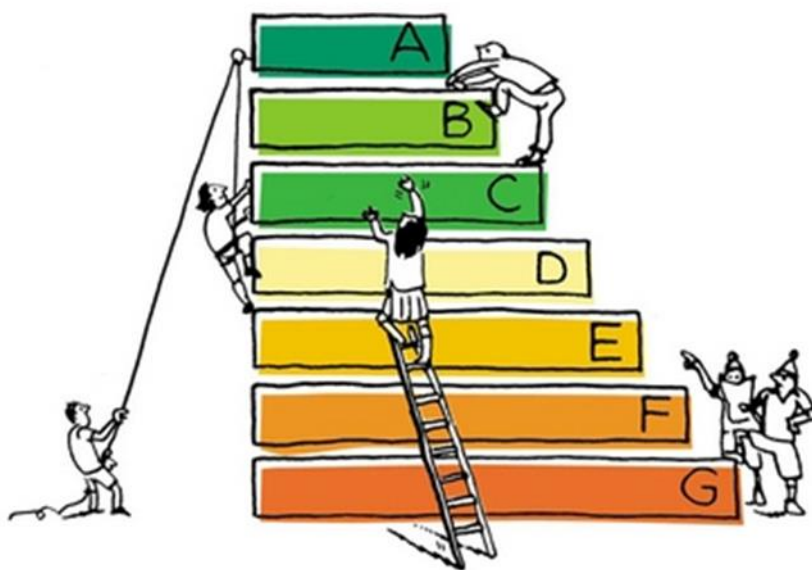


# GUIDELINES FOR PUTTING BUILDING RENOVATION STRATEGIES INTO ACTION



*Prepared jointly by the European Bank for Reconstruction and Development  
and the Energy Community Secretariat*

2023

*With the assistance of*



ECONOMIC  
CONSULTING  
ASSOCIATES

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## 1. Introduction

**Article 2a of the Energy Performance of Buildings Directive** (EPBD 2010/31/EU, as amended by decision 2021/14/MC of the Ministerial Council of the Energy Community) requires that each Contracting Party (CP) of the Energy Community establishes a **long-term renovation strategy<sup>1</sup> to improve the energy efficiency of the national stock of public, private, residential and non-residential buildings**, in a cost-effective manner. The Building Renovation Strategy (BRS) must include a roadmap for the implementation of appropriate measures towards achievement of the long-term 2050 goal of reducing greenhouse gas emissions in the Energy Community by 80-95% compared to 1990.












Beyond this formal obligation, the effective *implementation* of BRSs is considered

critical for achieving various Energy Community and CP goals such as:

- the reduction of greenhouse gases;
- decarbonisation;
- the integration of renewable energy;
- energy affordability;
- energy security/independence;
- the reduction of energy poverty;
- higher health standards; and
- job creation and skills development (for example, in the construction sector).

Buildings account for more than 40% of total final energy consumption in most CPs (see figure below), hence energy efficiency improvement in the sector can materially contribute to lowering emissions and meeting the stipulated targets and objectives.

Figure 1 Building energy consumption in the Western Balkans and status of BRS adoption

Building Energy Efficiency indicators and status of adoption on building renovation strategies						
	ALB	BIH	KOS	MNE	MKD	SRB
 Share of buildings in FEC (%)	40%	54%	50%	48%	38%	50%
 Building renovation strategies						
						
	Adopted	Draft	Work in progress			

Source: Energy Community Secretariat

<sup>1</sup> “Long term renovation strategy” is the term used in the revised EPBD; however, these Guidelines employ the term “Building Renovation Strategy” instead, which it is

understood has been more widely used by CPs to date. The terms should be considered interchangeable.

Notwithstanding the widespread potential benefits of renovating the building stock of the CPs, **there are significant barriers to implementing renovation strategies and undertaking the large scale, sustainable deployment of renovation that is required** throughout the Energy Community. The scale and complexity of achieving the ambitious renovation vision is vast given a range of factors, including:

- the varied nature and relatively poor energy performance of the building stock;
- the diverse circumstances, perspectives and incentives of the multiple stakeholders and decision makers;
- the pervasive barriers to renovation all along the value chain; and
- the materially upscaled and deepened renovation and market activity required if the vision is to be realised.

There is therefore merit in identifying some key steps and extracting best practices from known experience and sources to date (for example, in European Union (EU) Member States) that could help guide the practical implementation of (and avoid common pitfalls associated with) BRSs in the CPs. Accordingly, the European Bank for Reconstruction and Development (EBRD) and the Energy Community Secretariat (ECS) have jointly agreed to the development of these Policy Guidelines to support CPs in effectively implementing their renovation strategies.

Other than this introduction, the Guidelines have been structured around the following four sections:

- Section 2 discusses the reasons for developing these Guidelines, emphasising that beyond the formal obligation to implement BRSs there are significant benefits to be realised from effective implementation, but also major challenges to be managed or overcome.
- Section 3 articulates the fundamental challenge that must be met when implementing BRSs and which therefore forms the foundation for the policies, strategies and actions that must follow; essentially, the aim is to create a virtuous cycle of increased demand for deep renovation, which is matched by the required supply capacity delivered at reasonable cost and at the necessary or desired level of quality.
- Section 4 stipulates the key steps that should be followed or that are entailed in implementing BRSs to help ensure their successful delivery, and continuous refinement and improvement.
- Section 5 focuses on some specific intervention areas that should potentially form priorities for CPs when implementing their BRS.

Some reference material and additional sources of information that might be useful for CP implementing authorities are contained in Annex A.

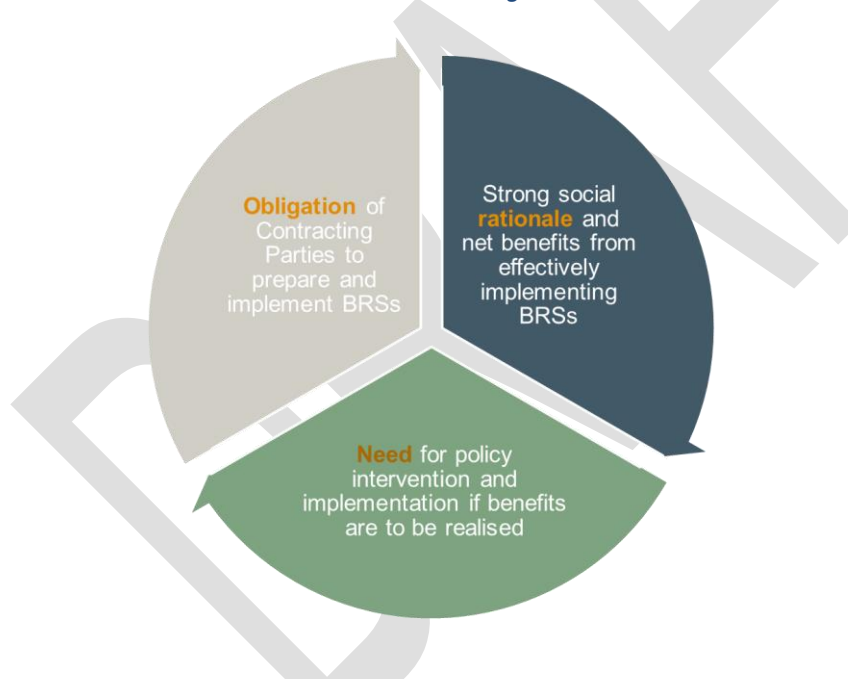
## 2. Why have these Guidelines been developed?

***These Guidelines have been developed recognising the CPs' obligations, challenges and impediments in developing and implementing BRSs, as a means to helping achieve energy and climate goals and benefits.***

The motivation for developing these Guidelines stems from three inter-related factors (see Figure 2 below and the subsequent sub-sections):

- The CPs' obligation under the energy efficiency *acquis* to establish a BRS, *in view of*
- The importance of reducing the energy consumption and emissions in the building sector for achieving climate targets, and the significant contribution of renovation to broad economic, environmental and social objectives, *while recognising that*
- There are significant impediments to realising these goals and gains, without the development and effective implementation of suitable policy actions and measures.

Figure 2 The need for Guidelines on delivering BRSs



The intention is that this document serves as a **reference guide and practical roadmap for implementing BRSs, while CPs embark on the challenging policy task of BRS delivery.**

It should be emphasised, however, that the building sector and the renovation of buildings is highly diverse, complex and fragmented, which makes the task of

formulating and (especially) *delivering* a successful strategy profoundly challenging and multifaceted.

While these Guidelines have been developed for the purposes of practically aiding the CPs in navigating this complex field, and coordinating the requisite actions for achieving the goals required by BRSs, they are necessarily limited in

scope and cannot claim to provide answers to all of the questions raised by this policy challenge.

Moreover, these Guidelines should not be viewed as being prescriptive of the approach or priorities that should be taken and set by CP authorities. These will necessarily depend on the building typologies, demographic factors, building ownership and usage patterns, the policy and legal framework, the economic circumstances, and the priorities and actions established in the BRSs in each of the individual CPs.

Nevertheless, it is hoped that the Guidelines can act as a useful guide for the relevant CP authorities, and that they provide a basis for actions that will place CPs on a path to stimulating, upscaling and broadening building renovation activity that is necessary, if the ambitious Energy Community commitments to reduce greenhouse gas emissions and achieve energy savings are to be fulfilled.

## 2.1. The obligations of the Contracting Parties

### ***The CPs were required to submit their BRSs under the revised EPBD prescription by 10 March 2023<sup>2</sup>***

The requirement, previously forming part of the Energy Efficiency Directive (EED),<sup>3</sup> to develop national strategies that support the renovation of all building types so that they are highly energy efficient and decarbonised by 2050 predates the current provisions of Article 2a of the

EPBD. The latter, however, contains strengthened provisions for the scope of the plans, for example, regarding:

- the consideration of ‘trigger points’;
- the targeting of all public and worst performing buildings;
- the alleviation of poverty; and, optionally
- the use of building renovation passports.<sup>4</sup>

The BRSs must also contain a roadmap with measures and progress indicators, with a view to the long-term 2050 goal of reducing greenhouse gas emissions in the Energy Community by 80-95% compared to 1990, with indicative milestones for 2030 and 2040. The submission of BRS updates (subsequent to the first BRS) will follow the cycle of the National Energy and Climate Plans (NECP). However, renovation targets and measures should be incorporated in the NECPs that must be finalised and adopted by June 2024.

