

A roadmap on how to develop Citizen-led Renovation as driver for the renovation wave

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Almut Bonhage, Stefan Scheuer Consulting

With the support of:

Stefan Scheuer, The Coalition for Energy Savings

Stanislas d'Herbemont, REScoop.eu

Bastiaan de Jong, European Climate Foundation

Citizen-led Renovation aims to boost the demand for residential energy renovations by mobilising citizen participation. In July 2019, Marion Santini, Stefan Scheuer Consulting, drafted a first Concept note with contributions from Stanislas d'Herbemont, REScoop.eu, Adrian Joyce, EuroACE, Peter Sweatman, Climate Strategy & Partners, Louise Sunderland, The Regulatory Assistance Project, and Stefan Scheuer, The Coalition for Energy Savings.

From November 2019 to April 2020, the concept of Citizen-led Renovation was developed further in cooperation between REScoop.eu and Stefan Scheuer Consulting. The project was financed and accompanied by the European Climate Foundation and supported by the Coalition for Energy Saving as policy partner.

This “Roadmap on how to develop Citizen-led Renovation as driver for the renovation wave” was established on the basis of REScoop.eu Building renovation working group findings, documented in the “Report on barriers and drivers to the deployment of Citizen-led Renovation mechanisms” finalised in April 2020.

Stefan Scheuer

Environmental &
Energy Policies
EU Affairs



REScoop.EU



European
Climate
Foundation



The Coalition for
ENERGY SAVINGS

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“The best energy is the one you don’t need to produce”

Context: A “Renovation Wave” that contributes to more resilient living and working conditions

The EU Commission announced the launch of a “Renovation Wave” in 2020 in its EU Green Deal published in December 2019. The goal is to boost the renovation rate from roughly 1% of the existing building stock to 3% a year while promoting deep or staged renovation that deliver highest energy savings while being a more economic choice.

While access to financing remains an important factor, experience of the past years has shown that access to finance on its own does not effectively increase the renovation rate and depth for retrofitting of homes. Investors are willing to provide the needed credit, but the demand for those credits is low and the size of renovation projects is often considered too small.

Demand creation and the building of renovation project pipelines is an indispensable step to scale up investment. Bundling of smaller projects is necessary too, yet this requires a planning period that is difficult to organise and to finance. The gap between citizens and investors needs to be closed.

The technologies for energy renovation are well established. However, the service market for deep energy renovations in the residential sector is lacking quality. Sustainable business models such as one-stop shops are being tested across the EU but have yet to be rolled out.

The residential sector is a particularly difficult to reach part of the EU buildings stock. Though, it is too important to be neglected. Improvement of the energy performance of buildings is not only a matter of energy consumption and CO2 emissions, but it also contributes to improved and more resilient living and working conditions, which is a crucial matter for citizens as exposed by the COVID-19 response measures (such as lockdown, teleworking, home schooling).

Recent years have seen the development of energy communities as an important driver for the energy transition. The role of citizens organised in energy communities, (e.g. renewables cooperatives, local authorities or SMEs) is recognised by provisions of the Clean Energy Package¹. However, the implementation of this dimension of the Energy Union needs to be strengthened. The National Climate and Energy Plans show that Member States need to do more to create a supporting framework for energy communities.

The growing importance of energy communities suggests that citizens are willing to engage in the energy transition by taking ownership of energy production and tapping the energy savings potential of retrofitting their homes. The REScoop.eu Building renovation working group identified this interest, but it also demonstrated that significant barriers need to be overcome in order to set up Citizen-led Renovation initiatives at a larger scale.

¹ See REScoop.eu, 2019, Europe’s new energy market design: What does the final piece of the Clean Energy Package puzzle mean for energy democracy?

Residential buildings: persuade home owners to renovate

75% of the building stock in EU countries are residential (64% single family, 36% apartment blocks). More than one third of them were built before 1960 and more than 80% were built before 1990. A large majority of these houses will still be in place in 2050, and will need renovation in order to bring down their energy consumption and CO2 emissions (see Annex II, figures on EU buildings stock extracted from “Europe’s Buildings under the microscope”, BPIE 2011). Thus, residential buildings in need of energy efficiency renovation are a very large part of the EU buildings stock and maybe the most difficult to reach. It’s about getting the owners of those building (two thirds are self-occupied) to decide to renovate their property with the goal to increase its energy performance.

A briefing² by the “Renovate Europe Campaign” from February 2020 reads: “An overarching challenge for homes is that renovations are a discretionary investment decision: building owners need to be persuaded not only of the merits of the energy investment, but to finance it and bear whatever personal disruption it entails. Privately owned rental dwellings raise other challenges, particularly that of ‘split incentives’ in that the owner bears the cost of renovation while the tenant receives the benefit of lower energy bills and greater comfort.”

