

# BUILD UPON<sup>2</sup>: Launch of the Italian Cluster for Building Renovation Initiatives in Cities <sup>†</sup>

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**Abstract:** BUILD UPON<sup>2</sup> project proposes to work with local, national and European stakeholders to create a Multi-Level Renovation Impact Framework that contains a suite of milestones and measurable progress indicators for building renovation strategies. This Framework will serve as tool for Cities in delivering the EPBD and ensure that local initiatives are aligned with national and European policies. The objective of the project's Italian cluster is to gather together a number of cities and stakeholders aiming at sharing strategies and results of initiatives undertaken at city scale for the renovation of the building stock and testing the Multi-Level Renovation Impact Framework.

**Keywords:** national renovation strategies; EPBD; city scale; impact framework; build upon

## 1. Introduction

The Article 4 of Energy Efficiency Directive (Directive 2012/27/EU) introduced the requirement for Member States to establish a long-term strategy for mobilizing investment in the renovation of the national stock of residential and commercial buildings, both public and private. These strategies contain important information and data on the national building stock, but also on policy measures that Member States put in place to stimulate cost-effective deep renovations of buildings and they provide estimates of expected energy savings. In the first round of submission, after one year from the deadline of the 30 April 2014 in total, twenty-three out of the thirty-one submitted strategies (74.2%) satisfactorily addressed the main elements of EED Article 4, 10 strategies are fully compliant, with exemplary coverage of regulation requirements, six strategies were found to be not compliant [1].

It is in this context that a group of 13 Green Building Council in Europe applied for European funding to propose a coordination and support action to help Member States in fulfilling the first and following 3-yearly updates of national renovation strategies, by setting national participated processes [2]. The H2020 project was successful and a new consortium applied for a second edition of the project, BUILD UPON<sup>2</sup>, to bring on board cities as testers of an impact framework for assessing the effectiveness of local initiatives toward national renovation targets.

The Sustainable Places conference session represented the opportunity to launch the *BUILD UPON<sup>2</sup> Italian cluster for building renovation initiatives in cities* aimed at gathering pioneering cities willing to test the impact framework as well as stakeholders interested in participating in policy making for renovation of the existing buildings in Italy. Results of BUILD UPON project were presented as well as the objectives of BUILD UPON<sup>2</sup>, two other stakeholders had been invited to the

session to share lesson learnt and new strategies for implementing renovation initiatives at city scale: the Municipality of Padova with PadovaFIT! and PadovaFIT! Expanded projects, and GBC España with MAKING-CITY project.

## 2. BUILD UPON Project

The ultimate goal of Build Upon project was getting all renovation stakeholders and initiatives on the same page, working together under a common national strategy, with clear common goals.

Across Europe BUILD UPON project mapped nearly 3000 key stakeholder organizations, of 12 different categories, that need to work together to deliver ambitious renovation strategies. [2]

A large literature reviews subdivided barriers to the implementation of renovation activities into 6 major categories: Awareness Raising, Skills & Capacity Building, Financial & Economic, Policy & Regulatory, Organisational & Administrative, and related to the main building typologies: residential buildings (multifamily and single-family buildings), public and commercial buildings.

Lack of awareness, financial investments and coordination among different level of governments were identified as the major difficulties Members States had to face.

The analysis of existing initiatives to support national renovation objectives, carried out in the 13 countries involved in the project, collected nearly 700 initiatives in a public portal, the Renowiki, meant to best practice exchange among countries. Very few of these initiatives publicly reported impact data and had monitoring activities in place.

The core participatory activity of the project was the definition of national “dialogue journeys”, participatory paths to discuss barrier and initiatives at national scale with local stakeholders.

Altogether, 96 workshops took place in the 13 countries of BUILD UPON, 3.362 stakeholders participated in them, with the consequent creation of consistent renovation communities. Nearly 2.000 direct leading stakeholders have been engaged as the final result.

### *BUILD UPON in Italy*

The BUILD UPON project in Italy was able to gather 85 organizations across the 8 events of the participatory dialogue process.