There is no known precedent for a strategy in the built environment of the scope and ambition required by EPBD Article 2a. Hence, **with BRSs being submitted and/or finalised in the CPs, attention must now shift to ensuring successful implementation.** No matter how detailed and extensive, a strategy alone is insufficient – meeting the strategy’s goals depends on effective execution.

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<sup>2</sup> According to the Energy Community Ministerial Council Decision 2021/14/MC-EnC.

<sup>3</sup> Directive 2012/27/EU, incorporated and adapted by the Energy Community in 2015, by

the Ministerial Council Decision 2015/08/MC-EnC.

<sup>4</sup> Refer to Box 1 for an explanation of some of these key terms and concepts.

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*“Without strategy,  
execution is aimless.  
Without execution,  
strategy is useless.”*

*Morris Chang, Founder  
& Chairman, Taiwan  
Semiconductor  
Manufacturing Company*

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### **Box 1. Key concepts and issues in Article 2a of the EPBD**

#### **Trigger points**

To align with practical market realities and consumer behaviours and choices, it is important to promote the attractions of energy efficiency upgrades to take advantage of ‘trigger points’ of opportunity and ‘decision windows’ in a cycle of building ownership and investment decision making. Examples include:

1. the **purchase or lease or change of use** (e.g. a business identity change) of a building when the new owner/occupant will be focused on adapting the building closely to their needs (if they have the resources);
2. a **significant extension or general renovation** to the building – for example for earthquake protection reasons, or following damage from an event, when the marginal cost of incorporating ambitious energy efficient measures in the upgrade is at its lowest; and
3. at a less comprehensive level, **replacement of individual components** such as windows, air conditioning units and boilers, or the carrying out of **necessary maintenance and the replacement of defective components** of equipment or systems.

Ensuring that energy related measures are incorporated during trigger point events can allow synergies with other actions to be exploited. In other words, cost-effective renovation (from a life cycle perspective) can be undertaken and allow for exploitation of economies of scale and/or scope<sup>5</sup> arising from carrying out energy efficiency improvements in tandem with planned renovation or other necessary works.

#### **Role of public buildings**

Public buildings are often targeted as a priority segment because of the exemplar and leadership roles it can assume. Indeed, there is a mandatory requirement under Article 5 of the EED (as currently adopted in the Energy Community) that from 1 January 2024 CPs establish measures to renovate 3%<sup>6</sup> of buildings owned and occupied by central

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<sup>5</sup> Economies of scale are proportionate savings in costs gained by an increased level of activity (in this case, deeper renovation). Economies of scope are cost savings that result from broadening the activities (in the present situation, undertaking energy-related renovation works together with more general renovation activity).

<sup>6</sup> Currently, the required renovation rate is 1%. Renovation in this context means consistent with the minimum energy performance requirements established under the EPBD (as adopted) using the cost optimality methodology.



government (or otherwise deliver the equivalent savings). However, there are additional reasons why public buildings are a priority for renovation, including:

- **Influence:** in the process of delivering on its mandatory obligation, the public sector can demonstrate practical and beneficial solutions which will be particularly relevant and helpful to informing and motivating the commercial buildings sector.
- **Best prepared:** in many of the CPs, the public sector possesses the strongest evidence base (including an inventory of energy performance through energy audits) on its profile of energy use across building types and functions.
- **Credit risk:** it is likely that central government bodies, and possibly some larger municipalities, will have a better credit rating than applies to the market in general.
- **Business models and market for energy efficiency:** in principle, the public sector has the potential to pioneer engagement with new business models for energy renovation, such as with energy service companies (ESCOs) and 'Super ESCOs' by means of energy performance contracting, project aggregation, and associated performance monitoring and verification protocols and guarantees.
- **Scaled up skills:** by focusing initially on the public sector (and setting ambitious renovation targets and measures for this segment), CPs can help expand the skills, knowledge, expertise and delivery capacity required to renovate the more extensive privately owned building stock.

### Worst performing buildings

Worst performing buildings are those that are considered to be among the least energy efficient buildings in a given area or country. In principle, the worst performing buildings can be defined as buildings which have one or more of the following conditions: they are old, they are characterised by high intensity energy use (relative to benchmark norms for the building type), and/or they house people suffering energy poverty. By extension, these buildings might therefore be considered to be those whose improvement would yield not only the greatest energy performance benefit, but also the greatest environmental and social benefit.

There is no common method for defining worst performing buildings. EU Member States, for example, employ various approaches including:

- **energy performance class**, with the energy label threshold also varying across jurisdictions, for example, from C class in the coastal areas of Croatia to G class in Germany;
- **age**, that is, buildings erected before a specific year, which also varies by country (reflecting the different age profile of the building stock and the evolution of energy and building standards in each); and
- **energy consumption**, expressed either as delivered (i.e. final) energy or primary energy consumption per year (kWh/m<sup>2</sup>/year).

### Alleviation of poverty

Another category of poor performing buildings are those of particularly poor thermal standards of construction and with inadequate heating systems, but whose occupants or owners have no resources, or access to finance, to invest in energy efficiency upgrades.



The energy characteristics of the dwellings are usually not the only factor contributing to energy poverty; the latter is commonly compounded by other factors such as low income, inadequate information and demographic profile. This therefore results in a vicious circle of large exposure to and little control of energy expenditure, the generation of high energy bills and arrears, and health problems.

It follows that **measures to improve the energy efficiency of these homes would reduce energy costs, improve comfort and indoor environmental conditions, and improve – or reduce the risk to - the health of the occupants, and lead to a significant improvement in their overall quality of life.**

### Building renovation passports

As a tool to enable staged renovations (i.e. implementing the ‘quick wins’ of ‘shallow’ energy efficiency renovation without jeopardising future ‘deeper’ energy efficiency renovation), there is a potentially important role for the concept of building renovation passports, currently being developed through several projects at EU level. These **passports aim to record all actions on a given building (energy audits, previous interventions, recommendations, etc.) over time, independently of its owner.** In other words, the passport allows the new owner of a building to know the history of the initiatives and diagnoses already made on the property. It thus saves on the cost of information and avoids the unnecessary repetition of actions.

A building renovation passport also outlines a long-term (up to 15-20 years) step-by-step renovation roadmap to achieve deep renovation for a specific building. It is designed to reflect the changing situation of the owner or occupier, and ensures coordination throughout the different stages of renovation. The passport can provide owners with personalised (user-friendly) advice on their renovation options, and clarify the renovation stages for all relevant stakeholders.

It is important to note that **for the passport to operate most efficiently as a support instrument, it should draw on the Energy Performance Certification process,** so establishing the latter as a visible market instrument with a recognised ‘currency’ (energy performance rating bands or classes) is an essential prerequisite.

## 2.2. The rationale for extensive renovation of the building stock

***If energy and emissions in the built environment are not radically reduced, decarbonisation goals will not be met and widespread economic, environmental and societal benefits will be foregone***

A key motivation and justification of the EU’s energy efficiency directives (and by extension, of the BRSs) adopted by the

CPs is the achievement of energy savings and greenhouse emission targets *en route* to the longer-term goal of climate neutrality. In the EU context:

- 85-95% of buildings that exist today will still be standing in 2050 (the target year for achieving net zero greenhouse gas emissions);
- buildings are responsible for about 40% of total EU energy consumption, and for 36% of its

greenhouse gas emissions from energy;

- to achieve the 55% emission reduction target it has set for 2030, the EU therefore estimates that it needs to reduce buildings' greenhouse gas emissions by 60%, their final energy consumption by 14% and energy consumption for heating and cooling by 18% (compared to 2015 levels).

Corresponding data for the CPs is not readily available and is likely to differ across the CPs, but it is reasonable to expect that a similar order of magnitude applies. Indeed, the required reductions in energy use and emissions are likely to be even higher, given the relatively inefficient building stock relative to most EU Member States.

Notwithstanding the stipulated targets, the current energy renovation rate in the EU is estimated at only about 1% per year, and is likely even lower in the CPs. At this pace, achieving net zero carbon emissions from the building sector would mean that the climate targets would be missed by many decades. Consequently, **there is a need for building energy renovation to increase at an unprecedented rate and level:**

- **The required pace of energy renovation is between 3% and**

**4% per year** (and to the degree that this rate is not achieved starting from now, the necessary annual rate of renovation will be even higher in subsequent years); and

- **The renovations need to be 'deep'** – these are broadly classified as renovations that result in **energy savings of at least 60%** compared to the original state of the building. Currently, across the EU, it is estimated that deep renovations are carried out only in 0.2% of the building stock each year.

Clearly, not meeting the targets would jeopardise achievement of the climate goals set by the EU and the Energy Community. However, it would also represent a major missed opportunity, as the benefits that can be derived from achieving energy savings and emission reductions are enormously wide ranging and can lead to a significant improvement to citizens' overall **quality of life**.

