Recovery and Resilience Plans

Example of component of reforms and investments –

Renovation wave aimed at enhancing energy and resource efficiency

Disclaimer

This document was produced by the Commission services. The views expressed in this document do not commit the European Commission.

The document takes into account the Proposal for a Regulation on the Recovery and Resilience Facility (hereafter 'the Proposal') adopted by the Commission on 28 May 2020[1] and the conclusions of the European Council of 17-21 July 2020[2], the Communication on the Annual Sustainable Growth Strategy 2021 (hereafter ASGS)[3] and the Commission's Guidance to Member States on the Recovery and Resilience Plans[4].

The document is intended to help Member States prepare their Recovery and Resilience Plans and ensure coherence with the European flagships proposed by the Commission in the ASGS Communication[5].

The document builds on the template[6] that was issued together with the guidance to Member States on the Recovery and Resilience Plans. Its structure is based on Part 2 of the template, where each component of the Recovery and Resilience Plan needs to be described. Therefore, this document does not cover the information that Member States are expected to include in Part 1 (general objectives and coherence of the plan), 3 (complementarity and implementation of the plan) and 4 (overall impact) of their Recovery and Resilience Plans.

The document contains examples of reforms and investments that Member States could include under a specific component in their Recovery and Resilience Plans, including some examples of the type of information required to describe the expected impact, to fulfil the green and digital tagging of measures and to set out the type of targets/milestones that have to be defined for each reform and investment in order to allow for the tracking of progress.

Given the fictitious nature of these examples, the document should not be regarded as comprising an exhaustive list of the most important reforms and investments in the mentioned area. Member States may cover different and/or broader mix of reforms and investments in their Recovery and Resilience Plans. Furthermore, the description should not be regarded as complete. More details and evidence would be expected in the actual Recovery and Resilience Plans in order to ensure a proper assessment of the measures to be implemented.

[1] COM(2020) 408
[2] EUCO 10/20
[3] COM(2020)575
[4] SWD(2020) 205
[5] The Commission in the ASGS strongly encourages Member States to include in their Recovery and Resilience Plans investment and reforms in the areas of: renewables, energy efficiency, sustainable transport, broadband connectivity, digital public services, cloud capacities and skills.
[6] SWD(2020) 205 PART 2/2

PART 2: DESCRIPTION OF REFORMS AND INVESTMENTS

A. COMPONENT 1: Renovation wave aimed at enhancing energy and resource efficiency

[Please note that this example of a component is fictitious. It has been prepared by the Commission's services to provide guidance to Member States on some reforms and investments related to the European Flagship 'Renovate' that could be included in the national Recovery and Resilience Plans. To substantiate the intended reforms and investments, the document references specific data sources, data sets and information relating to the baseline scenario, outstanding gaps, envisaged milestones, targets, including green and digital, etc. The references provided should not be regarded as comprehensive, compulsory elements to be replicated in national Recovery and Resilience Plans. Member States can include other/additional details and evidence to clearly describe and justify the importance and coherence of the Recovery and Resilience Plan and its contribution to the green and digital transitions, with a view to satisfy the assessment criteria set out in Article 16 and Annex II of the Proposal.]

1. Description of the component

Renovation wave aimed at enhancing energy and resource efficiency

Policy area/domain: Energy efficiency, building renovation, construction/housing, climate policy, social policy, resource efficiency, circular economy

Objective: The objectives of this component are threefold.

1) Jobs and growth: The renovation wave aims to create local jobs, stimulate local investments, foster the adoption of digital technologies, improve the resilience of the building stock and support SMEs.

2) Green transition: The renovation wave has the potential to reduce energy consumption by X ktoe per year, increase energy efficiency by X% compared to a business-as-usual scenario and reduce GHG emissions by X tCO2e per year during the 2021-2026 period, while improving environmental and health performance. By comprising X% climate expenditures, this component contributes to the 37% climate mainstreaming target. It also aims to increase the prevention, reuse and recycling of construction waste, and the uptake of sustainable construction materials to increase resource efficiency and realise climate benefits across the entire life-cycle of buildings.

3) Social resilience: By providing incentives to renovate the existing stock of buildings, in particular public buildings as well as social infrastructure and housing, energy poverty concerns can be alleviated through reduced energy and water bills, while improving affordability of housing and living conditions.

Examples of reforms and/or investments:[7]

Reforms:

- One-stop shops at NUTS-3 level (or relevant functional area) facilitating energy renovation projects across their lifetime.

- National plan for energy and resource efficiency skills development, and a certification scheme for professionals.

- Transferrable on-bill recovery scheme, linking the loan for renovation to the property meter (not the owner or occupant) and allowing repayment via electricity or heating bills.

- Supportive legislative package for energy and resource efficiency in buildings.

Investments:

- Energy and resource efficiency scheme for public buildings, health and social infrastructures based on comprehensive energy performance contracts (COFOG 06.10).

- Home renovation support scheme to increase the energy and resource efficiency of residential buildings and social housing (COFOG 06.10)

- Reuse and recycling infrastructure investments (COFOG 05.10)

Estimated cost: EUR XX.X million, of which EUR XX.X million (X%) are covered by RFF.

2. Main challenges and objectives

a) Main challenges

The challenge relates to renovating the existing stock of buildings and to make them more energy and resource efficient. This includes in particular public buildings, commercial buildings, and social infrastructure and housing, and more generally worst-performing buildings.

- **Old building stock**: A large share of the buildings stock is old, with around X% of buildings built before 1990 when building energy standards were much less strict or non-existent. Almost X% of the buildings stock is energy inefficient (corresponding to Energy Performance Certificate (EPC) class C and lower), with X% of the building stock being classified as worst-performing (EPC class F and below). The same buildings are also unprepared to protect occupants from higher temperatures as well as more frequent and severe natural hazards under changing climatic conditions. The building stock no longer servers the purpose it was constructed for.

[7] Including COFOG (General government expenditure by function) classification.

- **Existing inefficiencies**: Less than X% of buildings qualify for EPC class A, and less than X% of buildings have Energy Performance Certificates. The total energy consumed (excluding embedded energy) in residential and service buildings amounts to X ktoe in 2019, of which only X% stems from renewable sources. Direct energy-related GHG emissions from buildings are around X tCO2e in 2019, equivalent to X% of total GHG emissions of the country in 2019. X% of the building stock is not occupied or underutilised in 20XX.
- **Investment needs**: According to the National Energy and Climate Plan (NECP) and Long-Term Renovation Strategy, the investment needs to improve energy efficiency in the housing sector is estimated to be EUR X billion for the period 2020-2030. The gap in investment in social and affordable housing is estimated at EUR X billion per year [*reference to report*]. Further investments of EUR X are needed to facilitate the reuse of some built assets.
- **Availability of human capital**: Human capital and adequate skills have become two of the biggest obstacles to the development of the construction sector in the country, both in terms of highly skilled workforce, as well as low skills, which require specific training and competences. Only around X% of the professionals in construction participated in education and training per year since 20XX. At the same time, the average vacancy rates in construction has increased by X% between 20XX and 20XX. Construction professionals have to master rapidly evolving energy technologies, resource efficiency measures and climate-resilience requirements (e.g., protection from overheating during heat waves, flooding, storms).