The REScoop.eu Building renovation working group identified three actor groups with distinct characteristics that need specific support strategies:

- Single homes owner-occupiers (roughly two thirds of built m2 in the residential sector);
- Condominiums (roughly 20 percent of built m2 in the residential sector); and
- Energy poor households.

The project Citizen-led Renovation will prioritise the first group, as it is the largest and easiest to reach.

Citizens as drivers for renovation

The EU Green Deal published in December 2019 recognises that citizens have a crucial role. The section on the Climate Pact starts with the sentence: “Citizens are and should remain a driving force of the transition”³. As owners or tenants of houses and apartments they can plan a key role in driving renovations of residential buildings. Citizens are also given an important role in the European Parliament own initiative report on “Maximising the energy efficiency potential in the EU buildings stock” launched in 2020⁴.

Nevertheless, renovation remains a difficult task even though it is highly rewarding if successfully completed. The Citizen-led Renovation approach therefore is to mobilise and support house owners to decide to undertake an energy renovation of their home. It is an innovative approach on how citizens can be empowered through collective action schemes.

² Renovate Europe, Briefing “Financing Deep Energy Renovation”: https://www.renovate-europe.eu/wp-content/uploads/2018/09/RE_100_Article-3B_Financing_Policy_PPPS_personal-finance_FINAL_2020.02.17.pdf

³ EU Green Deal proposal, section four on the Climate Pact, p.22

⁴ Draft INI report by MEP Ciaran Cuffe (6 April 2020), points 1-8

Focus on energy communities

The Citizen-led Renovation approach focusses on citizens organised in energy communities, mainly in cooperatives. These models are getting more and more traction in Europe⁵. The Clean Energy Package has further strengthened the role of energy communities: citizens participation is one of the governing principles upon which the EU's energy market operates. Renewable and citizen energy communities are recognised to support the energy transition, including on energy efficiency matters⁶. Member States are required to develop an enabling framework for their development. Member States must report in their National Energy and Climate Plans (NECPs) on policies and measures which support energy communities, and where applicable their role in achieving energy efficiency policy objectives. However, the implementation of this provision insufficient until now.

By their very nature, cooperatives and other citizen-led collective action schemes are highly relevant for the renovation sector. First of all, collective mechanisms will allow home owners to get better financing and technical conditions. Furthermore, citizen-led initiatives developed by cooperatives are built on mutual trust and rely on it as a key component for their activities. In the "Report on barriers and drivers", trust is identified as one of the key drivers for investment decisions: trust in the contractors, in the technologies used in order to reach energy savings and decarbonization goals, and in getting the expected return on the investment (financial and in term of improved living conditions). Last but not least, it is an approach that allows citizens to actively participate in renewable energy and energy efficiency projects, and thus foster a broader public support for the energy transition.

Findings from reflection on existing programmes

The "Report on drivers and barriers to the deployment of Citizen-led Renovation mechanisms" presents findings from an exchange among several energy cooperatives that are or have been running renovation programmes. These projects are still very limited in numbers, yet the report identified a strong interest among the cooperative movement to take Citizen-led Renovation further. In order to overcome barriers and foster the drivers, the main asks from the REScoop.eu Building renovation working group are:

Share experience and models: to create experience in building renovation as it is still a new field for energy cooperatives.

Find financing: to support the projects? pipeline creation, and to develop interesting financing options for participants (investment plans).

Build a network: to coordinate efforts and scale up the initiatives. Even though support to citizens will remain local, a network offering collaboration and support will allow to ramp up growth.

Build evidences and indicators: to compensate for the lack of experience and knowledge in the cooperative movement. A systematic approach based on evidence would help to support a whole-system approach to the use of citizen-led initiatives.

⁵ In the Netherlands for example, in 2018, the number of energy cooperatives grew by 21%, see: <https://www.hieropgewekt.nl/local-energy-monitor>

⁶ The Renewable Energy Directive acknowledges the potential for renewable energy communities to advance energy efficiency in households and address energy poverty.

The cooperatives therefore recommend the creation of a support service, mandated with four main missions: training and capacity building, research and monitoring, fundraising and project pipeline building and finally advocacy.

Grow the maturity of community projects: map, build, assess

If energy renovation is among the activities of energy cooperatives, it remains, however, a rather under-developed activity. There is only a very limited number of examples where cooperatives provide building renovation as a core service. The “Report on barriers and drivers” sees a double challenge to change this: to tackle the technical and financial barriers, and to create momentum in the cooperative movement.

Citizen-led Renovation is a systematic approach to grow the maturity of cooperative organizations active in the construction sector and thus to accelerate the growth of building renovation programmes. There are two milestones on this path:

- cooperatives gain confidence in their capabilities to support their members to take on renovation projects; and
- cooperative are provided with expertise and technical support in order to be able to identify opportunities for their members to trigger renovation projects.