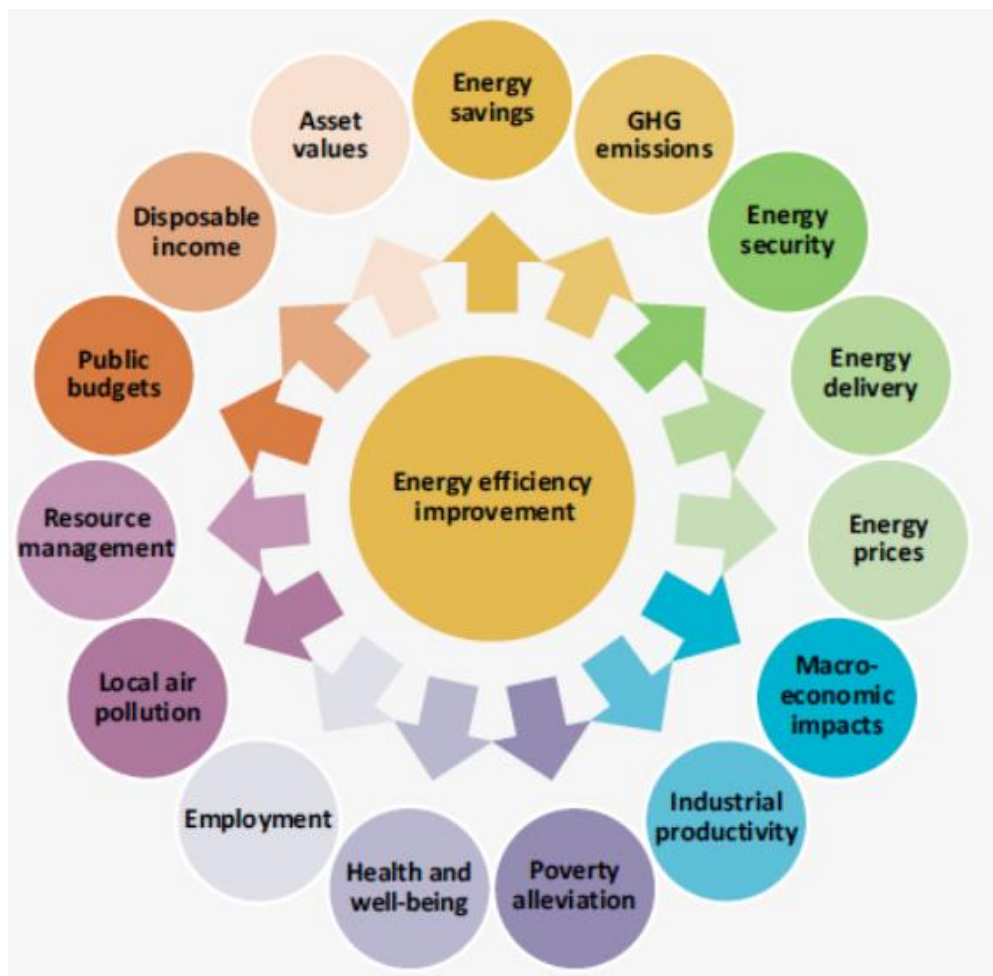
The International Energy Agency (IEA), for example, has highlighted the multiple benefits associated with energy efficiency improvement in a flagship publication from 2014;<sup>7</sup> an often-used IEA illustration from that report demonstrating these benefits is reproduced in Figure 3 below.

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<sup>7</sup> IEA (2014), Capturing the Multiple Benefits of Energy Efficiency (<https://iea.blob.core.windows.net/assets/28f84>

[ed8-4101-4e95-ae51-9536b6436f14/Multiple\\_Benefits\\_of\\_Energy\\_Efficiency-148x199.pdf](https://iea.blob.core.windows.net/assets/28f84-ed8-4101-4e95-ae51-9536b6436f14/Multiple_Benefits_of_Energy_Efficiency-148x199.pdf).

Figure 3 The manifold individual and social benefits of energy efficiency improvement



Source: IEA (2014), Capturing the Multiple Benefits of Energy Efficiency

As shown in the diagram, some (but by no means all) of the benefits of energy savings or efficiency improvements include:

- **Reduction in consumers' energy costs and bills**, which can improve affordability and help alleviate energy poverty;
- **Improved energy security**, as using less energy reduces the demand for energy resources and the corresponding reliance on energy imports and/or the exposure to supply risks;
- **Greater macroeconomic development**, by stimulating investment, job creation and potentially the development of new industries and technologies; and
- **Enhanced health, well-being and living conditions** through the reduction in the emission of harmful pollutants (e.g. particulate matter and nitrogen oxides) and the avoidance of associated illnesses and health costs.

### 2.3. The need for effectively implementing renovation strategies

***There is a large gap between perceived individual and holistic societal benefits that must be closed by policy and regulation***

The widespread and significant potential social benefits of reduced energy savings might suggest that investment in energy efficiency improvements (including through the renovation of buildings) should be forthcoming without the need for policy or regulatory intervention and support. However, the decision to renovate is mostly an individual one, and there are various **market failures and barriers that distort the cost-benefit calculus of individuals**, for example:

- **Split incentives (landlords vs tenants)** - this refers to a situation where the party responsible for paying for efficiency upgrades or energy retrofits (usually the landlord) cannot recover the full benefits and savings, as these accrue to the tenant occupying the premises. In these cases, the landlord may be less inclined to invest in renovations and energy saving measures.
- **Insufficient or imperfect information** – there are numerous informational barriers that act to hinder or delay decision making and lead to a reluctance to invest in renovations. These include a lack of awareness of the potential benefits and cost savings among homeowners and businesses; difficulties in understanding the technologies and retrofit options (given the complexity and technical

nature of the required interventions), or in accurately assessing the potential costs and savings; the absence or limited availability of accurate and reliable information regarding available technologies, renovation options and cost estimates; and concerns about the quality of work and reliability of construction contractors, professionals and/or tradespeople.

- **High transaction costs** – there are numerous transaction costs that impact the various stakeholders and not just building owners, which complicate the decision making process for renovation and/or create additional cost, risk and uncertainty that ultimately could deter renovation. These include the costs associated with obtaining information about renovation options, technologies and suppliers; the cost of negotiating and reaching agreement with various parties involved, including tradespeople, suppliers and regulatory or permitting bodies; and the cost of monitoring and enforcing compliance with agreed terms and conditions.

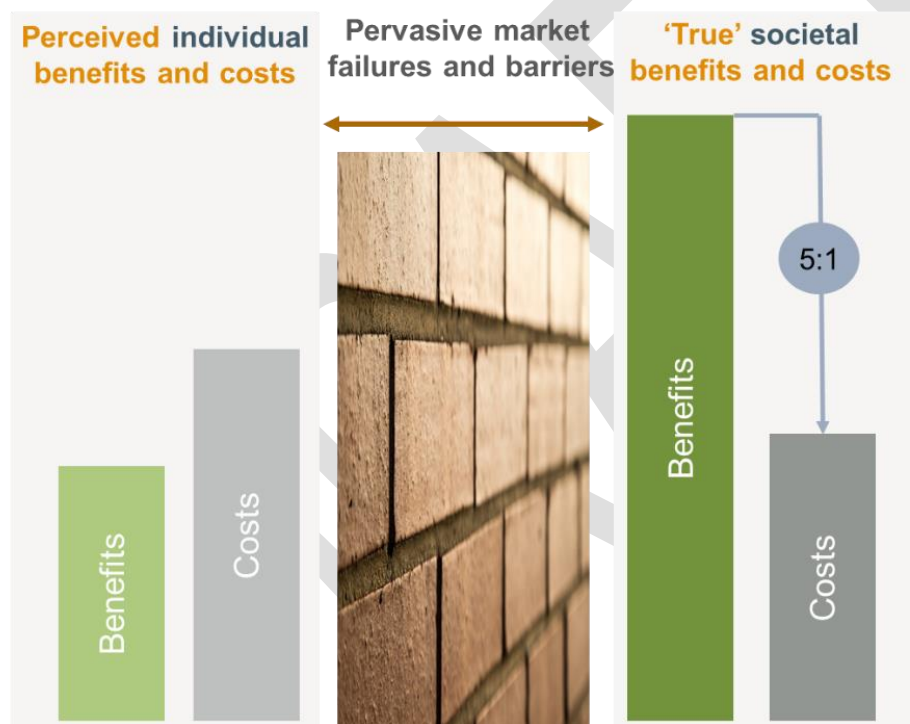
Collectively, these **market failures and the various barriers to building energy renovation can be summarised as constituting a perceived risk or deterrent** to the relevant decision makers. Such risk is based not only on concerns over investment cost, but on the time, effort and uncertainty that might be involved. For this reason, from an individual perspective, the perceived risks and costs appear to outweigh the

renovation benefits (as shown on the left-hand side of Figure 4 below).

Consequently, decision makers who perceive costs to be greater than the benefits, or who are faced with significant uncertainty, are likely to defer or not undertake investments, or opt for choices where uncertainty appears low, quantifiable and manageable (but which might be sub-optimal). This is notwithstanding the substantial lifetime

benefits arising from building energy renovation, which several analyses have indicated (as shown on the right-hand side of Figure 4) to be five times higher than the costs once the broader societal benefits are taken into account. Moreover, the market failures and barriers are so pervasive that they apply throughout the renovation value chain and therefore require **a coordinated set of remedies** to address and overcome them.

Figure 4 Perceived and true costs and benefits of renovation



For the CPs, there is compounded complexity as they probably confront additional challenges compared to EU Member States, including:

- A higher incidence of **unauthorised or illegally built dwellings** – this is likely to inhibit owners of such buildings in seeking participation in public

programmes, or even if they are willing, there are likely to be constraints in them obtaining the required finance and permits, and/or they might need to incur significant additional costs to regularise their status (e.g., meet safety standards, determine property boundaries and



ownership rights, address structural deficiencies, obtain 'proper' utility connections, etc.); and

- **Relatively lower GDP per capita and greater prevalence of low income households** – this accentuates the barriers as poorer households, for example, have greater difficulty in funding the upfront costs of renovation and/or obtaining access to affordable financing options, while the cost and complexity of renovation might also be higher as low income households may live in dwellings with substandard conditions that then require more extensive energy renovation.

