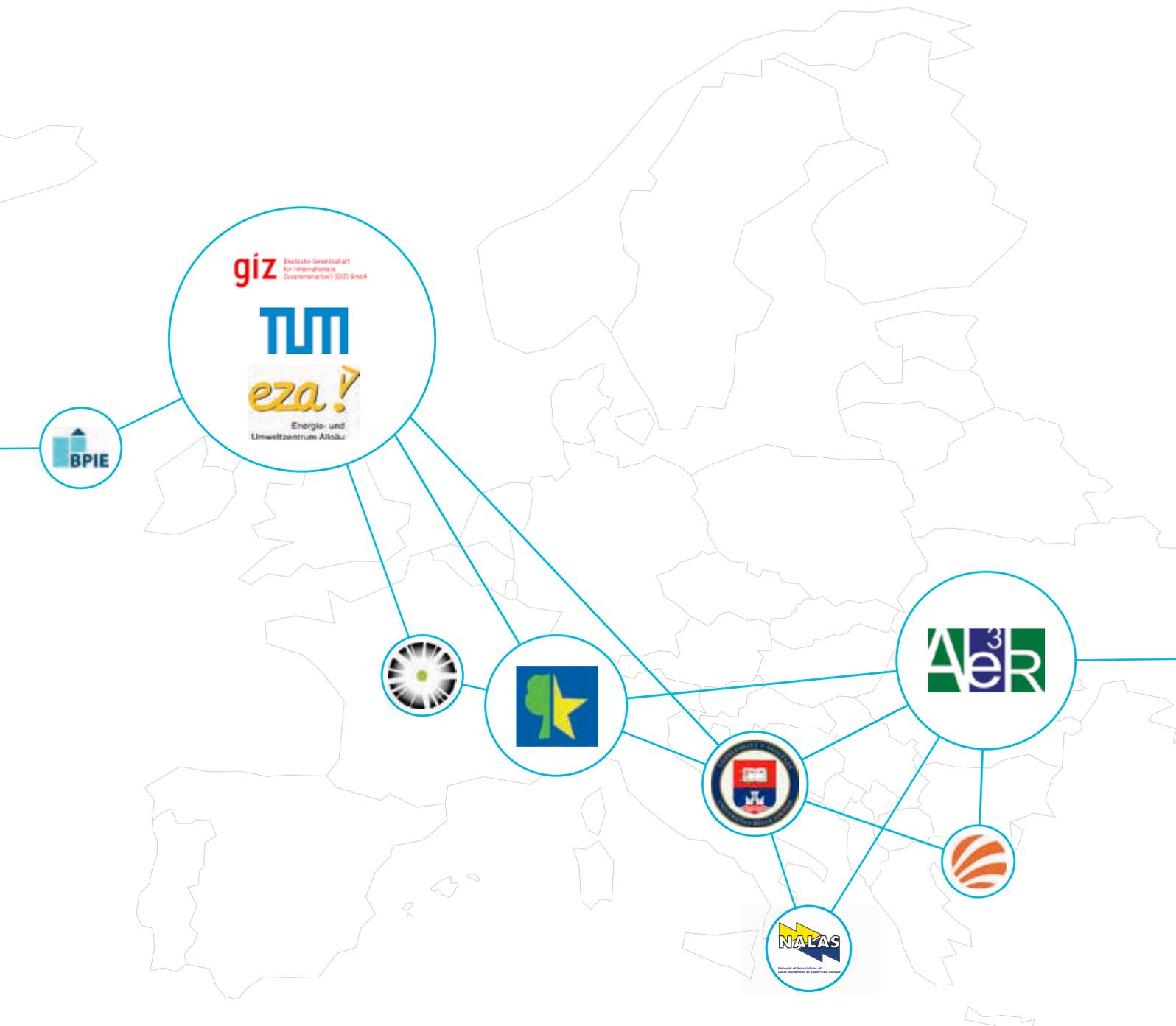


Guide to Raising Awareness at Municipal Level



Project Title: **EmBuild** - Empower public authorities to establish a long-term strategy for mobilizing investment in the energy efficient renovation of the building stock

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Introduction

Renovating and refurbishing the building stock in Europe is an enormous task that cannot be shouldered by public investment only. The EU, in its Energy Efficiency Directive, foresees an exemplary role of the public sector in this regard and views private investment as the main driving force for reaching the aspired breadth and depth of renovation. Public sector engagement is necessary for doing the groundwork, such as preparing sound renovation strategies that can guide private investment or raise awareness of the various benefits of renovations to elicit higher consumer demand.

This report presents possible measures for improving the awareness of benefits of applying energy efficiency measures and deep renovation in public buildings at local level. It includes measures of a more general nature as well as country-specific recommendations. The main objective of this document is to present existing and/or innovative approaches/mechanisms for active involvement of stakeholders at public level and to facilitate and stimulate application of such awareness raising measures in practice. The focus of EmBuild lies at the local level. Thus, measures are identified with a distinct local (municipal) and regional (county or district) application.

The recommendations and suggestions in this guide are aimed at local energy efficiency practitioners such as energy managers, energy officers, other experts and personnel involved in planning and applying energy efficiency measures at local level who also have the difficult task to convince the decision makers in benefits of application of energy efficiency measures in public buildings for various reasons (new directives, laws, requirements, budget restrictions, etc.) or interact in their daily practice with the stakeholders who are directly affected or influence the application of the energy efficiency measures (general public, NGOs, building societies, and others) . This document is based on and uses the findings and conclusions from work packages 2-4 of the EmBuild Project:

- ▶▶ Work Package 2 Inventory of the building stock and stakeholder involvement: Deliverables 2.1 Instruction note on stakeholder categorization and involvement; 2.2 Communication Plan; 2.4 Guidance note on stakeholders' involvement; 2.7 Comprehensive Report
- ▶▶ Work Package 3 Cost-effective approaches to renovations: Deliverables 3.2 Catalogue of low- and no-cost measures; 3.4 Standardised report for detailed analysis of buildings
- ▶▶ Work Package 4 Policies and measures to stimulate cost-effective deep renovations of buildings: Deliverable 4.1 Report on barriers to deep renovation for each participating country

This report also captures knowledge collected and generated during project implementation so the results and products of the project are made available and disseminated to stakeholders and to the widest possible relevant audience to maximise the project scope and impact. The conclusions and recommendations in this document will also serve as guidance to increase awareness of public authorities to attract and absorb investment in resource-efficient processes and actions, particularly in deep renovation/energy efficiency measures in public buildings.

Project Brief

EmBuild - Empower Public Authorities to Establish a Long-Term Strategy for Mobilising Investment in the Energy Efficient Renovation of the Building Stock - is a project financed under the Horizon2020 Programme of the European Union, and explores the modalities of investment in energy efficiency in public buildings with special emphasis on local level. Its main objective is to empower public authorities at local, regional and national level, to formulate renovation strategies for the building sector that foster deep renovation and facilitate the acceleration of the renovation rate. The project involves 10 partners, two of which are with regional or international mandate (NALAS and BPIE), and 8 national partners from 6 countries: EnEffect (Bulgaria), REGEA (Croatia), GIZ, eza!, Technical University of Munich (Germany), AE3R (Romania), University of Belgrade (Serbia) and KSENA (Slovenia).

The project results will contribute to increase capacities at municipal level to formulate policies and measures to stimulate cost-effective deep renovations of buildings and to guide public investment decisions, inclusive of capital investment and facilitation of private sector involvement.

Information requirements of different stakeholders

1

Investors and public officers tend to speak different languages – meaning they view the benefits and challenges of a renovation project through different lenses, use different indicators and data to measure the likelihood of success and use different sets of assumptions. Ensuring that the two parties understand each other is paramount for expediting a process of improving the building stock. On a European level, many projects and working groups are busy working on exactly this interaction, for example, EEFIG-DEEP may be the best known initiative to up-scale energy efficiency investments in Europe through the improved sharing and transparent analysis of existing projects in buildings (see <https://deep.eefig.eu> to learn more about the initiative).

