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**FINANCING BUILDING SMARTNESS UPGRADES THROUGH PUBLIC
INVESTMENT PROGRAMS-V1**

D1.4 FINANCING BUILDING SMARTNESS UPGRADES THROUGH PUBLIC INVESTMENT PROGRAMS-V1

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EXECUTIVE SUMMARY

Scope and objectives of the analysis

This document “Financing building smartness upgrades through public investment programs-v1” complements further research activities dedicated to “Collecting the information for bridging the gap between SRI and EU citizens”.

These activities compose Smart² WP1 and will gather the necessary information for the delivery of the required tools to allow the uptake of SRI and to reduce the distance between the SRI and EU citizens. Additionally, it aims to establish a system for recording how EU residents understand the SRI and to identify the components that common citizens consider crucial for SRI marketing initiatives.

The aim of the research reported in this document is to support collecting the required information and responding to the following objectives:

- To record the current status in relation to funds and tools, which could potentially finance the promotion of SRI in the Member States.
- To assess the rationale, the structure, and the sources of the funds.
- To outline the criteria used to evaluate and to qualify a project for funding.
- To define the potential for financing of buildings smartness upgrade.
- To analyse investment schemes that are currently in place, which could be considered for replication.

The report “Financing building smartness upgrades through public investment programs” will be updated on the 30th month of the project implementation (M30), and its contents will feed the SRI Observatory.

Methodology

For the purposes of this report, a structured questionnaire was developed to present systematized information on the main issues, specifics, and conditions in the current financing programmes in 6 Member States, represented in the project – Bulgaria, Romania, Italy, Greece, Cyprus, and Germany. Each of the partners involved in this activity provided their input, which was further analysed. The questionnaire covers topics such as:

- The current public programs through which SRI domains can be financed;
- The amount of financing and the conditions for receiving it;
- The organization of the application process and public procurement.

The 6 filled questionnaires can be found in the Appendix Section.

Relation to other research documents and activities

The results presented in this document have the potential to serve as a foundation in subsequent dissemination, communication, and exploitation activities. Because of updated report in M30, the identified good practices and success stories will be included as integral dissemination material of the project, in the SRI Observatory, the SRI Virtual Training Centre, as well as in the SRI Days.

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
SRI	Smart Readiness Indicator
EE	Energy Efficiency
RES	Renewable Energy Sources
EPBD	Energy Performance of Buildings Directive
EED	Energy Efficiency Directive
EU	European Union
MS	Member State/s
BGN	Bulgarian lev
MRDPW	Ministry of Regional Development and Public Works (Bulgaria)

1. Introduction

With a staggering estimation of the 97% of the building stock being energy inefficient, the building sector plays a key role for achieving Europe's goal of climate neutrality by 2050. In addition to conventional renovation measures (e.g., thermal insulation of the building envelope, substitution of technical building systems, etc.), smart digital technologies can be instrumental to reach this potential. Thanks to the advancements in sensors, controllers and communication technologies, buildings can be transformed from passive isolated elements to smart-ready assets with optimal control, fully integrated into the energy system and other infrastructures, while answering occupants' needs. Achieving this transformation requires a significant increase in deployment of energy efficient measures in buildings and homes, increasing both the level of "smartness" of the building as well as the depth of renovation. However, the "smartening" and energy efficient renovation of the building stock is not happening at the required pace (at least 3%) needed for Europe to reach its goal of climate neutrality. Public incentives and investment programmes are vital for the promotion and uptake of the SRI.

Within the scope of the report, the existing public financing tools for promotion of energy efficiency and buildings smartness, which could potentially finance the promotion of SRI in the Member States, represented in the project – Bulgaria, Romania, Italy, Greece, Cyprus, and Germany are assessed. The assessment focus is on the rationale, the structure and the sources of the funds, the criteria used to evaluate and to qualify a project for funding, role of public procurement, etc.

2. SRI Overview

The SRI is a common EU framework for rating the smart readiness of buildings, which has been developed in close cooperation with Member States and relevant stakeholders of the value chain. The SRI rates the capability of buildings or building units to perform the following **3 key functionalities**: optimise energy efficiency and overall in-use performance, adapt their operation to the needs of the occupant, and adapt to signals from the grid. Accordingly, **7 impact criteria** are defined with regards to each key functionality. In the first, energy efficiency and maintenance and fault prediction. Comfort; convenience; health, well-being, and accessibility; and information to occupants in the second. Lastly, energy flexibility and storage related to the third key functionality. Ultimately, the SRI’s scope covers **9 technical domains**. Namely, heating, cooling, domestic hot water (DHW), ventilation, lighting, dynamic building envelope, electricity, electric vehicle (EV) charging, and monitoring and control. The assessment structure is outlined in Table 1.

Table 1: SRI key functionalities, impact criteria and technical domains

	Optimise energy efficiency and overall in-use performance		Adapt their operation to the needs of the occupant				Adapt to signals from the grid.
	Energy efficiency	Maintenance and fault prediction	Comfort	Convenience	Health, well-being, and accessibility	Information to occupants	Energy flexibility and storage
Heating							
Cooling							
DHW							
Ventilation							
Lighting							
Dynamic building envelope							
Electricity							
EV charging							
Monitoring and control							

Ultimately, the SRI shall be implemented at Member State level with the possibility of tailoring certain aspects of the methodology (e.g., weighting factors, service catalogue inclusiveness, data protection, etc.), while adopting the core of the assessment without modification (i.e., functionalities, impact criteria, technical domains, and SRI classes).

