

## THE ROLE OF LOCAL BODIES ON THE BUILDING ENERGY RENOVATION IN PORTUGAL

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### Abstract

*In a time where there is a need for learning and sharing experience in policies across the EU, local level strategies are gradually seen as a main driver to increase energy efficiency and reduce primary energy demand in buildings. Policies which are closer to the individuals represent an easier way of communicating the benefits of building energy renovation. Recent studies demonstrate that people consider local authorities better than national ones at responding to their needs and when it comes to getting important things done. In some countries, information centres and energy advice programmes operate at local level providing expertise and independent advice. In addition, local initiatives and leadership networks are reported as one of the most trusted sources of information by many householders, with social network and strong local leaders having an important role. An analysis is conducted of local policies implemented in Portugal and a comparative assessment is made based on best-practice examples considered in policy evaluation reports from European countries. This study shed more light to the fact that the central governments and agencies needs to be closer to householders and work together with municipalities and local organizations to implement available advice for householders. Working at the local social environment can be cost-effective with the municipalities playing a front stage role. Some recommendations are provided for the improvement of the current policy instruments and implementation of new ones in Portugal.*

## **1. INTRODUCTION**

Several studies report that the policies which are closer to citizens have revealed to be effective and local bodies seem to be able to reach homeowners and householders in a more efficient way [1,2,3,4,5,6]. Experts see the regional and local level as a main driver of energy efficiency because it is easier to communicate with local policy makers [1]. The wide range of different information tools used within the policies for energy demand reduction in the existing buildings seem to be one of the main support instruments for local policies strategy. [1,2,3,7]. Recent approaches are highlighting that also the local social networks constitute a strong knowledge basis for the decision-making process to renovate and the success of this process is not only a question of giving homeowners the right information and motivation but see also them as socially contextualized individuals [8]. However, there is still a long way to go and some specialists continue to consider that "... if someone wants to rehabilitate their house, they do not know where to go or what to do." [9].

## **2. METHODOLOGY**

First, this study is partially based on the literature review on the assessment of policy instruments already implemented in EU countries at local level. Then a seek related with building energy-related issues was made on the local newspapers in the last two years and on the annual activity plans and websites of Portuguese regional energy agencies and municipalities. Initially two pilot interviews were made and then eleven in-deep qualitative interviews were conducted with Portuguese leaders and experts of municipalities and local organizations and energy agencies in order to understand their opinion about Portuguese context and the applicability of the local measures implemented in other countries to the Portuguese scenario. The interview guide included firstly questions about the Portuguese context based on the research made previously followed by questions related with local policies implemented in other countries to avoid the possibility of influencing the interviewee's opinions. From the literature review and the content analysis of the interviews a comparison is made between the Portuguese context and European countries' local policy measures. The potentialities and the limitations of the applicability of these local instruments to Portugal are discussed followed by some recommendations.

## **3. CONTEXTUAL BACKGROUND**

### **3.1. An overview of policy instruments for local bodies' intervention**

Private homeowners need to seek information support during almost phases of the building renovation process. One of the energy policy instruments quintessentially adequate to local bodies action are undoubtedly the information tools. There are three major types of information tools related with three phases of the building renovation process (Phases 1, 2 and 3) [7] which can be related to four homeowners motivation strategies [10] (Figure 1). In all these decision making-phases local bodies and social networks can have a major role. Other types of policies that can be implemented at local

level are financial incentives, like municipal taxes reduction.