### 3. The critical challenge

***The fundamental challenge that must be met is to stimulate a step change in demand and match it with delivery capacity by effectively executing the BRS.***

The foregoing discussion has highlighted that there is a strong policy case for building energy renovation, but this needs to be orchestrated, facilitated and coordinated by the state given the pervasive market failures and barriers. Moreover, the very fragmented nature of the building sector, with numerous decision makers and applications, means that **the policy mix needs to be 'broad' in order to tackle as many barriers as possible, and 'deep,' to ensure that the barriers faced by all those in the decision making chain are addressed.**

The challenge can be summarised as in Figure 5 overleaf, which attempts to

illustrate the necessary framework elements if a virtuous cycle of building energy renovation is to be established and implemented:

1. **Stimulate demand** – the starting point is to boost demand among owners of all building types for energy retrofits to levels that are consistent with meeting the ambitious climate goals (both in terms of the volume of renovations and the depth of these).
2. **Build supply capacity at the 'right' cost and quality** – correspondingly, there needs to be supply capacity to meet the increased demand, but this capacity needs to be delivered at competitive cost and comprise of sufficiently qualified actors that deliver the requisite quality.
3. **Design supporting policies and regulations** – ramping up demand and supply in turn requires supporting policy and regulatory measures, without which the scale and/or quality of activity is likely to be sub-optimal given that the sector is beset with market failures and barriers. For example, while predictable and stable demand for renovation could drive investment in capacity needed to meet this demand, a robust professional certification system and customer protection regime is also needed to ensure renovations are delivered to the requisite quality, both to ensure that energy saving targets are met, and to maintain trust among building owners without which the BRS would falter.

Figure 5 Stimulating and matching demand and supply for renovation



4. **Ensure there is sufficient finance and funding mechanisms** – this is fundamental to the successful implementation of building energy renovation. Without the right amounts and forms of finance directed to the ‘right’ places at the ‘right’ time, renovation will lack the necessary scale and pace required by the BRS goals.
5. **BRS implementation** – the ‘gelling agent’ for the above is the BRS, which should encapsulate the required policy measures and regulatory mechanisms for achieving the building energy renovation goals and objectives. Achievement of the objectives however rests on effective BRS *implementation*, which can be likened to an orchestra of different instruments and sector stakeholders that need to be ‘in tune’ with each other to ensure the strategy is delivered.
6. **Establish a standing commission or taskforce** – like any orchestra, a ‘conductor’ is required, which in the present context means

establishing a **dedicated body that is specifically tasked with BRS implementation**. There is such precedent in many EU Member States, where energy agencies or similar bodies oversee building renovation efforts, and/or administer the funding of renovation programmes, and/or have the responsibility to coordinate and implement BRSs, or to provide research and technical support. Examples include: ADEME (Agence de la transition écologique) or the Agency for Ecological Transition in France, the Bundesstelle für Energieeffizienz (BfEE) or Federal Agency for Energy Efficiency in Germany, ENEA (the National Agency for New Technologies, Energy and Sustainable Economic Development) in Italy, and ADENE (the Portuguese Energy Agency), which is part of the coordination committee monitoring the BRS in Portugal, and provides technical support to financing programmes for energy renovation.



## 4. Six steps to successful implementation

***BRS implementation should focus on six key tasks, which seek to ensure speedy, inclusive and proactive delivery and continuous refinement***

In developing their BRSs, CPs will have undertaken key tasks such as defining the vision, scale and boundaries of the strategy; identifying, analysing and detailing key issues, responsibilities and required policy instruments; and identifying and engaging stakeholders. The task of *delivering* on the strategy will typically require:

- Transmission of the BRS goals into coordinated implementation of the different elements of the strategy to achieve the upscaling of building energy renovation activity that is necessary; and
- Continuous monitoring and review of the effectiveness of the BRS, followed by adjustment and reinforcement of particular actions as required.

More specifically, to ensure effective implementation, it is recommended that CPs focus on six cross-cutting and reinforcing tasks as shown in Figure 6 and discussed further below.

Figure 6 The six steps for effectively implementing renovation strategies



### 4.1. Devise action plans and delivery programmes

The scale and complexity of the national BRS, together with the diversity of the building stock, the multitude of implementation barriers, and the varying circumstances and perspectives of the numerous decision makers and actors, requires solid and skilful coordination. In this context, it is critical to **devise action plans and delivery programmes**

**addressing particular needs, issues and/or market sectors.** This will ensure the BRS is delivered based on specific action lines with identified **cross-dependencies**. Moreover, this will help embed a culture of evaluation and review in the delivery of the different action plans within the overall BRS. Key matters or steps to consider include:

- **Segment the BRS into a series of individual action plans with targets and timelines<sup>8</sup>** – the

<sup>8</sup> These can be integrated with the NECPs that CPs are currently drafting with a view to

finalising by June 2024. Moreover, it should be noted that the current EPBD recast under

action plans should be driven by the priorities of the BRS and the peculiarities of each CP's circumstances. Common segmentation options include the grouping of actions around policy interventions (and corresponding barriers), and/or types of buildings and market segments, and/or geographies (regional, local, etc). Importantly, the action plans should be accompanied by specific targets and timelines that align with the BRS. This ensures consistency of the action plans with the overarching strategy, and enables the tracking of actions against the targets and planned timeframes. This is important for subsequently assessing the effectiveness of implementation, and refining and updating future directions and actions.

- **Allocate budgets and responsibilities** – to ensure the successful planning, implementation and monitoring of energy renovation projects, stakeholder<sup>9</sup> responsibilities need to be clearly assigned and delineated and, where relevant, sufficient funding (and other human and administrative resources) made available so that the relevant authorities, agencies or officers can deliver on their designated responsibilities.
- **Focus on different market segments and their particular**

**needs through targeted delivery programmes** – to successfully execute the BRS and associated action plans, various delivery programmes will need to be designed that address and target the specific characteristics and challenges of the particular market segment, whether this is homeowners, landlords, commercial businesses, or public institutions. Examples of such schemes for the residential sector in a selection of EU countries are described in Box 2. To be effective, these programmes will need to comprise: well-defined eligibility criteria; a streamlined application and approval process; an awareness and outreach programme; a clear selection of eligible measures and technologies; sufficient financial mechanisms; and the availability of technical assistance and support. Moreover, as with the BRS strategy itself, the delivery schemes should have a robust framework for monitoring and evaluating their performance and impact, they must be flexible and adaptable to changing circumstances (such as emerging technologies, market trends, and policy priorities), and include mechanisms for gathering feedback from participants and stakeholders to identify areas for improvement and make necessary adjustments.

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discussion in the European Parliament and the European Council already foresees that future iterations of BRSs become more 'operational' (and not just 'strategic') in nature.

<sup>9</sup> The key stakeholder groups are discussed below.

- **Involve regional and local authorities to tailor measures to local challenges and circumstances** – given their proximity to local communities and the buildings that will be the subject of renovation efforts, regional authorities and municipalities have intimate knowledge of local needs, priorities and challenges, as well as the unique characteristics of their areas, including the nature of the building stock, climatic conditions and demographic profiles. Local authorities also play a key role in urban planning and zoning, which can influence the design and layout of buildings. Engaging them therefore could ensure that energy efficiency considerations are integrated into the planning regulations and/or processes. Local authorities may also be quicker to respond to emerging challenges and opportunities in their areas, and they may potentially be more flexible to experiment with innovative policy approaches and pilot programmes that can provide a feedback loop that informs the broader national BRS.
- **Detail how financing needs will be met (at least until 2030)** – the funding of the action plans and delivery programmes should not be left to the vagaries of the annual government budgeting process. Instead, it is important to ensure there is committed and dedicated funding ahead of time and until 2030 (at least). Secured funding is important as it demonstrates commitment and credibility thereby instilling confidence in stakeholders (property owners, contractors, financial institutions); it minimises disruptions in the renovation process and the probability of renovation projects stalling or being postponed causing disruption to building owners, occupants and contractors; it incentivises higher participation by stakeholders who would otherwise hesitate to commit without the assurance of financial support; and it facilitates long-term planning.

## Box 2. Examples of residential energy renovation delivery programmes

### **MaPrimeRénov' (France)** ([MaPrimeRénov': the premium for energy renovation | economie.gouv.fr](https://economie.gouv.fr/ma-prime-renov))

This programme is aimed at assisting homeowners finance energy efficient renovations of buildings that are at least 15 years' old. It covers various types of residential housing – single family homes, multi-apartment buildings (including common areas) and social housing. The programme is open to all dwelling owners (whether they occupy or rent out their premises) and irrespective of their income (although the amount of assistance varies by income).

The programme grants can be used for energy audits and insulation, heating, or ventilation works, which must be carried out by certified providers. There are various aid ceilings that apply depending on the owners' income level and the expected energy and emission savings from the relevant works. Depending on the assistance package, grants can range from about €10,000 to €35,000. There is also a bonus system that rewards the most efficient renovations and encourages the use of renewable energy.

### **KfW 'Energy Efficient Refurbishment' programme (Germany)**

([https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestehende-Immobilie/F%C3%B6rderprodukte/Bundesf%C3%B6rderung-f%C3%BCr-effiziente-Geb%C3%A4ude-Wohngeb%C3%A4ude-Kredit-\(261-262\)/](https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestehende-Immobilie/F%C3%B6rderprodukte/Bundesf%C3%B6rderung-f%C3%BCr-effiziente-Geb%C3%A4ude-Wohngeb%C3%A4ude-Kredit-(261-262)/))<sup>10</sup>

This initiative provides low-interest loans and grants for energy efficient renovations of residential buildings, including single family homes and multi-apartment buildings. As with the French scheme, eligibility extends to all owners whether they occupy or rent the property, and the financial assistance covers energy audits and insulation, heating, or ventilation works, which must be carried out by certified individuals or companies.

Currently, a loan of up to €150,000 per residential dwelling is available together with concessional interest rates and repayment grants that can cover up to 45% of the loan amount, depending on the efficiency level (using a KfW efficiency standard) and the stage of the renovation. The more ambitious the energy saving target is, the higher is the available grant and/or the lower the interest rate payable.

The scheme is currently being re-examined with a view to expanding funding for “climate friendly heating” given government plans for replacing fossil fuel heating systems with renewable alternatives.