Citizen-led Renovation will stepwise build up a support service for energy communities. The service proceeds around three dedicated activities:

Mapping: finding cooperatives that are capable and motivated to develop a building renovation programme and creating in parallel a network of potential citizen-led organisations (i.e. energy communities, associations, citizen groups) for exchange and capacity building.

Building: supporting the cooperative to build its renovation program, through background research, mentorship and specific training.

Assessing: supporting the launch of the programme by offering assessment tools and feedback to the young programme, allowing it to stabilise its business model and value base for the members.

The initiative will develop in three phases, the first starting in October 2020, the second in June 2021 and the last in June 2022.

Phase I is aimed at strengthening the basis for the initiative. Three frontrunner projects are analysed, their context is further explored and the network for the further process is created. Assessment tools are developed and the programme managers of the successful programmes are turned into ambassadors for the approach.

In phase II the scaling up and replication of the frontrunner projects can begin. Three additional projects are involved. Stepwise the support service team is established and the services are developed and geographically extended. Furthermore, policy recommendations are developed and advocacy starts. This is also the moment to work on funding questions.

Phase III will finally see the support service in place with larger capacities in terms of country mappings and specific support to energy communities which are about to set up a building’s renovation programme.

Phase I: Frontrunner project analysis and context study

The first phase consists in analysing three selected frontrunner projects, documenting their experience and needs, and establishing a qualification and quantification of the programmes.

1. Research and analysis

a. Analysis and documentation of three selected frontrunner projects building upon the work of the REScoop.eu Building renovation working group and other cooperative research projects in the field of building renovation:

- People Power Retrofit - Carbon Coop (Manchester, UK)
- Tipperary Energy Communities (Tipperary, Ireland)
- Rhedcoop, REScoop.Vlaanderen (Flanders, Belgium)

b. Country mapping of six selected countries. These include the three countries where the frontrunner projects are situated and three more countries where new programmes could be launched in phase II (see below).

2. Capacity building

Network mapping and creation of the network of actors at national level in the 6 countries selected for phase II and at the EU level (see table of finalised and ongoing projects, publications and actors). The network mapping includes a mapping of the key relays in the movement, a skills map, an expert map and the production of country specific factsheets in order to support the local REScoop.eu network.

Ambition:

- Prepare the analytical basis for the scaling-up of successful approaches to Citizen-led Renovation
- Create a network of organisations and actors committed to Citizen-led Renovation at the EU and national level (in six countries)
- Turn the programme managers of the frontrunner projects into ambassadors for Citizen-led Renovation

Phase II: Stepwise scaling-up and replication

The second phase consist in the consolidation of the success of frontrunner programmes and the launch of three new programmes. Furthermore, five more countries are mapped in order to prepare the launch of new programmes in phase III.

1. Research (continued from phase I): on top of the six countries mapped during phase I, five more countries will be mapped during this phase in order to prepare the ground for the creation of new programmes in phase III.

2. Capacity building (continued from phase I): this includes awareness raising and supporting three existing energy cooperatives in three countries to extend their field of activity to energy renovation; engaging with the (local) construction sector in order to develop the needed skills as established during phase I.

3. Advocacy: this includes tracking the implementation of EU legislation (namely energy communities and the role of citizens in the renovation wave), a national legislative watch and coalition building at the EU and national level.

4. Fundraising: liaising with institutions who can finance renovation programmes. At the EU level, this is in particular the EIB and other financing instruments for climate action. Furthermore, the Pilot Project for a support services for Citizen-led Renovation, launched by the European Parliament's ITRE Committee for the budget procedure 2021, will be in a decisive phase. Alternatives are EU funding instruments such as the new Innovation founding programme HorizonEurope and the Life grants.

Ambition:

- Up-scaling of three existing renovation programmes run by frontrunning energy cooperatives, creating each a pipeline of 100 projects per year (Lighthouse project);
- Launch of three new renovation programmes run by three existing energy cooperatives;
- Mapping of five additional countries in order to create new renovation programmes in phase III (2022);
- Policy recommendations on how to better support energy communities aiming to set up renovation programmes and their dissemination among decision makers;
- Successful fundraising in order to secure the EU support services for Citizen-led Renovation at least over the next 3 years (2022-2024);
- Improved access to financing for Citizen-led Renovation projects in the 6 countries mapped during phase I.