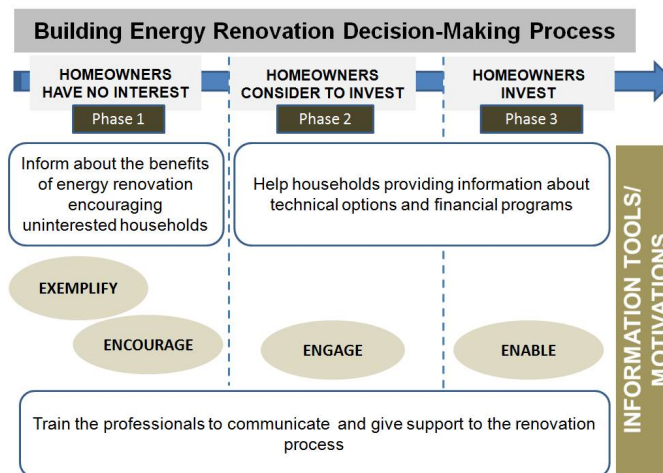


Figure 1 - Information instruments and householders motivation strategies during the three phases of decision-making building renovation process

### 3.2. Local networks activities for awareness raising, information dissemination and voluntary action

Recommendations to save energy to reach private households are made often through large campaigns but they are not achieving the desired effect. It is important the information to be personalized because households do not apply general tips. The recommendations need to be focused on different effects important for the household [11]. In the beginning of the decision-making process, when homeowners are not interested (Phase 1), face-to-face advertising as well as open days represent measures which have proved to be successful in providing information and awareness [12]. Local initiatives driven by strong local leaders or people with an image of reliability within the local community are cost-effective ideas which have been applied in some European countries [13]. The proposals include giving incentives to these agents by inviting them to bring their testimony within local workshops/exhibitions [13]. One obstacle to this measure is to find appropriately skilled leaders for communicating advice [13]. There are also some peer-to-peer initiatives like group tours to enable those who made building renovations to display and explain it to others homeowners who are interested (Phase 2) [5]. In Germany, innovative social marketing campaigns have been established involving energy advisers, local mayors, tradesmen and local press. The campaigns have been announced by local media and in a letter from the mayor. Energy agencies offer homeowners an initial appraisal of their buildings energy performance. This has been a very successful and effective communication tool [4]. Also in Phase 2, public meetings where building professionals are invited to present their stuff and skills to homeowners who in turn put their doubts, are good experiences from the citizens' initiative [5].

### **3.3. Energy advice and consultancy**

Firstly, it is necessary to state that in general, householders do not request for advice or counselling at high complexity levels. More often than not, they continue to implement improvement measures by receiving baseline levels of advice, which does not always result in the best building renovation solutions [1]. Being able to rely on information is considered an important matter when it comes to large financial investment options such as large-scale renovations [14]. The information need to be trustworthy, easily accessible and specific on the possibilities and gains from energy efficiency [15].

The informants seek others for advice before and during the renovation process [8]. Family, friends, contractors and building industry professionals constitute the one of the most reliable and low-cost source of information, as householders seem to be more willing to adopt changes when the reactions of their peers are positive [14]. Sometimes this search for information is simply through informal conversations or just consulting craftsmen [8]. Local-level knowledge networks may be a cost-effective way to deliver information [13]. Creating a culture of energy knowledge must be a strong bet of policy makers.

Personal contact and physical proximity favours communication and engenders trust in all phases of the process. It is easier to trust experts as persons than in systems [16]. The oral information seems to be more comprehensive because the advisor can orally explain [16]. The possibility of phoning the expert to clarify some aspects, for example, can also be an important factor for achieve confidence. Personal communication may mitigate the many fears and doubts of the householders [17]. Initial advice in Phase 2 given by a professional is more likely to ensure building rehabilitation cost-effective solutions than a simple simulation software tool available online, for instance [18,19]. Some municipalities in Germany provide door-to-door advice in the initial process of decision-making (Phases 1 and 2), when the householder needs basic information and reinforcement [14]. A survey carried out in Germany, where energy advisors are already considered as reliable professionals [19], showed that throughout the decision-making process phases the reliance on the professional increase [14]. Nonetheless, others studies reveal that homeowners still compare information between the energy assessments and what they already know from their social network [20].