Investment at local level requires involvement of stakeholders who contribute to the planning and implementation and later share the benefits of the intervention. Based on the Guidance Note on Stakeholders' involvement¹, several important conclusions can be made with regard to the diversity of stakeholders who should be subject of awareness raising and who influence the investment climate at local and regional (county or district) level.

At local level, stakeholders that influence the investment are often beneficiaries of the results at the same time:

- ▶▶ Local decision makers with political influence (mayors and deputy mayors, city managers, municipal councils);
- ▶▶ Local decision makers with technical competence/expertise (energy managers, chief architects, heads of departments, energy agencies, construction engineers, building supervisors);
- ▶▶ Business community – (not necessarily local) small- and medium-sized enterprises, corporate representatives, corporate and trade associations; and
- ▶▶ Local community – the citizens and the users of the public services at local level.

¹ <http://embuild.eu/knowledge-center/training-material/>

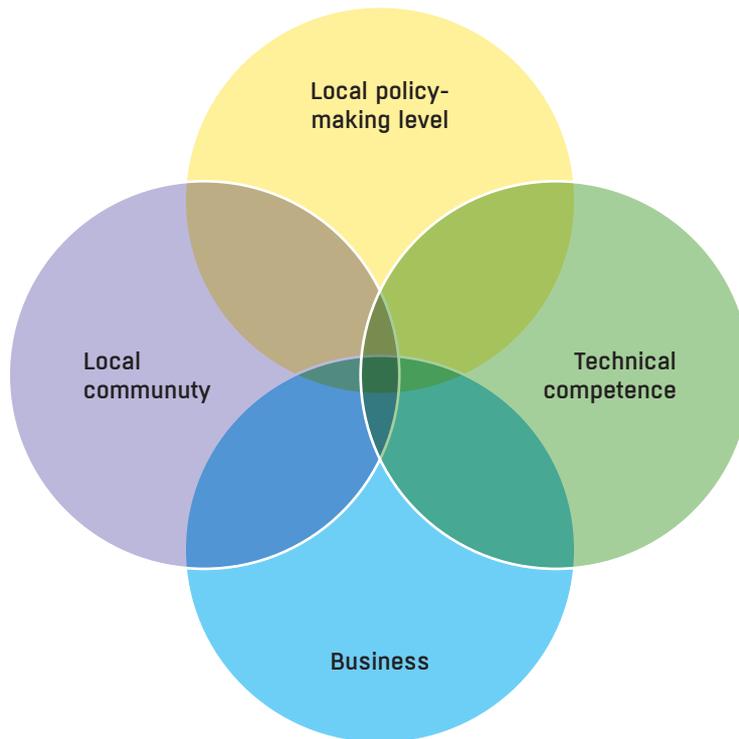


Figure 1 Interrelation of stakeholder groups

This guide focuses primarily on local level actors and spends less time on techniques and measures for raising awareness among higher tier of governance (central/national, EU and international). While local governments are mostly focused on the impact of their daily work in their geographic area and are the closest to the communities they serve, macro-level actors have only secondary or indirect influence over the local investment as the directives and laws are being implemented at local level. However, the national and EU dimension should not be lost from sight.

1.1 Information needs at local policy-making level

Information needs at local political decision-making level are specific and deserve detailed elaboration.

One key conclusion from the EmBuild Survey is that actors important for the investment climate and the actions regarding energy efficiency in a municipality are primarily local, with the exception of businesses that may or may not be local legal entities. However, local plans and their implementation should be in line with the National Energy Efficiency Action Plans (NEEAPs) as the success of their application results from the actions at local level.

The political level decision makers' awareness and knowledge of the EU policies and concepts are of pivotal importance for the application of energy efficiency measures at local level, including those of deep renovation of public buildings. More local energy action plans should be elaborated and implemented, despite the indication that they may not be obligatory by law and not legally binding. It is especially important to be aware of the link between European policies, NEEAPs and their expression and application at local level in distinct local renovation strategies for the building sector or building renovation strategies as integral part of Local Energy Action Plans (LEAPs). As 13% of the local stakeholders have pointed out to have detailed knowledge of EU Regulations in contrast to 50% of those working in higher tiers of governance, a gap in knowledge between the local and national level decision makers is apparent. This gap should be filled by enabling local decision makers to "translate" the NEEAPs to "local language", i.e. to make sure that the Local Energy Action Plans and local building renovation strategies also contribute to implementation of the EU and national targets respectively. The existence and application in practice of regulations, rules and guidelines from the central governance level to the local level concerning the implementation of national targets for energy efficiency should be explored more deeply, as well as if there are methodologies and tools to ensure the coherence between the NEEAPs and LEAPs, as well as specific local building renovation strategies, and their realization into the municipal budget and capital investment plan.

Implementation of NEEAPs depends on their transposition to local level and for that purpose relevant resources should be allocated by the central government, and the decision makers at local level should be aware not only about their obligations but also about the available resources for implementing them. Additionally, the need for developing capacities to implement the local decisions on energy efficiency should be clearly articulated and provided with relevant resources for the actual application. For this to happen, the intergovernmental vertical dialogue should be encouraged, and the local government associations naturally fit in with their mandate to represent the local authorities in negotiations with central government and in providing capacity building and training to the local authorities, including the elected representatives.

Another important information need is for the decision makers to be aware of the wide benefits of applying energy efficiency measures at local level. The importance of having LEAP or specific building renovation strategy that are based on thorough knowledge and analysis of local specificities should be in the focus of the decision makers when it comes to energy issues at local level. A good LEAP can be a starting point for planning and implementing capital investments, for attracting funding for local energy efficiency projects and for demonstrating political responsiveness, competence and good will. At the same time, for the local decision makers to be initiators and promoters of energy efficiency measures at local level, incentives for these measures should be clearly defined and articulated. These incentives should motivate and make investment in local energy efficiency more attractive to the local politicians as opposite to cutting subsidies and transfers by the central government proportionately to energy savings in the city or county.

At local level it is very important to recognise the available approaches and technologies to building renovations. Low- or no-cost measures for energy efficient buildings should of course be on the radar of the decision-makers but they should also be aware of benefits of long-term strategies and investments, and the latter should be more in the strategic focus of the local government.

Low- and no-cost measures are necessary and gratifying “quick fixes” and they should not eclipse or distort the necessity of more expensive investment in energy efficiency. The benefits of both approaches should be clearly understood by local decision makers.

Funding local energy efficiency investment is one of the most controversial and sensitive areas. On one hand, the incentives for such investment should outweigh the backlashes for the local government, to illustrate, the potential decrease in subsidies and transfers by the central government proportionately to the fiscal value of the energy savings. On the other hand, investment in local energy efficiency should be easy and not consume vast local resources. Specially designed financing schemes, simplified procedures for local borrowing related to energy efficiency measures, the benefits of public-private partnerships in energy efficiency and Energy Savings Companies (ESCOs) should be thoroughly clarified and propagated amongst local decision makers. The latter should dispose of the whole range of knowledge arsenal to pursue energy efficiency measures at local level.

To summarise, the information needs of the decision makers that have the most impact on local policy formulation are as follows:

- ▶▶ Awareness of EU and national energy efficiency policies and concepts
- ▶▶ Implementation of energy efficiency measures is a good opportunity to promote an EU component (for example, the Covenant of Mayors) and to increase municipality's visibility towards EU
- ▶▶ Recognition of the link between NEEAPs and LEAPs, and the existing local building renovation strategies implemented separately or as part of LEAPs
- ▶▶ Benefits of applying LEAPs
- ▶▶ Incentives in applying energy efficiency and deep renovation measures in public buildings
- ▶▶ Benefits of low-and no-cost measures vs. capital investment in energy efficiency
- ▶▶ Funding sources, financial schemes and innovative approaches for financing local energy efficiency projects.

1.2 Information needs at local expert level

The role and the input of the local experts specializing or working in local energy management or broader disciplines that include competence in energy efficiency is very important as they contribute to the quality and delivery of the energy efficiency measures. Senior public officers (director of department or head of position) have significant influence on the elected decision makers as very often they provide rationale and technical knowledge behind formulating local energy policies and strategies. They are the people who have the on-the-ground experience and knowledge in practical terms.