3. Funds and tools, which could potentially finance the promotion of SRI in the Member States

3.1. General overview

According to the information analysed in all 6 countries, financial instruments and programmes that provide citizens with the opportunity to improve the energy performance of their buildings are available. Embedded within such funding instruments there are some elements which are relevant for the smartness of buildings. Consequently, the upgrade of building smartness may be indirectly promoted through the following national programmes:

Table 2: Programmes/ tools by countries

Country	Programme/ Tool	Managing authority
Bulgaria	Support for sustainable energy renovation of the residential buildings - Stage I ¹	Ministry of Regional Development and Public Works
Romania	Grant scheme for energy efficiency and resilience in multi-family residential buildings ²	Ministry of development, public works and administration (MDLPA)
Italy	Taxes bonus (Bonus Mobili, Bonus Casa, Ecobonus) ³	Ministry of the economic development, national agency for taxes, national energy agency (ENEA).
Greece	<ol style="list-style-type: none"> 1. Electra⁴ 2. Saving at Home⁵ 3. Smart Readiness (undergoing public consultations)⁶ 	<ol style="list-style-type: none"> 1. Ministry of Environment and Energy 2. Ministry of Environment and Energy 3. Ministry of Digital Governance
Cyprus	"Saving – Upgrading Houses", Operational Program THALEIA ⁷	European Regional Development Fund and the Republic of Cyprus
Germany	The Federal Funding for Efficient Buildings ⁸	Federal Government

¹ [Approved Guidelines for application under the procedure "Support for sustainable energy renovation of the residential building stock - Stage I", December 2022, Ministry of Regional Development and Public Works, Bulgaria](#)

² National Recovery and Resilience Plan

³ [Taxes bonus \(Bonus Mobili, Bonus Casa, Ecobonus\), Agenzia Entrate, Italy](#)

⁴ [Electra programme, Greece](#)

⁵ [Saving at Home programme, Greece](#)

⁶ Public consultations, 2022, <https://mindigital.gr/archives/4249>

⁷ ["Saving – Upgrading Houses", Operational Program THALEIA, Cyprus,](#)

⁸ [The Federal Funding for Efficient Buildings Programme, Germany](#)

In most of the programmes, there is an opportunity to promote the SRI, but specific recommendations have also been identified to help the improvement of building smartness. For each programme or tool, the following main characteristics have been outlined:

- purpose and scope of the program/tool;
- period of action;
- eligible beneficiaries;
- source of funding;
- criteria used to evaluate and qualify a project for funding;
- organization of the application process;
- conducting public procurement;
- information on measurable results achieved;
- if the SRI criteria are identified by the program as an advantage in assessment phase and how.

The figure below illustrates how the existing funding schemes (mostly focused on energy performance) could indirectly boost SRI upgrade.

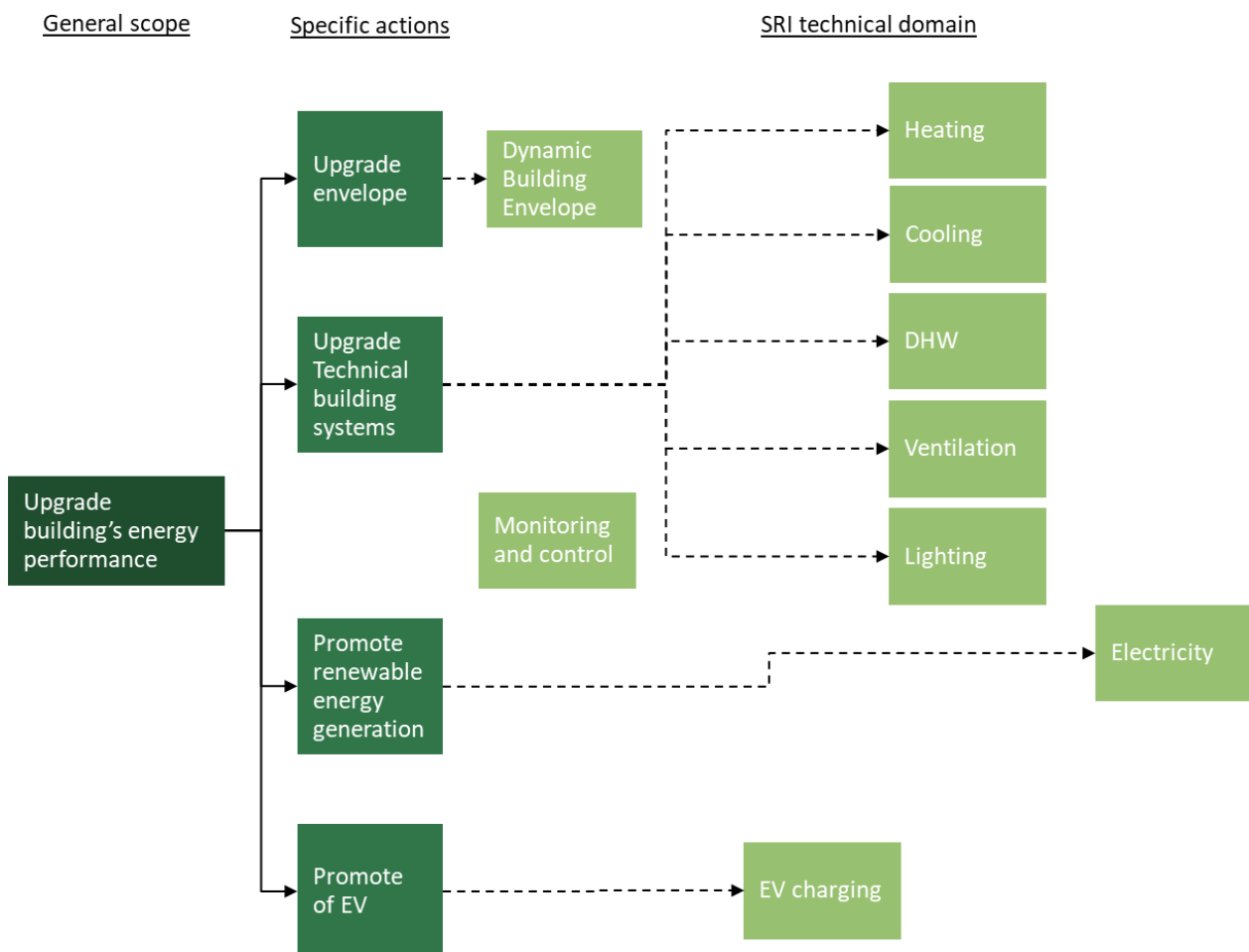


Figure 1

3.2. Purpose and scope of the program/tool

In general, for all the public programmes considered, the main objective is to promote building renovation and reduce energy consumption mainly in residential buildings (i.e., multi and single-family buildings).