The public sector support and recognition is essential for local network success and qualified energy advice [7] The information from the government and public institutions is mainly on a generic level, need to be more specific [15]. Public entities such as energy agencies or public energy information centres are seen as reliable sources by the German householders, providing information via local offices [14]. A good experience with positive impacts, of which Finland, Germany and Austria are good examples, is the support given to citizens through local desk advice offices easily accessible, impartial and subsidized, where energy advisors who are not related to any product marketing company are easily available to citizens [1,12,10]. There are proposals with a view to enabling these desk advice offices to provide free initial pre-assessment and advice on possible energy renovation measures, including an estimate cost of such measures as well as their benefit in the energy bill. In Germany, energy advisors' services are compulsory for high energy

performance standard renovations funded by the KfW Bankengruppe, a German government-owned development bank [14]. In Sweden, municipalities are the ones in possession of an energy advisor service, which provides free information regarding energy issues and available tools [13]. In such countries, which are in an advanced stage of these policies implementation, there are proposals to enable householders to be contacted by these offices [13]. In Denmark, a pilot program starting in nine councils implemented one stop information shops providing personalized consultancy to each householder throughout all the renovation project stages. There are also good examples of desk service run by consumer associations, which provide information at low costs for homeowners [3].

Local energy agencies and consumer organizations can also play an important role but they have to go beyond their traditional roles of providing technical expertise and information about legal requirements. The new role is serving as an intermediary among stakeholders and the citizens. Local agencies are well-suited to take in hand specific situations through local public relations work and to initiate networks among stakeholders, promoting collaboration, communication and interaction [4].

Local contractors and craftsmen have a significant influence on homeowner's choice of energy efficiency measures (Phase 2 and 3) but they still demonstrate lack of knowledge in comprehensive renovations for low energy buildings [21]. These professionals should be trained to improve their skills in a whole building renovation perspective [21]. In general, they do not recognize themselves as building energy efficient practitioners and do not share a common goal resulting many times in contradictory advice and know-how [8]. Contractors need to build a personal trusted relationship over a lengthy time of periods to support homeowners through periodic, successive or ongoing renovations [20].

In addition to this, the most recent studies have concluded that the policy-makers need to change their promotional speech, which is mainly centred on the financial feasibility of renovations and find what is important for the homeowner [22,23]. Energy advisors must be sensitive towards understanding lifestyles approaching energy renovations in a broader sense, be capable of identify the proper motivators and adapt the presentation accordingly [4,11,24,25]. An atmosphere of face-to-face and closer interpersonal proximity and trust with citizens in the desk advice offices will enable a more effective explanation of such arguments.

### **3.4 Central and local authorities' policies**

Central government initiative should devise ways of working through local governments and citizens' initiatives [5]. For example, in France there is a long-term strategy in which governments work cooperatively with societal actors, like municipalities. In Bulgaria, municipalities take part in the tower blocks renovation national program [18]. In Denmark the local authorities have formed public-private partnerships with local companies for strengthening the companies' competences in energy renovations [8]. A form of support could be also encouraging financially energy renovations collective approaches by citizens [8]

The increasing number of signatures of the Covenant of Mayors, a bottom-up movement, demonstrates that there is a great interest of municipalities in submitting a Sustainable Energy and Climate Action Plan (SECAP). The Joint Research Centre has carried out an in-depth analysis [26] of selected SECAPs across Europe. Firstly, the building sector is the preferred sector for the signatories' estimated CO2 reduction and the renovation of social buildings is one of the main areas where the Covenant signatories tend to focus. This study highlights the importance of involve civil society in the drafting of local plans and strategies (making pre-draft consultations with different local bodies) [26]. Further, small municipalities present a more accurate evaluation of the reality of the city and may also benefit from more direct contact with the public and stakeholders and run more successful awareness raising campaigns [26]. In addition, groups of municipalities of small cities coordinated by a territorial coordinator have shown that they work and communicate more successfully with stakeholders at regional level than at local one [26]. As far as incentives are concerned, policies viewing to reducing local taxes applied to householders who implement the energy renovation in their buildings constitute tools used also as motivation measures [10]. Rewarding and promoting high-performance building energy renovations can be a way to induce other householders [27]. The overall recommendation for novel policies is that they must be focused on the social context of building renovation and this needs local bodies' support [8].