Phase III: EU support service for Citizen-led Renovation

The third phase consists in further scaling up the renovation activities of energy communities by further replication of successful programmes and the setting up of an EU support service for Citizen-led Renovation. The activities in this phase include:

1. Capacity building: putting in place an EU support service for Citizen-led Renovation with the aim to provide information and support. This also includes research in further countries in order to prepare the creation of new programmes across Europe;
2. Advocay (continued): coalition building at the EU and national level, dissemination of policy recommendations, advocacy for strong framework for energy communities.

Ambition:

- EU support service for Citizen-led Renovation is working in 11 Member states;
- Lighthouse projects in 11 member states demonstrating benefits and encouraging replication, be it in the same country or in other countries;
- Improved cooperation between construction sector and energy communities at the EU and member states level.

Established partnership and new partners

RESCoop.eu, Stefan Scheuer Consulting and the Coalition for Energy Saving are working together on developing the concept of Citizen-led Renovation in this project running from November 2019 until April 2020, which is funded by the European Climate Foundation. They intend to continue promoting Citizen-led Renovation with the following respective roles:

Role of RESCoop.eu:

- coordination;
- research and analysis;
- networking and facilitation (at national level);
- fundraising; and
- management of support service.

Role of individual Energy Cooperatives:

- local partner to develop and run a programme.

Role of Stefan Scheuer Consulting:

- strategy and communication;
- evaluation / quality control;
- liaising / partnering at the EU level;
- fundraising; and
- advocacy.

Role of Coalition for Energy Savings:

- policy partner;
- dissemination and communication.

Further cooperation partners:

Many projects are dealing with innovative concepts for the renovation of (residential) buildings (see list Annex I). The approach to boost Citizen-led Renovation by providing specific support for energy communities remains unique. Nevertheless, establishing a cooperation with other organisations from the buildings renovation sector will allow to join forces and to use synergies. Potential partners are Energy Cities, BPIE, FEDARENE, the European Builders Confederation (EBC), Housing Europe, BEUC, Climate Alliance, etc.

European Parliament

In April 2020, the European Parliament ITRE committee launched a Pilot Project for the Budget 2021 for an EU Support service for Citizen-led Renovation. If successful, the European Commission will launch a tender for the project early 2021. The suggested project volume is 1.000.000 euro (possibly 2.000.000 euro).

Annex I: Comparison with similar initiatives

	EU City Facility (Energy Cities, Climate Alliance, Fedarene, Adelphi, Enviros)	STEP (BEUC, etc.)	STUNNING	Renovate Europe (EuroACE)	JRC OSS report	REScoop PLUS
Character	Horizon 2020	Horizon2020	Horizon2020	Campaign	Publication	Horizon2020
Goal	<ul style="list-style-type: none"> - at least 225 credible and scalable investment concepts - at least 450 public authority staff to develop substantial project pipelines - to facilitate access for municipalities to private finance, EU funding streams and similar facilities (e.g. ESIF, H2020-PDA, Elena-EIB) and advisory services such as the EIB Advisory Hub - to reach out to more than 8,000 cities and communities, encourage replication and catalyse further action 	<ul style="list-style-type: none"> -to develop national networks of advisors from consumer and frontline organisations who are in direct contact with consumers in or at risk of energy poverty - to improve living conditions of consumers in or at risk of energy poverty (behavior / low-cost EE measures) - to create schemes contributing to the alleviation of energy poverty, promote their replication and draw policy recommendations 	<p>Support the growth of a diverse stakeholder community around a web-based knowledge sharing platform (KSP)</p> <p>Identify and cluster innovative refurbishment packages</p> <p>Identify the barriers which prevent innovative refurbishment packages and business models from being replicated</p> <p>Promote new business cases that make renovation more profitable</p>	<ul style="list-style-type: none"> - foster renovation of buildings (renovation rate of annual 3% and promote deep renovation 	<ul style="list-style-type: none"> - review of case studies of one-stop-shops (23 OSS+5) - A second report will follow as of early 2019, which will complement it with a deeper analytical assessment of the role of OSS in the energy efficiency market. 	<ul style="list-style-type: none"> - to make REScoops in Europe go beyond their activities of producing and supplying energy and take up energy savings for their members - to go beyond the experimental phase and create a toolkit with a range of best practice products like communication tools, ICT tools for better measurements or new business models that support energy savings of consumers/members
Target	Municipalities and communities	Consumers (organisations)	Construction sector, municipality, energy utilities, investors, house owners and tenants	Political decision-makers	Political decision makers	Energy cooperatives
Timeframe	Aug 2019- July 2023	June 2019 – Nov 2021	Oct 2017 - Sept 2019	2011 - ongoing	2018 – ongoing	Mar 2016 – Feb 2019

