This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 840926
The BUILD UPON² Project

We are in a state of climate emergency. We must act now to reach net zero carbon by 2050 - and cities can lead the way. To get there, cities must unlock the huge potential of their buildings - and building renovation in particular.

Deep building renovation has far-reaching benefits for society as increasing indoor comfort and air quality avoids illnesses and premature deaths associated with living in cold and damp homes. This in turn reduces pressure on healthcare and social services.

About PLGBC

Polish Green Building Council (PLGBC) is a non-governmental organisation, which since 2008 has been carrying out a mission to radically improve the design, construction and use of buildings in Poland so that sustainable construction becomes the standard. Together with our members we strive to carry out a significant transformation of the construction industry to make it healthy and sustainable. This is our response to climate change and care for the planet.

We are part of the global community of more than 70 green building councils within the World Green Building Council. We successfully support a range of projects, activities and research.

Contact person: ajurczak@plgbc.org.pl

The EU Horizon 2020 funded BUILD UPON² project will empower cities across Europe to join forces with national governments and industry to decarbonise their existing building stock by 2050. BUILD UPON² will strengthen the local effectiveness and implementation of the national building renovation strategies required by the EU Energy Performance of Buildings Directive (EPBD).

www.worldgbc.org/build-upon

“Net zero buildings are as much a social as an investment challenge. If we want people to take it up, we must show them how they benefit. Implementing the city of Wrocław’s short-term strategy of moving away from individual coal heating, we don’t forget about long term energy and climate goals. We therefore recommend and encourage to deep renovation and renewable energy sources use.”

Katarzyna Szymczak-Pomianowska
Municipality of Wrocław

“Renovation of existing buildings should be a priority, not only because of the need to reduce energy consumption but also to improve their resistance to climate change.”

Janusz Mizerny
Sweco Consulting

“The reduction of harmful gases emissions and energy consumption is our priority, especially in the municipal building resources of the city. For example, over the period 2019-2022, deep renovations have been planned and are being implemented in about 350 municipal buildings. I hope that the current economic slowdown, caused by the epidemic, will not affect the planned actions.”

Adam Neumann
Municipality of Gliwice

“Modern construction combines energy efficiency, low bills, comfort, health, clean air and a good condition of natural environment, with innovation and future-proof jobs. It is a huge leap forward for civilization compared to the present situation.”

Marcin Popkiewicz

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LIST OF Acronyms

- CoM: Covenant of Mayors
- SECAP: Sustainable Energy and Climate Action Plan
- PKD: Polish Classification of Business Activities
- PGN: Low Carbon Economy Plans
- RES: Renewable Energy Sources
- EPC: Energy Performance Certificate
INTRODUCTION

Build Upon² is the world’s largest collaborative project on building renovation. It is Europe’s foremost effort to establish a framework for national renovation strategies and build the commitment of local governments and companies to net zero emission buildings by 2050.

To achieve this objective, the project will work with cities, including Covenant of Mayors signatory cities, national governments and a wide range of key stakeholders to develop and test a Multi-Level Energy Renovation Impact Framework (the ‘Framework’). The framework will contain a suite of milestones and measurable progress indicators for building renovation strategies, integrating data and insights from the local authority level. This in turn will allow local authorities and central government to assess the impact of local energy renovation initiatives and better identify best practice. The Framework will also serve as a tool for municipalities in delivering the Energy Performance of Building Directive and ensure that local initiatives are aligned with national and European policies.

To make it easier for cities, the framework will be integrated into Sustainable Energy and Climate Action Plans, prepared by Covenant of Mayors municipalities.

Framework Objectives

| Better align local and national government retrofit initiatives. | Enable the capturing of sound data and knowledge at the local level. | Better capture and use data on the co-benefits of energy renovation. |
| Capture data in a consistent format. |

BUILD UPON² in Poland

In Poland, PLGBC work in close cooperation with Wroclaw, and three “follower” municipalities. These are Gliwice, Ruda Śląska, Rybnik, Siemianowice Śląskie.