## 4. RESULTS

### 4.1. An overview of Portuguese local bodies related with energy building renovation

Figure 2 presents a overview of Portuguese local bodies with a role in building energy renovation.

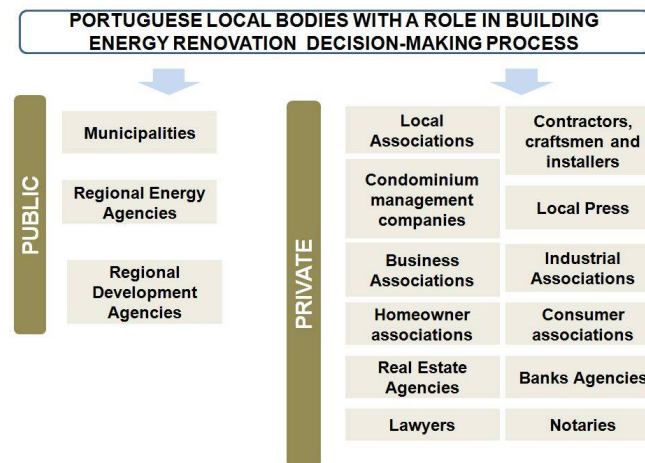


Fig 2 - Portuguese local bodies with a role in the building energy renovation decision-making process

Central authorities and municipalities are the most interested parties in a comprehensive renovation of the Portuguese building stock. Citizens need and use the council's services

quite frequently and therefore face-to-face consultancy have preferential conditions to be implemented. The majority of municipality leaders interviewed have state that have already implemented or have the aim to put in to action plans to improve the service attendance to the citizens. The focus of the annual activity plans of regional energy agencies, whose associates are the municipalities, on building energy renovation is still minor, as they concentrate more on raising end-users' awareness towards energy saving. Portuguese local associations, organizations and companies connected to buildings can also play an important role because of their facilities and their geographic proximity to citizens but they need a front stage leader organization to create a culture of collaboration and communication. When asked, eight of the respondent state that these local bodies are still playing a minor role in the incentive to building energy renovation and few initiatives for householders were organized by them individually or in cooperation. From the interviewers perspective they still do not fell as energy saving practitioners.

#### **4.2. Local-level information programmes and knowledge networks**

Local press might be a favoured means to promote energy efficiency in Phases 1 or 2 with good results in other countries. The analysis of twelve Portuguese local newspapers editions from the last two year revealed that there is practically no references to promoting building energy efficiency. Such press might be a means to promote important contents and publish interviews with local leaders and experts.

As far as events are concerned, the investigation made into the ADENE's (Portuguese National Energy Agency) website and in the anual activity plan revealed that they invest mainly in promotional and awareness events at central level and not so much in regional or local events. Homeowners must seek the information as information does not come to them easily. Local open days could be a type of initiative with ADENE sponsorship. "Another problem is that each local practitioner works separately and they do not share a common goal". state on interviewee. Municipalities and ADENE could take the head step to gather the several local bodies to start a effort of collaboration to organise events for homeowners awareness. In the Municipalities' annual activity plans consulted it was registered that almost none local campaigns for motivate the homeowners for building energy renovation has been made and cooperation with local associations is practically residual.

As in other countries, also in Portugal the local social network (family, colleagues, friends etc) have a decisive influence on the Portuguese homeowners choice for their relevant experience [28]. The learning that takes place between individuals is a daily fact. Contractors and craftsmen are some of the most trusted sources of information for Phases 2 and 3 of the process but need to be more comprehensive and impartial [28]. Affordable training for other practitioners in the building energy renovation decision-making process (craftsmen, tradesman, condominium agents etc - Fig 2) beyond architects and engineers is not a common practice have considered seven of the interviewees. ADENE could create a funded or at least affordable local training plans or support for these professionals at local level creating partnerships with professional associations.