### **Warmer Homes Scheme (Ireland)** ([Fully Funded Energy Upgrades | Home Energy Grants | SEAI](#))

This scheme is targeted at low income households and provides free energy efficiency upgrades – this is a national level scheme, while there are also parallel local government schemes focused on social and low income housing. The scheme currently targets the

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<sup>10</sup> Our understanding is that the KfW programme is being reviewed and/or redesigned and, therefore, the details of the scheme may differ to those described here.

worst performing properties, by prioritising (without being limited to) homes that were built and occupied before 1993 and that have a pre-upgrade energy rating of E, F or G. Supported upgrades include insulation (of attics, cavity walls, external walls and internal walls), secondary works such as draught proofing and energy efficient lighting and, occasionally, new heating systems and windows.

Eligible applicants are owners living in their own home (and for their main residence), the home must have been built and occupied before 2006, and the applicants must be recipients of certain specified government welfare payments. Those that are not eligible under this scheme do have access to other grant assistance for bringing up homes to an energy efficiency rating of B2 or above.

The scheme is administered by the Sustainable Energy Authority of Ireland (SEAI). The process, after a homeowner applies and is confirmed to qualify for assistance, entails an SEAI surveyor checking that the home is suitable for the works and recommended upgrades, a contractor is then appointed from SEAI's panel to carry out the upgrade works, and once completed, the works and resulting energy rating are assessed by SEAI, while this may also be supplemented by a quality inspection.

#### **Clean Air Programme (Poland) ([Clean Air – Clean Air Programme \(czystepowietrze.gov.pl\)](http://czystepowietrze.gov.pl))**

The Polish programme was originally launched in 2018, it was revamped in 2020 and is expected to run until 2029. The scheme focuses on modernising heat systems in residential buildings, including single family homes, multi-apartment buildings, and social housing, and particularly targets households in need. Other key features of the Polish scheme are that it prioritises regions and areas with higher levels of air pollution (and therefore where the need for air quality improvement is most urgent), and it involves extensive collaboration with municipalities in identifying eligible buildings, raising awareness, and facilitating the implementation of renovation projects.

The support offered is in the form of grants and subsidies, which are differentiated depending on the income of the beneficiaries and the energy efficiency of the building. The works covered include the replacement of solid fuel heating sources with heat pumps, electrical heating systems, condensing gas boilers, or biomass boilers; the upgrading of insulation and ventilation, and the replacement of windows and doors; and the installation of renewable energy sources, such as solar collectors and small photovoltaics.

As part of the 2020 relaunch, the banking sector is also part of the programme acting as a source of complementary and bridging finance in addition to the grants or subsidies available. The latter comprise of a 'basic subsidy' that can be granted to persons with an income of less than PLN 100,000 (c. €21,500). 'Increased subsidies' are available to those with average monthly income per household member that does not exceed PLN 1,400 (€300) for multi-member households, or PLN 1,960 (€420) for single-member households. The grants that are offered typically cover a percentage of the eligible costs associated with the energy efficient renovation. This percentage varies (depending on income and the state of the building), but it can range from a significant proportion up to the full cost of the eligible measures.

**IFRRU 2020 (Financial Instrument for urban revitalisation and renewal) (Portugal)**  
(<https://ifrru.ihru.pt/home-en1>)

IFRRU 2020 is a financial instrument that has been established to fund urban renewal and energy efficiency in Portugal. It uses €102 million of European Structural and Investment Funds to mobilise €1.4 billion of public and private financing for urban development, with the aim of generating a total investment of €2 billion. The investment strategy of the ‘fund of funds’ targets the improvement of buildings that are more than 30 years old, abandoned industrial spaces and units, social housing (including private units within a social housing building) and public spaces. Typically, the works should improve the general condition of the building and must include interventions to improve the energy efficiency of the building (through energy certificates that are issued before and after the intervention).

IFRRU 2020 is a national body established to act on behalf of the eight managing authorities supporting the financial instruments. It operates in a multi-stakeholder environment, which includes the public financiers, the private sector financial intermediaries, specialist ministries and agencies, and more than 300 municipalities across Portugal. The financial intermediaries were chosen through a public tender. The design of the instrument requires that the IFRRU 2020 products are offered by each of the banks across all of Portugal (in total more than 1,000 offices). This generates more competition and therefore ensures that the final recipients can access finance on the most competitive terms. Until the end of 2022, this programme had allocated around €143 million for energy efficiency in residential buildings.

**Fundo Ambiental – PAES (Environmental Fund - More Sustainable Buildings Programme) (Portugal)** (<https://www.fundoambiental.pt/paes-2023/e-balcao.aspx>)

The More Sustainable Buildings Programme aims to finance measures that promote rehabilitation, decarbonisation, energy efficiency, water efficiency, and the circular economy, contributing to the improvement of the energy and environmental performance of buildings and corresponding goals.

Specifically, it is intended that the measures to be supported can lead, on average, to at least a 30% reduction in primary energy consumption in the intervened buildings. The incentive programme covers existing single family residential buildings as well as dwellings in multi-family buildings in all of Portugal.

The intervention measures include the replacement of windows for more efficient ones (class A+), application or replacement of thermal insulation, heating and cooling systems that use renewable energy (class A+ or above), PV (including storage) and solar thermal, and equipment for hydraulic efficiency. This programme has an average participation of 85% in the form of grants and each beneficiary is limited to a maximum incentive of € 7,500. The programme is in its third phase with a total allocation of €30 million (the previous phases from 2021 to 2022 allocated around €132 million for energy efficiency in residential buildings and achieved an estimated reduction of primary energy of 47%).



## 4.2. Engage stakeholders

An important element of BRS *formulation* is engagement with stakeholders in order for them, among other things, to gain an insight into the advantages and opportunities that implementation of the strategy will create, and to help them obtain an early understanding of their own roles within the strategy, while ensuring that a comprehensive approach to building renovation is adopted, which considers the diverse interests, expertise and perspectives needed for successful collaboration. The experience of EU Member States has highlighted the importance of involving stakeholders from the earliest stages of the BRS (i.e. during their design). However, **stakeholder engagement and consensus building takes time and will need to continue while the strategy is implemented in practice, as it is a key determinant of the quality and effectiveness of the BRS in delivering the scale of transformative change required in the marketplace.**

Key factors CPs should consider in this regard are:

- **Seek inclusiveness** – open and inclusive participation is both necessary and justified, given the broad societal benefits being pursued through the strategy and the coordinated action that is required among many and diverse actors to ensure the BRS is delivered. See Figure 6 below for a summary of the different stakeholder groups that would need to be engaged and consulted. As the stakeholder community is both vast and diverse, the CPs should explore whether associations or representative groups have been identified, and should consider establishing sub-working groups (see the Denmark case study in Box 3 below).

Figure 7 The diverse community of stakeholder groups





### Box 3. Stakeholder engagement case study: Denmark

Although the approach described here relates to how Denmark formulated (rather than how it is delivering) its BRS in 2014, it does demonstrate the breadth of engagement required (about 200 participants were involved), how the stakeholder engagement can be organised around the targeting of market segments, and the importance of a dedicated coordinating body. Key features of the engagement process were:

- **Six working groups** were created to formulate initiatives - single family houses, flats, public buildings, businesses, financing and economic security, and innovation and green business;
- **An inter-ministerial task force** was established to coordinate efforts and discuss cross-cutting initiatives and issues, which were identified by the participants themselves;
- Stakeholders agreed to participate **without any financial compensation**, which demonstrates that there is value and benefits from the experience; and
- The **outcomes and proposals from the engagement process were catalogued** and fed directly into the formulation of the renovation strategy.

- **Ensure roles and responsibilities are understood** (enablers, deliverers, influencers, etc.) – to ensure that the various stakeholders make the necessary commitment and facilitate BRS delivery, they need to be actively engaged according to their respective roles. These include direct delivery on elements of the strategy (e.g. the provision of finance, or the execution of works by installers), or can be indirect in enabling (or not disabling) others to deliver (e.g. training and regulatory bodies). Special attention should also be given to key intermediaries such as architects, contractors and installers who can significantly influence energy renovation decision making. These intermediaries play a

prominent role in the delivery and/or quality assurance of energy renovation measures, but they are also the persons that building owners consult when deciding about the extent and depth of their renovation projects. Hence, these intermediaries and deliverers need to fully support the BRS and its measures if renovation activity is to be catalysed and upscaled.

- **Promote collaboration and consensus building** – this ensures that the collective expertise from all parties is harnessed to ensure effective delivery and helps foster trust, collaboration, transparency, accountability and commitment to the goals and methods of the BRS.
- **Coordinate with other policy dimensions** - in engaging with stakeholders, it is likely to be appropriate to coordinate with

other policy dimensions to the national energy agenda, extending to regional and local level. For example, actions under the aegis of the sustainable energy action plans of the EU Covenant of Mayors may facilitate such dialogue and coordination. This ensures that the consulting parties are not unnecessarily burdened with duplicate processes, and it promotes joined-up thinking and implementation.

The way that stakeholders are engaged and consultation is undertaken will depend on national and local cultural norms and practices. However, there are some broad principles that CPs should be mindful of that could help ensure effective and impactful participation. These include the following:<sup>11</sup>

- **Consultation should be clear and concise** to facilitate understanding and foster stakeholder participation and responses.
- **Consultation should entail a distinct purpose and procedure**, so that the nature of the consultation and how this relates to BRS formulation and implementation is understood.
- **Consultation should be informative**. This requires the provision of sufficient, digestible and evidenced information to aid understanding of the issues that are being consulted upon and to garner informed responses.
- **Consultation should employ multiple channels and forms**. Consider using informal and iterative procedures where appropriate, and employing new digital tools and open, collaborative approaches.
- **Consultation should allow sufficient time for responses**. This requires balancing the need for allowing parties sufficient time to provide informed and meaningful responses, but at the same time not unnecessarily delaying BRS development and implementation. The duration of the consultation will depend on the scope, nature and impact of the matter being consulted upon.
- **Consultations should be targeted and tailored to the stakeholder groups being consulted**. This requires consideration of both the messaging that is used, having regard to the needs and capacity of the relevant stakeholders to utilise the information presented to them, and of the times needed by different stakeholders to respond.
- **Consultation should facilitate scrutiny and transparency**. CPs should consider publishing summaries of the responses received, and specifying how they have informed, or are being incorporated in, the renovation strategy and its implementation.