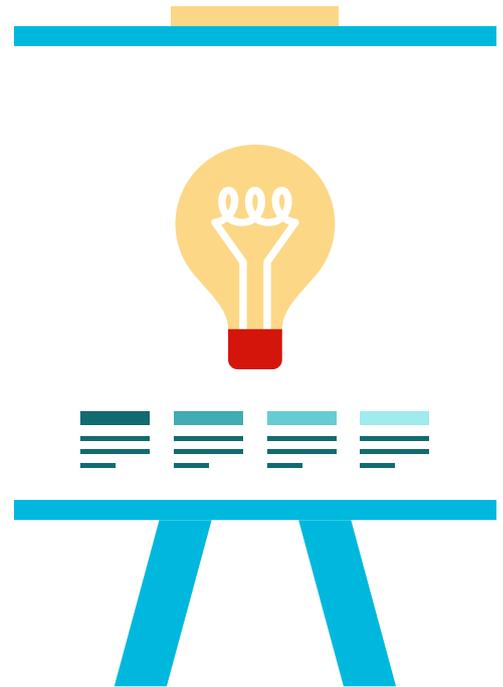
In accordance with the EmBuild Survey and the Guidance Note on Stakeholders' Involvement, only 34% of the respondents indicate that EU and national regulations count for the bigger part of their daily work. The experts at local level see the impact of the EU and national regulations less significant. However, as they are expected to have detailed knowledge of the local state of matters and further to be the main contributors to the technical rationale of a local energy efficiency strategy or energy action plan, the need for awareness of EU and national regulations becomes more pronounced. Moreover, the very technical matching, if done at all, between the NEEAP with local energy efficiency strategic targets is most probably a task of a local expert with technical competence and local knowledge.

Significant part in formulating local energy efficiency policies and respectively strategies and plans is being played by the local experts. In this sense, the technical experts at local level provide the technical reassurance behind the political decisions (evidence-based policy making). It is of no surprise then that the vast majority of these experts choose cost-effective technological approaches to building renovation. In this regard their continuous update about the latest trends and technologies/innovations related to energy efficiency and energy saving is one of fundamental information needs for this stakeholder group. A local expert competent in latest technologies will have broader choice of possible solutions and will be able to propose and match the most appropriate for the local conditions, and most applicable and realistic for the public owner. This will also contribute to attracting relevant investors.

In accordance with the EmBuild Survey, this stakeholder group does not see deep impact of their departments' work on the energy efficiency regulations. However, they play significant part in the inventory of the public building stock and the monitoring and assessing the schemes for energy efficiency projects. Thus, their information needs on methodologies and practice for building stock appraisals, monitoring and data collection should be satisfied so the local energy efficiency policies and building stock renovation actions are formulated and implemented in the most efficient way. Peer-to-peer learning and exchange at national and international level can significantly improve the expertise basis in this regard. The local government associations play an important role in responding to these information needs because within their mandate they have established mechanisms for expert networking and relevant training of municipal experts. The local energy agencies and info points can also fulfill this role but to a lesser extent as they often represent a number of municipalities in limited geographic area, unless they are part of a larger centralized national network.

In brief, the information needs of this stakeholder group are as follows:

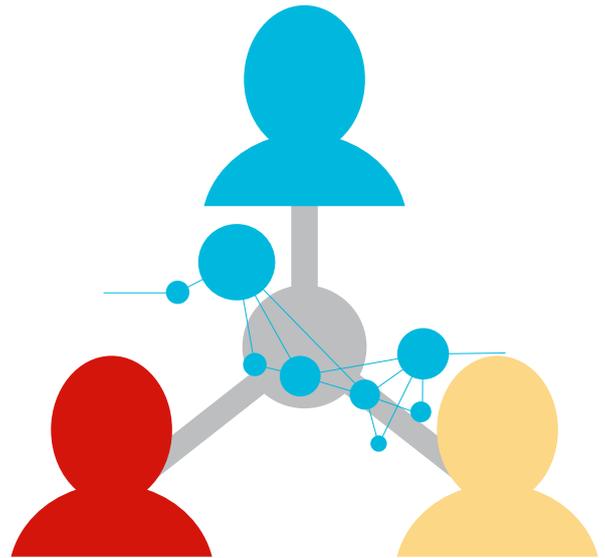
- ▶▶ Knowledge and practical experience in applying EU and national relevant legislation and regulations concerning energy efficiency.
- ▶▶ Latest practice and know-how in technologies/innovations related to energy efficiency and energy saving, as well as building/construction technologies, new materials, etc.
- ▶▶ Methodologies and practice for building stock appraisals, monitoring and data collection
- ▶▶ Regular networking and peer-to-peer learning



1.3 Information needs at local community level

The information needs of this stakeholder group is very specific and the improvement in delivering information to the citizens and the users of public services will make the energy efficiency policies and their implementation much more understood and agreeable, especially if they require public resources investment or refer to sensitive social issues as addressing energy poverty or renovation of social buildings/housing for vulnerable groups. **Ensuring citizens' participation in the most important local governance decisions is one of the fundamental principles of good governance.**

It is not surprising that citizens' participation in the local energy efficiency policy making and implementation is stated as a priority in the EmBuild Survey. In this regard, the following streams of information should be maintained in the most transparent and understandable way:



- ▶▶ Citizens' participation should be ensured from the very early stages of formulating energy efficiency policies and actions. Public discussions should precede the adoption of such local policies, and the technical aspects should be accordingly explained.
- ▶▶ Public cost/spending on implementation of energy efficiency or deep renovation should be rationalized by calculations and the link between the scope of the actions, their price, the time of investment return and public benefits of the applied measures should be explained, so should regular updates on progress be made. The public procurement procedures and the public-private partnership conditions whenever applied should be transparent and well explained.
- ▶▶ Health and wellbeing benefits from the intended interventions should be broadly announced and wherever possible demonstrated. Depending on morphology of social groups, tailored messages can be delivered. For example, for more affluent citizens the environmental benefits may be more appealing, while for poorer groups savings in spending for energy may appear more attractive.
- ▶▶ Educational (behaviour change) measures should be part of the bigger picture of energy efficiency policy implementation at local level. Low- or no-cost measures can be applied both in public and private buildings and may not require technological investment at all.
- ▶▶ With demonstration of successful projects and actions for energy efficiency and deep renovation is important to create public demand for energy efficiency so the politicians/decision makers are pushed to promote and apply energy efficiency measures.

1.4 Information needs for businesses

The respondents in the EmBuild Survey who represented private bodies indicated that strategic barriers (political or regulative, focus on other subjects...) for them “is not a low obstacle”². Easier access to municipal information on adopted or policies in process of discussion, and local regulations; lesser local regulative burden and simpler procedures for participation in local tenders and public procurement that are part of the implementation of the Local Energy Action Plans and the strategies for deep building renovation should be considered as some of the first measures to remove the strategic barriers to private sector’s involvement in energy efficiency measures.

When rating their interest between cost effective approaches and technologies for renovation of buildings, policies to stimulate cost-effective deep renovation of buildings, no-cost energy efficiency measures like motivational, behavioural or societal changes, and also public participation and inter-stakeholder dialogue, the stakeholders found the cost-effective approaches and technologies most interesting and relevant. The businesses usually possess and contribute to bringing technical knowledge and innovative solutions for deep building renovation. In this sense, the information flow from the businesses to the municipal technical level experts is equally important as it provides professional interaction and overview of the latest technical possibilities and approaches. On the other hand, the information flow from the local government to the businesses should enable this exchange, and also should provide information on possible areas of intervention for building renovation where the private sector can anticipate opportunities. During these exchanges, the local government shall ensure transparency of the information flow and trust between all stakeholders. This also means that the information flows from the local government towards businesses can be directed in several possible ways:



- ▶▶ Wide and transparent public discussion before adoption of municipal budget and capital investment plans, as well as energy action plans.
- ▶▶ Medium and long-term local renovation plans are published and constantly available and updated. SMEs should be aware of possibilities for applying as sub-contractors well in advance before the announcement of public procurement procedures.
- ▶▶ Steady and predictable legislative environment that encourages trust and excludes conflict of interest and fraud; clear public procurement rules and procedures.
- ▶▶ Information on available funding and financing schemes for small- and medium-sized enterprises related to deep renovation and energy efficiency;
- ▶▶ Cutting the red tape (less bureaucracy) for SMEs that intend to apply energy efficiency measures. In accordance with the EmBuild Survey, only 26% of the private bodies measure the energy consumption of their public building stock. Relevant information and awareness raising measures should be taken in this regard by local authorities and especially local energy agencies.
- ▶▶ Examples of successful energy efficiency and deep renovation projects from the SME environment could be considered. There is nothing more convincing than the testimony/proof of investments that paid off when they come from parties belonging to the same business sector.

