



## EmBuild Navigator Narrative

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BPIE - Buildings Performance Institute Europe ASBL (Belgium)  
NALAS - Network of Association of Local Authorities of South East Europe (Macedonia)  
TUM - Technische Universität München (Germany)  
AE3R - Agentia pentru eficienta energeticasi energii regenerabile Ploiesti-Prahova asociatie (Romania)  
UoB - University of Belgrade (Serbia)  
REGEA - North-West Croatia Regional Energy Agency (Croatia)  
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## About the project

EmBuild is a coordination and support project implemented by a consortium of ten institutions based in eight countries throughout Europe under the Horizon 2020 research and innovation Programme. Overall coordination rests with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

The main objectives of EmBuild are to increase the capacity of public authorities at regional/municipal level to collect the necessary data to prepare ambitious, sustainable and realistic renovation strategies for public buildings, analyse and identify cost-effective approaches to renovations, guide investment decisions and facilitate private sector involvement. EmBuild is supporting municipalities and towns in Bulgaria, Croatia, Germany, Romania, Serbia and Slovenia. In addition, the project will focus on analyzing policies and implemented measures that stimulate cost-effective deep renovation of buildings and identify best practices in 6 partner countries.





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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# What is EmBuild?

EmBuild - Empower public authorities to establish a long-term strategy for mobilizing 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 a special emphasis on the local level. Its main objective was 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 involved 10 partners: two have 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 KSSENA (Slovenia).

EmBuild supported public authorities in Southeast European countries to prepare a long-term strategy for mobilising investment in the energy efficient renovation of the building stock.

EmBuild worked directly with public authorities in towns and regions in Romania, Bulgaria, Slovenia, Croatia, Serbia and Germany. The project generated new tools, better processes and enabled higher capacity in local governments to design ambitious but realistic renovation strategies.

EmBuild communicated the experience of the focus municipalities throughout Europe and helped regional energy agencies to support more and more municipalities.

EmBuild promoted a bottom-up approach, where the national renovation strategy should be the sum of local commitments. The project consortium worked closely with national actors to contribute to national processes: local governments, energy experts, business, local government associations, financing agents and other stakeholders that may influence the implementation of deep renovation of public buildings at local level.

EmBuild's focus municipalities produced solid renovation strategies for their building stock. More municipalities and towns across the whole region followed the example and produced their own strategies. The renovation of the building stocks contributes to the achievement of multiple goals: lower energy bills, increased comfort, healthier living and working spaces, improved air quality and new local jobs.

The success of energy efficiency measures in public buildings depends on the strategy: how to plan? Where to start? Which aspects to consider to make it work?

EmBuild prepared, with inputs from project partners, stakeholders and, most of all, local governments, guidance with practical information that will navigate you through the steps and milestones of preparing a renovation strategy. This is our Navigator.

# Plan.



Where to start? The value of a strategy consists not only in the renovation strategy itself but also in the process behind its development. The quality and effectiveness of a strategy depend very much on the quality of the analytical, consultative and stakeholder engagement processes.

EmBuild created a stakeholder network of parties involved in the formulation, implementation and/or monitoring stages of renovation strategies for the public sector in each country, identified and evaluated the essential aspects to participatory cost-effective stakeholder engagement at different levels. The project partners also developed a detailed spreadsheet which was used to collect the meta-research data on public building stock. The spreadsheet also contains an instruction manual with details about available information and location of the sources.

Supported by the active stakeholder engagement, we reviewed successful examples of building stock appraisals and templates applied for the documentation of the buildings, this way gaining an overview of the public building stock in partner countries. These templates were adapted to national contexts, their feasibility was validated and submitted for national level scrutiny using the capacities of the relevant local government associations.

The next step in building the strategy is the building stock overview and cost identification.

A preliminary analysis of energy consumption and renovation needs is necessary in the approach to create a renovation strategy in public buildings at local level. EmBuild partners evaluated and prepared a structured questionnaire for conducting a preliminary analysis of the existing building stock. The questionnaire includes existing tools and standards and assesses all energy types referred to by the EPBD (heating, ventilation, cooling, lighting, etc.). With this preliminary analysis, energy managers at local and regional level have a reference on how to prepare a good overview of the possible interventions. They also have a catalogue of possible low- and no-cost measures and an analysis of the profitability of these measures. If a detailed analysis of public buildings is in place, the energy managers at local level can decide how to set priorities. The project prepared a standardised report that includes relevant parameters and guidelines for the calculation of costs and profitability of various measures. Existing tools for the calculation of the energy efficiency of buildings were used for the analysis. To help even further in identifying low- and no-cost measures in municipal buildings, a webinar with technical experts was organised by the consortium.

Municipalities and public officers were trained in the application of the report to their municipality. This online training informed and sensitised public administrations towards the energy-management of municipal buildings and is available to use and for reference.

A good renovation strategy is based on the existing policies and measures and has in view stimulation of cost-effective deep renovation of buildings. As a next step, the project helped regional and local authorities to increase their capacity, to analyse data and to determine correctly their potential for energy efficiency. This, in turn, facilitated the development and implementation of realistic, sustainable plans in the building sector.

Every renovation strategy shall take into account the existing market and governance barriers and shall prescribe actions to overcome them. The latter include improvements of the financing and regulatory frameworks as well as enhanced skills on energy efficiency by public authorities. EmBuild identifies the barriers to cost effective deep renovation of buildings. This way, the public authorities' experts at regional and municipal level can implement changes within their powers of jurisdiction to remove those barriers. The review of existing policies



and regulations that stimulate or hinder deep renovation in the building sector using the policy template is an analysis of strategic legislative/regulatory, technical, fiscal/financial, R&D and communication/capacity building dimensions.