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<sup>11</sup> These principles are drawn from BPIE (2019), EU Energy Performance Of Buildings Directive – Guidance for Public Officers, Navigating new requirements for renovation

strategies (<https://www.bpie.eu/publication/eu-energy-performance-of-buildings-directive-guidance-for-public-officers-navigating-new-requirements-for-renovation-strategies/>).

### 4.3. Sell the case

Publishing and effectively communicating the BRS is crucial for its success, as it forms the foundation for informed decision making, and ensures transparency which helps foster trust, cooperation and participation. Publication of the BRS effectively represents the final phase of BRS development and the commencement of implementation. The opportunity should therefore be used to 'market' the strategy by:

- Promoting the benefits of renovating buildings to stakeholders, including the wider public, **to raise awareness and garner support** for the strategy; and
- Showcase the **wider environmental and societal benefits** of renovation (improved quality of life) that were discussed in Section 2 above.

However, as with other aspects of BRS implementation, public awareness should be an ongoing process that is maintained (and modified as required) throughout the implementation period. Drawing on the range of approaches used by EU countries to promote and implement their long-term renovation strategies, CPs should consider the following when promoting and communicating their BRS:

- **Publish a user-friendly version of the BRS.** The strategy document is likely to be lengthy and very detailed, containing much analysis and technical content that cannot be readily understood by the wider public. Hence, CPs should consider producing an abridged

version with clear and understandable language and with the use of figures, charts, infographics and images to illustrate key points and ensure the information is more digestible and engaging.

- **Ensure wide dissemination and communication of the BRS.** The strategy should be published on official government websites, but should also be distributed through other channels, such as media outlets and press releases (both in the trade and popular press), and social media platforms. Public forums and workshops could also be held to present and discuss the BRS and its implementation, as could webinars and online seminars or forums to either share information, or engage with stakeholders and host educational campaigns. Any awareness or educational campaigns would need to contain targeted messaging for the different stakeholder groups and their respective interests and needs. Importantly, the target audience should also include intermediaries such as engineering institutes, architects, surveyors and trade bodies, and also building industry trades such as heating contractors, insulation installers, etc.
- **Highlight success stories.** Use examples of successful renovation projects to demonstrate the benefits and possibilities of the strategy, and to highlight and disseminate knowledge regarding replicable learnings and good practices.

- **Maintain two-way and continuous communication.** Ensure that there are nominated contact points where stakeholders can send questions or obtain further information. Communication should remain open and the relevant CP authorities should continuously monitor stakeholder feedback and promptly address any queries or concerns.
- **Produce progress reports.** As discussed further below, an important element of BRS implementation is ongoing monitoring and review. The outcomes of this should feed back to the awareness raising activities; that is, stakeholders should be periodically informed of progress and any achievements, challenges, and future actions or targets be highlighted thereby ensuring transparency and accountability.
- **Highlight the wider social benefits.** As discussed earlier, the benefits from a long-term programme of investment in improved building energy performance are extensive, and include a number of positive consequences, such as improving the quality and valuation of the building stock as a capital asset, related improvement of living and working conditions (comfort and health), reduced CO<sub>2</sub> emissions, reduced local pollution emissions (e.g. 'PM 2.5' particulates which can be particularly damaging to respiratory health), reduced maintenance costs, improved productivity, creation of skilled jobs

and greater economic activity, as well as increasing energy security and reducing the energy bills for households, business and the public sector alike. While it can be difficult to estimate the economic value of these incidental benefits, they are nevertheless real and tangible and should be identified, described and publicised to obtain broad community 'buy-in' for the BRS.

#### 4.4. Close data gaps

Based on experience elsewhere, it is reasonable to assume that there are likely to be significant data gaps in the CPs and their associated BRSs, in at least some respects. Hence, **the implementation phase should be used to address and resolve these data gaps**, which are likely to relate to:

- the building typologies and their energy and technical characteristics;
- the cost of energy efficiency interventions; and
- the wider environmental and social benefits.

In addition to addressing data deficiencies, the implementation phase should be used to **collect data (including through research) needed for planning and prioritising future renovation opportunities and activities.**

Possible ways that can be employed by the CPs to close data gaps include the following:

- **Use and leverage existing databases and tools.** The relevant information or data may be

available in the databases of government agencies, local authorities, research organisations, or industry associations. Energy performance certificate (EPC) databases would be particularly valuable in this regard. Moreover, reference to data available in other CPs or EU countries in analogous circumstances might be useful.

- **Conduct pilot projects.** Implementing pilot and demonstration projects can be used to collect actual data on energy performance, costs, and other technical characteristics.
- **Undertake relevant surveys and data gathering exercises.** Targeted surveys and data collection efforts can be used to obtain the missing information. Stakeholder groups such as local authorities, professional organisations and industry associations could be involved in such activities.
- **Collaborate with academia and research outfits.** Partnering with academic organisations and research institutes specialising in energy efficiency and building science can be employed to conduct research and studies in the areas where information is lacking. Consideration could also be given to establishing data sharing platforms where relevant energy performance data and renovation activities can be collected and shared.
- **Obtain information through stakeholder engagement.** The engagement and consultation discussed in section 4.2 can be

used as an opportunity to obtain the relevant information and valuable ‘on-the-ground’ insights. Dedicated workshops, roundtables and expert consultations could also be used to collect the relevant information and draw on relevant knowledge and expertise.

- **Conduct energy audits and assessments.** A programme of energy audits could be established for the main categories of buildings (e.g. in the commercial sector) where there might be data limitations, in order to assess the techno-economic feasibility of energy renovations and to help prioritise opportunities and resources for energy efficiency renovation in those sectors. These could also be targeted at sub-sectors that might be the subject of specific delivery programmes, such as the hotel sector, or hospitals, or small and medium sized enterprises, or the retail sector.

#### 4.5. Create momentum

Since the BRSs in the CPs are the first of their kind and will be newly implemented, **the initial implementation steps are likely to be the most difficult.** A key objective for the CPs will be to **achieve an early mobilisation of investment in energy performance upgrades**, on a scale considerably greater than the current norm.

Ideally, this investment would be primarily in deep renovation, however, pragmatically, **there might be a need to initially accommodate staged renovation approaches.** These entail



'shallower' energy efficiency renovation because of their lower logistical difficulties, investment cost and/or quick returns on investment (or payback periods), deferring investment in deeper energy efficiency renovation. However, it should be recognised that the staged approach might also result in 'lock-in' effects, that is, installing less than best practice technical energy systems today would effectively 'lock in' the building into energy consumption and emissions for, say, a 20-year period until that plant is due for replacement.

The crux of this trade-off is the gap between the holistic interests of society versus the perceived narrower interests and perspectives of the individual investor, and correspondingly between a broader social benefit versus a payback approach to evaluating the cost effectiveness of investments. Because of the dichotomy between these perspectives, and because it is the role of policy makers to serve the wider and long-term interests of society (including investors), much of the discussion and guidance in these Guidelines is predicated on an assumption that it is a responsibility of public policy to use the appropriate regulatory instruments (and the types of suggestions in these Guidelines) to gain investor confidence, and stimulate investors to extend their level of ambition in relation to energy efficiency renovation and the upgrading of their building assets. This could be termed the 'payback challenge' – while paybacks can be long, energy renovations still translate into favourable investments and outcomes compared to alternatives (especially if measured using social discount rates in the same way that infrastructure projects are justified).

Regardless of the approach chosen by the CPs, **it will be important for momentum to be achieved early in the BRS implementation period.** For this purpose, CPs should consider:

- **Seeking early wins** to create confidence and offer examples that can be replicated (e.g. cost-effective solutions, where there are fewer political constraints);
- **Undertake specific actions for publicly managed buildings**, thereby demonstrating leadership in renovating the public building stock, in procurement and in other visible initiatives. It is noted that under Article 5 of the EED, there is in any case an obligation for a 3% annual renovation rate in the public sector; and
- **Start immediately with priority actions** centred on addressing key barriers (see section 5 below) and eliminating the dichotomy between broad social and narrow private costs and benefits.

#### 4.6. Monitor and review

The Governance Regulation applying in the Energy Community ensures that a transparent and reliable integrated reporting and monitoring system is in place on a national level, based on the NECPs.

However, irrespective of the formal obligation to review the BRS and report to ECS biennially, **BRS implementation should be regularly monitored and periodically reviewed and updated.** Monitoring and review of the effectiveness of the BRS as it is applied in each market segment ensures that:

- **Progress** towards achieving the goals and targets set in the BRS/NECP **is assessed**.
- **Successful and unsuccessful outcomes, challenges, lessons learned and best practices** can be identified and disseminated.
- The strategy, action plans and/or delivery programmes can be **adjusted based on experience and changing circumstances**.
- Decisions can be made about **reallocation of resources to ensure maximum benefit** is obtained and/or specific problem areas are promptly identified and addressed.
- **Momentum and engagement can be sustained** by demonstrating a commitment to BRS implementation.
- **Accountability is maintained**, as progress is continuously tracked and reported.
- **Define specific metrics and indicators** that will be used to assess progress and outcomes. These could include measures of energy savings, emission reductions and cost effectiveness, as well as the specification of indicators of the wider benefits of energy renovation (such as reduction in energy poverty, reduced emissions, productivity gains, and improved living conditions). This is an area that still lacks consistency among EU Member States, but there are ongoing efforts to streamline and standardise indicators such as the “EU Buildings Climate Tracker” (see Box 4). CPs should monitor and participate in developments in this area. Moreover, it will be important to ensure the ‘integrity’ of the metrics, that is, that the outcomes measured can be assigned to the renovation actions and that no spurious claims are made that would harm the credibility of the BRS. A mix of both bottom-up and top-down metrics are likely to be needed, and these will need to be reconciled to ensure a balanced and comprehensive understanding of outcomes.