Access to information vital for companies to invest at local level: municipal property data and ownership, information on existing SMEs that could be partnered at local level; cost of doing business; documents on spatial plans, development plans; information on available investment locations; data on energy consumption which is closely related to the building renovation; technical documentation on construction and/or technology documentation³

² Guidance Note on Stakeholders Involvement, EmBuild Project, 2016

³ Needs Assessment Study of Local Governments and Private Sector in the Area of Energy Efficiency and Renewable Energy Sources Use, NALAS, 2013

Communicating the necessity for coherence between NEEAPs and SEEAPs/LEEAPs

2

As the implementation of the NEEAPs will inevitably be implemented mostly at local level as most of the building stock is being owned by municipalities or privately within municipalities, the link and coherence between the NEEAPs and SEEAPs/LEEAPs is one very important condition for achieving the goals of the national plans, and at the larger scale, the EU targets respectively.

First and foremost, the local decision makers and technical staff (local energy managers, representatives of energy agencies) should be aware of existence and/or content of National Energy Efficiency Action Plans and of the EU directives upon which these plans are built. In accordance with the Guidance Note on Stakeholder Involvement prepared by the EmBuild project “a main driver to implement energy efficiency at local and regional level is that decision makers are familiar with European energy-efficiency concepts and policies. EU-Regulations like EED or EPBDs have to be implemented in all steps of the policy making process.”

- ▶▶ It is necessary, in parallel with applying measures to implement the NEEAPs, to dedicate expertise and resources for awareness raising among the professionals who will be directly involved, including also ministerial personnel, and to enable regular exchange amongst professionals and/or decision makers at all levels of governance and expertise.
- ▶▶ The vertical intergovernmental dialogue is of special importance both during preparation of NEEAPs and their implementation. This dialogue should be in place from the very beginning when the initial rationale is being formulated and before the negotiations (for example, with Energy Community Treaty) have begun. The role of the local government associations should be emphasised here as their mandate is to serve as one voice on behalf of local governments.
- ▶▶ There should be clear and easy to communicate quantifications of the goals of the NEEAPs, the required contributions of the obligated parties and the role of the regional and/or local authorities; respectively, local authorities should be stimulated to set measurable energy saving targets for both the public and private building stock in a coherent timeframe, applying a coherent monitoring, evaluation and reporting procedure.
- ▶▶ The requirement above implies clear long-term perspective for the incentive measures at national levels. Additionally, the energy savings contributions of the obligated parties in the different administrative regions should be visible, with publicly available action plans, monitoring, evaluation and reporting procedures.
- ▶▶ It is very important to develop mechanisms for financing the implementation of the NEEAPs. It is a common (and negative) practice when national tier of government delegates obligations to the sub-national tiers without allocating financial means for their implementation. This can be addressed by enabling relevant legislative environment with rules, handbooks and all necessary attributes for awareness, understanding and motivation for implementing the national targets.
- ▶▶ Other from allocations from national budget or other mechanisms of the state in line with implementing the NEEAPs, it is necessary to stimulate the local governments to adopt their own SEEAPs/LEEAPs, and to provide the necessary assistance with methodologies, guidance, trainings of relevant staff, awareness raising campaigns. The best way to achieve this is to work hand in hand with the local government associations as they are the natural interlocutor between the national and local tiers of governance.
- ▶▶ In addition to central government mechanisms for financing the implementation of the NEEAPs' targets at local level, there should be relevant legislative environment for establishing ESCOs, public private partnerships or other innovative forms of local investment in energy efficiency and deep renovation in public buildings. The procedures for local borrowing and capital investment with specially tailored financing instruments should be also optimised, explained and applied accordingly.

- ▶▶ European financing tools should be promoted and exploited to their full potential, including instruments as ELENA and MLEI-PDA (depending on the size of the projects), EEEF, KfW-supported tools and others;
- ▶▶ GHG emission trading incomes generated locally should be invested back in local energy efficiency projects in the framework of the LEEAPs;
- ▶▶ Academic research and cooperation between the local and regional governance level, higher education and innovative local businesses should be promoted through various sources, one example of many is the EU Horizon 2020 Programme.

Experience from Serbia (University of Belgrade)

Faculty of Architecture was leader of the team of researchers that has developed the National Typology of residential buildings of Serbia based on the IEE project TABULA and EPISCOPE. Following the unified approach formulated by EU partners and taking into account the local characteristics of Serbia unique method has been developed based on targeted national survey.

Major impact of the study on national level has been achieved by overtaking of the data for the formulation of II and III NEEAP for Serbia, where the whole method has been stated as one of the basis for decision making in the field of EE.

Following the national methodology downscaling of the principle and development of the LEEAP in the building sector has been formulated. New survey principle scaled according to the size of the local municipality has been developed and tested on five local municipalities. Following the success of the method two LEEAPs for municipality of Vrsac and Pirot have been adopted and three more Soko Banja, Ivanjica and Vrbas are in procedure.

Local significance of the methodology has been recognized by investors and construction sector which is using the survey data mainly refurbishment potential and material quantities as the ground for business strategies and planning.

- ▶▶ Continued monitoring, control and reporting of the achieved results is an extremely important component of the process of preparation, implementation and monitoring SEEAPs. These reports should have to include the analysis of dynamics and success of the implementation of identified measures as well as suggestions of corrective measures for all those cases when the implementation of the Action Plan resulted inexecutable or the expected results were not achieved. When creating NEEAPs, the said reports should be considered so to assure successful implementation of energy efficiency measures.

An example from Slovenia:

The reference is for LEK (Local Energy Concept), SEAP (Sustainable Energy Action Plan – from Covenant of Mayors) and several national documents:

Energy Concept of Slovenia (EKS) – not published yet

- ▶ NEAP (National Energy Efficiency Action Plan 2014–2020 – an ure 2020) sets national target to improve energy efficiency by 20% by 2020, in line with the requirements set out in Directive 2012/27/EU (Energy Efficiency Directive). This target states that primary energy consumption will not exceed 7.125 million toe in 2020, meaning that it may not exceed the 2012 figure by more than 2 %.
- ▶ NREAP (National Renewable Energy Action Plan 2010-2020), its main points are: the national policy of renewable sources of energy, expected gross final energy consumption in the period 2010-2020; targets and trajectories regarding renewable energy sources; measures for achieving binding target shares of renewable energy sources; estimates of the contribution of individual technologies to achieving the target shares of renewable energy sources and estimates of the costs of carrying out measures and of impacts on the environment and on job creation.
- ▶ Long-Term Strategy for Mobilising Investments in the Energy Renovation of Buildings
- ▶ Operational Program with measures to reduce emissions of greenhouse gases by 2020
- ▶ Action Plan for the Nearly Zero-Energy Buildings by 2020 is mandated by Article 331. of the Energy Act and defines the main targets, objectives as well as programmes and specific measures for their realization. The implementation of the action plan and realization of targets must be monitored and revised every three years.

Local energy concept must be in line with above-mentioned documents. When new national strategy takes place, every local strategy must be adjusted.