The literature review of barriers to the implementation of deep renovation highlighted that major difficulties affected residential sector, and multifamily buildings in particular, because of the problem of the split property and the lack of initial funding to carry out building works. Overall these major barriers were identified:

- the lack of financial and economic solutions to support renovation processes
- the lack of coherent strategies and policy packages across governmental levels
- the lack of specific measures addressed to multifamily buildings

The Renowiki webpage collected about 50 initiatives across different areas of competence and different regions of Italy. Very few initiatives have publicly available results and almost none of them clearly quantified the impact of actions to guide future policy developments.

Among the stakeholders, the construction businesses were perceived as the most engaged of the building sector, with 32% of the share, followed by research and academia with 14% and local government with 9%. Local government was perceived as an informed partner but not in the first line for the implementation of national renovation strategies.

The results of dialogue journey were summarized into 10 recommendations transmitted to national governments as suggestions to follow for the implementation of national renovation strategies after the first European review process. Some of them were anticipating the objectives of next BUILD UPON<sup>2</sup> project proposal [3]:

- Side benefits of deep renovation, further than energy savings, are key for all public and private stakeholders. Their importance shall be recognized, measured and their impact must be considered in the definition of policies and implementation initiatives.

- It is needed a task group among different ministries involved in the process of renovation of the building sector to coordinate policy development and assess their effect in the short, medium and long term.
- Public administrations shall assume a driving role in the renovation of buildings, not only for public but also private properties, demonstrating their leadership on public existing buildings. Strategies should support the match between supply and demand, should favour aggregation of the demand, should reinforce financing instruments basing them on reduced risk and awarding criteria for best practices in construction systems.

### 3. BUILD UPON<sup>2</sup>

BUILD UPON<sup>2</sup> proposes to address one of the main barriers stopping proper public management, and consequent upscaling of Deep Energy Efficiency Renovation: the lack of an adequate, widely shared Impact Framework. BUILD UPON<sup>2</sup> proposes to work with local, national and European stakeholders to create a Multi-Level Renovation Impact Framework that contains a suite of milestones and measurable progress indicators for building renovation strategies, integrating data and insights from the city level. This Framework will serve as a tool for Cities in delivering the EPBD and ensure that local initiatives are aligned with national and European policies. A methodology will be developed to indicate how the Framework reporting system can be integrated into Sustainable Energy Actions Plans (SECAPs), how to use the Framework and how data to support the indicators will be collected and used. The Framework will be tested with 8 pilot cities and the results of this testing phase will be used to update the Framework and create policy recommendations, ensuring that the Framework can be replicated across Europe and help local, regional and national authorities deliver on European energy efficiency goals. [4]

#### *The Launch of BUILD UPON<sup>2</sup> Italian Cluster for Building Renovation Initiatives in Cities*

The objective of the cluster is to gather together a number of cities and stakeholder aiming at sharing strategies and results of initiatives undertaken at city scale for the renovation of the building stock to the purpose of collecting lesson learnt and progress together in the implementation of the Italian targets of the national long-term renovation strategy. City and stakeholders will be also involved in the testing phase of the BUILD UPON<sup>2</sup> impact framework to assess its suitability to guide local authorities in evaluating effects of local actions and guide future policy development.

### 4. Lesson Learnt from Padova FIT! and Objectives of Padova FIT! Expanded

The PadovaFIT! Project, funded by the European Commission through the IEE (Intelligent Energy Europe) program and coordinated by the Municipality of Padova, was designed to address energy poverty and energy refurbishment of private building stock of the city, focusing particularly on condominiums. The action focused on the energy refurbishment of condominiums in the Padova metropolitan area, via an ESCO (selected with a public tender) and the use of standardized EPCs. The Municipality played the role of the promoter and coordinator of interventions, by implementing facilitation policies. The major barrier encountered was finding an agreement among owners in a condominium, fed by the lack of knowledge of the beneficiaries and the difficulty in grasping the economic convenience that these interventions entail. To overcome this barrier, Padova-FIT! consortium has developed a method focused on the role of the facilitator, a new professional profile able to combine both technical expertise regarding energy refurbishment of buildings and the ability to support building managers and condominium assembly through the complex decision-making process required for the energy retrofitting of the condominium. [5]

The project Padova FIT Expanded builds on the experience generated in the Padova FIT! project and aims at planning, creating and piloting a one-stop-shop dedicated to private residential buildings with an improved and financially sustainable business model addressing block of buildings at neighbourhood scale. A new public-private-partnership will be activated to manage the whole activity.