We assisted local governments in the preparation of public sector renovation strategies, tailored to the different territories. Country-specific policy reports exploring the commitment by government, the regulatory framework, the technical solutions, the fiscal/financial stimuli, the communication and capacity building needs and the research and development were used to contribute appropriately to the national debate on renovation strategies.

We identified the actions the local authorities can take to make the local/regional market for renovation of public buildings more attractive and referred to national policy makers on the policies and measures that stimulate or hinder cost-effective deep renovations of buildings.

After this thorough work, a renovation strategy template was prepared keeping to the requirements of Article 4 of the Energy Efficiency Directive for national strategies, including a set of criteria that allows public officers to assess the quality of local/regional renovation strategies and the analysis that underpins it in case the municipalities request a third party (e.g. consulting company) to prepare the renovation strategy or parts of it.

## Invest.

Even if a municipality has a good renovation strategy for energy efficiency in public buildings, this may not be enough. Without the means to implement it, even the best strategy will remain only a set of good intentions.

How does a local government attract investment and improve investment climate? The decision makers should be convinced of the benefits of energy efficiency measures in buildings as they will have the responsibility to propose or introduce capital investment in the municipal budget and execute it. It is all about knowledge and awareness amongst local stakeholders who participate in the improvement of the local investment climate. We captured existing and innovative best-practice examples facilitating and stimulating the application of energy efficiency measures in public buildings for the active involvement of stakeholders at public level. The conclusions and recommendations are also intended to serve as guidance to increase capacity of public authorities to attract and absorb investment in resource efficient processes and actions, particularly in deep renovation/energy efficiency measures in public buildings.

We explored the link between the National Energy Efficiency Action Plans (NEEAPs) and Sustainable Energy Action Plans (SEAPs) and recommended measures to capitalise this knowledge at municipal level. EmBuild prepared a guide for municipal practitioners operating in municipal budgeting, for local energy managers, energy agencies officers and decision-makers. This guide recommends how to plan and direct interventions on public buildings and private housing, and how to attract investment. The guide also provides advice on financial support during and for the successful elaboration and implementation of knowledge-based, realistic and financeable SEEAPs, or equivalent local energy efficiency action plan - LEEAP, and their “translation” into the municipal budget/capital investment plan.

EmBuild extracted knowledge from practice in live discussions between various stakeholders at nine roundtables (one at regional level, eight at national level). The conclusions are strong contribution towards transparent and sustainable stakeholder involvement, better





coordination of the national and LEEAPs in the frame of the implementation of the EU Energy Efficiency Directive and contain practical inputs from stakeholders for the improvement of investment climate at local level. The roundtables triggered discussions for exploration of the link between different levels of governance and improving the available financing instruments, attraction of investment and mid- and long-term measures to improve the investment climate. We summarised the captured trends and knowledge in a set of recommendations for improving the investment climate at local level.

## Benefit!

There is so much more in the deep renovation of public buildings than “just” saving energy. A school with modern lighting, good air quality, the right temperature in winter and summer has a huge impact on the quality of education, the general wellbeing of pupils and teachers and on the environmental awareness of students, including the economic effects coming from the engagement of local enterprises. The asset value of schools will increase and so will the reputation of the entire city. Many benefits can be reaped by renovating a public building.

We evaluated in-depth the different countries’ methods, frameworks and approaches to estimate energy savings and wider benefits of the renovation measures and contributed to complementary required development of methods to quantify current and future energy savings and the induced wider benefits. EmBuild performed cost-benefit assessments, identification of synergies, and mutual interaction between wider benefits, instruments that may help local governments to put forward the outputs and outcomes of their deep renovation strategy. EmBuild used sensitivity analyses to identify and quantify impacts of parameters like renovation quality and renovation activity in different countries and stakeholder groups. The project consortium discussed the results within its expert capacity in specifically established expert boards. An investigative report finally condensed the discussions and findings, illustrating the complex benefit mesh of energy savings and wider benefits.

EmBuild analysed existing methods to increase the renovation activity regarding the utilisation of wider benefits. The experts identified some flaws and they were used as basis for the development of suggestions for changes in existing methods and the creation of new ones. On this basis, EmBuild partners assessed the use of existing instruments and developed suggestions for additional action. The suggestions will enable or enrich promotion and empowerment of energy-related renovations and will assist in raising awareness of related benefits and financial advantages.

Local authorities now have a reference to address benefits of renovation measures to target groups in order to strengthen motivational aspects in building renovation programs and illustrate that renovation is not only a matter of energy savings. We collected specific feedback from the local authorities to communicate the wide range of benefits coming from building renovation to building owners and public authorities. The network of dependencies between wider benefits and energy savings are described and clearly illustrated in detail and can be used in participation processes amongst the related actors. EmBuild held a webinar on how to measure the additional benefits of energy efficiency, targeting public authorities.

The wider benefits assessment is embedded in the overall EmBuild goal to support public authorities in Southeast European countries in preparing long-term strategies for mobilizing investment in the energy efficient renovation of the building stock. The project partners





widened the discussion and delivered a webinar on how to measure additional benefits of energy efficiency measures to reach a high number of public authorities. The recording from the webinar is available to use and for reference.

# Deep renovation in public buildings is a resource. It is comfort, health, performance at work and many other benefits.

With the wide range of EmBuild products, municipalities can use a comprehensive approach to plan, invest and implement wider benefits in their decision-making process and in the necessary reporting and evaluation schemes for deep renovation measures.