Deep renovation of public building stock and private housing requires thorough planning. This is necessary so the local government can estimate, allocate resources and attract investment, and implement all the measures that will lead to improving the quality of the building stock, decrease cost on its maintenance, and improve

Planning and directing interventions on public building stock and private housing

3

the living/working conditions of its occupants and users. The latter will also have an indirect impact on other municipal services such as health and education.

Developing and implementing a renovation strategy for the building sector is not a technical matter only. Without appropriate citizens' participation and support of the stakeholders the necessary large-scale renovation activities could most probably not be realized smoothly.

The stakeholders should be involved from the very beginning of the planning process. With this, the local government ensures collaboration and motivation of the citizens. Engaging citizens early in the process also allows for communicating costs and challenges but also benefits of proposed measures.

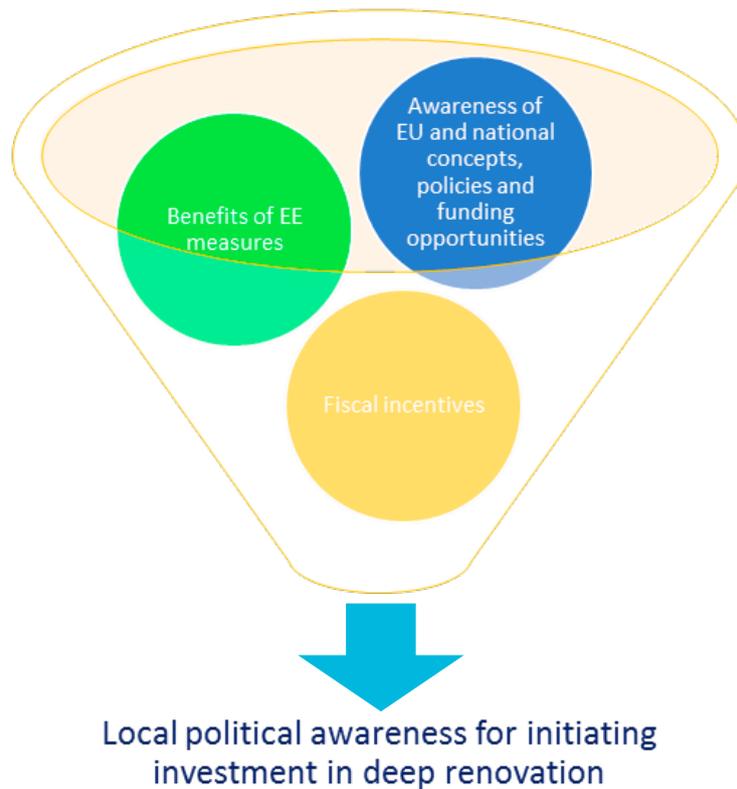


Convincing the decision makers: why is planning deep renovation of building stock so important?

Local planning of energy efficiency measures for deep renovation of public building stock and private housing is important as it contributes to the bigger picture of municipal vision and overall local development strategy with longer time span as mid- and long-term, and will also provide arguments for shaping the municipal budget and capital investment plans.

Energy efficiency action should be part of local governments' priorities and the decision makers should be convinced with demonstration of energy savings, budget gains, possible citizens' satisfaction indicators, etc.

Decision makers should be, first of all, aware of what energy efficiency exactly means, and then be aware of the benefits and the necessary steps towards energy efficient municipality. The decision makers should be convinced in the benefits of the energy efficiency measures in buildings as they will be the ones proposing/introducing capital investment in municipal budget and later execute it and bear the responsibility for it.



The document that will describe the measures for implementing the municipal vision and higher goals on, for example, mitigating effects of climate change, reducing carbon footprint and use of renewable energy sources at local level will be the Local Energy Action Plan (LEEAP) or the Sustainable Energy Action Plan (SEEAP). The planning of interventions of building stock will be a significant part of the Local Energy Action Plan and will paint an accurate picture of the current condition of the building stock. The answers to the following questions will give the decision makers powerful arguments to pursue the necessary actions towards the set municipal overall strategic goals: How many buildings require intervention? How many public resources are available for investment? What is the expected timeframe for completion of the renovation activities? What will be the effect of the applied measures and what will be the benefits for the municipality and the citizens? How much time will it take for the investment to pay off?

The decision maker should be aware about the impact of local application of energy efficiency measures and especially those that deep renovation in public buildings have on standard of life and wellbeing of citizens, for example, on reducing energy poverty, reduction of health-related loss of working days and increase of citizens' wellbeing and health; increased local energy security and independence; the energy efficiency action plan may point towards significant increase in the use of local renewable energy sources such as geothermal, biomass, solar, etc., depending on the available resources at local level, for improvement of energy efficiency in local building stock.

An example from Croatia:

By Decision of the Zagreb City Assembly from 30th October 2008, the City of Zagreb joined Covenant of Mayors, as one of the first European capitals that recognized the significance of this great initiative for sustainable development of urban areas of European Union. Sustainable energy action plan of the City of Zagreb is a key document that, based on collected data of energy consumption, identifies and provides precise and clear guidelines for the implementation of energy efficiency, renewable energy sources and environmentally friendly fuels projects at the town level, which will result in reducing CO₂ emissions by more than 20% by 2020. In Croatia there are 76 signatories of the agreement, which covers a population of 2,046,190 people (48%), of which 62 signatories developed SEAP (82%), but has only 12 signatories (16%) developed a report on actual effects. The obligation of reporting is every two years.

City of Zagreb in the report from 2015 stated that the savings in the building sector are: buildings owned by the city of 477.66 MWh or 104.8 tCO₂ and in residential buildings of 5502.35 MWh or 1507.64 tCO₂.

An example from Germany: Energy-alliance in the county Oberallgäu (Energie-Allianz Landkreis Oberallgäu)

Numerous municipalities in the Allgäu are working on sustainable energy action plans and climate protection plans. Some municipalities established climate protection as an on-going process, using the European Energy Award (EEA). Since 2011, the county Oberallgäu works together with 14 municipalities belonging to local authorities in collaboration with the Energy and Environmental Center Allgäu (eza!) to develop a sustainable energy action and climate protection plan for the whole county. In this context, energy and CO₂ footprints for the communities and the entire county were prepared, containing vital data from the year 2000. This data is combined and recorded for strategic and politically important energy decisions.

By this, a leading image should be created, that can show not only the policy but also the citizens and the companies in which areas potential for energy savings still exists. With the climate change action plan a base should be created that captures the current status and identifies more opportunities for actions and measures.

With the project "energy future Allgäu" the activities of many innovative actors in the Allgäu are linked together and highlights are made visible. In the first phase of the project, data on energy supply and energy use are collected. The potential for saving and efficient use of energy and renewable energies are analyzed. On this basis, goals for the Allgäu are developed - with broad participation of the population and various stakeholders from politics and business - and specific projects for implementation have to be decided. Energiezukunft Allgäu is co-funded by the Interreg IVB funding Central Europe in the framework of the project "Introduction of Regional Energy Concepts".

As a next step, in 2013, the county of Oberallgäu - in cooperation with the local energy agency eza! - set up the energy alliance for the 26 municipalities in the county Oberallgäu. The county offered some services to the municipalities if they "signed" the energy alliance. The services for the municipalities are frequent information on issues related to energy (e.g. regulations and subsidies), training for the caretakers of municipal buildings (2 training days per year), the possibility to use an online monitoring system for municipal buildings and additionally a yearly benchmark on energy consumption of buildings. In return, the municipalities are obligated to announce a person responsible for energy, offer energy consulting for their citizens. This alliance is an offer with a low threshold - most of the 26 municipalities in the county of Oberallgäu joined. With the energy-alliance, the constant contact and periodic information of the municipalities is established and ensured on a long sight.

The benefits of having municipal energy efficiency action plan should be carefully considered and explained with the opportunities it brings for cooperation with other municipalities, for attracting investment, for creating jobs and demonstration of political will and commitment to greater values. The municipal expert proposing these facts and figures supporting the beneficial should present to the decision maker concise and understandable information, especially if the decision maker is not technically familiar with energy efficiency.