In Europe, PLGBC and Wroclaw work closely with 7 other green building councils and cities, alongside the Building Performance Institute of Europe and Climate Alliance, part of the Covenant of Mayors’ office team.

The project partners are supported by a European advisory board and eight national steering groups, which have provided feedback on the first two versions of the Framework.

Polish National Steering Group

| MINISTRY OF DEVELOPMENT | Dorota Cabańska, Tomasz Gałązka, Wiktor Grudzień |
| MUNICIPALITY OF GLIWICE | Tomasz Misztal |
| MUNICIPALITY OF RYBNIK | Barbara Krybus, Monika Wolska |
| MUNICIPALITY OF WROCLAW | Michal Brożyna, Karolina Orfin-Skroban, Małgorzata Puchała-Pietruszka |
| NATIONAL FUND FOR ENVIRONMENTAL PROTECTION AND WATER MANAGEMENT (NFOŚiGW) | Leszek Katkowski, Piotr Oblękowski |
| POLISH FOUNDATION FOR ENERGY EFFICIENCY (FEWE) | Szymon Liszka |
| POLISH NATIONAL ENERGY CONSERVATION AGENCY (KAPE) | Arkadiusz Węglarz |
| SILESIAN UNIVERSITY OF TECHNOLOGY | Aleksandra Specjał |
| SWECO CONSULTING | Janusz Mizerny |
The versions 1, 2 and 3 of the draft Framework were developed by the project partners in close cooperation with the European Advisory Board and the eight national steering groups. The objective of the workshop organised on 15th May 2020 was to gather feedback on the third draft version of the Framework and to discuss actions required to support its implementation. The PLGBC team would like to thank all the participants who attended and contributed to the workshop. These are listed on page 19.

Seven similar workshops took place across Europe in May 2020. The feedback received will be used to update the draft Framework V.3 before it is tested by the 8 pilot cities between July and December 2020.

1 The 8 pilot cities are Budaörs - Hungary, Dublin - Ireland, Eskişehir - Turkey, Leeds - UK, Padova - Italy, Valladolid - Spain, Velika Gorica - Croatia, and Wroclaw - Poland.
Executive Summary

Workshop Key Outcomes

The main problem that arose during the Polish Focus Group meeting, both at national and local level, is the lack of data to calculate the indicators included in the Framework.

So far, no structured way of collecting and processing data has been developed in Poland at the national level, so that each municipality can follow it to ensure specific data collection, aggregation and process is made in the same way. Since municipalities have a considerable degree of freedom in this respect, they only collect data they consider useful for themselves. Moreover, the data are scattered between different municipal entities. Part of the data is also located outside the municipalities’ jurisdiction - in private institutions or in the resources of energy suppliers. The biggest challenges related to data collection are: limited obligation for EPCs, lack of a comprehensive approach to retrofit, lack of adequate legislation related to renovation, lack of control over the private sector, or lack of communication and adequate information flow and lack of clear guidelines on how to collect data and which data is worth collecting and why. A great simplification, which was repeatedly mentioned by representatives of municipalities, would be a database integrating data from different bodies and different governance levels.

For the Framework to be successfully implemented in Poland, a number of changes in the approach to data collection and processing, as well as legislative tools to make this process possible should be created or strengthened. This concerns in particular the creation of a buildings database in which information related to building resources would be collected, the creation of a clear procedure for the flow of information and data or legislative changes related to renovation.
Polish Focus Group Session was held as an online workshop on 15 May 2020. The meeting lasted 2 hours and gathered 21 participants, among them representatives of local and national authorities and specialists dealing with the topics covered by the Framework.

During the meeting, participants were divided into 3 workshop groups, representing 3 categories of indicators (environmental, social and economic), in which two sessions were held:

**SESSION 1**, during which participants:
- evaluated the usefulness of the indicators and the possibility of obtaining data for their calculation
- provided feedback on the indicators, including proposals for new ones

**SESSION 2**, during which participants discussed the potential sources of data needed to calculate the indicators presented in the Framework.