### **4.3. Energy advice services**

Portuguese governments have invested increasingly more in strategies to reorganize public customer services and for that, they intend to make use of town councils as well as of the third sector (business associations etc). The initiative is called “Open Administration+Simple+Close.” Portuguese municipalities have also invested in a closer proximity with citizens through one stop shops and multiservice shops, which provide and facilitate several services in one single space with more quality in attendance. In fifteen main Portuguese cities' municipalities contacted there is no local energy advice offices in operation much less door-to-door advice programmes. Nine of the interviewees consider that there are privileged conditions to start introducing energy desk advice services in municipal spaces. Accreditation of these desk advice offices by ADENE could be the next step. What is paramount is that these advice services are provided at zero cost or for token fees in order to motivate householders, at least in the beginning of the process (free initial advice on Phase 2). Town councils will have to train and hire technicians. The Portuguese qualified experts of the Energy Certification National System are prepared to offer energy advice in technical issues but they lack training to provide end-users with wider arguments for renovation [8]. On the other hand, the Portuguese homeowners still need to improve the importance given to the recommendations of the EPC since an early phase of the process [8]. These personal contact in the desk advice services could be a good instrument to reinforce the confidence of homeowners in EPCs. Other aspect is that Portuguese stakeholders seem not to have an acute perception of opportunity or do not know or are unable to understand what tools are available to them regarding financial support instruments to building renovation. Furthermore, they lack the technical ability to assess the investment profitability as information tools concerning financial feasibility and funding possibilities are not always easy to grasp or use [28,29]. Such support would also be a crucial service to be included through the desk advice services as well as the encouragement of private players to appeal to financing schemes and sources of funding to invest in building energy renovation (Phase 2) [21].

Additionally, condominium management companies and homeowners and consumer associations could represent an important means for promoting low energy renovation playing as a mediate agent. These are local and privileged means of direct contact with householders daily life practices. It would be important to include energy advisor services into these companies in order to encourage the renovation of multifamily buildings. Note that in Portugal, most of these buildings are in horizontal property regime with multiple owners, where renovation turns into a complex process of interest management.

### **4.4. Local authorities' policies**

Ten of the interviewees consider that the national and local stakeholders connected to the sector of building energy efficiency in Portugal should play a more active role in the definition of national and local policies for the energy renovation of the building stock. For the time being, almost all the interviewees consider that the involvement of local actors is no common practice in Portugal, although there is a record of some initiatives

carried out by town councils to involve their citizens. An example of this is the participatory budgeting, where citizens propose ideas to be voted and implemented in public spaces. The majority of interviewees consider that these initiatives could be a starting point and might be widened.

Most of the experts who were interviewed consider that ADENE's work with municipalities as partners has not been a strong bet, which results in municipalities showing little ambition in their annual activity plans as far as strategies for energy renovation of their building stock is concerned.

A profitable particularity in the implementation of measures in Portugal is the fact that cities are generally small, which might contribute to a more operational implementation of local policies, as it has been concluded in the study on SECAPs [20].

With regards to the municipalities' commitment to energy renovation in social housing areas, seven of the interviewees think that it represents an efficient way for the Portuguese municipalities to set the example and thus promote the increase of the renovation rate in private buildings. However, such actions must be disseminated appropriately.

In addition, three local leaders from municipalities interviewed consider that the municipalities might also make agreements with national energy and investment agencies with regards to applications for financial funding for building renovations of local buildings.

#### **4.5. EU Policies applicability to Portugal - Summarize and recommendations**

Table 1 summarizes the applicability to Portugal of the main EU local policy measures.