Incentivising investments in energy and resource efficiency in buildings is currently obstructed by relatively high upfront costs compared to the gradual energy cost savings in the longer term.

- **High upfront costs**: The investment needed to significantly improve the energy and resource performance of buildings (i.e., deep renovations[8]) or to repurpose a build up space in order to ensure its efficient reuse often requires high upfront costs, and finding suitable financing solutions is currently challenging. Housing prices play an important role as these determine the level of home improvements and renovation expenditures. In the country, X% of the population spend 40% or more of their income on housing, while having an average of X monthly net salaries as savings [*reference to source*]. Investing in the renovation of their home is often an additional expenditure that households cannot afford. In addition, administrative barriers to provide permits and certification for realising energy efficiency measures are found to be a significant challenge and cost in rolling out energy and resource efficiency investments [*reference to report*]. Moreover, a lack of sufficiently skilled labour and businesses to implement and certify the energy and resource efficiency measures exacerbates the long-time horizons and high costs of renovation projects [*reference to report*].

[8] Of at least 60% improvement in energy efficiency.

- **Long payback periods**: Even though upfront investments are recovered from the generated energy and resource savings, the payback period is often perceived as excessive. For households currently benefiting from subsidies for heating and paying lower bills for the energy consumed, the payback periods are even longer, making building renovation often unattractive from a financial point of view. Externalities associated with energy and resource use (e.g., GHG emissions, air pollution, security of supply) are not sufficiently internalised, neither through environmental taxes nor as shadow prices resulting from the regulatory approach followed in the context of Energy Efficiency Directive (2012/27/EU). According to the OECD Taxing Energy Use 2019 report, the residential and commercial sector's energy use is taxed at a rate of EUR X per tCO2e and therefore below the low-end carbon benchmark of EUR 30 per tCO2e. This extends the time frame over which savings in energy and resource consumption are able to cover upfront investments in renovation.

b) Objectives

The component is line with the country specific recommendations (CSRs) for the country for the years 2019 and 2020, which recommend focusing investment and investment-related policies on energy efficiency (CSRX in 20XX). [*Please indicate how each reform and investment aims to address which specific CSRs in 2019 and 2020*]. All proposed reforms and investments either implicitly or explicitly aim to increase investments in energy efficiency. Reform i) on the one-stop shops aims to address administrative barriers to increase investments in energy and resource efficiency enhancing building renovations, thus being in line with focusing on investment-related policies on energy efficiency (CSRX in 20XX). Investment i) on the energy and resource efficiency scheme aims to directly incentivise investments in energy and resource efficiency, thereby taking into account CSRX in 20XX.

The component also supports the European Flagship 'Renovate' (COM(2020) 575) by improving the energy and resource efficiency of public and private buildings, and contributing to the doubling of the renovation rate and the fostering of deep renovations by 2025. In line with the European Flagship 'Renovate' to boost current low renovation rates, the objectives of the renovation wave aimed at enhancing energy and resource efficiency and renewable energy uptake in buildings are threefold.

1) **Jobs and growth**: Create local jobs (estimated to amount to X new jobs between 2021-202X), stimulate local investments and its positive spill-over effects on the local economy, in particular SMEs, and foster the adoption of digital technologies (e.g., smart meters and smart appliances) and the integration of renewable energy. The increased counter-cycle spending will also support the recovery of the overall economy.
2) **Green transition**: Buildings are responsible for X% of energy consumption in 2019. The renovation wave has the potential to reduce energy use by X ktoe per year, increase annual energy efficiency by X% compared to a business-as-usual scenario and reduce

GHG emissions by X tCO2e per year during the period 2021-2026. Furthermore, this component significantly contributes to the national target of X% energy efficiency increase per year, which forms part of the Energy Efficiency Directive (2012/27/EU) and the Nationally Determined Contributions to the Paris Climate Agreement, which cannot be achieved without increasing the energy performance of the existing building stock.

By comprising X% climate expenditures (see Table 1) this component contributes to the 37% climate mainstreaming target set out in Article 15(3)(c) of the (proposed) Regulation COM(2020) 408. [9]

Further environmental and climate benefits are expected by applying life-cycle approaches and design based on circular systems to housing and construction materials. This includes adaptability, service life extension, reuse of abandoned or unutilised buildings, resilience to climate change and disasters, disassembly and reassembly, reuse and recycling, using materials with recycled content, deploying nature-based solutions (e.g., green roofs, green walls, green and blue infrastructure to combat heat waves and reduce pluvial flooding by retaining and reusing water), and rehabilitating abandoned or contaminated brownfields. This component will increase the 2019 recycling rate of construction waste from X% to X% and increase the use of sustainable construction materials from X% to X% by 20XX. Increasing the prevention of construction waste, recycling of construction materials and boosting the uptake of sustainable construction materials will support the transition to a circular economy and reduce environmental pressures associated with land use change. The application of green public procurement across this component will increase demand for more sustainable buildings and provide a stimulus for eco-innovation.

Substituting fossil fuel-based heating installations that contribute to excessive ambient air pollution by cleaner alternatives fuelled with renewable energy and phasing out fossil fuels in buildings altogether is also part of this component. Additionally, by deeply renovating the housing and the non-residential stock with a long-term perspective that also takes disaster risks and changing climatic conditions into consideration (e.g., increasing likelihood of more frequent and more severe extreme weather events), their overall resilience can be enhanced.

3) **Social resilience**: By renovating existing buildings, including public buildings, health and social infrastructure, and housing, considerable savings for the public budget can be achieved. Additionally, energy poverty concerns can be alleviated by reducing energy and water bills, in particular in worst performing buildings occupied by low-income and vulnerable households. This will improve living conditions by better thermal comfort, better ventilation, removing harmful substances (e.g., asbestos, old lead pipes), upgrading technical systems (e.g., electrical wiring), while ensuring that the renovated units remain

[9] Communication COM(2020) 575 on the Annual Sustainable Growth Strategy 2021 sets out a climate target of 37% for each national Recovery and Resilience Plan, to follow the commitment of the European Council of July 2020. This is reflected in the 7th compromise proposal put forward by the German Presidency on the proposal for a Regulation COM(2020) 408 as a Council negotiating mandate.

affordable for low-income and vulnerable households. Developing new uses and functions for vacant and underused areas can increase the affordability of housing and create accessible spaces for entrepreneurs, social initiatives and community groups. The renovation wave is an opportunity to improve quality of life and liveability of entire housing areas in an all-encompassing approach, including accessibility, mobility, spaces for social services and economic activity (e.g., co-working spaces for telework, shops, start-up incubators).