Both sessions were moderated by PLGBC staff engaged in the Build Upon² project: Alicja Kuczera, Dorota Bartosz and Anna Jurczak.

During session 1, the participants developed a number of comments for each group of indicators, the most important of which are presented below.
Environmental Indicators

During this session, it was emphasised the need to introduce a common baseline year to compare the reduction of CO₂ emissions as a result of renovation. In case of the annual renovation rate, the nZEB standard was proposed as a benchmark for renovated buildings (which is a goal to be pursued and evidence of high quality).

A very important conclusion was that only partial data for the calculation of indicators are available, due to the limited obligation for EPCs (they are mandatory for buildings that are either being rented or sold, in case of newly constructed buildings, energy performance document is required as part of the building law). For the moment being, EPCs are the main source of information for this set of indicators.

Furthermore, new indicators were proposed, related to local air quality, the number of prosumers or prosumers’ initiatives (RES-related indicator), ‘rationalisation’ practices (demolition of buildings which are not cost-effective to retrofit and construction of new ones instead. It was also suggested to include in the Framework buildings which achieve better than expected results after retrofitting.

Social Indicators

As regards social indicators, topics related to the level of energy poverty and the indoor air quality (including thermal comfort) have been identified as the most important, while indicators related to the number of private households renovated and the floor area of commercial buildings renovated have been considered not relevant.

The indicator on households in arrears with utility bills was considered easy to collect but not very useful when collecting data from surveys and difficult to collect but useful when collecting them from energy suppliers.

During this session it was proposed to introduce a new indicator related to fire safety, resulting from the EPBD guidelines, mentioning that with the growing use of RES, Member States should pay attention to the increased fire risk.

Economic Indicators

The three economic indicators related to the financial investments in renovation were considered useful since they can reflect the dynamics of renovation, but it was highlighted they should be correlated to the size or quantity of renovated buildings to make them useful.

Opinions on the importance of the three remaining indicators related to the number of professionals (including graduates) were divided. On the one hand, these indicators are important because they can demonstrate existing resources, the potential of the sector and quality. On the other hand, the indicators are very imprecise, so the data will not be reliable. First of all, the term “companies involved in energy renovation” should be clarified and divided into those engaged in general renovation works and those dedicated to installation, which is important given the different type of training and job creation potential. A distinction should also be made between those companies that carry out comprehensive renovation works and those that offer only single services. Necessity of creating a verification system was mentioned during this session as well, as this is considered the only way of confirmation of high quality of services and competence.

The indicator on the number of graduates only illustrates a certain potential of the industry, but it should be taken into consideration that only part of the graduates work in their profession. This is why this indicator was considered not useful.

Information related to professionals upskilling in energy renovation is practically impossible to collect and therefore the indicator is not useful at the time being.
Making the Framework Work In Poland

Supporting Actions Needed

During session 2 participants focused their attention on potential sources of data for each indicators’ group.

In all workshop groups, it was emphasised that data to calculate indicators are incomplete, as they do not cover the entire building stock. Municipalities do possess some data concerning their own resources, however, data about private buildings are partial - municipalities obtain them from information presented by private investors when applying for grants for renovation works.

With regard to environmental indicators, participants emphasised that, for the time being, EPCs are an important, or many times the only source of information and due to the limited obligation for EPCs the data will be partial. For the EPCs to become widespread, legislative changes would need to be made at national level.

Another source of data could be energy suppliers, Distribution Network Operators and PSE SA (the last two concern the connection of photovoltaic installations to the grid), but this would also involve legislative changes (due to GDPR). An important issue raised by the group is lack of availability of data on other RES, apart from photovoltaics. These data could only be obtained if the methodology for EPCs is modified to include this information.