In terms of the support offered, the program for tax reductions in Italy stands out, where the owners themselves finance the energy efficiency measures in advance, and the investments made are recovered within a 10-year period, through discounts in the taxes they pay. In the rest of the programs that have been examined, the support model is expressed in receiving different percentages of grant funding, which reaches 100%.

The detailed description of the current programs in the 6 countries is as follows:

Bulgaria

In Bulgaria, the main programme that offers support for energy renovation of residential buildings is "SUPPORT FOR SUSTAINABLE ENERGY RENOVATION OF THE RESIDENTIAL BUILDINGS - STAGE I", designed under the National Recovery and Resilience plan. The specific objectives of the programme are:

- improving the energy performance of residential buildings, by applying sustainable integrated highly efficient energy measures;
- reaching energy consumption class "B" or better after implementing energy-saving measures in multi-family residential buildings;
- reduction of the country's energy consumption, as well as reduction of greenhouse gas emissions;
- achieving 30% primary energy savings for each object of the residential building stock.
- resource efficiency, economic expediency, decarbonization through RES, sustainable construction process;
- reducing energy poverty by reducing energy costs;
- improvement of the conditions and quality of life of the population in the country through technological renewal and modernization of the building stock.

Eligible activities for funding are:

- replacement of windows, doors, etc.;
- thermal insulation of the external enclosing elements (external walls, roofs, floors, etc.);
- repair, modernization, or replacement of degraded common parts of the building's heating, cooling and ventilation systems to increase energy efficiency, within the limits of

the internal heating installation and without affecting facilities and fittings owned by heating companies registered under the Energy Act;

- reconstruction of the centralized heating system into an individual one, providing individual accounting of heat consumption for each owner of an independent object in the building;
- repair or replacement of the electrical installation in the common parts of the building and implementation of energy-saving lighting in the common parts;
- installation of a system for automated centralized lighting control in the common parts of the residential building;
- Placement/installation of energy utilization systems from renewable energy sources for the building's energy needs and energy storage batteries, if prescribed in the energy audit, which is mandatory for funding application;
- Accompanying construction and assembly works related to the implementation of energy efficiency measures and the corresponding restoration of the common parts of the building as a result of the implemented energy-saving measures. The accompanying construction and installation works are only related to the restoration of the original state, disturbed as a result of the renovation of the common parts and the replacement of windows in the independent object;
- Repair of a roof (sloped or flat roof), which may include activities to restore coatings, waterproofing, cladding, drainage system - permissible only if the energy-saving measure "Roof thermal insulation" is prescribed in the energy survey;
- Construction and installation works that arise from regulatory requirements related to the safe operation of buildings and are prescribed as mandatory in the technical passport of the building and construction works, which are legally necessary for putting the building into operation;
- Construction and installation works related to the removal of local defects and damages that do not violate the general structural stability of the buildings, but at the same time create a direct danger for the direct users or their non-removal would lead to more serious changes in the supporting structure of the building in the future;
- Construction and assembly works related to ensuring fire safety, repair/replacement of lightning protection and grounding installation, provision of an accessible architectural environment to the entrance of the residential building.

Romania

In Romania as in Bulgaria the master plan is The National Recovery and Resilience Plan under Ministry of development, public works and administration. The grant scheme for energy efficiency and resilience in multi-family residential buildings finances moderate or deep renovation/integrated renovation of multi-

family residential buildings of the at least 4.3 million m², through the following types of projects: integrated projects (seismic strengthening and energy efficiency) and energy renovation projects.

Through component C5 - Renovation Wave, the improvement of the building stock will be pursued through an integrated approach towards energy efficiency, seismic consolidation, fire risk reduction and the transition to green and smart buildings, while maintaining its aesthetics and architectural quality, the development of appropriate mechanisms for monitoring the performance of the building stock and ensuring the technical capacity for the implementation of investments.

Specific measures:

- Improving hygiene and thermal comfort conditions;
- Reduction of heat losses and energy consumption;
- Reduction of maintenance costs for heating and domestic hot water;
- Reducing pollutant emissions generated by energy generation, transport and consumption;
- Preservation of the architectural, environmental, and chromatic integration value in the urban environment.

Activities supported under the investment axis/operation:

- Thermal rehabilitation works of the building envelope elements;
- Thermal rehabilitation works of the heating system/of the domestic hot water supply system;
- Installation of alternative electricity and/or thermal energy generation systems for own consumption; the use of renewable energy sources;
- Installation/rehabilitation/modernization of air conditioning and/or mechanical ventilation systems to ensure indoor air quality;
- Rehabilitation/modernization works of lighting installations in buildings;
- Integrated energy management systems for buildings;
- Intelligent shading systems for the warm season;
- Modernization of the technical systems of the buildings, including for the purpose of preparing the buildings for intelligent solutions;
- Provision of equipment for electric vehicle charging stations, according to the provisions of Law no. 372/2005 on the energy performance of buildings;
- Other types of works (*usually activities that are required as a consequence of implementing energy efficient measures, such as plastering and painting around replaced windows, etc.*);

- Related works to comply with other fundamental requirements regarding quality in constructions (fire safety, hygiene, health and environment, operational safety and accessibility , noise protection, sustainable use of natural resources), applicable as the case may be.

Italy

In Italy, a tax incentive scheme is implemented. The aim of the incentive is to support the renovation of multi- and single- family houses, condominiums, hotels, whose owners paid the Income Tax on Natural Persons, called IRPEF (the main direct tax of the Italian tax system) or the Tax on Corporate Income.

The programme finances:

- thermal insulation of the building envelope
- replacement of windows
- modernization/replacement of Technical Building Systems;
- new energy efficient electrical appliances for household (such as fridge, oven, washing machine, dishwasher, etc.)
- renewable energy systems
- building automation and control systems -BACS.

The programme co-funded with different percentages the various interventions, from 50% to 85%.

