

Social Green
Interreg Europe

SOCIAL GREEN - REGIONAL POLICIES TOWARDS GREENING THE SOCIAL HOUSING SECTOR

INTEGRATED SELF-ASSESSMENT REPORT

Author: Nordregio



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Social Green project in brief

Social Green is funded by INTERREG Europe between April 2016 and September 2020. It's 1.01 M funding from the European Regional Development Fund (ERDF) is distributed among eight partners in six countries: Tartu Regional Energy Agency (EE), Extremadura Energy Agency (ES), Regional Energy Agency North (HR), CCDR-N - Regional Coordination and Development Commission of Norte (PT), CEiiA - Centre for Excellence and Innovation in the Automotive Industry (PT), Alba Iulia Municipality (RO), South Muntenia Regional Development Agency (RO) and Nordregio – Nordic Centre for Spatial Development (SE). One advisory partner, Nordregio (Sweden) will provide scientific and technical support to the consortium. The other partners, municipalities, energy agencies and Managing Authorities will jointly work in the development of the main project's activities, namely preparation, implementation and monitoring.

Social Green will promote the greening of the social housing sector through mutual learning and development of improved regional policies. It will provide the opportunity to explore green building practices and significantly reduce GHG emissions through cost-effective means, while providing much needed housing in a healthy and sustainable manner. Through interregional cooperation Social Green stakeholder regions will identify, share and transfer innovative methodologies, processes and good practices in developing and implementing greener social housing sector policies, targeting new constructions or retrofitting existing buildings. In this context the project's sub-objectives are:

1. To understand the role of the green building intervention in the social housing sector and the link with fuel poverty;
2. To identify green measures for the social housing sector, specifically including energy efficiency and renewable energy development;
3. To identify, share and transfer experiences and good practices and to develop joint policy tools and instruments related to innovative solutions for greening social housing sector, namely in the areas of fuel poverty and energy efficiency;
4. To develop strategic guidelines and policy recommendations as an integrated toolkit for regional and local authorities,
5. To improve regional/local policies by introducing best practices into EU mainstream programmes in order to contribute towards fostering the competitiveness, sustainability and social cohesion of cities, regions and the EU as a whole.

1. Introduction

This report presents a joint analysis of six regional self-assessments produced by Social Green partners. The regional self-assessments have collected data and knowledge about the state of the social housing sector and green building in each partner municipality and/or region. With the self-assessment reports, the partners contribute to the development of social housing in their area by making knowledge accessible in one document. The self-assessment reports have been made in close cooperation with local stakeholders, making it possible for Social Green partners to get access to important data through their stakeholders at the same time as increasing the stakeholders' awareness of the state of the social housing in the area. It also provides a knowledge base for preparing local Action Plans for greening social housing, both in terms of identifying potential actions, as well as providing a basis for monitoring the progress of green local social housing.

This joint analysis of the regional self-assessment adds a comparative dimension to the individual assessment and aims to put the knowledge of the partner regions into a wider territorial context. It also provides the possibility for mutual learning and pinpointing common challenges and potentials.

This report is structured according to following section: **section 2** presents territorial context of partners and benchmarking indicators; **section 3** presents an introduction to social housing in the partner regions; **section 4** presents a specific overview of the policy and funding situation for social housing in the partner regions; **section 5** provides a brief overview of the progress of social housing retrofitting in the partner areas; **section 6** gives a summary of the swot-analysis made by the partner regions by highlighting the challenges and opportunities for greening social housing; and **section 7** provides conclusions and a way forward towards the action plan process – finding solutions to issues identified in the self-assessments.

2. Territorial context of the partnership

Social Green stakeholder regions represent five countries: Estonia, Spain, Croatia, Portugal, and Romania. They represent a set of organisational forms at different geographical levels, including one municipality (*Alba Iulia – Romania*), three regional energy agencies (*Tartu Regional Energy Agency – Estonia*, *Regional Energy Agency North – Croatia*, *Extremadura Energy Agency – Spain*), and two regional development agencies (*South Muntenia Regional Development Agency – Romania* and *Norte Regional Coordination and Development Commission – Portugal*). The geographical focus of each partner is listed in table 1 below as well as the statistical unit used for the benchmark indicators. Please note that the benchmarking indicators used below are based on statistical unit (NUTS2). For some partner regions, the statistical unit corresponds with the administrative structure, for some it doesn't. It also shows the diverse size of each of the region in area and population. Finally, the share of tenure form is presented at national level to give a general indication of the composition of the housing stock.