Volume	16 mio euro (13.5 mio euro benefitting communities)	2 mio euro	1 mio euro			1.5 mio euro
Reference	https://cordis.europa.eu/project/id/864212 www.eucityfacility.eu https://ec.europa.eu/inea/sites/inea/files/ee17-europen_city_facility.pdf	https://cordis.europa.eu/project/id/847080	https://cordis.europa.eu/project/id/768287 https://www.stunning-project.eu/		https://e3p.jrc.ec.europa.eu/publications/one-stop-shops-energy-renovations-buildings	

Other projects to be (possibly) added to this table

The **TURNKEY RETROFIT** service will be developed as a home-owner-centric renovation journey, which will transform the complex and fragmented renovation process into a simple, straightforward and attractive process for the home-owner. <https://cordis.europa.eu/project/id/839134>

INNOVATE will overcome market barriers to deep energy-efficient retrofits of private housing stock by developing and rolling out integrated energy efficiency service packages targeting homeowners in 11 target territories from 10 EU Member States (NL, DK, BE, LV, CZ, CY, SE, IT, ES and UK). <https://cordis.europa.eu/project/id/754112>

ACE-Retrofitting directs efforts towards co-owned residential buildings. A large number of private owners at once can benefit from more energy efficient homes, reduced energy bills and carbon footprint (50-70%). <https://www.nweurope.eu/projects/project-search/accelerating-condominium-energy-retrofitting-ace-retrofitting/>

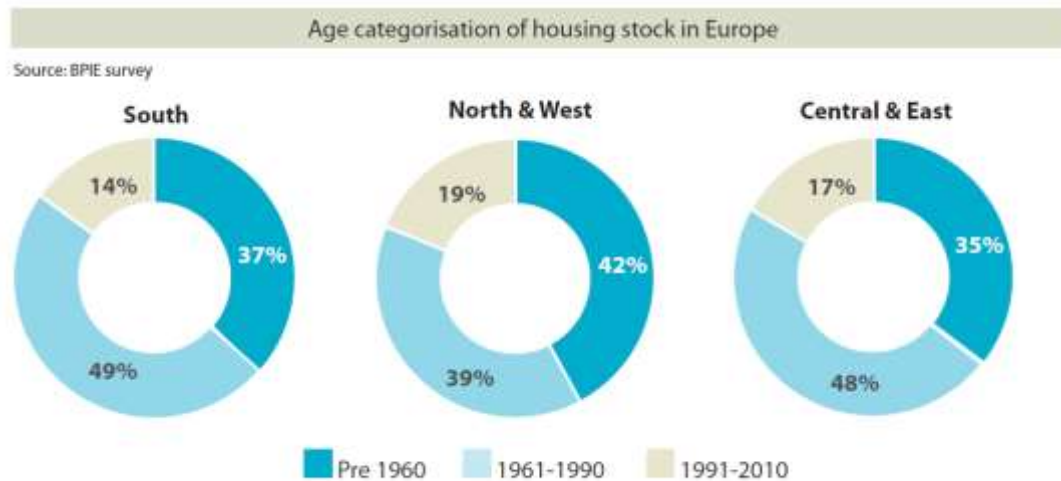
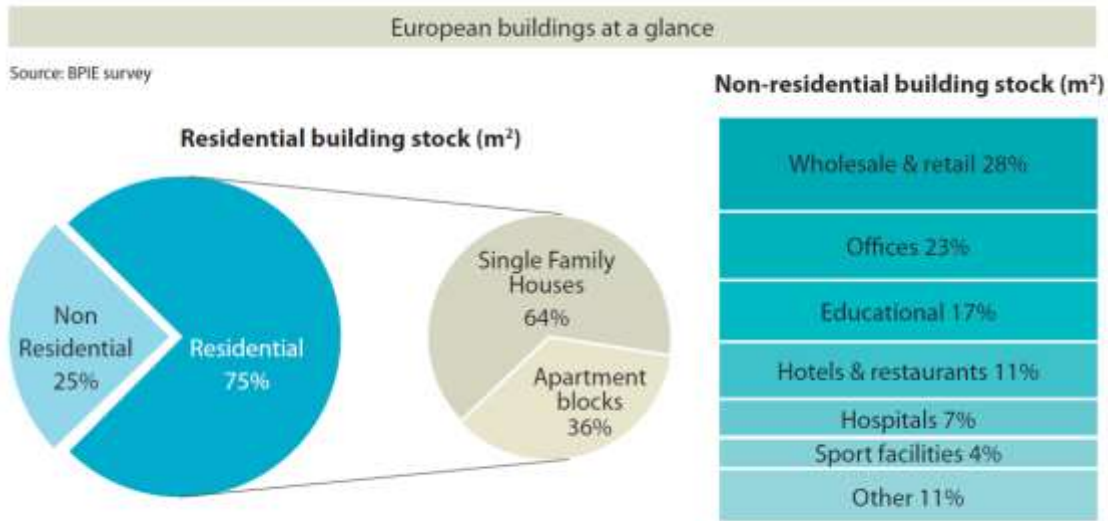
DRIVE 0 aims to come to a decarbonisation of the EU building stock and to accelerate deep renovation processes by enhancing a consumer centred circular renovation process in order to make deep renovation more attractive for consumers and investors, and more environmental friendly. <https://cordis.europa.eu/project/id/841850>