In short, the intention of the monitoring and review process is to ensure that corrective actions and adaptations of the BRS and its implementation are realised, so that there is **a sustained, long-term evolution and delivery of the strategy**. The following are some key considerations for CPs in undertaking their monitoring and review activities:

- **Consider establishing an independent committee to monitor and report progress** – this helps ensure that evaluation is objective and credible, and avoids actual or perceived conflicts of interest (given that those reviewing the strategy and its implementation are not the same as those tasked with delivering on its goals).
- **Establish regular reporting intervals** – CPs should be clear about and set a predetermined frequency for progress reporting (e.g. quarterly, half-yearly, annually, etc.). The intervals might differ depending on the market segment and the related volume, scale and complexity of the renovation efforts.



- **Collect robust data** – this requires that robust data collection processes are established (see also the discussion earlier about closing data gaps) so that the assessment is based on accurate and reliable information.

**Box 4. The EU Buildings Climate Tracker developed by the Buildings Performance Institute Europe (BPIE) (<https://www.bpie.eu/keyword/buildings-climate-tracker/>)**

As a response to the challenges of collecting and using data to monitor and assess decarbonisation progress in the EU building stock, BPIE developed an index composed of a set of relevant indicators. The Tracker is intended to serve as a benchmark and assessment tool for the status of decarbonisation in the EU building sector and its progress towards climate neutrality by 2050. The index aggregates the following six indicators:

- CO<sub>2</sub> emissions from energy use in buildings by households and the services sector;
- Final energy consumption in households and the services sector;
- Improvement in EPC ratings;
- Share of energy from renewable sources (for heating and cooling, and in gross electricity consumption);
- Cumulative investment in renovation in real terms; and
- Annual domestic expenditure per household in real terms.

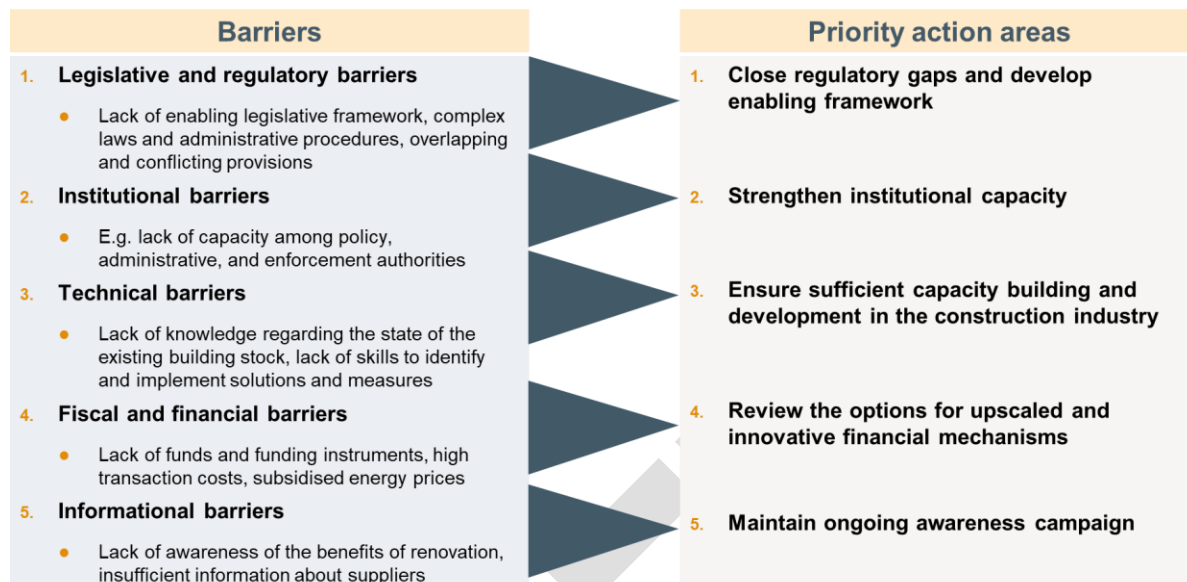
## 5. The five priority action areas

As discussed in previous sections, the building renovation sector is characterised by a multitude of market failures and barriers, which collectively act as a deterrent for undertaking renovation activity (of the required level or depth) on both the demand (building owner or investor) and supply (service provider) sides.

**A key immediate focus for CPs therefore should be tackling the barriers to achieve early phase renovation delivery, while also setting the pathway for upscaled (in terms of pace and depth) energy renovations in the future.**

Accordingly, this section stipulates a **checklist or menu of actions that CPs should be prioritising to ensure effective BRS delivery**. These action areas have been developed and grouped as specific responses and solutions to tackling key renovation barriers as shown in Figure 8. It is noted that these actions do not apply equally to all CPs, and some may have already been implemented in certain CPs. Moreover, in many cases, the actions already constitute formal obligations under the transposition of the EU energy efficiency *acquis*.

Figure 8: Key barriers\* and corresponding action areas



\* Note: These can apply in some or all market segments (i.e. building types), on either or both the demand and/or supply side, and in isolation or together with other barriers.

### 5.1. Close regulatory gaps and develop a favourable legal and regulatory framework

Key actions for CPs to ensure that an enabling legislative and regulatory framework is in place to support BRS implementation include:

- Finalise the **cost optimal methodology** for renovation works to inform the next upgrading of building regulations consistent with BRS goals and objectives.
- Finalise the definitions and guidance on nearly zero energy buildings (nZEB)<sup>12</sup> for different building types and any other

### outstanding EPBD provisions

(e.g. EPC procedures, National Calculation Methodologies, etc.).

- Take account of positive energy efficiency aspects in **public procurement** procedures.
- 'Fast-track' **legalisation of buildings** without permits if owners implement energy efficiency measures (to the required standard) and subject to meeting other important conditions (such as safety).
- Establish an effective legal framework to support the formation of **Housing Associations** and their ability to raise finance (see Box 5).

<sup>12</sup> It is noted that under the new EPBD recast under discussion in the EU, the aim is to upgrade the European building stock to zero-emission buildings (ZEB) by 2050. These are defined by the EPBD recast as buildings with

very high energy performance where the very low amount of energy still required is fully covered by energy from renewable sources generated on-site, or from a district heating and cooling system.

- Develop the legal and financial infrastructure to facilitate the establishment and entry of **ESCOs**. This way, building owners can leverage the expertise and services of ESCOs, thereby accelerating the implementation of building energy renovations. Consideration could also be given to establishing ‘Super ESCOs’ as a means of driving large scale renovation initiatives (for example, in the public sector).
- Amend **restrictive legislative acts or operational rules** that discourage the improvement of energy efficiency in buildings and/or the establishment of renewable energy communities and collective self-consumption. These can exist in many forms, including indicatively, cumbersome, costly and time-consuming permitting processes, inflexible zoning or planning codes and regulations, and high property taxes. These can in many cases be simplified or made more efficient without jeopardising their intended purpose.
- Identify **trigger points** (see Box 1) and develop regulations promoting energy performance improvement following trigger point events. These can include tax breaks or credits, and other financial incentives and subsidies (provided there is an expected net social benefit), and mandated energy audits that can identify cost-effective deep renovation opportunities.

### **Box 5. The challenge of multi-apartment buildings**

#### **A summary of the barriers**

Multi-apartment buildings raise special challenges for energy retrofits and renovations of common spaces, such as roofs, facades, entrance areas and lobbies, stairwells and elevator lobbies, hallways, storage areas, utility installations, etc. The split ownership between apartment owners of the common spaces in a building, and the ambiguous or complex governance structures governing these areas create significant hurdles for energy renovations. It is noted also that, even where EPCs exist for individual apartments, these do not extend to the common spaces and therefore there is limited information about the options available for upgrading the energy performance of the entire building. While the area of common spaces varies widely, these can represent about 10%-20% of the total floor area of apartment blocks, which represents a significant proportion of the total. Without a clear regulatory framework, therefore, energy efficiency upgrades to common spaces and a material percentage of building floor space would be jeopardised. This further compounds split incentive problems where apartments are rented.

#### **The obligation to introduce measures to help overcome the barriers**

Importantly, Article 19(1)(a) of the EED requires the CPs to evaluate and implement appropriate measures to remove regulatory and non-regulatory barriers to energy efficiency, including those that might exist between owners in multi-apartment buildings. Specifically, the Directive states the following:

*“1. Contracting Parties shall evaluate and if necessary take appropriate measures to remove regulatory and non-regulatory barriers to energy efficiency, without prejudice to the basic principles of the property and tenancy law of the Contracting Parties, in particular as regards:*

*(a) the split of incentives between the owner and the tenant of a building or among owners, with a view to ensuring that these parties are not deterred from making efficiency-improving investments that they would otherwise have made by the fact that they will not individually obtain the full benefits or by the absence of rules for dividing the costs and benefits between them, **including national rules and measures regulating decision making processes in multi-owner properties;**”*  
(emphasis added).

### Key measures to address barriers

Some measures that have been taken by EU Member States and some CPs to address the barriers to the energy efficiency improvement of common areas in multi-apartment buildings include the following:

- **Legal requirement to establish a Homeowners’ Association (HoA) and grant legal personality** – this creates an ability to raise finance on behalf of the multiple owners, but also to enforce the collection of funds.
- **Governance reforms e.g. simple majority decision making for energy upgrades** – energy efficiency upgrades are typically categorised under major repairs or renovations, which in many cases require unanimous or enhanced majority agreement among the multiple owners. Moving to a simple majority rule could simplify decision making, but this could also create problems among the dissenting minorities (who may have objective reasons to disagree, e.g. financial hardship) and therefore mediation techniques will be needed where there is a lack of consensus.
- **Obligation to periodically contribute to a common fund for maintenance, renovation, and energy efficiency** – this is an extension of the governance rules and in many cases there already exist such obligations among the co-owners of the common spaces for repairs and maintenance. This could be extended to cover energy efficiency upgrades.
- **Financial support** – this could take various forms, including the extension of credit lines to HoAs and the provision of government guarantees, encouragement of building level upgrades, for example, by providing increased financial assistance when energy renovation of the apartment extends to common areas in the building, targeted and tailor-made financing schemes for HoAs, and programmes specifically designed for implementing energy performance contracting in multi-apartment buildings.
- **Advice and consumer information** – provision of independent advice for energy efficiency upgrades in common areas, dissemination of best practice examples, development of information tools regarding the efficiency and energy performance status at building level, etc.