Table 1. Overview Social Green partners. Source: EUROSTAT: EU-SILC survey – 2016; Municipal Survey, 2017

| | Geographical focus of Partner (Stakeholder perspective) | Area Km2 | Total Population | Share of tenure form 2016 (NUTSO – national level) EUROSTAT: EU-SILC survey - 2016 | Statistical Unit (NUTS2) |
|--|---|--|---|---|----------------------------------|
| Alba Iulia Municipality | Alba Iulia Municipality | 104 km ² | 74 000 | Owner Occupied: 96 % Tenant, rent at market price: 1.5 % Tenant, rent at reduced price or free: 2.5 % | Centru (Romania) |
| CCDR-N | Municipalities of Norte Region | 21 km ² | 3 612 782 | Owner Occupied: 75.2 % Tenant, rent at market price: 12.9 % Tenant, rent at reduced price or free: 11.8 % | Norte (Portugal) |
| Extremadura Energy Agency | Extremadura | 42 km ² | 1 082 063 | Owner Occupied: 77.8 % Tenant, rent at market price: 13.8 % Tenant, rent at reduced price or free: 8.4 % | Extremadura (Spain) |
| Regional Energy Agency North | Križevci Varaždin Virovitica (Zagreb) | Zagreb: 641 km ² Križevci: 264 km ² Varaždin: 159 km ² Virovitica: 179 km ² | Zagreb: 790 017 Križevci: 22 122 Varaždin: 46 946 Virovitica: 21 291 | Owner Occupied: 90.1 % Tenant, rent at market price: 1.6 % Tenant, rent at reduced price or free: 8.4 % | Kontinentalna Hrvatska (Croatia) |
| South Muntenia Regional Development Agency | South Muntenia | 34 km ² | 3 136 446 | Owner Occupied: 96 % Tenant, rent at market price: 1.5 % Tenant, rent at reduced price or free: 2.5 % | Sud - Muntenia (Romania) |
| Tartu Regional Energy Agency | City of Tartu | 2992 km ² (Tartu County level) | 145 550 (Tartu County level) | Owner Occupied: 81.5 % Tenant, rent at market price: 4.1 % Tenant, rent at reduced price or free: 14.5 % | Eesti (Estonia) |

2.1 Benchmarking indicators

Please note that due to data availability, these benchmark indicators include only NUTS2 level regional data from each partner region (except for Norte and REAN where NUTSO level data is used), although several partners target individual municipalities in their actions. Please find below the NUTS2-regions corresponding each partner's region (See Table 1).

Burdensome cost of housing (Figure 1) indicates affordability of housing by estimating the spending on housing in relation to disposable income. On a European scale, the EU-28 average is approximately 35 % and the cost overburden rate is the percentage of the population living in households where the total housing costs represent more than 40 % of disposable income. Four of the Social Green partner regions are considered to have a situation with overburden rates (over 40%), including Centru, Extre-

madura, Kontinentalna Hrvatska, and Sud Muntenia. Meanwhile, one of the regions performs equivalent to the EU28 average (Norte), and Eesti is the only region performing better than the EU-average. The indicator illustrates a common challenge across all partner regions to provide affordable housing to residents, increase the disposable income levels and improve the general socio-economic situation among citizens in severe areas.