Within the national strategic context, the building sector must make a significant contribution to achieving climate neutrality by 2050. Adjusting to the effects of global climate change presents significant challenges for the buildings sector along the whole life cycle, from the manufacturing of construction products, design, construction, use and end of life. The renovation wave aimed at enhancing energy and resource efficiency takes place in the context of an existing national strategy. In accordance with the Long-term Renovation Strategy and the NECP, and in line with the Energy Performance of Buildings Directive (Directive 2010/31/EU), national building stocks are to be decarbonised by 2050, and the building sector needs to limit emissions from the use phase to only X tCO2e by 20XX.[10] Additionally, the country has adopted the target to achieve a share of renewable energies in final energy consumption for heating and cooling of X% and the ambition to phase out fossil fuels in buildings by 20XX.

In general, there is potential for significantly reducing energy consumption in the buildings sector and for an increased use of renewable energies for producing electricity, heating and cooling. Further resource savings could be achieved across various sectors by reducing indirect emissions, which occur during the production of construction materials, building components and plant technology in the industrial sector. In addition to preventing construction waste, increasing the recycling capabilities of construction materials and promoting the use of resource-efficient building materials forms part of the national strategic context. Additional measures could include emission reductions via provisions that facilitate low-carbon transport (e.g., electric vehicle charging points, parking spaces for bikes) and promote building designs that reduce the need for active cooling or warming.

[*Additional information on the political situation of and discussions in the country in the context of the component*]

3. Summary description of the reforms and investments of the component

[*The following outlines a mix of reforms and investments of the component. The separation of reforms and investment presented below is for illustrative purposes only. Their interlinkages and synergies are explicitly mentioned and explained as part of their description, but Member States are asked to be more specific and to provide a more detailed description of the specific context*

[10] In line with the European Commission Recommendation on Building Renovation EU 2019/786.

of each suggested reform and investment, in line with the template. This should also include a description on how the intended reforms and public investment projects reinforce the effects of one another and how the Member State seeks to ensure that they are of a complementary and coherent nature.]

a) Examples of reform

i) One-stop shops

Addressing challenges: The one-stop shops aim to address administrative barriers in providing permits, certification and to support households and businesses with legal, technical (including energy audits) and financial advice. Additional challenges that need to be addressed are the burden of managing the execution, the quality and performance control of the renovation, and knowledge gaps in incorporating resource efficient and circular approaches. To this end, dedicated one-stop-shops in each NUTS-3 region (or relevant functional area) will be set up for project developers, individual households and businesses to streamline the administrative processes, to ease access to finance and to enhance the absorption capacity of public and private investments in energy and resource efficiency building renovations.

Objectives: The local one-stop shops are covering the whole customer journey from information, technical assistance, structuring and advising financial support schemes to the monitoring of energy savings. This includes the provisions of tools and practices to increase the uptake of Energy Performance Certificate (EPC) and of their recommendations as well as the broader climate quality standards for renovation. The one-stop shops are crucial for more complex social housing and creating cross-sectoral partnerships for large scale renovations at district level. They could develop mapping of built assets, notably exploration of empty and underused properties and creation of an inventory explicating ownership and type of building. The shops play also an important role in increasing trust by ensuring good quality renovations at district level, where a multitude of renovation aspects and purposes have to be combined, by linking households and businesses, in particular SMEs, to certified professionals and monitoring the achieved performance. The one-stop shops will help build strong project pipelines that offer integrated solutions and strong partnerships with local actors (e.g., SMEs, qualified professionals, financial institutions, social housing associations, energy and building agencies, residents), the key being to connect the supply of finance and expertise with demand for it. They will coordinate local actors to ensure efficient separate collection of building waste and used building products, and their effective management and re-use or recycling.

Implementation: In the country, one of the main impediments for energy efficiency enhancing renovations currently relate to the numerous actors involved, from agencies providing the permits and experts undertaking the certification processes to companies performing the renovations, architects and financial institutions. This requires multiple contacts and contracts, leading to high searching costs and a lot of 'hassle' discouraging households and businesses from

undertaking renovations [*explain the current process and its obstacles in detail by providing evidence*]. To this end, a dedicated task force will be created at national level bringing together the relevant stakeholders (e.g., developers, SMEs, financial institutions, energy and building agencies, social housing associations, local and national administration) to propose concrete measures to streamline and further reduce administrative, legal, technical and financial barriers along the entire renovation project cycle, both a national and local levels. A bi-annual report of the task force will make concrete recommendations and will be made publicly available. A mandatory follow up assessment will require the local and national administration to publicly take a stance on the recommendations, detailing and justifying which recommendations will be adopted and by when as well a detailed justification for those not being considered. The implementation will be led by the Ministries of Energy, Environment and Building, supported by the Public Energy Authority as well as local and regional authorities.

Target group: Once set up, the one-stop shops will support project developers and businesses at local level as well as individual households.

Timeline: The implementation period is estimated to be 18-24 months (see Table 2 for details).

ii) National plan for energy and resource efficiency skills development, and a certification scheme for professionals

Addressing challenges: To address the challenge of not having enough and sufficiently trained worker to plan, implement and certify measures linked to energy and resource efficiency, life cycle performance and circularity across buildings, a national plan for relevant energy and resource skills development, including a certification scheme for professionals, will be set up.

Objectives: The aim is to provide a comprehensive and uniform basis for the upskilling of construction sector workers and training of workers from other sectors on a range of areas, including energy and resource efficiency, climate resilient housing, renewable energy technologies and digital technologies in housing. The plan is expected to be rolled out nationally across relevant education institutes (e.g., engineering and design schools, apprenticeships, training facilities). Once implemented, this measure will support the re-skilling/up-skilling of X number of workers per year. As part of this measure, a certification scheme will increase the number of certified professionals who can conduct energy and resource efficient building renovations and constructions, thereby leading to higher-quality renovations.

Implementation: The national government will organise a dialogue with union representatives, employers' organisations and relevant education institutes [*name the specific ones*] to discuss the plan that will be made public. The plan will build on the national skills roadmap developed under the Build Up Skills initiative. To develop the certification scheme, a consultation group between the national and local administrations, union representatives and employers' organisations will be set up to define standards in line with the required expertise by professionals to conduct

energy/resource efficient and climate resilient constructions and renovations. This consultation group will then appoint official certification bodies that can authorise the certifications.

Initiatives to develop the skills and/or certify individuals (e.g., through vocational training) are in general not caught by State Aid rules. However, public funding to train the workforce of specific undertakings may constitute training aid. Training aid of a maximum EUR 2 million per scheme will be compatible with the Internal Market if it complies with the conditions set out in Chapter I and in Article 31 of the General Block Exemption Regulation (GBER). For training aid that would not comply with the requirements of the GBER, the country will envisage a sufficiently early notification to allow for the necessary compatibility assessment by the European Commission. The assessment would follow the principles set out in the Communication from the Commission on the Criteria for the analysis of the compatibility of State Aid for training subject to individual notification (2009/C 188/01).