The renovated role of building managers, as community facilitators, is designed to engage citizens to organize the demand side in a joint cluster of buildings that apply for renovation measures. [6]

## 5. The Objectives of MAKING-CITY H2020 Project

Within the SCC-1 Lighthouse framework, MAKING CITY project, coordinated by CARTIF Technology Centre, with 34 members from 10 nationalities, proposes a methodological advance towards this end, as a large-scale demonstration project aiming at the development of new integrated strategies to address the urban energy system transformation towards low carbon cities, with the positive energy district (PED) approach as the core of the urban energy transition pathway.

The PED concept (district with annual net zero energy import, and net zero CO<sub>2</sub> emission working towards an annual local surplus production of renewable energy) is the necessary way forward in urban development to reach the Paris Agreement, and decarbonize Europe built stock by 2050. MAKING CITY 's main challenge is to demonstrate, in the five-year duration of the project (December 2018 to November 2023) that the PED concept is realistic and replicable. In order for this to happen, two lighthouse cities, Groningen in the Netherlands and Oulu in Finland, will have a full PED process, complemented by partial developments (at least at the level of an execution project) in six fellow cities: León in Spain, Bassano del Grappa in Italy, Kadiköy in Turkey, Vidin in Bulgaria, Lublin in Poland, and Poprad in Slovakia.

By developing strategies for long term energy transformation and methodologies for supporting cities, MAKING-CITY will represent a substantial contribution the European City Vision 2050. [7]

## 6. Conclusions

The need to ensure that local initiatives are aligned with national and European policies was expressed among the recommendation of BUILD UPON project. BUILD UPON<sup>2</sup> proposes to work with cities to create a Multi-Level Renovation Impact Framework that contains a suite of milestones and measurable progress indicators for building renovation strategies. The Italian Cluster was launched for starting an exchange of best practices and strategies to support the development of the Framework. Padova FIT! Project suggested that social factors affect the results of the initiatives more than the technical accuracy of the procedures and that influencing stakeholders, such as building managers and their associations in the case of multifamily buildings, need to be addressed and empowered for the positive impact of the actions. MAKING CITY project highlights the need of considering the district scale, as indicated by the Positive Energy District concept, to address sustainable initiatives that can effectively support the implementation of the European energy and climate objectives.

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## References

1. Castellazzi, L.; Zangheri, P.; Paci, D. *Synthesis Report on the assessment of Member States' building renovation strategies*; EUR 27722 EN; Publications Office of the European Union: Luxembourg, Luxembourg, 2016. doi:10.2790/052530
2. Mitre, E.M. Deliverable 1.4 Final project Report, Build Upon GA n. 649727, 2017. Available online: <https://cordis.europa.eu/project/rcn/194605/factsheet/it> (accessed on 5 June 2019)
3. Cristoforetti, S.; Marino, V.; Rossini, C. BUILD UPON percorso di dialogo, una policy partecipata per la riqualificazione energetica degli edifici, Build Upon GA n. 649727, 2017. Available online: [http://www.gbitalia.org/documents/20182/58526/BU\\_workshop0-6\\_report+short\\_digital+complete.pdf/9ae95221-77e5-4283-a4ef-d3617c803a02](http://www.gbitalia.org/documents/20182/58526/BU_workshop0-6_report+short_digital+complete.pdf/9ae95221-77e5-4283-a4ef-d3617c803a02) (accessed on 5 June 2019)
4. BUILD UPON<sup>2</sup> factsheet, GA n. 840926, 2019. Available online: <https://cordis.europa.eu/project/rcn/223352/factsheet/en> (accessed on 5 June 2019)

5. Luise, D.; Minicuci, M.; Rinzafri, C.; Devetta, M.; De Filippi, F. PadovaFIT! A financing tool for the retrofitting of housing in the Padova area. Final report, 2017. Available online: <http://www.padovafit.it/final-publishable-report/> (accessed on 5 June 2019)
6. PadovaFIT Expanded factsheet, GA n. 847143 2019. Available online: <https://cordis.europa.eu/project/rcn/223412/factsheet/en> (accessed on 5 June 2019)
7. MAKING-CITY factsheet, GA n. 824418 2019. Available online: <https://cordis.europa.eu/project/rcn/219215/factsheet/en> (accessed on 5 June 2019)



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