BUILD UPON2 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. <https://cordis.europa.eu/project/id/840926>

Syn.ikia aims at achieving sustainable plus energy neighbourhoods (new construction). <https://cordis.europa.eu/project/id/869918>

Annex II: Residential buildings in the EU buildings stock

Key figures from the publication “Europe’s Buildings under the microscope”, BPIE 2011” (<http://bpie.eu/publication/europes-buildings-under-the-microscope/>)



The building sector is one of the key consumers of energy in Europe where energy use in buildings has seen overall a rising trend over the past 20 years. In 2009, European households were responsible for 68% of the total final energy use in buildings³. Energy in households is mainly consumed by heating, cooling, hot water, cooking and appliances where the dominant energy end-use (responsible for around 70%) in homes is space heating. Gas is the most common fuel used in buildings while oil use is highest in North & West Europe. The highest use of coal in the residential sector is in Central & Eastern Europe where also district heating has the highest share of all regions. Renewable energy sources (solar heat, biomass, geothermal and wastes) have a share of 21%, 12% and 9% in total final consumption in Central & Eastern, South and North & West regions, respectively.

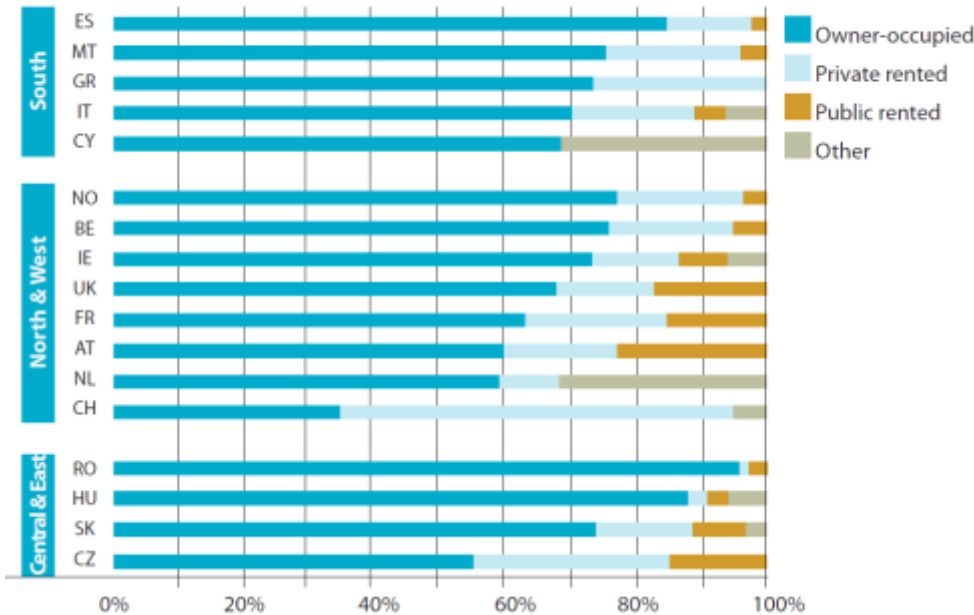
Average final consumption levels for heating (kWh/(m²a)) of single family homes by construction year

Source: BPIE survey



Tenure of residential buildings in Europe

Source: BPIE survey



	Population (2010)	Land area (km ²)	Building Floor Space
EU27	501 million	4 324 782	24 billion m ²
US	309 million	9 826 675	25 billion m ²
China	1 338 million	9 598 080	35 billion m ²