Target group: Construction sector workers, including those currently not working on energy and resource efficiency measures in buildings.

Timeline: The implementation period is expected to be 36 months (see Table 2 for details).

iii) Transferrable on-bill recovery

Addressing challenges: To address investment barriers for renovation, in particular the high up-front cost and the long pay-back periods, a transferrable on-bill recovery will be set up that allows customers to repay loans made for energy and resource efficiency improvements on their electricity or heating bills. To address information barriers, the necessary technical assistance will also be provided. The idea is that a customer will apply for a loan for an efficiency project and the repayments are then added to the customer's electricity or heating bills according to the energy and resource savings achieved by the renovation.

Objectives: The on-bill scheme has a number of advantages for beneficiaries, facilitating the repayment so that there is only on-bill to pay, being simple to understand and the duration of the loan can be set so that energy cost savings ensure a neutral or positive cash flow. The scheme is transferable as it is tied to the property meter and not the household, business or the energy supplier (no switching costs). It also provides incentives to financial institutions by allowing them to use the existing invoicing system to recover the loan which reduces overheads, increases repayment rates, gives access to large customer base, and is transferable as it is tied to the property meter. The aim is to facilitate the uptake of energy and or resource efficiency measures and is expected to lead to an average increase of X% in energy efficiency for the renovated buildings at the same time as aiming at minimising whole life carbon emissions, resulting in a decrease in energy consumption of X ktoe per year, an improvement of the EPC label (compared to before the renovation) and an annual reduction of GHG emission by X tCO2e.

Implementation: The implementation will be led by the Ministry of Energy in close collaboration with the local authorities, house and other real estate owner associations and energy utilities. A

roundtable will be set up to discuss the steps of setting up the on-bill recovery scheme with the relevant stakeholders (e.g., citizens, financial institutions, energy providers, architects, national and local administration). The discussions, statements and documents will be made publicly available.

Target group: Households, businesses, energy providers and renovation companies.

Timeline: The implementation period is expected to be 24 months (see Table 2 for details).

iv) Supportive legislative package for energy and resource efficiency in buildings

Addressing challenges: To further incentivise energy efficiency measures in residential, commercial and public buildings, and social infrastructures with a particular focus on multi-apartment buildings, the national government will introduce revisions to the building legislation. The aim is to increase the energy performance of buildings and speed up the decision-making process for the renovation and new building permits of condominiums. Facilitating the process will also include incentivising the digitalisation of the sector and speed up the administrative processes for renovation and new building permits.

Objectives: To reinforce energy performance certification of buildings, addressing the current low coverage of X% of the national building stock having an energy performance certificate available, and reinforcing independent control systems for higher quality. Additional objectives are to make comprehensive energy performance certification of buildings more widely available, stating the current energy performance and outlining measures and recommendations to improve energy and resource performance of buildings and to increase energy and resource savings, energy and resource efficiency, and to reduce GHG emissions, as well as the associated financial savings of implementing the measures over time.

Additionally, new legislation will be implemented for the buildings sector. One measure is to streamline and fast-track the authorisation process for renovations aimed to increase the building insulation and for the instalment and use of renewable energy, and the reforms needed to allow easier decision making processes in multi-apartment buildings. For condominiums, the new legislation will revise the decision-making process for building renovation, allowing for decisions to be adopted with simple majority when the renovation aims to increase the energy and resource performance of the buildings and financial solutions exist allowing the owners to avoid any upfront costs and repay the investments exclusively from energy savings.

Another new legislation will require for rented and commercial buildings an EPC of class D of better as of 202X. Legislation will be implemented that phases out fossil fuel use in buildings by 20XX. Existing and new pieces of legislation will also require that for large-scale building projects disaster and climate risk assessments are carried out, and building codes include basic disaster and climate resilience requirements for all buildings.

[*Please note that this reform package would need to be significantly more substantiated and detailed in an actual RRP, including for instance sector-specific measures, compensatory schemes, monitoring provisions and penalties for non-compliance.*]

Implementation: The reform proposal will be consulted with all relevant stakeholders in the ordinary legislative process, including households, energy providers, industry, academia and sub-national authorities [*describe involvement of stakeholders*].

Target group: The entire building stock and new buildings constructions.

Timeline: The timeline for implementing the reform package is expected to be 24 months (see Table 2 for details).

b) <u>Examples of investments</u>

i) Energy and resource efficiency scheme for public buildings, health and social infrastructures based on comprehensive energy performance contracts

Addressing challenges: To address the challenge of high upfront costs and going beyond Article 5 of the Energy Efficiency Directive, an energy and resource efficiency scheme for public buildings, health and social infrastructures will be set up, based on comprehensive energy performance contracts. The focus will be on renovations of worst-performing buildings and those occupied by low-income households. This will have significant positive social implications, including tackling energy poverty and substandard liveability in social housing dwellings and districts.

Objectives: The aim is to temporarily increase the renovation rate of the building floor area of buildings owned and operated by the national government and local authorities from 3% to 6% each year until 2026, starting with worst-performing buildings and those occupied by low-income households. This includes the renovation of health and social infrastructures (e.g., schools, hospitals, social housing). Overall, the annual renovation target for public buildings, health and social infrastructures is increased from X m^2 to X m^2. The building renovations undertaken will be compliant with the requirements for major renovations or leads to a reduction of primary energy demand (PED) of at least 30%. The estimated cost amounts to EUR X million per year until 20XX.

The scheme is expected to create X new and local jobs across SMEs in the country by 20XX. The savings achieved as a result of raising the level of ambition will allow the cumulative final energy saving target of X ktoe per year derived from Article 7 of the Energy Efficiency Directive to be surpassed. The scheme is expected to reduce annual GHG emissions over the full life cycle of buildings by X tCO2e and have significant positive social implications, improving the conditions in hospitals, schools and social housing. The scheme will allow consultation of residents of social housing units and foster resident's participation where appropriate. The

scheme is expected to create X number of shared ownership of renewable energy projects for housing by 20XX through cooperatives and energy community schemes.

The renovation to enhance energy and resource efficiency will further include the adoption of digital technologies (e.g., smart meters, smart housing elements), circular solutions, climate and disaster resilience, and the integration of renewables (e.g. energy self-consumption and sharing), while ensuring housing units remain affordable.

Implementation: The implementation will be coordinated by the Ministry for Buildings, in close cooperation with the Public Energy Authority, and regional and local authorities operating the relevant building stock. The scheme will be implemented mainly through publicly procured comprehensive energy performance contracts that guarantee a minimum energy performance after renovation and take into account resource efficiency, climate adaptation measures, adoption of digital technologies and affordability. The scheme will start with worst-performing buildings (those with an EPC class F and lower) and those occupied by low-income households (i.e., those with less than 60% of the median national income), where appropriate through a larger scale district approach.