Greece

In Greece, there are two active programmes to promote energy efficiency in buildings. The Saving at Home programme aimed at households and the Electra programme aimed at public administration buildings. Details of the two programmes are presented below as follows:

Saving at Home programme

Specific objectives of the investment for Saving at Home are:

- Improving the energy performance of households by at least 3 energy classes after implementing energy-saving measures (over 30% Primary Energy Savings).
- Contributing to energy savings of at least 213 ktoe per year and energy renovation of at least 105,000 homes by 2025
- Including incentives to support poor and vulnerable households in the form of an increased grant rate

Eligible activities for funding energy upgrades on:

- Windows (and doors for single-family houses only)
- Building envelope
- Hot water supply
- Heating and cooling system

Electra programme

Specific objectives of the investment of Electra are:

- Meeting the target of the annual energy renovation of 3% of the public administration buildings
- Reducing the primary energy consumption of buildings and the reduction of CO2 emissions
- After the interventions, to be classified, as a minimum, in class B of the EPC.

Activities eligible for funding are the following:

- Thermal insulation of opaque elements
- Replacement of transparent elements (frames, glazing)
- External shading systems
- Cooling and heating systems
- Mechanical ventilation systems
- Hot water supply
- Electrical installations and lighting systems
- On-site energy storage and generation

Cyprus

A sub-programme “Saving – Upgrading Houses” funded through an operational programme THALEIA is being implemented in Cyprus.

The programme aims at the extensive energy upgrade of existing houses. This is intended to be achieved using incentives in the form of grants. The programme covers exclusively investments related to the purchase and installation of new equipment / materials.

Eligible actions/costs covered by this programme include:

- consulting services
- thermal insulation of the building envelope
- replacement of windows
- installation of shading systems as well as the installation and / or replacement of technical systems (such as solar, photovoltaic, air conditioners, storage batteries, automations etc).

Germany

In Germany the Federal Funding for Efficient Buildings – BEG for short – summarizes previous funding programmes for promoting energy efficiency and renewable energies in the building sector and supports, among other things, the use of new heating systems, the optimization of existing heating systems, measures on the building envelope and the use of optimized system technology.

The BEG consists of three sub-programs:

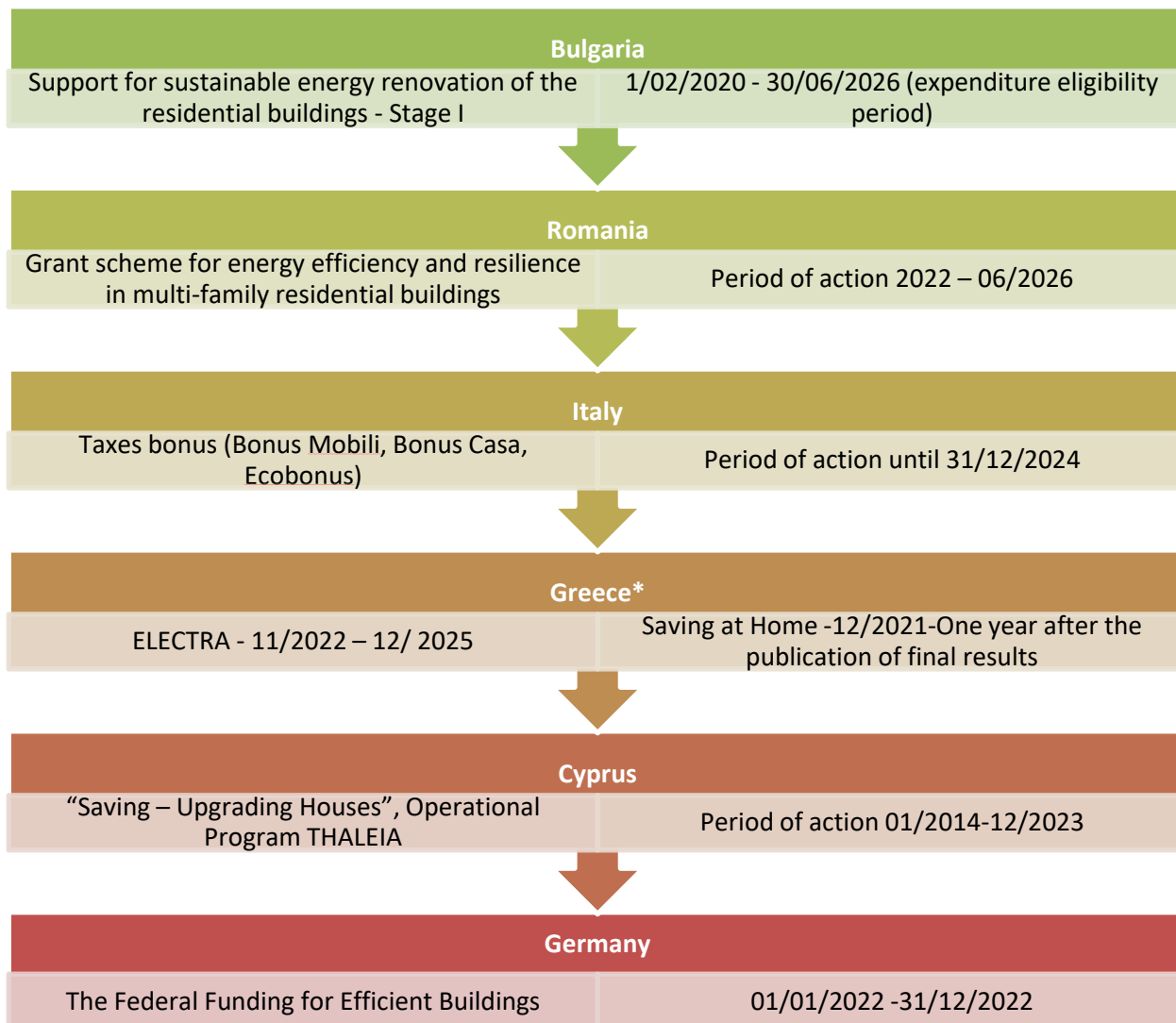
- Federal funding for efficient buildings - residential buildings (BEG WG)
- Federal funding for efficient buildings – non-residential buildings (BEG NWG)
- Federal funding for efficient buildings - individual measures (BEG EM)

Among the activities financed under the program are:

- Insulation of the building envelope
- Air conditioning systems including heat/cold recovery

- Installation and / or replacement of technical systems (such as solar, photovoltaic, air conditioners, storage batteries, automations etc)
- Heating optimization
- Specialist planning and construction supervision

3.3. Period of programmes duration



* *Smart Readiness programme (undergoing public consultations) is planned in Greece. The programme will be open till 12/2026. Start day not defined yet.*

3.4. Eligible beneficiaries

Bulgaria

- All multi-family* residential buildings that are managed under the Condominium Management Act (CMA) and designed before April 26, 1999 (when the norms for energy efficiency of buildings came into force) are eligible.
- *Multi-family residential building is a building with more than 3 separate objects for residential use.