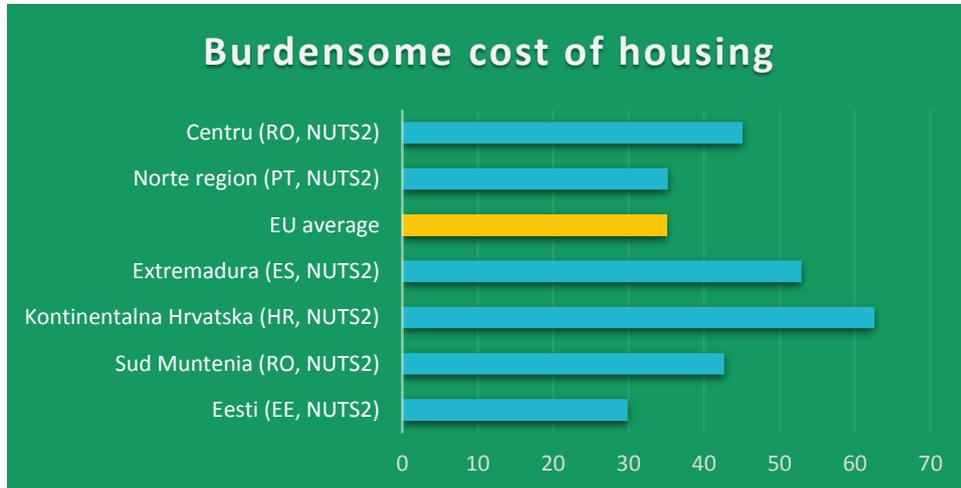


Figure 1: Burdensome cost of housing - % of population living in households where the total housing costs ('net' housing allowances) represent more than 40 % of disposable income ('net' of housing allowances). Year: 2011-2013 average. Scale: NUTS2 (NUTS0 for HR and PT). (Source: Eurostat / EU-SILC)

Satisfaction with Housing (Figure 2): illustrates that all Social Green regions are performing under the EU average of 35 %. This indicates a need to improve the quality of housing in all the regions and the satisfaction with housing may be influenced by different socio-demographic characteristics such as age, sex, household composition, tenure status, and income/monetary poverty or material deprivation. The most severe situation with satisfaction with housing could be seen in Romanian regions (South Muntenia & Centru), as well as to some extent in Croatia. The Romanian partner regions have a very low-level satisfaction below 10 %. The partner regions with highest level of satisfaction with housing could be seen in the partners situated in Spain (Extremadura 27 %) and Portugal (Norte 21 %), however both are still performing under the EU-28 average.

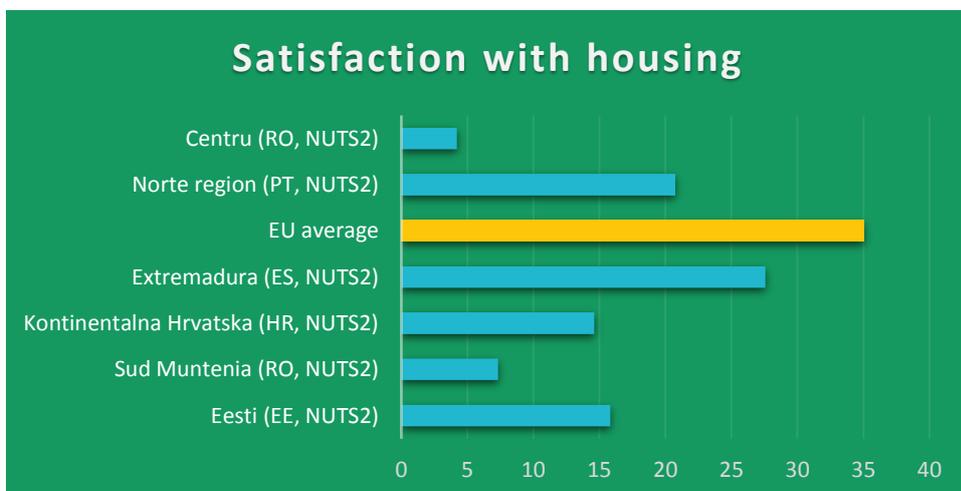


Figure 2: Satisfaction with Housing - % of people who feel satisfied with the dwelling they live in. Year: 2012. Scale: NUTS2 (NUTS0 for HR and PT). (Source: Eurostat / EU-SILC)

Overcrowding (Figure 3) indicates quality of housing conditions and the 'sufficient' space for each member of a household in a dwelling. We see a diverse pattern of overcrowding in the partner regions, with regions performing both over and under the EU-28 average. The patterns follow the above-mentioned indicator on *satisfaction with housing*, where the Romanian regions (South Muntenia & Centru), as well as to some extent in Kontinentalna Hrvatska in Croatia, are performing far over the EU-28 average. Meanwhile, Extremadura and Norte have less pressured situation with overcrowding and places themselves well under the EU-28 average.