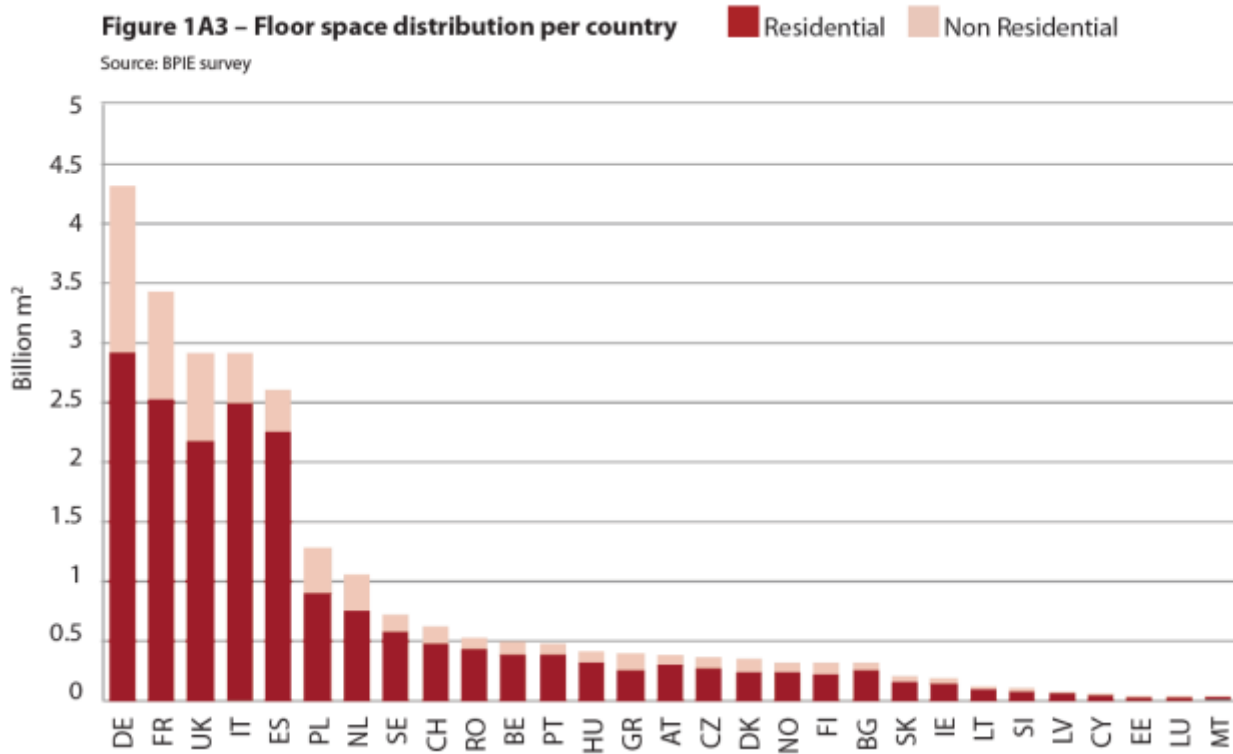
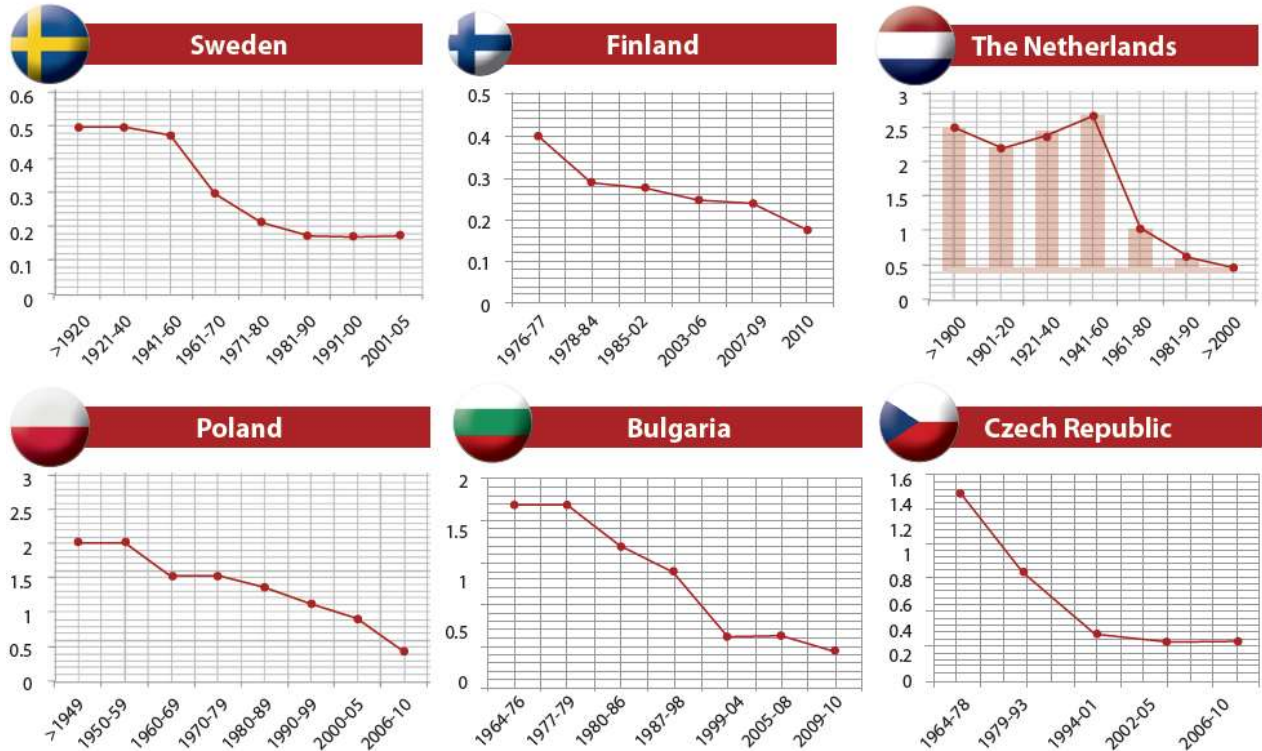