Romania

- Territorial Administrative Units - UAT commune, municipality, county seat municipality, county, the Municipality of Bucharest and its administrative-territorial subdivisions (sectors of the Municipality of Bucharest), defined according to Government Emergency Ordinance no. 57/2019 regarding the Administrative Code, with subsequent amendments and additions, the Association/Associations of Owners will/will make available to the Applicant the Decision/Decisions of the General Assembly of the Association/s of Owners, approving the request for financing through the PNRR, under the conditions of this guide. If the owners are not constituted in owners' associations, they will make available to the Applicant a Resolution of the owners approving the request for financing through the PNRR, containing the written consent of all the owners.

Italy

- Multi- and single- family houses, condominiums, hotels, whose owners paid the Income Tax on Natural Persons, called IRPEF (the main direct tax of the Italian tax system) or the Tax on Corporate Income.

Greece

- **Saving at Home programme** - All residential buildings that meet the following conditions are considered to be eligible: It must be legally existing; It must be in good standing; It is used as a primary residence; It has been classified under EPC in a category lower than or equal to C.
- **ELECTRA programme** - All the public buildings that meet the following conditions are considered to be eligible: Legally existing and operating with the corresponding urban planning use; Owned by the candidate beneficiary; Classified in their existing state in an energy efficiency class C or lower; Buildings that have not undergone a radical renovation; Have a primary Pre-Earthquake Check Bulletin and are not classified as Class A; The interventions must concern a useful surface area of more than 500 m², per application to the program (exceptions for Municipalities under 40.000 inhabitants, Island Municipalities under 20.000 inhabitants, Municipalities belonging to lignite areas, Municipalities affected by natural disasters in recent years two years).

Cyprus

- Natural persons residing permanently in the areas under the control of the Republic of Cyprus are eligible to apply. Exceptions are the cases of energy upgrades of apartment buildings, for which a single application must be submitted by the Management Committee of the apartment building, which will act on behalf of all the owners, who must be natural persons.

Germany

- All investors (e.g., homeowners, contractors, businesses, non-profit organizations, municipalities) of eligible measures on residential and non-residential buildings are permitted to apply.

3.5. Source of funding

The main sources of funding for the energy renovation programs of the building stock are national budgets (Italy and Germany) and external funding, among the funds of the European Union and the recovery mechanism.

In Bulgaria

The programme is funded under the Recovery and Resilience mechanism (National Recovery and Resilience Plan). The intensity of the grant is 100% of the eligible costs for the first stage of the program, while for the second stage the intensity of the grant is planned to be 80% of the eligible costs. The only form of co-financing that is applicable to the first phase is the payment of the costs for the preparation of the technical passports of the buildings and for the energy audit.

In Romania

The financing rate granted through the PNRR is 100% of the value of the project's eligible expenses without VAT.

The funding scheme ensures that at least 90% of the total allocation for Axis 1 will be used for energy efficiency improvement works and no more than 10% of the allocation will be used for seismic strengthening and other complementary works (such as fire protection, accessibility, etc.).

In the case of projects submitted under the PNRR, the VAT amount related to the eligible expenses will be borne from the state budget, from the budget of the coordinator of reforms and/or investments for Component 5 - Renovation Wave - MDLPA, in accordance with the legislation in force.

Apart from the eligible value of the project, any other expenditure constitutes ineligible expenditure and will be borne by the beneficiary.

In Italy

The programme is funded by public funds from national government, covering a certain percentage of the eligible costs for the interventions (from 50% to 85% depending on the intervention types), while the remaining part is covered by the beneficiaries. The beneficiaries receive the funds in the form of taxes deductions, by subtracting the received incentive from the gross taxes amount during the year.

In Greece

The Saving at Home programme - The support of the scheme (with an EU co-financed budget) consists of a grant covering up to 75% of the cost (depending on the applicant's income), while the remaining 25% must be covered by loan or own funds.

The ELECTRA programme - The Greek state is investing 640 million euros coming from the Deposits and Loans Fund, the European Investment Bank and the Recovery Fund. The grant is set at 50% of the amount of the eligible public expenditure. If after the interventions the building is subject to radical renovation or achieves energy class B+, then the rate of funding shall be increased by 10% (in total 60%).

In Cyprus

The amount that will be allocated for the needs of the programme during the first call for proposals amounts to € 30 million and will be co-financed by the European Regional Development Fund of the European Commission and the Republic of Cyprus under the Cohesion Policy Fund.

The total call budget will be at least €70million during the Programming Period 2021-2027. The financing percentage is 60% funding rate of the total eligible budget, and the percentage of vulnerable consumers increases to 80%.

In Germany

The Federal Government has provided new funds for the BEG of around 9.5 billion euros. The upper limit of eligible costs in the BEG WG and BEG NWG for residential buildings is max. 150,000 euros for efficiency houses 40 Plus or efficiency buildings with EE or NH class, otherwise the upper limit is 120,000 euros per residential unit. In the case of non-residential buildings, the upper limit is a maximum of EUR 2,000 per m² of net floor area, with a maximum total of EUR 30 million.

Renovations in the BEG WG and BEG NWG on existing buildings are funded with up to 50% (efficiency building 40) depending on the efficiency level. Newly built residential buildings are subsidized with a maximum of 25% (efficiency building 40) and non-residential buildings with a maximum of 22.5% depending on the efficiency level. Funding for the construction of new efficient buildings, both residential and non-residential, is currently suspended. We are staying up to date so we can keep you informed.