In addition to energy efficiency targets and guaranteed energy savings, climate change adaptation measures, and the adoption of digital technologies, the contracts will also enshrine resource efficiency measures. This entails the use of circular solutions like adaptability, service life extension, reuse and recycling, life cycle performance, and the deployment of nature-based solutions, resource-efficient building materials, the use of recycled building materials as part of the renovation activities, and the prevention of construction waste resulting from the renovation activities while ensuring affordability. This will increase the prevention of construction waste and increase the recycling rate of construction materials, thereby increasing resource efficiency by X% measured in value-added per tonne of construction material used in the construction sector. This in turn reduces environmental pressures associated with construction (e.g., GHG emissions, local air pollution, land use change).

Link to reforms: In the longer term, the energy and resource efficiency scheme for public buildings and social infrastructures will benefit from the national plan for energy and resource efficiency skills and the certification scheme for professionals that will address the existing skills shortage in the implementation and certification of performance measures. The scheme will also be supported by the proposed legislative package.

Target group: All publicly owned and operated buildings, including social infrastructure, with a particular focus on social housing, schools, hospitals and care facilities.

Timeline: The implementation time is expected to start in 2022 and will run until 2026 (see Table 2 for details).

ii) Home renovation support scheme to increase the energy and resource efficiency of residential buildings and social housing

Addressing challenges: To address the challenge of high upfront costs of building renovation and the perceived long payback periods, the government will introduce a home renovation scheme. The support will be provided in the form of guarantees and a grant component that will be made available for low-income households in line with the national Long Term Renovation Strategy. Such renovations will also tackle energy poverty and substandard liveability in social housing dwellings and districts.

Objectives: The proposed scheme is designed to allow households, including low-income households, to live in renovated, energy and resource performant buildings, enjoying better living conditions and a lower financial burden linked to housing costs. The scheme will contribute to the green transition by reducing the annual energy consumption in the residential building sector by at least X%, reducing associated GHG emissions by X tCO2e per year, and also by alleviating energy poverty. The improvement of energy performance will be certified by issuing an EPC before and after renovation. The building renovations undertaken will be compliant with the requirements for major renovations or leads to a reduction of primary energy demand (PED) of at least 30%.

The scheme provides guarantees (covering 80% of the loans) for loans for energy and resource efficiency measures in residential buildings and social housing. The scheme additionally provides a grant component of up to X% of investment costs calculated so that the estimated repayment of the loan needed to cover the remaining investment costs is limited to 90% of the estimated energy savings. The grant component is applicable to low-income households (i.e., with less than X% of the median national income). The grant component aims at covering part of the upfront costs and ensuring the repayments for the loan will not exceed the energy savings, in particular for low-income households.

Implementation: The home renovation support scheme will be a national aid scheme, implemented at local level. It will be implemented by local authorities in partnership with financial institutions, social housing associations and energy utility providers. To facilitate the access to loans for beneficiaries, a third-party payment system will be put in place by local authorities, in partnership with financial institutions and the national development bank, or another intermediary selected in an open non-discriminatory procedure. The financial partners for providing loans for home renovations will be selected via an open non-discriminatory tender. Up to X number of financial partners will be selected, based on their capacity to offer attractive financial conditions for the loans, and their geographical coverage.

A fund will be set up to provide the needed guarantees, with an initial allocation of EUR X. Guarantees will be provided free of charge. A mechanism will be set up to ensure recovery of amounts that had to be covered from guarantees, including through compensation from other tax credits and public subsidies the respective households would be entitled to. An agreement will be signed at national level with energy utility providers to allow the on-bill recovery of loans (see Reform *iii) Transferrable on-bill recovery*).

The support provided will cover energy efficiency measures (e.g., insulation, double glazing, replacement of heating and cooling systems, green roofs), installing renewable energy capacities

for self-consumption (e.g., solar PV panels), projects to decarbonise heating systems and measures to apply circular systems to minimise environmental pressures over the life-cycle, while ensuring affordability of renovated units. To this end, measures are covered that support a shift to electric heating or heat pumps and a fuel switch towards more low-carbon fuels, such as biomass in buildings and low-carbon district heating systems. However, any promotion of biomass should be accompanied by measures reducing air emissions, especially of particulate matter, and should comply with the sustainability requirements under RED II. The measures implemented will be selected based on the recommendations included in the EPC done before the renovation and should ensure at least X% energy savings. Priority will be given to worst performing buildings (those with an EPC class F or lower). Broader resource considerations, including their associated GHG emissions will also be used as criteria for the selection of the energy and resource efficiency measures.

In case the loan guarantee involve undertakings (e.g. landlords, financial intermediaries or energy suppliers) or concern buildings in which economic activities are taking place, compliance with State Aid will be verified before the scheme enters into force. Such State Aid could be compatible under the General Block Exemption Regulation (namely art. 38, 39 and/or 41) or alternatively under the Environmental and Energy Aid Guidelines (EEAG) for larger schemes.

Link to reforms: In the longer term, the home renovation support scheme will benefit from the one-stop shops, the transferable on-bill scheme, the national plan for energy and resource efficiency skills and a certification scheme for professionals. The support scheme will also benefit from the proposed legislative package.

Target group: Households occupying residential buildings, including social housing.

Timeline: The timeline for implementation is expected to be between 2021 and 2026 (see Table 2 for details).

iii) Reuse and recycling infrastructure investments

Addressing challenges: To reduce the negative environmental externalities associated with energy and resource use for renovation activities, investments in reuse and recycling infrastructure are planned.

Objectives: The government will initiate tools and facilities for reusing construction materials (including material passports / databases for reusable construction elements), substituting existing construction materials by more sustainable alternatives (e.g., wood) and using construction materials with recycled content [*more details required*]. Additionally, the government will provide financial support for the construction of X new recycling facilities for secondary construction materials by 20XX. The facilities will generate X new green and local jobs by 20XX. In addition to ensuring sufficient supply of secondary construction materials at local level, this will reduce energy use by X ktoe and GHG emission by X tCO2e per year. The emission savings will also occur due to reduce indirect emissions related to extracting,

processing and transporting fewer construction materials. It will further facilitate going beyond the targets from the European Waste Directive to recover 70% of construction materials by 2020, increase the national recycling rate of construction waste from X% in 2019 to X% in 20XX, and increase the use of sustainable construction materials from X% to X% by 20XX.

Implementation: The implementation of tools and facilities for reuse of construction materials and of providing financial support for building X new recycling facilities for construction material will take place through the national development bank, or another intermediary selected in an open non-discriminatory procedure. A green public procurement process aimed at selecting the builder and operator of the recycling facility will ensure a transparent and non-discriminatory bidding process and an efficient use of public funds, while taking into account environmental sustainability criteria. The government will provide support for building the facility (investment aid), but the recurrent costs of maintaining and operating the reuse system and tools as well as the recycling facilities should be covered by operator.