Developing and implementing a renovation strategy for the building sector is not a technical matter only. Without appropriate citizens' participation and support the necessary large-scale renovation activities could most probably not be realized smoothly. The citizens should be involved from the very beginning of the planning process. With this, the local government ensures collaboration and motivation of the citizens and much needed political support of the planned actions. Engaging citizens early in the process also allows for communicating costs and challenges but also benefits of proposed measures.

Funding of the Local Energy Efficiency Action Plan is of paramount importance if the decision maker is to be aware and convinced in the benefits of municipal investment in deep renovation of building stock. The energy manager should have at hand a list of possible funding sources and opportunities to show at demand; if the municipality has a department dealing with EU projects and programmes and national operational programmes close intramunicipal cooperation between departments will provide, on one hand, expert technical rationale for project application, and on the other hand, skilled project proposal writing with higher probability to win financing for the municipal energy efficiency projects and investments.

The decision maker should be informed on the different options for joint investment in energy efficiency measures in public buildings or deep renovation with purpose of energy efficiency such as Energy Savings Companies (ESCOs), public-private partnership schemes, or other forms of joint venture schemes.

The decision makers should be also aware of the available options for financing the local strategies for deep renovation in buildings such as European programmes and instruments or national programmes that provide grant schemes or co-finance energy efficiency measures. Of special importance are the schemes that help invest in "hard" (investment in infrastructure) energy efficiency projects as they are more visible to the public and the end result can be seen, felt and calculated.

There is a lot of available funding for local energy efficiency projects in deep renovation in buildings. The different donors have different rules for granting funding and there are several conditions that repeat throughout, for example, existence of local energy action plan or technical projects for concrete actions.

Two examples from Slovenia:

Elementary school Škale

In 2005, Municipality of Velenje adopted the action program and the guidelines for the systematic implementation of energy concepts in municipality. This document contain following measures related with deep energy renovation:

- ▶ Identifying actors responsible for promotion and use of renewable energy sources (solar systems, heat pumps, biomass, landfill gas cogeneration, etc.)
- ▶ Energy renovation of building, increase efficiency of heating systems, and energy contracting (EPC and ESC)

KSSENa was responsible for implementation of these measures, and one of lighthouse project was renovation of primary school Škale. For renovation of boilers and heating system, private investor was engaged. ESCO Company renovated the heating system, replace oil boilers with new cogeneration of heat and power system (CHP). In addition, Municipality renovated the building, replacing old windows, blinds and doors. Average yearly heat consumption reduced for 186.683 kWh and in seven years School saved 1,18 MW of energy.

ZD Velenje (Medical center Velenje)

Velenje Municipal council confirm local energy concept in April 2012. ZD Velenje was identified, as on one of municipal owned building, that need deep energy renovation the most. Later in 2012 first activities and project documentation development started. Project application for EU cohesion funds was successful so 80 % of investment was covered from grants, 20 % was financed by the Municipality of Velenje. Whole investment in deep renovation and other organizational measures was 1.046.996 EUR, and it contained following measures:

- ▶ Insulation of external walls;
- ▶ Replacement of joinery;
- ▶ Insulation of ceiling;
- ▶ Installation of thermostatic valves;
- ▶ Installation of central ventilation and heat recovery system;
- ▶ Optimization of the heating system;
- ▶ Hydraulic balancing of the heating system;
- ▶ Installation of heat pumps and thermal solar panels for water heaters;
- ▶ Installation of energy management system;
- ▶ Organizational measures

After renovation, KSSENA took over monitoring of energy consumptions, and offers energy counseling for building users. KSSENA monitors energy savings with advanced energy management system and annual energy savings in 2016 was 3.272 MWh of electricity and 704 MWh of heat.

How is it done in Bulgaria?

The Bulgarian National Programme for Energy Efficiency of Multifamily Residential Buildings is in implementation since February 2015. It is the biggest social initiative in Bulgaria for many years now. Starting with some distrust among the citizens despite the proposed 100% grant, 22 months later, in January 2017, projects in more than 200 buildings are already implemented and the renovations, that have already started, are more than 500, and more than 2,000 have already signed framework agreements for financing. The expected energy savings for all buildings of which energy audits have already been carried out amount to a total of more than 900 GWh/annually. The interest of the citizens seeing the implemented projects in buildings near their homes is growing and the number of the applications submitted for funding under the programme already has exceeded 4,000. It could be said that the first stage of the program has played its most important role - to trigger enthusiasm and kind of competition between the condominiums. There are serious prerequisites to consider a long-term and comprehensive national program for renovation of the existing residential building stock.

However, the success of the Programme is much different in any municipality. The municipalities are the main driving force in the implementation process. Municipalities are responsible for the overall organization and control of the implementation of all activities starting from the consultation of the citizens and finishing with the commissioning of the construction works and payments to the stakeholders involved. In general, where local governments have given the highest priority of the execution of the Programme, activities have already been implemented or are in process of implementation in many buildings. Besides the organizing of the tenders for selection of different service-providers, contracting and controlling the execution of the contracts probably the most important role of the municipalities is in the beginning of the process when direct work with the citizens has turn out very crucial for the success on the local level. The municipalities have overcome the initial disbelief not only by organization of an municipal informational event and providing information in the local media but also by direct visits to the buildings, participations in general assemblies of property owners, full support to the citizens in preparation of the necessary documentation for registration of Household Associations and for application to the Programme. Some municipalities have even employed additional specialists or has opened temporary consultation bureaus in different districts of the cities to help the people in their application. During the implementation phase, municipal officers stay in constant close contact with all involved stakeholders to take into account any meaningful note, to explain any misunderstanding or to solve any rising conflicts by different parties.

Local borrowing schemes for energy efficiency should be also offered to the decision makers, with clear explanation about the conditions, risks, benefit rates, and the administrative burden necessary to service the loan. This is especially important for the smaller in size municipalities as often the preparation of the application and then servicing the loan requires very thorough planning of a small municipal budget and use of human resources.

The decision maker should understand that even in the case when the national subsidies are reduced with the amount in the municipal budget that was saved by applying energy efficiency measures, the benefits from applying them in general far greater outweigh the fiscal losses.

Convincing the citizens:

The citizens should be aware and involved from the very beginning of the planning process for deep renovation in public buildings. With this, the local government ensures collaboration and motivation of the citizens. Engaging citizens early in the process also allows for communicating costs and challenges but also benefits of proposed measures.

Involvement of all relevant stakeholders at the earliest stage of conceptualising of the measures for deep renovation in energy efficiency is required so the future shape and functioning of the city *after* the measures are applied is modelled in accordance with the various relations and transactions between numerous local institutions, including the local housing associations, energy agencies, utility companies, and so on. The underlying rationale for choosing the participatory approach to initiate and apply energy efficiency measures in buildings is both pragmatic and ethical. Pragmatic because better quality of life is achieved (i.e., better air quality, temperature, humidity, etc., more appropriate working environment, less sick days, rational spending of public money...); ethical because it is the right thing to do i.e., the citizens have a right to be involved and informed about decisions that will directly or indirectly affect them during and after the application of deep renovation of public buildings measures for energy efficiency.

Awareness raising means to make somebody or group of people aware of something. In the case of applying deep renovation energy efficiency measures in public buildings at local level, the awareness raising is a necessity as the support from the public will be vital for the success of the measures, and the processes and results of the applied measures may also carry some political implications at some point.

Citizens' participation is also important as the awareness raising about the energy efficiency measures applied at local level will start from their very conception, and both the institutions and citizens will be involved, will be able to contribute and will be expected to commit to the shaping of the local energy efficiency landscape.

Energy efficiency awareness raising for citizens: How?

The awareness raising measures amongst citizens whether it is a small informative announcement for a particular intervention or a full awareness raising campaign shall have clearly formulated target group/recipients of the messages, objectives, key message, and sender/organiser (in this case the municipality) that reflect the intention of the local government to improve the life standard/working conditions/public health and so on. As a result, the awareness raising measures should have informed the citizens in regards and about all aspects with the applied measures and should have convinced them in the benefits of the applied measures.