Lack of adequate heating (Figure 4) indicates energy poverty and poor housing quality. Energy poverty is defined as a situation where individuals or households are not able to adequately heat or provide other required energy services in their homes at affordable cost. Today, 10 % of Europeans are suffering from lack of adequate heating, and in Social Green the regions with challenges in relation to this are the Romanian partner regions (South Muntenia & Alba Iulia) and as well Portuguese region of Norte, which has the highest share of household with lack of adequate heating. Spain, Croatia and Estonia perform better than the EU-28 average.

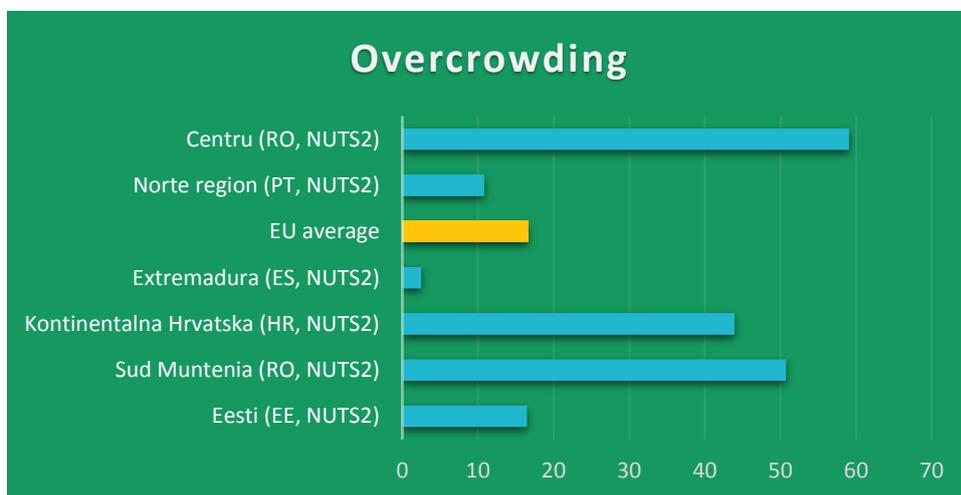


Figure 3: Overcrowding - % of people living in an overcrowded dwelling, as defined by the number of rooms available to the household, the household's size, as well as its members' ages and family situation. Year: 2011-2013 average. Scale: NUTS2 (NUTS0 for HR and PT). (Source: Eurostat / EU-SILC)

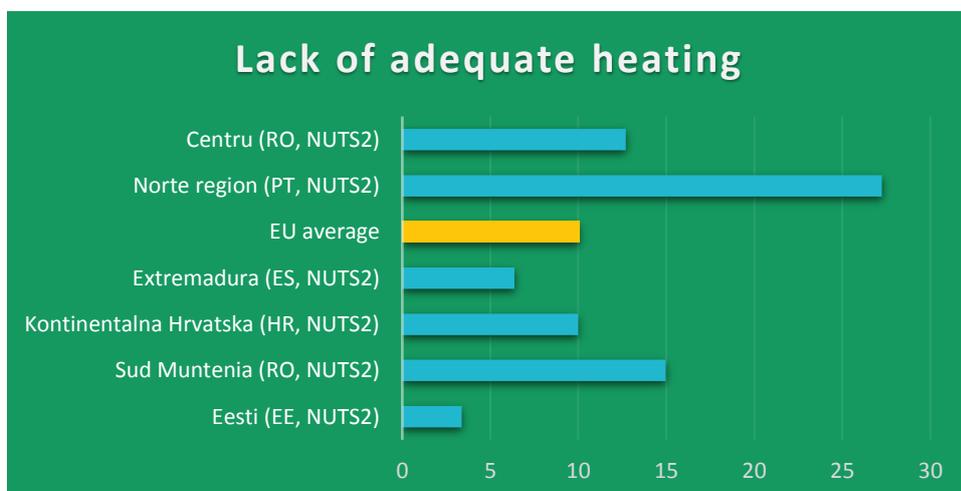


Figure 4: Lack of adequate heating - % of people who are in the state of enforced inability to keep home adequately warm. Year: 2011-2013 average. Scale: NUTS2 (NUTS0 for HR and PT). (Source: Eurostat / EU-SILC)