The support granted will have to comply with the conditions defined in the EEAG or the GBER. The support granted by the government can cover a share of the difference between the costs of the construction of X new recycling facilities on the one hand and the costs of constructing conventional construction material plants or of conventional waste treatment facilities on the other hand. A competitive, open and non-discriminatory bidding procedure for selecting beneficiaries and determining the level of support will ensure that aid is limited to what is necessary. In that case, the aid intensity can reach 100% of eligible costs. In case there is no competitive bidding process and depending on the size of the operation, the support will not exceed 35-55% of the difference between the costs of the construction of X new recycling facilities and the costs of a conventional construction material plant or a conventional waste treatment facility.

Taking into account local-specific circumstances, citizen engagement platforms will be installed to ensure that the views of the local population are heard and integrated into the planning, construction and operational stages of the recycling facilities.

Target group: Local construction stakeholders (architects, SMEs, clients, recycling companies) and waste management authorities, in particular in densely populated urban areas which produce and consume a large share of construction materials in the country.

Timeline: The timeline for implementation is expected to be between 2022 and 2025 (see Table 2 for details).

4. Green and digital dimensions of the component

a) Green transition

The (proposed) Regulation COM(2020) 408 establishing a Recovery and Resilience Facility sets a binding target of at least 37% of the plan's total allocation to contribute to climate mainstreaming. [11]

Buildings consume around X% of energy in the country during their operation and are responsible for X% of GHG emissions, while X% of primary fine particulate matter emissions are related to heating. GHG emissions from construction material extraction, manufacturing of construction products and renovation of buildings add another significant share to national GHG emissions with X% in 20XX. Buildings are particularly vulnerable to climate change impacts and need to become more resilient in the country, with many buildings located in urban heat-islands.

Reaching climate neutrality by 2050 means highly energy efficient buildings need to be intelligently designed for sustainability and supplied with key enabling technologies (e.g., advanced and sustainable construction materials, advanced manufacturing, digital technologies and interconnections, AI), renewable energy, and designed and constructed with re-use and circularity solutions and life cycle techniques to ensure a more efficient use of natural resources. This component provides an opportunity for transforming and improving the construction system as part of the green recovery.

Renovations improve the energy performance and resource efficiency of buildings, increases the use of renewables (e.g., using solar PVs installations, heat-pumps) and can promote the deployment of nature-based solutions (e.g., natural shading, green roofs, green walls, green and blue infrastructure to combat heat waves and reduce pluvial flooding by retaining water). It is therefore in line with the European Green Deal, the Nationally Determined Contributions to the Paris Climate Agreement, and the national long term renovation strategy. It will make a significant contribution to reaching climate neutrality by 2050.

Since more construction materials will be needed to implement this component, circularity principles are incorporated in the design phases of renovation and construction, and reuse as well as recycling platforms for construction materials and demolition waste are foreseen. Prevention of construction waste is supported and given priority, as indicated by the waste hierarchy. This will improve the sustainability of all operations in the built environment, including renovations.

Therefore, by comprising X% climate expenditures (see Table 1 below) this component contributes significantly to the 37% climate mainstreaming target [*where relevant, provide more*

[11] Communication COM(2020) 575 on the Annual Sustainable Growth Strategy 2021 sets out a climate target of 37% for each national Recovery and Resilience Plan, to follow the commitment of the European Council of July 2020. This is reflected in the 7th compromise proposal put forward by the German Presidency on the proposal for a Regulation COM(2020) 408 as a Council negotiating mandate.

details on how the expenditures of each investment/reform relate to the climate target, including an explanation for the choices made for the intervention fields in Table 1]. The component also contributes to broader environmental objectives with X% environmental expenditures (see Table 1 below).

In addition, the component proposed measures contribute to the green transition, taking into account the six climate and environmental objectives as defined in Regulation (EU) 2020/852 (Taxonomy Regulation). The proposed reforms and investments contribute to the climate change mitigation and adaptation objectives as well as the transition to a circular economy. This relates directly to the energy efficiency measures, reductions in GHG emissions and climate change adaptation measures in Reform 3, Investment 1 and Investment 2. Measures supporting the transition to a circular economy are included in Investments 1, 2 and 3. [*Provide more details, justification and evidence on how exactly the measures contribute to the environmental objectives as defined in Regulation (EU) 2020/852 (Taxonomy Regulation)*].

There are clear commitments and mechanisms in each of the reform and investment to ensure that the *do no significant harm* principle is respected and effectively implemented for the other environmental objectives as defined in the EU Taxonomy Regulation. This includes that the building components and materials used in the renovation wave do not contain asbestos nor other substances of very high concern, and that water use is minimised. [*Further details, evidence and justification needed to explain how each reform/investment relates to the 'do no significant harm' principle defined in Regulation 2020/852 (Taxonomy Regulation).*]

b) <u>Digital transition</u>

The (proposed) Regulation COM(2020) 408 establishing a Recovery and Resilience Facility sets a binding target of at least 20% of the plan's total allocation to contribute to the digital transition or to the challenges resulting from it.[12]

Building renovation as part of the component includes the installation of smart energy systems and appliances, which enable ICT-based and data driven services, increase their energy performance and support a better integration of buildings in the energy system, in smart districts and cities (including links with transport via smart charging infrastructure). The renovation wave will also provide an indirect opportunity to apply research and innovation results and scale up the successful industrial and clean energy transition initiatives. The construction ecosystem in the country is dominated by SMEs and is the X least digitalised sector only after X. This poses a severe constraint to the actual capacity of the sector to adapt and implement to a new environment where digital tools will become the norm. Achieving the digital transition in this

[12] Communication COM(2020) 575 on the Annual Sustainable Growth Strategy 2021 proposes setting a 20% digital target for each national Recovery and Resilience Plan. This was endorsed by the European Council of 1-2 October. It is reflected in the 7th compromise proposal put forward by the German Presidency on the proposal for a Regulation COM(2020) 408 as a Council negotiating mandate. See Article 15(3)(c1) which sets out the 20% digital target, based on a methodology for digital tagging set out in Annex III.

SME dominated sector will require additional investments of up to EUR X million at national level. The evolution of the uptake of digital technologies in the construction sector will be monitored through the Digital Intensity Index.

The information, data and documentation generated in the different stages of a buildings’ life-cycle are of enormous value to achieve quality renovations, upgrades, management of a building sustainably and communication across the construction ecosystem, owners, investors and authorities. Digital buildings logbooks and material passports will facilitate the collection, organisation and hosting of information of a building accessible by one single getaway, and they shall be interconnected with energy performance certificates, renovation roadmaps and information collected in the context of the smart readiness indicator.