First of all, the target group should be defined. Is the information targeted to the owner of the building (for example, a municipally owned utility company), or to the user of the building (for example, tenants of a municipal housing building)? How many representatives of the target group will receive the message/s? What communication channel will be best for the target group to convey the message?

An example of well formulated objective would be:

“By fitting the Public Hall with new triple glazed windows and insulating its roof, the municipality will save 20 235 Euros of your money on heating and cooling”

“The deep renovation that is going to be implemented in your building will save you 400 Euros per year and will prevent condensation on walls and windows, thus improving the living and working conditions in the building.”

Simple and positive language should be used with avoidance of too technical terms that would not appeal to the general (non-expert) public and that would require additional explanation. Numbers should be mentioned with care, for example, to an average person the amount of CO₂ savings will not matter much, but messages like “will save you xx amount of money” or “will help preserve xx sq. m of rainforest” might attract more attention and support. In any case, the municipal energy experts should have at hand and should be able to easily communicate some basic numbers like total saved energy after intervention in kW/h, or its expression in Euros or local currency, or how much time less it will take to heat the sports hall, or what is the rationale between spent money and saved energy.

The objective of the deep renovation in buildings and the success of the awareness raising measures also depend on the precise targeting of the audience that is expected to receive and pay attention to the message, and, afterwards, support the intervention. Some are more receptive to environmental arguments while others find health benefits or economic gains more appealing. Depending on their background, the citizens may be more attracted to messages appealing to preserving the environment or the biodiversity, or to measures that contribute to mitigating the effects of global warming, etc., while others might be more impressed with reassurance that the intervention will save them money, or will reduce risks to health and wellbeing and that way will also save them visits to the doctor;

Energy efficiency awareness raising for citizens: What?

The awareness raising activities should clearly communicate the following issues:

- ▶▶ The objective of the intervention. If applicable, for example in the case of external building insulation, it would be best to show how the end result will look by computer generated images or by showing before/after images from previous municipal building renovation projects; thermal images can also help to demonstrate the energy losses of a building and why exactly that intervention is being chosen over the other possible options.
- ▶▶ The number of the buildings that are planned to undergo deep renovation and their purpose (if they are kindergartens, or sports hall, or public housing)
- ▶▶ To what extent buildings under renovation are operational during the works;
- ▶▶ The amount of public money that is going to be spent and the benefits/the return for the municipal budget, the additional investment and its source (e.g. private, public, central government subsidy, EU funding) that was/is going to be attracted should be also mentioned,
- ▶▶ Approximate foreseen time for announcing public procurement procedures and other public tenders to ensure the implementation of the deep public building renovation. This way the local businesses can plan and allocate capacities and resources to participate in the tenders. Access to relevant documents for land and/or building ownership, spatial plans, building plans should be also ensured.
- ▶▶ If and when inventory of building stock and collecting of data will start. If preliminary views or measuring will take place, on each building, especially if it is private housing building, should be communicated the date and time of the visit with the kind of interventions that will be implemented (measurements or taking pictures with thermocamera). If there are municipal officers who will work on site, it should be clearly visible they work as public officers (wear badges or uniform or other recognisable attribute). The privacy of the citizens should not be compromised or invaded.
- ▶▶ The planned time for the start of the intervention and the inconvenience it may potentially cause, as well as any preparatory works, for example, if street digging will take place, or if entrances to a building will be blocked;
- ▶▶ When the intervention is likely to end. Generally, the public tolerate inconvenience if they know that it is only temporary and that it will lead to improvement of certain conditions.
- ▶▶ The municipality should choose carefully the channels for communicating the deep building renovation interventions. For example, if there is a municipal display, or local TV channel, or if printed materials will reach more citizens. Online tools are also an option. Of course, the balance between price and effect should be well considered.

- ▶▶ If the deep renovation of public buildings is part of a bigger plan, i.e. Local Energy Action Plan or similar that should be also demonstrated as it will also provide awareness about future interventions, for example, improving the mobility in the city, or use of local renewable energy sources. Sense of community and mutual benefit can be induced or highlighted.
- ▶▶ Organising a Municipal Energy Day can help introduce energy saving measures that everyone can understand and practice. This will also add meaning to the effort of the municipality to improve the standard of life for its citizens and their wellbeing. Involvement of different community groups can be achieved easily and with good effect. There are many guides on how to organise an Energy Day, here as an example is cited the Covenant of Mayors Guide.
- ▶▶ If the municipality does not have a Local Energy Action Plan or plan for deep renovation in public buildings the municipal officers who will elaborate it, along with the significant technical work that should be done, should also consider thorough public engagement process.
- ▶▶ Educating the citizens in energy efficiency is of special importance to the success of the implementation of local measures for deep renovation in public and private buildings. Communication and introduction of low- and no-cost measures for energy efficiency to the general public is one of the easy and cheap ways to save energy in public and housing buildings.
- ▶▶ There are different national programmes for energy efficiency measures in buildings that provide grants or co-finance energy efficiency investments both in public and private buildings. These programmes usually have technical assistance budget which means that there is already a ready-made communication strategy to promote the programme, as well as a lot of communication and promotional materials that can be used to promote the programme for free for the municipality. If the municipality has its own programme for supporting energy efficiency measures in private buildings, the citizens should have easily available information about terms and conditions for using the programme, like required documents and deadlines for application, financial options, etc., and a contact person in the municipality should be available for quick inquiries or to help the citizens with applying.

AWARENESS RAISING IN SEVEN EASY STEPS



STEP 1

define the overall objective and outcome (“citizens leap towards bright and warm future by energy efficiency measures in public buildings applied by our municipality”)

STEP 2

put together some Initial Information (scale, benefits, time frame, sources of funding, price, how to apply if there is application process)

STEP 3

identify the target group (Who? Owner? User?)

STEP 4

formulate the key message (Inform? Influence? Convince? “The municipality loves you therefore it applies energy efficiency measures, and the future is bright and warm or cool depending on the season”)

STEP 5

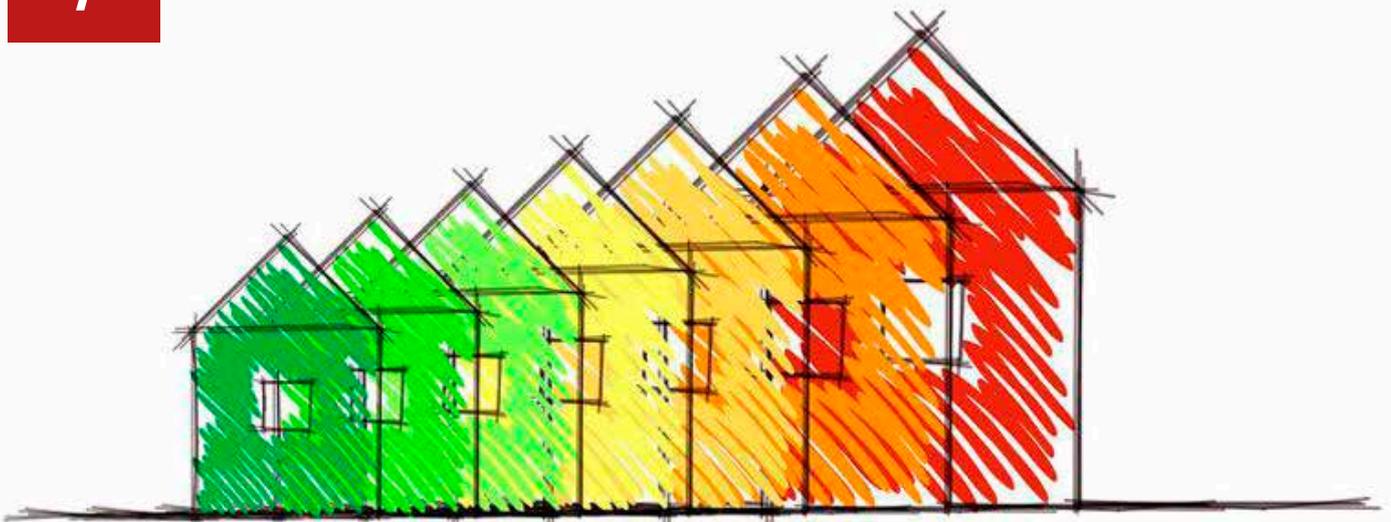
select the communication channels and concrete actions/activities (Social media? Flyers? Radio? Local newspaper?), put together a plan (on the 6th June the street digging will start, so the announcement on the radio should be in the air on the 1st)

STEP 6

apply concrete actions and activities in accordance with the plan

STEP 7

monitor and enjoy the effects of the campaign



Awareness raising for you, the municipal energy efficiency hero

Experience exchange with fellow municipalities, comparative studies and demonstration projects are much more convincing than a table with numbers or several hundreds of pages for reading. The decision makers and the municipal experts who are involved in the preparation and implementation of the plans for deep renovation in public buildings should have enough opportunities to exchange with colleagues. For example, peer-to-peer learning and exchange at national and international level or peer pressure can trigger actions towards structured planning of the renovation measures in building stock.

