitting market in the CSO sector can be considered a mainstream market (mainly in South and Eastern-Europe) as privately owned multi-family buildings make up a significant share of the housing stock. These multi-family buildings are in the process of (mainly small scale) rehabilitation on an individual basis. The Proficient business model for retrofitting processes intends to concentrate part of the retrofitting activities above the everyday maintenance and retrofitting activities resulting in complex energy efficient interventions. This market can be divided into four sub-segments : 1) Complex retrofitting without any community value, 2) Complex retrofitting with community value, 3) Complex retrofitting with additional technical solutions (e.g. additional floors, enlarged flats) OR energy efficient intervention on district level, 4) Complex retrofitting with additional technical solutions OR on district level and with community values.

This narrowed and specified market offers opportunities for SMEs in the sense that it requires flexibility and adaptability, which is often an advantage of SMEs. However, they can only work in close cooperation with each other, in well-organised networks, as the complexity of interventions requires both strength in capital and a wide range of knowledge.

The demand to carry out complex, CSO type retrofitting, may occur in any region of Europe, in any kind of housing stock (e.g. prefabricated, brick buildings, high rise ones and low rise ones). However, concerning the social status of the inhabitants current information suggests that similarly to CSO new construction, people with a relatively stable and high income, usually middle or upper middle class, will be interested and capable to participate in the Proficient retrofitting process.