By comprising X% digital expenditures (see Table 1 below) this component contributes to the aforementioned 20% digital target [*where relevant, provide more details on how the expenditures of each investment/reform relates to the digital target, including an explanation for the choices made in Table 1, in particular if it is chosen to increase the coefficients for support to the digital objective from the values set out in Annex III of the (proposed) Regulation COM(2020) 408 as amended by Council]*.

[Please fill in Table 1 from the template on the contributions of the measures to the green and digital transitions. Please note that when relevant investments/reforms contribute to the mutually reinforcing goal of the twin transition, Member States can simultaneously associate those to both one green intervention field and one digital intervention field. The Table is only provided for illustrative purposes and does not reflect the ongoing work for the definition of a common methodology to track digital expenditures.]

Table 1. Green and digital impact

Please indicate if 0%, 40% or 100% of the reform/investment contributes to the objective. For reforms/investments and the climate objective, Member States should use the methodology for climate tracking applied for cohesion policy funds, in particular as set out in Table 1, Table 4 and Table 6 of Annex I to [Common Provision Regulation COM(2018) 375] and justify their choice, in particular for reforms. For reforms/investments and environmental objectives, they are invited to follow the same methodology. In both cases, please indicate the relevant intervention field for every reform/investment by choosing the most appropriate one. If several ones can be applied, the Member State should motivate why they choose the selected one. For green objectives, Member States are invited to indicate that the do not significant harm (DNSH) principle is respected defined in Regulation 2020/852 (Taxonomy Regulation).

Short title	Green objectives				Digital objectives		Transition challenges	
	Climate Tag	Environmental Tag	Intervention fields for investments	DNSH			Green	Digital
Component 1: (Reform 1: One-stop shops)	100%	40%	25	yes				
Component 1: (Reform 2: National plan for energy and resource efficiency skills development, and a certification scheme for professionals)	100%	40%	27	yes				
Component 1: (Reform 3: Transferrable on-bill recovery scheme)	100%	40%	25	yes				
Component 1: (Reform 4: Supportive legislative package for energy and resource efficiency in buildings)	100%	40%	25	yes				
Component 1: (Investment 1: Energy and resource efficiency scheme for public buildings and social infrastructures based on comprehensive energy performance contracts)	100%	40%	26	yes				
Component 1: (Investment 2: Home renovation support scheme to increase the energy and resource efficiency of residential buildings, health and social housing)	100%	40%	25	yes				
Component 1: (Investment 3: Reuse and recycling infrastructure investments)	0%	100%	45	yes				

5. Milestones, targets and timeline

[Only two examples, one reform and one investment, are shown here for illustrative purposes, directly in the text. Actual RRPs should include this information in the Excel files attached to the Template.]

Table 2. Milestones and targets

Related reform or investment	Milestone or target name & number	Qualitative indicators (for milestones)	Quantitative indicators (for target)			Timeline for completion (indicate the quarter and the year)	Data source /Methodology	Responsibility for reporting and implementation	Description and clear definition of each milestone and target	Assumptions/ risks	Verification mechanism
			Unit of measure	Baseline	Goal						
Component 1											
Reform 1: One-stop shops	1. Set up task force bringing together all relevant stakeholders	Set up of task force, publish first report by the task force making concrete recommendations on how to streamline and further reduce administrative barriers along the entire project cycle, and publish assessment by the government taking a stance on the recommendations of the task force	n/a	n/a	n/a	QX-20XX (t + 6 months)	Ministries of Energy, Environment and Building [*add more information on data source / methodology*]	Ministries of Energy, Environment and Building	Task force needs to be given a mandate, mission statement and financial means to operate efficiently. It also needs to have access to relevant information by the local and national administration to make its recommendation. The government will ensure that the recommendations by the task force will be assessed within a reasonable amount of time (max. 6 months) and the results of the assessment will be published with a detailed justification of why and why not recommendations will be implemented. This includes a detailed and evidence based explanation as well as a binding timetable until when and how the recommendations will be implemented. In case the implementation is delayed or deemed insufficient by the task force, it can publish its opinion on the implementation of the previous recommendations as part of the next bi-annual report.	Lobbyism; adequate representation of all relevant stakeholders in the task force (e.g., developers, SMEs, financial institutions, energy agencies, social housing associations, local and national administration); making the report and the assessment publicly available; providing sufficient justification for taking up or not taking up the recommendations	Providing the minutes of the task force meeting(s); hyperlink to the task force report; hyperlink to the assessment report
	2. Set up pilot one-stop shops	n/a	Number of one-stop shops	0	3	QX-20XX (t + 12 months)	Ministries of Energy, Environment and Building [*add more information on data source / methodology*]	Ministries of Energy, Environment and Building	Three pilot one-stop shops will be set up in different locations across the country to test the requirements underlying the setting-up, operating and maintaining the shops. The aim is to run the pilots for 6 months and then report on the challenges for rolling out the one-stop shops across all NUTS-3 regions (or relevant functional areas). The government will ensure sufficient funding for setting up the pilot shops.	Challenges incurred can be solved within relatively short time horizon; no legislative changes are required to pilot one-stop shops	Providing verification for existence, operation and maintenance of pilot one-stop shops
	3. Roll out one-stop shops across all NUTS-3 regions (or relevant functional area)	n/a	Number of one-stop shops	3	X [in all NUTS-3 regions (or relevant functio	QX-20XX (t + 36 months)	Ministries of Energy, Environment and Building [*add more information on data source / methodology*]	Ministries of Energy, Environment and Building	The government will ensure sufficient funding for setting up the shops.	Challenges incurred can be solved within relatively short time horizon; no legislative changes are required to roll out one-stop shops	Providing verification for existence, operation and maintenance of pilot one-stop shops in each NUTS-3 region (or relevant functional