The amount of the eligible costs in the BEG EM is max. 60,000 euros per residential unit for residential buildings and max. 1,000 euros per m² net floor area for non-residential buildings, a total of max. 15 million euros. Depending on the project, the funding for individual measures is between 20% and 35%. A 10% higher subsidy rate applies to the replacement of an oil heating system. Specialist planning and construction supervision can be funded with up to 50%. The minimum investment sum in the BEG EM is 2,000 euros, or 300 euros for heating optimization.

3.6. Criteria used to evaluate and qualify a project for funding

Regarding the criteria for the selection and evaluation of funding projects, countries have adopted different approaches. In some of them, they are evaluated according to several different indicators related to energy consumption, CO₂ emissions, investment efficiency (saved energy/investments), etc., while in other countries the projects are evaluated according to a simplified scheme based on the achieved energy efficiency class or embedded materials with predetermined characteristics (windows, heating appliances, etc.). In general, in all programs, the principle is followed that the better indicators are achieved with the project, the higher the grant percentage or the more points it receives in the overall ranking for funding. This practice allows a relatively easy integration of SRI into the evaluation criteria of project proposals for energy renovation of buildings.

It should be noted that in Bulgaria, Romania and Greece, an energy audit/energy performance certificate of the building, that defines the measures and the expected energy savings and the reduction of CO₂ emissions, is a mandatory condition to apply in the programme. These audits/certificates are the basis on which the eligibility assessment and ranking of the projects is made.

Bulgaria

The criteria for evaluating individual projects are divided into two main directions - administrative compliance and quality criteria. The quality criteria are as follows:

1. Percentage of energy savings in the annual consumption of primary energy as a result of energy-saving measures - kWh/year, where > 65 % receives 25 points and $\geq 30\% \leq 45\%$ receives 10 points.
2. Expected annual reduction of CO₂ emissions (environmental benefits)
 - > 80 t CO₂ eq. /20 points
 - > 60 t CO₂ eq. \leq 80 t CO₂ eq./ 18 points
 - > 40 t CO₂ eq. \leq 60 t CO₂ eq./ 16 points
 - > 30 t CO₂ eq. \leq 40 t CO₂ eq./ 14 points
 - > 20 t CO₂ eq. \leq 30 t CO₂ eq./ 12 points
 - \leq 20 t CO₂ eq./ 10 points
3. Efficiency of the investment for energy efficiency as a ratio of the necessary investment in BGN to the amount of saved primary energy in kWh on an annual basis, for example: BGN /kWh/year \leq BGN 1.75/kWh/year - 35 points and > BGN 2.50/kWh/year - 10 points.
4. Feasibility of the energy efficiency investment as the gross floor area of the building/block-section/group of block-sections
 - > 5000 sq.m. gross floor area of the building/block-section/group of block-sections / 20 points

> 4000 sq.m. The gross floor area of the building/block-section/group of block-sections \leq 5,000 sq.m.
gross floor area of the building/block-section/group of block-sections / 18 points

> 3000 sq.m. The gross floor area of the building/block-section/group of block-sections \leq 4,000 sq.m.
gross floor area of the building/block-section/group of block-sections / 16 points

> 2000 sq.m. The gross floor area of the building/block-section/group of block-sections \leq 3,000 sq.m.
gross floor area of the building/block-section/group of block-sections / 14 points

> 1000 sq.m. The gross floor area of the building/block-section/group of block-sections \leq 2,000 sq.m.
gross floor area of the building/block-section/group of block-sections / 12 points

\leq 1000 sq.m. gross floor area of the building/block-section/group of block-sections / 10 points

5. Level of commitment of condominium members in the owners' association to project implementation

The owners of > 95% of the common parts of the condominium are members of the owners' association and have supported the implementation of the project during the voting of the general meeting - 25 points

The owners of > 80% and \leq 95% of ideal parts of the common parts of the condominium are members of the owners' association and have supported the implementation of the project in the voting of the general meeting - 15 points

The owners of \leq 80% of the condominium are members of the owners' association and have supported the implementation of the project in the voting of the general meeting - 10 points

6. Achieved level of improvement of housing infrastructure after the implementation of EE measures

The object of intervention will achieve energy consumption class "A" or "building with zero energy consumption" after the implementation of the measures included in the energy survey report - 10 points

The project envisages the implementation of measures contributing to the general architectural appearance of the city in accordance with the ordinance/instructions approved by the municipal administration - 5 points

Romania

The whole scheme will ensure that all contracts meet the relevant energy efficiency requirement of a minimum reduction in energy consumption of at least 50% compared to the pre-renovation annual heating energy consumption for each building (except buildings with cultural heritage status), which will have to ensure a reduction in primary energy consumption of at least 30% (moderate renovation) and above 60% (deep renovation) compared to the situation before the renovation and will comply with the Commission Communication - Technical guidance on the application of the principle of "do no significant harm" under the Regulation on the Recovery and Resilience Mechanism (2021/C58/01).

Call for projects indicators / measures:

1. reduction of the specific annual final energy consumption for heating (kWh/m² year)
2. reduction of total primary energy consumption (kWh/m² year)

3. primary energy consumption using renewable sources at the end of implementation of the project (kWh/m² year)
4. area developed by multi-family residential building, consolidated and renovated (m²)
5. estimated annual reduction of greenhouse gases (equivalent kgCO₂/m² year)
6. people who benefit from measures to adapt to climate change (e.g. heat waves)

Italy

Each type of intervention must have at least the minimum level of energy performance required by the regulations of the financial programme.

For example, the minimum level of thermal transmittance for windows and for the retrofitted components of the building envelope, the minimum energy efficiency ratio for boilers, the minimum energy classes for the electrical appliances, etc.

The programme has different schemes with different level of co-funding, as it follows: Bonus Mobili with coverage of the 50% of the eligible costs, Bonus Casa with the 50%, Ecobonus at 6 steps of costs coverage, namely 50%, 65%, 70%, 75%,80%, 85%.

Each scheme has also a maximum threshold for the eligible costs for the interventions.

The schemes with the higher percentages of funding can be accessed with more interventions applied together and with an improvement of at least 1 energy class in the EPC scale.

Greece

For the programme Save at Home the evaluation criteria on the basis of which the ranking points are calculated are presented in the table below. Coefficient weighting varies between the criteria used to evaluate and qualify a project for funding.