As far as social indicators are concerned, the workshop group came into conclusion that surveys (carried out for 20% of the dwellings or inhabitants) will be an appropriate method to collect data.
The source of data for the indicator on households in arrears with utility bills could be the energy suppliers, but (1) without changing the legislation (GDPR issue) this could be difficult, (2) the data would cover the whole building sector, not only the renovated residential buildings (suppliers do not keep a register of building categories). Assuming that surveys were the source of data, it would be important to consider the high sensitivity of people regarding their financial status and take this into account in the analysis of results. It was also stressed that arrears do not always correlate with poverty - they may be due to other reasons.

In case of indicators related to thermal comfort and indoor air quality, it would be very difficult to carry out tests and analyses, as it would involve additional financial and personal resources on municipalities’ side and the issue of availability of dwellings to carry out such tests would have to be taken into consideration. Moreover, in Poland, there are no specific regulations concerning heating in renovated buildings. For this reason, the group considered that surveys would be the right and only possible source of knowledge about these indicators at this time. However, it is very important that they contain supporting questions to help reduce the scope of error. The surveys would be carried out in electronic form (whenever possible) by administrators, building owners or municipal authorities. In order to collect data, it is also possible to analyse the number and subject of complaints to property managers. Such data are usually available and clearly show that something does not work properly.

As for economic indicators, the data which relate to financial investments in the renovation of building stock are easy to collect in case of public funding (which is quite well monitored). For private investments, data are not available, but could be collected through surveys completed by private investors when reporting renovation works in municipal office (however, it should be taken into account that not all renovation works have to be reported, thus the data would be partial).

Data for the indicator on the number of companies involved in energy renovation are not available for the moment. In order to be able to collect such information, it would be necessary to create a special sub-group in PKD framework (Polish Classification of Business Activities) that would contain only this kind of companies. It would also be necessary to create a precise definition of such companies and to group them appropriately (the suggestion of division was given in the previous section of this document). Finally, as regards the indicator on the number of graduates, data could be collected from universities and secondary schools (on the number of graduates of specific courses or specialities). In case of private companies that provide such courses and trainings, data are not available. The reliability of this indicator has been questioned as it does not represent the actual proportion of graduates who are later pursuing their profession. This indicator shows only some potential.

Similar situation occurs with the indicator for professionals improving qualifications in energy renovation - most often trainings for professionals are offered by private companies, which are outside the jurisdiction of authorities. In this case only data concerning the municipal employees improving qualifications are available in the municipal resources.

Thank you to all our Workshop Participants

The Polish Focus Group consists of high-class specialists related to the topics covered by the Framework.

**ORGANIZATION**

**NAME**

- Architect, LEED Green Associate
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- Association of Modern Buildings (SNB)
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- Silesian University of Technology
  - Leszek Katkowski

- SWECO Consulting
  - Szymon Liszka

- Aleksandra Specjał

- SWECO Consulting
  - Janusz Mizerny
### Appendix 1. Build Upon² Draft Framework V.3