2.2 Composite results of the regional benchmarking indicators

All partner regions encounter challenges in some of the indicators - there is no region that performs better than the EU average in all the selected indicators. Eesti, for example, does not experience major challenges in lack of heating and burdensome housing costs, which can be related (i.e. burdensome housing costs may imply lack of heating). On the other hand, Norte suffers from lack of adequate heating, but not from burdensome housing costs. This illustrates how the specific challenges of each region are dependent on related territorial characteristics, for example the welfare service system. There is, for instance, no single standard where the public sector pays for part or all of heating costs in social housing units.

In general, it seems that the partner regions in Southeast Europe (Centru Region (RO) and Sud Muntenia Region (RO) and Kontinentalna Hrvatska (HR)) are the most vulnerable in terms of burdensome costs of housing, housing satisfaction, lack of heating (not applicable to the Croatian region), and overcrowding. Regional GDP indicators in 2014, according to Eurostat, show that the Southeast partner regions also have the lowest GDPs in comparison to the EU average (Sud Muntenia 43% of EU average; Centru 52% and Kontinentalna Hrvatska 60%). However, the GDP of the Croatian region is not much lower compared to some of the other partners, and the variations in performance are also dependent on other societal challenges and likely also on welfare policies.

The benchmarking indicators show that the Social Green partner regions have varied points of departure in terms of the current state of social housing, both when it comes to improving the general housing quality and the needs for retrofitting. However, the benchmarking indicators only provide a baseline concerning the entire housing sector in NUTS2-regions, and in doing so it shows that more detailed knowledge of the local challenges and opportunities is required. Therefore, partners have collected data of social housing in their own area to ensure a sound knowledge base for developing their local action plans.

3. Social housing Defined

While Social Green partner regions differ considerably in terms of the function and regulation of social housing, there are also many commonalities among the regions. In this section, we include an overview of ownership, rental regulation, funding and the targets groups, which provides a structural overview of social housing in Social Green partner regions.¹

In terms of understanding the definition of Social housing, Social Green project deploys a broad and inclusive working definition that includes both publicly- and privately-owned tenures:

Housing and associated housing policy serving the needs of low-income and vulnerable residents. Social housing is often built, owned, and/or managed by the public sector, but it also includes privately-owned rental housing or different forms of housing cooperatives.

This broad definition acknowledges the different forms of housing provision that exist in our partner regions. Irrespective of **ownership**, our view of social housing includes any form of housing or associated policy subsidies that provide affordable housing to low-income, vulnerable, or disadvantaged people. Therefore, this includes housing owned by private citizens that face a burdensome cost of housing, energy poverty, or in some other way face limitations in their ability to maintain housing conditions to an appropriate standard based on their local context.

Concerning **ownership** of social housing in the Social Green Partner areas, the municipalities own at least a portion of their social housing stock (i.e. public social housing). There is only one case of regional ownership of social housing, in Extremadura (ES). However, there are differing degrees to which private owners are responsible for parts of the social housing stock in the partner areas. Statistics from the EU-SILC survey (see Table 1) only indicates a vaguely defined share of tenure form without specifying the ownerships structure. In reality, it is more complex. In Region Norte (PT) for example, the municipalities own a significant number of social housing dwellings, but these can be either entire apartment blocks or portions of apartment blocks that include private dwellings. This creates a barrier to overcome in terms of public funding for implementing green retrofit strategies. In the other partner areas, significant numbers of housing that fall under our definition of being “Social” are privately owned.