The equation from which the ranking order will be derived based on the above criteria is the following:

$$\text{Score} = K1 \times 50\% + K2 \times 14\% + K3 \times 7\% + K4 \times 5\% + K5 \times 3\% + K6 \times 7\% + K8 \times 7\%$$

Table 3: Ranking criteria

	Criterion	Coefficient weighting	Criterion upper limit	Criterion lowest limit
K1	Negotiated cost of energy savings	50%	0,200	1,000
K2	Income	14%	1 000 euro/ family member	30 000 euro/ family member
K3	Days of sunlight coefficient	7%	1,4069	0,2180
K4	Energy class of first EPC	5%	G	C

K5	Year of construction	3%	Before 1955	2011
K6	People with disabilities	7%	Fix	
K7	Single partner family	7%	Fix	
K8	Large family	7%	Fix	
Maximum weighted percentage coefficients		100 %		

For the ELECTRA programme, the priority will be given to buildings with high energy consumption, whose upgrade will lead to greater savings in actual energy, as well as a reduction of greenhouse gas emissions.

Applications for admission, once submitted in full, are evaluated independently, on a first-come, first-served basis, based on the order in which they are submitted on the information system platform.

Cyprus

The residences for which the application is submitted must meet the following eligibility conditions:

- Have an electricity supply account from the EAC (Electricity Authority of Cyprus) with household pricing and this account belongs to a natural person.
- The application for planning permission must have been submitted before December 21, 2007.
- To be located in areas under the control of the Republic of Cyprus. Houses located in areas of the British Bases are not covered by this Programme.
- The EPC class of the house should be C or lower.
- Not to have received a grant in the context of any invitation of the “Save – Upgrade to Housing” Programme of FP 2014-2020 or from the Fund for Renewable Energy Sources and Energy Saving for the same eligible costs/expenses.
- Under this call, only one application can be approved for each residence. There is no limit to the number of applications that can be submitted by each individual, provided that these will concern different residences.

Germany

The building must be located in the territory of the Federal Republic of Germany and the funded measure must contribute to an improvement in the energy level of the building. In addition, subsidized systems or parts of the building that have been improved as a result of the individual measure must be used appropriately for at least ten years.

For certain measures (individual measures on the building envelope, system technology (except heating)) within the framework of the BEG, it is required to consult an energy efficiency expert.

3.7. Organization of the application process and conducting public procurement

The organization of the application process for energy renovation is different in individual countries, but in general two approaches can be described - when owners apply independently and when they participate jointly with the local authorities. Depending on the funding mechanism, the requirements for conducting public procurement vary, but a regularity can be noted that when the percentage of grant funding and the maximum value of the investment is higher, conducting a public procurement is mandatory. When the process is administrated by the local authorities and they apply in partnership with the owners, the public procurement is mandatory as well.

Bulgaria

The associations of the owners of the multi-family residential buildings, together with the local administration, prepare the project proposals and apply for financing to the MRRD.

Since the process of energy renovation of multi-family residential buildings is administered by local authorities, the execution of the construction and installation works is carried out on the basis of a public procurement. The municipalities are responsible for conducting the tender procedures, including the determination of criteria for the selection of the contractor and the technical evaluation of the offers. Usually, the evaluation criteria "economically most advantageous offer" is set in the procedures. However, previous experience shows that the criteria for the technical evaluation of offers are not always sufficiently detailed.

Romania

The applications for funding will be submitted exclusively through the electronic application, available at the web address <http://www.mdlpa.ro/investitii/PNRR>.

Funding applications submitted through the online system, as well as all documents that accompany them in .pdf format copy, will be submitted under the extended electronic signature, certified in accordance with the legal provisions in force, of the legal representative of the funding applicant or the person authorized by to it.

Funding applications will be completed with the eligible values of the projects, expressed in lei without VAT, taking into account the Infor euro exchange rate for May 2021, according to PNRR, Component 5 - Renovation Wave.

There will be 2 rounds of funding:

First round: - open call for all eligible applicants for this call for projects, within the limit of the maximum eligible budget.

The approach will be of a non-competitive type, with a deadline for submitting funding applications, on a first-come, first-served basis, with compliance with the requirements regarding the framing of residential buildings, through a technical expertise report in seismic risk classes Rsl and RslI, located in areas in which the peak value of the ground acceleration for earthquake design a(g), according to the zoning map of the

territory of Romania in the Seismic Design Code P100-1, is greater than or equal to 0.2g, for IMR=225 years.

In the first round, the financial allocation for the call for integrated projects (seismic consolidation and moderate energy renovation) is dedicated to seismic consolidation works, complemented by energy renovation works.

Integrated projects must necessarily include seismic strengthening works, accompanied by moderate energy renovation works for each component within the project.

If there are uncommitted funds after the first round of fundraising, they will be subject to the second round of fundraising:

- In this round, the approach will be non-competitive, with a deadline for submitting funding applications, on a first-come, first-served basis.

In the second round, the financial allocation for the call for integrated projects is dedicated mainly to seismic strengthening works, accompanied by moderate energy renovation works or related works to meet other fundamental requirements regarding quality in constructions (fire safety, hygiene, health and environment, operational safety and accessibility, noise protection, sustainable use of natural resources, applicable requirements as the case may be), accompanied by moderate energy renovation works.

- Procurement

The beneficiary has the obligation to upload in the computer system (managed by the Ministry of development, public works and administration) all the documents of the award of the procurement contracts concluded for the implementation of the project, in .pdf format copy under extended certified electronic signature of the legal representative of the applicant/authorized person, as the case may be. Attached documents should be fully scanned, appropriately named, easily identifiable and legible.

The monitoring of the implementation of financing contracts from a technical and financial point of view will be carried out by the Ministry of Development, Public Works and Administration.

MDLPA may send requests for clarifications/completions regarding the requested documents . Failure to respond fully and in time to the request for clarification may lead to the termination of the financing contract, in accordance with the provisions of the specific guide/contract financing.

Italy

Each owner submits an individual application for participation in the tax relief program, attaching the necessary supporting documents for the activities performed and the results achieved. Since the owners have the leading role in the process, there is no public procurement for the selection of the contractor or the supply of the equipment.