## 5.2. Strengthen institutional capacity to ensure the efficient management and operation of the energy efficiency sector

Key action points under this priority area include:

- **Strengthen the capacity of managing authorities** / ministries responsible for delivering the BRS.
- Create and reinforce (as appropriate) the relevant energy agencies by **committing sufficient staff numbers** at levels of expertise appropriate to their planning, regulatory, monitoring, support and programme delivery functions, including technical assistance for training of professionals (such as EPC assessors).
- Establish and **maintain the capacity of the EPC system** (ensure compliant labelling, online publicly accessible central register of licensed professionals/EPC assessors, QA system, etc.). The importance of the EPC system cannot be emphasised enough and in many ways represents the ‘currency’ of the renovation strategy. A robust EPC system provides an independent, standardised assessment of a building’s energy performance, and is therefore important for maintaining credibility and trust among stakeholders.
- Ensure **adequate capacity (assigned staff) of municipalities** to control and enforce compliance with construction regulations,

particularly minimum energy standards/nZEB and EPC legislation, and to implement penalising sanctions in cases of non-compliance.

- Compile and publish a **public sector buildings inventory** of energy performance, covering central and municipal government buildings, thus complying with the inventory requirement of EED Article 5.
- Establish **knowledge and experience sharing networks** across CPs (and with EU Member States). In this context, the CPs’ attention is drawn to the “EU Build UP” platform,<sup>13</sup> a portal established to foster knowledge sharing about energy efficiency and renewable energy related to the building and construction sector in Europe. It seeks to bring together practitioners and professional associations with a view to exchanging and sharing best practices, knowledge, tools and resources.

## 5.3. Ensure sufficient capacity building and development for construction industry professionals, workforce and suppliers

This represents another challenging BRS implementation area given the fragmented nature of the construction sector. Key actions that can be undertaken by CPs include:

- Deliver exemplar **pilot / demonstration projects** with

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<sup>13</sup> [Homepage | BUILD UP \(europa.eu\)](https://europa.eu).

accessible learnings for transmission to the construction industry in general.

- Deliver **training programmes**, including ‘Train the Trainers’, ongoing training of professionals and practical training of the construction workforce. CPs should investigate if they have access to EU projects funded under “Horizon 2020” (such as the “Train-to-NZEB project”<sup>14</sup>) and other EU programmes.
- **Register adequate numbers of qualified professionals and tradespeople (installers, glaziers, electricians, etc.)** to provide a basis for market confidence in engaging energy service providers, and encourage industry professionals and tradespeople to obtain relevant certifications and accreditations.
- Provide a **coherent suite of tools** (e.g. manuals, software) and online systems (e.g. databases of registered products and installers).
- Support **research, development and demonstration (RD&D)** measures to accelerate the deployment of new or improved construction technologies, techniques, materials, and components for the renovation of buildings.

#### 5.4. Review the options for upscaled and innovative financial mechanisms for funding energy efficiency schemes

Finance is fundamental for successful BRS delivery. The essence of the finance challenge is to draw out the financial resources potentially available on the supply side and deliver them to the market through intelligent mechanisms so that they are leveraged and applied to stimulate and mobilise energy efficiency renovation at the right scale, pace and depth, sustained from short to long-term, in line with overall energy efficiency targets.

Key priority actions for CPs to ensure finance is forthcoming include:

- Engage in a coordinated way with **donor bodies** to target the most promising ‘early wins’ in the public sector, social housing and energy poor households.
- Adopt monitoring and verification **(M&V) protocols** to help establish financier confidence.
- Establish official **model Energy Performance Contracts** to assist ESCO uptake.
- Review **international case studies on financing mechanisms** regarding their relevance and applicability to CPs. Of relevance to this is a World Bank-funded study undertaken recently for the Western Balkans (see Box 6). An important element of the funding framework is the need to ensure wholesale financing that

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<sup>14</sup> [Train-to-NZEB project | BUILD UP \(europa.eu\)](https://ec.europa.eu/euipo/train-to-nzeb/).



can be complemented to leverage renovation action on the required scale.

**Box 6. Western Balkans Residential Energy Efficiency Market Assessment – 2021 World Bank study carried out by Eco, ECA, Timel, Links4, Energy Saving Group ([https://www.energy-community.org/dam/jcr:d16f0354-d06a-4bd6-ac73-64a7a3a2c19c/WSEE\\_WB\\_112021.pdf](https://www.energy-community.org/dam/jcr:d16f0354-d06a-4bd6-ac73-64a7a3a2c19c/WSEE_WB_112021.pdf))**

This study assessed the readiness in the six Western Balkan countries for energy efficiency residential investments, including the potential for financing options.

The funding options considered were: public grant programmes, private sector mandates (including energy efficiency obligation schemes), energy efficiency funds providing direct loans, commercial financing (loans and credit enhancement tools), public-private partnerships through ESCOs and Super ESCOs/aggregators, enhanced green mortgages, on-bill financing, and Property Assessed Clean (PACE) loans.

The funding options were assessed against four criteria: scalability (i.e. the extent to which they can reach a large part of the target market), leverage (the degree to which private finance can be harnessed in addition to public funds), readiness (that is, whether the institutional and legal set-up is such that the funding option can be easily implemented), and sustainability (the probability that funding will continue to be available in the future and without government support).

The study found that grant programmes are already available but argued they would be difficult to upscale to ensure full market impact given budget limitations (although it was recognised they could augment other options). Of the remaining financing options, the study concluded that the most promising were:

- Option 2: Private sector mandates (including Energy Efficiency Obligation schemes) linked to Option 7: On-bill financing.
- Option 4: Commercial financing (loans and credit enhancement tools) particularly using guarantee mechanisms and targeted subsidies (for poorer households).
- Option 5: Public-private partnerships through ESCOs and Super ESCOs / aggregators for distributed renewable energy (for single family households) and aggregators for multi-apartment buildings.



Criteria	Option 1: Public grant programmes	Option 2: Private sector mandates (including Energy Efficiency Obligation schemes)	Option 3: EE Fund to provide direct loans	Option 4: Commercial financing (loans and credit enhancement tools)	Option 5: Public-private partnership through ESCOs and Super ESCOs / aggregators	Option 6: Enhancing green mortgages	Option 7: On-bill financing	Option 8: Property Assessed Clean Energy (PACE) loans
Scalability	Red	Green	Yellow	Green	Green	Yellow	Yellow	Yellow
Leverage	Yellow	Green	Yellow	Green	Green	Green	Green	Yellow
Readiness	Green	Yellow	Yellow	Yellow	Red	Yellow	Yellow	Red
Sustainability	Yellow	Green	Green	Yellow	Yellow	Green	Green	Green

- Assess the scope for **innovative finance delivery mechanisms**, e.g. the possibility of channelling donor funds to consumers through means other than the banks (e.g. Housing Associations).
- Stimulate **blended financing arrangements** such as leveraging private funding through public financing, or de-risking of loans, etc. to 'free up' the funds given in the form of grants for those who are in most need, such as vulnerable households and people living in fuel poverty.
- Allow **central budget finance**, e.g. grant schemes, to be made available on a multiannual programme basis.
- Develop **funding vehicles, tailored to specific market segments**, with streamlined procedures ('one-stop shop').

- Abolish **fossil fuel subsidies** to remove disincentives to invest in energy efficiency.

#### 5.5. Maintain an ongoing campaign directed at building awareness and confidence among all market sectors and players

The need to sustain engagement, consultation and awareness has already been emphasised. Key actions in this regard include:

- Deliver **regular promotional campaigns** to the different market segments, coordinated with the applicable financial instruments on offer.
- Seek to develop and **pilot the concept of a 'one-stop shop' service** to building owners, championed by a municipal authority (or other relevant party) under the aegis of the relevant managing authority/ministry.<sup>15</sup> EU

<sup>15</sup> This may also be Local Energy agencies (where they exist), as these can have an important role in creating awareness of and/or

operating one-stop shops, connecting different stakeholders according to local context.

experience has demonstrated that there may be merit in having a different one-stop shop depending on the target market segment. For example, a private entity may be interested in managing a one-stop shop in view of supporting the financial authorities and investors in improving their Environmental, Social and Governance assets, while a public authority may be more suited to managing one-stop shops that employ public funding to support people in energy poverty, worst performing buildings, etc. An interesting case study from Portugal suggests yet another option, a mobile one-stop shop. This entails the 'shop' going to the building owners rather than the other way around.

- Establish good **communication channels for the exchange of knowledge and experience between different levels of administration** (national, regional, county, local).
- Establish a **web portal as a comprehensive focal point** for energy efficiency in buildings, hosting or linking to all key registers and databases.
- Establish **publicly accessible (online) databases with case examples of good practice** and all necessary data for launching and implementing energy renovation projects.

## Acknowledgements

These Guidelines have been jointly prepared by the Energy Community Secretariat (ECS) and the European Bank for Reconstruction and Development (EBRD), with assistance from Economic Consulting Associates Ltd (UK) (and its associate, Kevin O' Rourke, Sustainable Energy Specialist).

The preparation of these Guidelines has benefitted from inputs and reviews from several individuals and organisations. We are grateful to those who provided such input including participants in a workshop of the Energy Efficiency and Coordination Group (EECG) held in Vienna, Austria on 29 March 2023 and a subsequent EECG meeting in Tbilisi, Georgia on 22 June 2023. Many of these individuals devoted considerable time and expertise to help us shape our views on different parts of the Guidelines.

A special thanks is attributed to Claudia Monteiro from ADENE (Energy Agency, Portugal) and Mariangiola Fabbri of the Buildings Performance Institute Europe who voluntarily contributed to the roundtable discussion at the March 2023 EECG workshop, and kindly accepted to peer review these Guidelines.

Notwithstanding the invaluable insights and assistance of all those mentioned above, responsibility for the content of this document rests with ECS and EBRD alone.

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