					nal areas)]						area).
	4. Bi-annual reports and assessments on which measures will be implemented and how as well as the justification for those not being implemented	Publication of recommendations by task force and assessment report by government	n/a	n/a	n/a	QX-20XX (t + 12/24/36/42 months)	Ministries of Energy, Environment and Building [*add more information on data source / methodology*]	Ministries of Energy, Environment and Building	The government will ensure that the recommendations by the task force will be assessed within a reasonable amount of time (max. 6 months) and the results of the assessment will be published with a detailed justification of why and why not recommendations will be implemented. This includes a detailed and evidence based explanation as well as a binding timetable until when and how the recommendations will be implemented. In case the implementation is delayed or deemed insufficient by the task force, it can publish its opinion on the implementation of the previous recommendations as part of the next bi-annual report.	Smooth functioning of the task force to provide recommendations on a rolling basis	Hyperlinks to the task force report; hyperlinks to the assessment reports
Reform 2: National plan for energy and resource efficiency skills development, and a certification scheme for professionals											
Reform 3: Transferrable on-bill recovery scheme											
Reform 4: Supportive legislative package for energy and resource efficiency in buildings											
Investment 1: Energy and resource efficiency scheme for public buildings, health and social infrastructures based on comprehensive energy performance contracts	1. Develop, publish and promote the use of comprehensive energy performance contracts that take energy, natural resources, digitalisation, climate and disaster resilience, and affordability into account	Develop and publish the template of comprehensive energy performance contract taking into account energy efficiency, natural resources use, digital uptake, climate and disaster resilience, and affordability	n/a	n/a	n/a	QX-20XX (t + 6 months)	Ministry for Buildings, Public Energy Authority [*add more information on data source / methodology*]	Ministry for Buildings	Develop, publish and promote the use of comprehensive energy performance contracts that will be used as part of the green public procurement process to renovate public buildings and social infrastructures. In addition to energy efficiency targets, the contracts will also enshrine the use of resource-efficient building materials, the use of recycled building materials as part of the renovation activities, the prevention of construction waste resulting from the renovation activities, digital technologies (e.g., smart meter, smart building elements), climate and disaster resilience, and affordability.	Lobbyism; technical aspects and trade-offs across the performance criteria can be reasonably aligned; implementation of the comprehensive energy performance contracts can be rolled out across the country uniformly	Published comprehensive energy performance contract
	2. Pilot comprehensive energy performance contracts in X renovation projects across worst-performing buildings and those occupied by low-income households	n/a	Number of renovation projects across public buildings and social infrastructures with comprehensive energy performance contracts across worst-performing buildings and those occupied by	0	X	QX-20XX (t + 18 months)	Ministry for Buildings, Public Energy Authority, regional and local authorities [*add more information on data source / methodology*]	Ministry for Buildings	As part of the green public procurement process, the comprehensive energy performance contracts are used for X pilot project to fine-tune the contracts' scope and ambitions before rolling them out. The focus of the renovation projects will be placed on public and social buildings that are worst-performing (EPC class of F or lower) and those occupied by low-income residents (i.e., households with less than 60% of the median income level of the country in 20XX). The energy consumption, energy efficiency level and amount of GHG emissions will be	Quick roll out of pilot renovations; swift assessment of the impacts; swift integration of assessment results into a revised comprehensive energy performance contract template	List with X finalised renovation projects for which the comprehensive energy performance contract template was used; assessment reports on the impacts; revised template for comprehensive energy

			low-income households						reviewed in detail for 10% of the pilot renovations.		performance contracts
	3. Reach annual renovation rate of 6%	n/a	% renovations as a share of all publicly own and operated buildings by the national government and local authorities	% of renovation of floor area of public buildings and social infrastructures in 20XX	6	QX-20XX (t + 24/36/48/60 months [regular reporting])	Ministry for Buildings, Public Energy Authority, National Statistical Institute, regional and local authorities [*add more information on data source / methodology*]	Ministry for Buildings	The target is to temporarily increase the renovation rate of the building floor area of buildings owned and operated by the national government and local authorities from 3% to 6% each year until 2026, starting with worst-performing buildings and those occupied by low-income households. Therefore, the annual renovation target of public and social buildings is increased from X m2 to X m2, with a target of X m2 for the renovation of social infrastructures.	Sufficiently quick roll out; temporary housing during renovation works for households available/affordable; sufficient availability of qualified staff to implement and certify renovations	Publicly available report detailing the status, challenges and achievements of the renovation wave, including an Annex with all renovation projects/energy performance of buildings/low-income household
	4. Increase uptake of digital technologies in X public buildings and social infrastructures	n/a	Number of public buildings and social infrastructures with at least one digital technology newly installed (e.g., smart meter, smart building elements)	Y	X	QX-20XX (t + 60 months)	Ministry for Buildings, Public Energy Authority, National Statistical Institute, regional and local authorities [*add more information on data source / methodology*]	Ministry for Buildings	As an outcome of the renovation wave of public and social buildings, increase the number of public buildings with digital technologies (e.g., smart meters) by X. This figure will be ensured by the comprehensive energy performance contracts that take into account digital developments, in particular for buildings occupied by low-income households.	Digital technologies can later be used by the households; sufficiently skilled staff is available to install digital technologies	A section as part of the publicly available report focusing on digital uptake, including a reference in the Annex for each project and whether it also comprised the uptake of digital technologies
	5. Reduce GHG emission of public buildings and social infrastructures by X tCO2e	n/a	annual tCO2e	Y	X	QX-20XX (t + 60 months)	Ministry for Buildings, Public Energy Authority, National Statistical Institute, regional and local authorities [*add more information on data source / methodology*]	Ministry for Buildings	As an outcome of the renovation wave of public and social buildings, GHG emissions of the public and social building stock will decrease due to the projects financed by the RRF. The GHG emissions reduced will be reported compared to a business as usual scenario (i.e., the absence of the RRF intervention).	Renovation measures lead to a reduction in GHG emissions; business as usual scenario is credible; intervention does not lead to crowding out other public investments (to build counterfactual)	Certification of renovated buildings; GHG emission based on energy consumption and other GHG-related activities (in line with the System of Environmental Economic Accounting (SEEA) Air Emission Accounts)
	6. Increase recycling of construction materials and resource efficiency by X%	n/a	%	Recycling rate for construction materials and resource efficiency in the construction sector in 20XX is Y	X	QX-20XX (t + 60 months)	Ministry for Buildings, Public Energy Authority, National Statistical Institute, regional and local authorities [*add more information on data source / methodology*]	Ministry for Buildings	As an outcome of the renovation wave of public buildings and social infrastructure, the recycling rate of construction materials will be increased from Y% in 20XX to X% in 20XX. At the same time, resource efficiency measured in value-added per tonne of construction material used in the construction sector will be increased by X% between 20XX and 20XX.	Recycled materials will be sufficiently used	Recycling rates and resource efficiency in the construction sector according to the SEEA Material Flow Account and Solid Waste Account.
Investment 2: Home renovation support scheme to increase the energy and resource efficiency of residential buildings and social housing											
Investment 3: Reuse and recycling infrastructure investments											

6. Financing and costs

[Member States should provide information on the total estimated cost of the component, backed up by appropriate justification. This should be complemented by the appropriate detailed justification on the plausibility and reasonability of the estimated costs, as explained in the guidance. The justification can be annexed to the RRP. While the table is introduced directly in the text, actual RRPs should include this information in the Excel files attached to the template.]

Table 3. Estimated cost of the plan

Component (name)	**Investment/Reform (short description or cross-reference)**	**Relevant time period**	**Total estimated costs for which funding from the RRF is requested (mn/bn national currency, e.g. mn EUR)**	**If available: Total estimated cost by year (mn/bn national currency/EUR)**							**Funding from other sources (as requested by Art. 8 in the Regulation)**				**COFOG level 2 category / or type of revenue (if relevant, e.g. tax expenditure)**
											from other EU programmes				
				2020	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*mn.bn nat. currency*	*specify the EU programmes and breakdown by programme if relevant (e.g. regional operational programme)*	*from the national budget*	*Other sources (please specify)*	