Greece

Save at Home programme - The application process can be organized by the owner but due to the complexity of the process, an energy consultant is usually hired by the owner. The cost of the energy consultant is covered by the Scheme. The scheme provides the maximum financial amounts per

intervention. The supporting documents from the receipts and delivery notes related to the interventions carried out for the energy upgrade of the household are uploaded on the program's platform for final disbursement. If an energy consultant is hired, he/she is responsible to prepare the requirements for the contractor and the tender file, selecting the offer which is within the limits provided by the scheme.

ELECTRA programme- Candidate beneficiaries (public authorities) shall submit their applications for inclusion in the online information platform. As part of the application package of documents, the applicant must submit a Decision of the competent body (for example the Municipal council) of the candidate Beneficiary as well. Within this decision, it should be explicitly stated that the terms of the Call are accepted and the Method of Implementation of the proposed interventions (implementation through a public project contractor or through an energy performance contract) should be fixed.

Cyprus

In Cyprus, owners can independently submit their applications to participate in the program. Public procurement is not applicable.

Germany

In Germany, owners can independently submit their applications to participate in the program. The application for the BEG is made using an electronic application form at BAFA or KfW. Public procurement is not applicable.

3.8. Information on measurable results achieved;

As all the programs under consideration have started or are starting immediately before the preparation of this report, no data on the results achieved are currently available. However, for some of the programs, information is available on the main indicators by which their success will be measured, as follows:

Bulgaria

The following indicators are planned to be tracked:

1. Number of renovated independent residential objects - number;
2. Renovated multi-family buildings - gross floor area sq.m.
3. Reduction of the annual consumption of primary energy kWh/year;
4. Reduction of greenhouse gas emissions (tCO₂ /year)
5. Percent savings in primary energy consumption

Romania

The following indicators are planned to be tracked:

1. reduction of the specific annual final energy consumption for heating (kWh/m² year)

2. reduction of total primary energy consumption (kWh/m² year)
3. primary energy consumption using renewable sources at the end of implementation of the project (kWh/m² year)
4. deployed area of the multi-family residential building, consolidated and energetically renovated (m²)
5. estimated annual reduction of greenhouse gases (equivalent kgCO₂/m² year)
6. people who benefit from climate change (e.g. heat waves) adaptation measures (number*)

Italy

A national report is expected to be published, which will present interim results of the implementation of the tax incentive.

Greece

Save at Home programme – N/A

ELECTRA programme - The Applications submitted should contribute to the achievement of the relevant Monitoring Indicators, which are presented in the table below.

Table 4: ELECTRA programme monitoring indicators

Code	Description	Unit of measurement
ENER1	Number of buildings	Number
ENER2	Heated area surface	m ²
ENER3	Reduction of annual consumption of primary energy, per usable floor area of a building	kWh/m ² /year
ENER4	Estimated annual reduction of emissions of greenhouses gases, per usable building area	Tones of CO ₂ equivalent/ m ² / year
ENER5	Number of buildings subject to radical renovation	Number
ENER6	Number of buildings upgraded to NZEB	Number

Cyprus

No information is currently available.

Germany

No information is currently available.

3.9. Are the SRI domains identified by the programmes an advantage in the assessment phase, and how?

According to the analysis of the current public programs/schemes that support and promote the energy renovation in the building sector, each one of them covers one or more of the SRI domains. Some of the programs explicitly support the installation of devices to improve energy management, comfort and smartness of the building, such as the installation of building automation and control systems (Italy), installation of intelligent shading systems (Romania); Modernization of the technical systems of the buildings, including for the purpose of preparing the buildings for intelligent solutions (Romania); installation and / or replacement of technical systems such as solar, photovoltaic, air conditioners, storage batteries, automations etc. (Cyprus and Germany), renewable energy installations and batteries for storing the energy produced (Bulgaria), etc.

The improvement of energy efficiency, as an overall result of the investments, is considered as a condition for a higher evaluation of the project in each of the programs. In addition, for the programs in which a public procurement is planned for the implementation of the activities, there is an opportunity to apply selection and evaluation criteria that will stimulate the implementation of more smart solutions, for example in the activities of modernization of heating and cooling installations, lighting, shading etc.

4. Key findings, conclusions and recommendations

4.1. Key findings

In each of the countries considered, there is a programme/scheme in place or about to start to promote building renovation.

Each of these programmes has the potential to promote SRI, as this would lead to higher energy savings (a key indicator for most programs).

The measures eligible for funding can be referred to the SRI domains.

The lack of specialized financial schemes assessing and prioritizing smart readiness, with the exception of the programme in Greece, which is in the process of public consultation.

4.2. Summarized conclusions and recommendations

Public incentives and investment programs are vital for the promotion and uptake of the SRI. With a reasonable use of the current programs and proper programming of the next ones, it is possible to achieve higher results of energy savings thanks to the application of smart solutions. For example, the current programs set a broad framework of activities that are eligible for financing, providing some options to include additional requirements and criteria in the implementation of measures to promote SRI. However, the topic needs to be properly communicated and adequately represented in the application guidelines. This is an option for programs that are planned on an annual basis (for example Italy) or for those in which implementation is planned in stages (for example in Bulgaria and Romania).

In addition to better energy efficiency indicators, the benefits for the programmes and financial institutions themselves of promoting SRI also include the possibility of very accurate and practically real-time tracking of the effect of investments. Providing reliable data on buildings and their integration into a common, accessible platform, which is practically the idea of digital logbooks, would create prerequisites for attracting additional, private funding to already available or planned grant schemes. This would also allow the financial institutions to offer financial instruments with better terms, since the effect of these investments will be much easier to assess and the risks will be specified.

Owners being well-informed and able to assess the potential for improvements themselves would also contribute to more effective project planning and increase the applicability of the SRI. In addition, it is reasonable to consider the need for training and work with all relevant stakeholders - auditors, national and local authorities, financial institutions, citizens, and business.

Appendix

1. [Questionnaire_Bulgaria](#)
2. [Questionnaire_Romania](#)
3. [Questionnaire_Italy](#)
4. [Questionnaire_Greece](#)
5. [Questionnaire_Cyprus](#)
6. [Questionnaire_Germany](#)