The **Municipal Energy Efficiency Network EcoEnergy – Bulgaria** (www.ecoenergy-bg.net) is a voluntary non-profit association of Bulgarian municipalities established in 1997 for mutual support and activities related to the local policies for effective use of traditional and alternative energy resources. Based on the excessive expertise in municipal energy planning of its technical secretariat, many of its members had local energy efficiency action plans long before they were introduced as mandatory by the national legislation, and in fact this legislative change was provoked by the bottom-up approach exemplified by the network. During its traditional annual conferences, the local authorities involved are informed and enter into discussion on the available incentive schemes for renovation of the existing building stock, promoting more ambitious energy efficiency targets, continuous administrative and professional capacity building, and sustainable market development as the foundations of the national and local energy and climate policies.



Croenergy is a conference about the possibilities for financing energy projects, how to encourage investment and how to successfully connect the economy, energy and financial institutions. The Conference is organized every two years by North-west Croatia Regional Energy Agency. The Conference is conceived as a multi-stakeholder event that connects a wide range of key actors with a common goal of facilitating knowledge exchange, policy development and joint action towards a rapid transition to renewable energy and energy efficiency. Divided into a number of interactive panel sessions and specialized sections Croenergy brings together various level governments, non-governmental organisations, research and academic institutions, financing institutions and industry actors to learn from one another and build on examples of successful energy projects and implemented policies.

Participation in European or global local governments' initiatives for energy efficiency of climate change mitigation can be a very motivating activity as it gives the municipality visibility and recognition at international scale. Signing the Covenant of Mayors, for example, gives the mayor an opportunity to sign the Covenant officially in Brussels and to be part of a global network with all the benefits such network can provide: from capacity development through peer-to-peer exchange, regular face-to-face or online events to practical support with guidance material and tools. Better financial opportunities for local energy and climate projects are another significant benefit of being a signatory of the Covenant of Mayors.

An example from Bulgaria:

The Covenant of Mayors is the mainstream European movement, involving local and regional authorities voluntarily committing to increase energy efficiency and use of renewable energy sources on their territories. By their commitment, Covenant signatories aim to meet and exceed the European Union 20% CO₂ reduction objective by 2020. In the SEAP of the Bulgarian city of Burgas, for example, the savings from energy efficiency measures in the residential sector alone amount to 266 860MWh/a, and the GHG emissions savings to 2020 would be 739.3 ktonnes of CO₂ equivalent – again, mostly coming from the residential sector, responsible for 78% of the emissions and 73% from the total energy consumption. As now Burgas moves into the second generation SEAP, it already leads by far in the implementation of the National Energy Efficiency Programme in comparison with all other Bulgarian cities, having more than 200 multifamily residential buildings to undergo complete retrofitting in 2016-2018.

How is it done in Slovenia?

Association of Municipalities and Towns of Slovenia (SOS) - tasks of Association of Municipalities and Towns of Slovenia are, in particular, implementation and representation of local community's common interests in proportion to coordination with legal and regulation acts, which, with their solutions, impact on municipalities' situation.

Consortium of local energy agencies - local energy agencies cover national territory, are involved in energy planning and can reach any municipality.

En.Občina and EN. Management, (En.Municipality) - Competition En.občina gives slovenian municipalities opportunity to share their best practice examples in fields of RES and RUE. This competition is voluntary and each municipality apply projects that shows their activity in energy efficiency, e mobility, promotion of renewables etc. The winner municipality is announced at the final Conference.

The annual conference of European network of local authorities Energy Cities offers unique opportunities for exchange and networking in lively group discussions with hundreds of experts and urban practitioners who deal with energy transition and climate protection in their everyday work at the local level. It is one of the most expected events for all those willing to receive the latest news on the political dialogue on climate and energy-related topics and to check up the progress of the Covenant of Mayors. Undoubtedly, it has also turned into an important place for generating ideas for new projects and knowledge sharing initiatives at local and regional level.

Useful information sources:

Building Performance Institute Europe BPIE <http://bpie.eu/>

The Covenant of Mayors: http://www.covenantofmayors.eu/index_en.html

European Energy Efficiency Platform E3P: <http://e3p-beta.jrc.nl/>

Public Awareness Toolkit, the City of Red Deer, Alberta, Canada:
<http://www.reddeer.ca/media/reddeerca/recreation-and-culture/community-programs-and-information/Public-Awareness-Toolkit.pdf>

ICLEI Europe, <http://www.iclei-europe.org/>

Energy Cities, <http://www.energy-cities.eu/>

ManagEnergy, <http://managenergy.com/>

BUILD UP portal (capacity building for nZEB): www.buildup.eu

European Council for an Energy Efficient Economy: <http://www.eceee.org/>

EuroACE: <http://euroace.org/>

Renovate Europe campaign: <http://renovate-europe.eu/>

PassREg: the European Passive House regions. Approaches for introduction of the Passive House concept as regular design and construction practice at region/city level: www.passreg.eu

Covenant CapaCITY: online tool and library/database of resources for municipal energy efficiency planning:
<http://www.covenant-capacity.eu/>

Networking the Covenant of Mayors (NET-COM): how to create national platforms in support of the CoM?
<http://www.networkingcovenantofmayors.eu/>

EcoEnergy Municipal Energy Efficiency Network – Bulgaria: www.ecoenergy-bg.net

Environmental Protection and Energy Efficiency Fund, <http://www.fzoeu.hr/en/home/>

European structural and investment funds, <http://www.strukturnifondovi.hr/eu-fondovi>

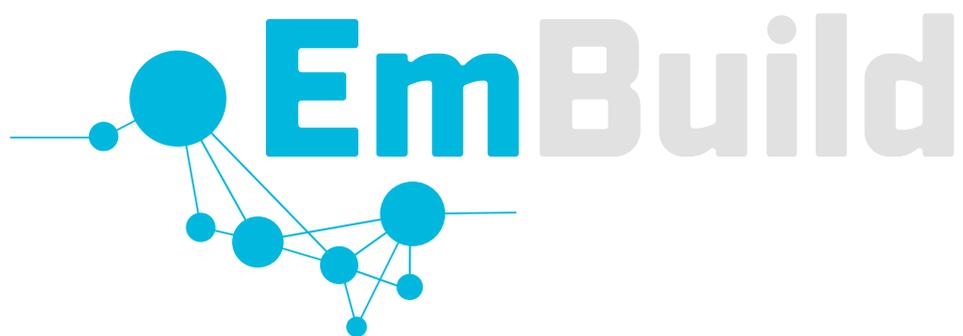
Croatian Bank for Reconstruction and Development, <https://www.hbor.hr/>

European Investment Bank, <http://www.eib.org/>

European Energy Efficiency Fund, <http://www.eeef.lu/home.html>

Western Balkans Sustainable Energy Financing Facility II, <http://www.websedff.com/>

European Bank for Reconstruction and Development, <http://www.ebrd.com/home>



Empower public authorities to establish a long-term strategy for mobilizing investment in the energy efficient renovation of the building stock