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>GOAL</th>
<th>NATIONAL</th>
<th>MUNICIPAL</th>
<th>Unit of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>Contribute to EU Targets</td>
<td>Greenhouse gas emission reduction: 50% by 2030 compared with 1990 levels and carbon neutrality by 2050</td>
<td>Reduction in direct annual CO₂ emissions from renovation compared to 1990 levels</td>
<td>Reduction in direct annual CO₂ emissions from renovation compared to the municipality’s baseline year as per CoM reporting</td>
</tr>
<tr>
<td>Environmental</td>
<td>National Progress Indicators</td>
<td>Final energy consumption reduction from renovation</td>
<td>Final energy consumption reduction from renovation</td>
<td>kWh/m²/year</td>
</tr>
<tr>
<td>Environmental</td>
<td>Municipal Progress Indicators</td>
<td>Improvement of Net Space Heating &amp; Cooling Demand due to energy renovation</td>
<td>Improvement of Net Space Heating &amp; Cooling Demand due to energy renovation</td>
<td>kWh/m²/year (total building stock)</td>
</tr>
<tr>
<td>Environmental</td>
<td>National Readiness Report: Poland</td>
<td>At least 32.5% improvement in energy efficiency by 2030 - relative to the 2007 modelling projections for 2030</td>
<td>Annual energy renovation rate %</td>
<td>Total annual energy renovation rate %</td>
</tr>
<tr>
<td>Environmental</td>
<td>Environmental</td>
<td>At least 32% share of renewable energy by 2030</td>
<td>Total additional energy produced from renewable resources on site or nearby as a result of renovation</td>
<td>Total additional energy produced from renewable resources on site or nearby as a result of renovation</td>
</tr>
<tr>
<td>Environmental</td>
<td>Environmental</td>
<td>% of renovated buildings reaching nZEB standard annually</td>
<td>% of renovated buildings reaching nZEB standard annually</td>
<td>% renovated buildings</td>
</tr>
<tr>
<td>Environmental</td>
<td>Environmental</td>
<td>% of the total floor area of buildings owned and occupied by central government retrofitted each year</td>
<td>% of the total floor area of buildings owned and occupied by the municipality retrofitted each year</td>
<td>% of total m² net floor area</td>
</tr>
</tbody>
</table>

NATIONAL READINESS REPORT: POLAND
<table>
<thead>
<tr>
<th>CATEGORY</th>
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<th>MUNICIPAL Progress Indicators</th>
<th>Unit of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>Contribution to EU Targets</td>
<td>% of households having arrears on utility bills</td>
<td>% of households having arrears on utility bills</td>
<td>% of households</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actions to improve indoor air quality post renovation works</td>
<td># households living in renovated dwellings with commissioned ventilation system</td>
<td># households</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide safe buildings to people - Indoor Air Quality and Thermal Comfort</td>
<td># non-residential renovated buildings with a commissioned ventilation system</td>
<td># buildings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actions to improve average thermal comfort post renovation works</td>
<td># households living in renovated dwellings where calculations demonstrate that post renovation condition will satisfy heating requirements</td>
<td># households</td>
</tr>
<tr>
<td>Social</td>
<td>Empowering citizens - Ensuring citizens are at the centre of the transition</td>
<td># private households retrofitting their homes / year</td>
<td># private households retrofitting their homes / year</td>
<td># private households</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td># sq. m² commercial buildings retrofitted annually</td>
<td># sq. m² commercial buildings retrofitted annually</td>
</tr>
</tbody>
</table>

**Economic**

- Increasing investment in energy renovation
  - > Total annual investment in energy renovation
  - > Total annual public investment in energy renovation
  - > Total annual private investment in energy renovation

- Providing training and education for energy renovation professionals
  - > Graduates from tertiary and technical training courses with focus on energy renovation

- Improving economic performance
  - At least 32.5% improvement in energy efficiency by 2030 relative to the 2007 modeling projections for 2030.

- Supporting the energy renovation process financially
  - # companies involved in energy renovation
  - # graduates from tertiary and technical training courses with focus on energy renovation

- Economic impacts
  - # building professionals and construction workers taking part in energy renovation upskilling
  - # Municipalities staff upskilling in energy renovation

As 2020 is the start of the decade of climate action, we are inviting all cities, regions and companies to work with us on solutions in the building sector.

The Build Upon² project is welcoming cities to join our work on renovation strategies, and would love to hear more about impactful renovation initiatives you are running in your city - which we can put on the European stage.

The pilot cities we are working with are: Velika Gorica, Croatia - Budaörs, Hungary - Dublin, Ireland - Padova, Italy - Wroclaw, Poland - Valladolid, Spain - Eskişehir, Turkey - Leeds, UK.

We are calling on leaders across the public and private sector to join the Net Zero Carbon Buildings Commitment ahead of COP26 - to really make Europe’s renovation wave a reality.

Read more about the project and get in touch with the team via the links and details below.

Contact

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