### **5. CONCLUSIONS**

Face-to-face and closer interpersonal proximity with the homeowners is paramount to implement policies. Portuguese local partners must be involved and work together (energy advisers, local mayors, tradesmen, local press etc) led by municipalities. More discussion forums, public meetings and open days organized by local bodies could increase the transmission of knowledge and know-how among building renovation stakeholders and citizens. ADENE must invest, together with local partners, in promotional local events for householders. Well-known local leaders must be encouraged to give their testimony.

Energy advice must be decentralized by finding local partners and involving the regional agencies and the municipalities more. Portuguese town councils are now in good conditions to implement the desk advice services by making the most of the undergoing reform of the customer service strategy.

Joint work at regional level might be a good strategy, especially in certain councils where the geographic proximity is reduced. Portugal has small cities and appropriate local structures to implement the good examples from other countries.

Both governments and ADENE must find local partners and involve them more to promote their participation in the definition of national and local policies regarding energy building renovation.

Local professional associations could play a crucial role in providing information and

training accessible to energy practitioners. For example, craftsmen are in Portugal an important font of advice that need to feel they are an important part in the building energy renovation process to provide an integrated approach avoiding differentiated and fragmented advice.

Last but not least, in Portugal new local and regional forms of collaboration and information platforms are needed in energy building renovation process. The definition of national and local policies must be carried out by closely communicating with local stakeholders, a scenario that it is not the reality today.

Possible future developments of this study are to understand and define more specifically the role of each local body in the building renovation process and define a network program of collaboration and partnerships developing the measures to operationalize it.

Table 1 - Applicability to Portugal of the instruments implemented locally in EU Member States

	Local policy instruments implemented in EU countries	Applicability to Portugal - Potential, recommendations, comments
<b>Awareness, information programmes and voluntary action</b>	Face-to-face advertising, open days and marketing campaigns (Energy agencies and local desks offer homeowners an initial appraisal of their buildings energy performance)	<i>High/Medium</i> - More partnerships between central and local bodies to invest in more events at regional or local level - ADENE, municipalities, energy advisers and other local private bodies need to cooperate more
	Local initiatives driven by strong local leaders or citizens (public meetings, group tours and discussion forums)	<i>Medium</i> - Needs to have sensitized local leaders to lead the process and a good synergy between local bodies and citizens
	Door-to-door initial advice from municipal initiative	<i>Medium</i> - The municipal services need to make a database to identify potential householders and prepare local teams and programmes
<b>Energy advice and consultancy</b>	Local desk advice offices independent and subsidized or at low costs (Municipalities and other local bodies)	<i>High</i> - There are exceptional physical and organizational conditions to be implemented in the municipalities, less potential in other local bodies - Qualified experts must be hired with training in other skills (communication, motivation capacity, etc) - Need a intensive work of awareness and campaigns to convince uninterested homeowners (Phase 1) - Homeowners also trust strongly on their social network and ask them for advice
	Training of local contractors and craftsmen in an integrated building energy renovation perspective	<i>Medium</i> - ADENE together with professional associations could promote affordable local training - Professional associations need to be sensitized
	Governments and national agencies work cooperatively regional energy agencies, municipalities and citizens	<i>High</i> - ADENE is in a adequate stage of maturity to start working more closely with municipalities, regional energy agencies and associations as partners
<b>Local authorities' policies</b>	Engage civil society in the drafting of local plans and strategies for building energy renovation	<i>Medium</i> - Local stakeholders need to have access to platforms to be more consulted for the definition of local policies
	Public-private partnerships between local authorities and local private bodies to increase competencies in energy renovations	<i>High</i> - The municipalities must take the front step
	Renovation of social buildings and other demonstration programs	<i>High</i> - These actions are in the field but need be disseminated appropriately
	Groups of municipalities of small cities working together and coordinated by a territorial coordinator	<i>Medium</i> - Cities are generally small, which might contribute to a more successful implementation

	- The inter-municipal communities must want to work for this aim
Reducing local taxes applied to renovations works	High
Rewarding and promoting high-performance building energy renovations	High - Need a previous classification of the buildings - The homeowners can be invited to give testimony.

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