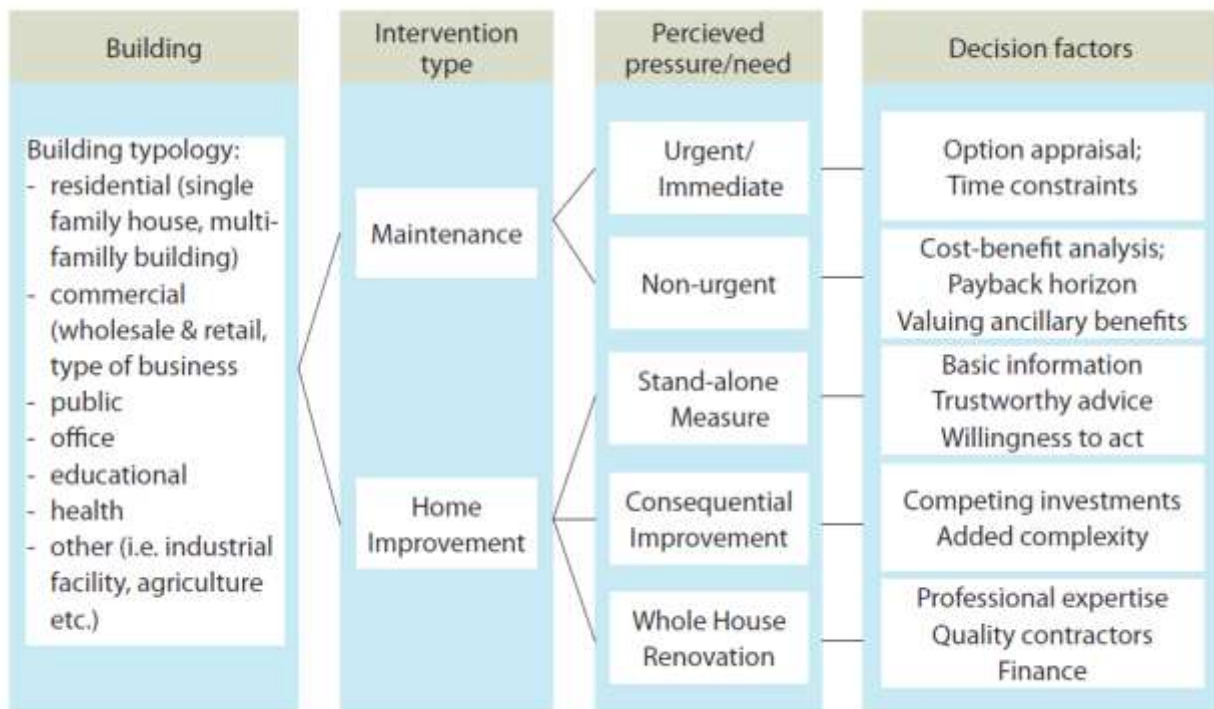
Figure 1C7 – U values (W/(m²K)) for external walls in different countries for different construction periods.

Sources: BPIE survey



Sufficient thermal insulation of the building envelope is in fact essential for shielding the interior of the building from the exterior environment and minimising thermal transfer (heat losses or gains) through the envelope during the winter and summer periods. Figure 1C7 compares typical U values of exterior walls in a number of countries for different construction periods and compares these with the respective requirements for today's new build. The lack of proper insulation in older buildings is clear in all countries due to the lack of insulation standards in those construction years.

Figure 2A2 – Building owner’s decision-making process for undertaking renovation work



A number of attempts have been made to relate the renovation depth with relative energy savings or absolute energy consumption levels. For example, the Buildings Performance Institute Europe has considered for its modelling purposes that minor renovations correspond to 0-30% of final energy savings, moderate 30-60%, deep 60-90%, while nZEB renovations represent savings beyond 90% (BPIE, 2011). In a cross-regional review, the Global Buildings Performance Network has concluded that deep renovation can be linked with improvements of at least 75% and / or have a primary energy consumption after renovation of less than 60 kWh/m² per year (Shnapp, Sitjà, & Laustsen, 2013). This mostly focuses on heating, cooling, ventilation and hot water end uses (see JRC, Energy Renovation).