Another key issue is how **rents** are decided in social housing, the core idea of social housing is providing affordable housing for vulnerable tenants. **The joint assessment indicates different rental systems and indicators often based on a national regulation with local flexibility to define regulation in accordance with local needs. In some of the partner regions there is no national regulation and it is up the local municipality to decide the rent (Tartu, Estonia).**

As shown in Table 2, the cost of social housing is publicly supported through measures such as rent reduction/protected rent by subsidies, or through the social welfare system by unemployment support. For example, in Extremadura all rents and utility costs are subsidized locally or regionally, while social welfare subsidies are provided nationally. In cases where protected rent is implemented the rent is calculated on national regulation based on factors such as size of the apartment, year of con-

¹ The geographic scope of the data is based on data provided by each partner. In some cases, the provided data covers regional level and in some cases also local level in one or several municipalities.

struction and/or income levels of the tenants (Alba Iulia, Norte, Extremadura & Croatia). Income indicators are used both in Norte (Portugal) and Extremadura (Spain) to calculate the level of subsidies for low-income households. In Croatian municipalities, protected rent is calculated on the basis of national regulations plus the cost of the regular maintenance of the building, but in some of the municipalities also based on local regulations. In South Muntenia, the different counties set rents in different ways but mainly the rents are regulated based on legislation and adjusted based on inflation.

In almost all cases, social housing **target groups** is defined by the income level. Low-income groups are specifically vulnerable and families in socio-economic deprivation supported in most system. However, there are also partners with targeted support for specific age categories, such as young people who never owned an apartment (Alba Iulia; South Muntenia) or war veterans (REAN, Croatia). Furthermore, some regions have also specific support for families with specific needs, including residents/families with disabilities or single parent families.

Table 2. Social Housing system in Partner regions and municipalities. Source: Municipal Survey, 2017

| | Who are the owners and managers of publicly-owned social housing? | How are rents decided in social housing (if your city/region has subsidized rental social housing) | How is social housing funded | What are the target groups of social housing? |
|--|--|---|---|---|
| Alba Iulia Municipality | Municipality | By local regulations, calculated by each municipality based on national laws. Rents are calculated differently for specific target groups. For young people, rents are calculated based on coefficients related to the size of the apartment and the year of building construction. For families with income below national average, rent is set at 10% of the family's monthly net income, but only five apartments in Alba Iulia belong to this category. | By municipality, national and European sources through the Ministry of Regional Development, Public Administration and European Funds. | -Young people who have never owned an apartment -Families with income below the national average - Persons evicted -Family member with disabilities -Single-parent families with children |
| CCDR-N | Municipalities (main social housing providers and managers) and Central Administration (Housing and Urban Rehabilitation Institute (IHRU)) | Leased or subleased through rents calculated according to the household income . Local authorities may adopt their own regulations in order to adapt this law to the physical and social realities existing at local level, provided that this does not lead to the definition of less favourable regulatory standards for residents. | By municipal councils, but usually through the IHRU – the National Institute for Housing and Urban – in the form of grants or subsidized loans, under programmes such as the PROHABITA (which aims at meeting the demand for affordable housing by households in a situation of socioeconomic vulnerability). | Households in a situation of socioeconomic vulnerability, as well as households that live in precarious housing conditions. |
| Extremadura Energy Agency | Region | Subsidies are defined by the family unit income, which is defined by the Family Income Indicator (IPREM), number of family members, and size of the population. The maximum amount granted is 250 €/month. | - Three different national programmes offer subsidies to households to pay the rent. | The criterion for granting subsidies is defined by family unit income, which is defined by the IPREM (Family Income Indicator). |
| Regional Energy Agency North | Municipality | Križevci: The city sets the price (0,2 €/m ²); Zagreb: City sets the price (0,35 €/m ²); Varaždin and Virovitica: Protected rent calculated by Croatian national regulations plus the cost of regular building maintenance; Each city makes their own calculations for amount of protected rent by costs of dwelling maintenance (protected rent cannot be lower than the cost of the regular monthly maintenance for the dwelling). | Rents and utility costs are subsidized on local/regional level. | -Residents who lived in the city for 10 years and do not own property; -low income (defined by Centre of Social Welfare). -Veterans -Those with health conditions -Single parents. |
| South Muntenia Regional Development Agency | Municipalities | The rents for social houses are established in accordance with national and local law and regulations. The calculation method is based on the net income per family and the rent may not exceed 10% of the net income/family. | The funds used to finance building works come from the state budget, domestic/foreign loans, amounts resulting from the sale of former rental housing units for young people, as well as from other legally constituted sources (national and European Funds). | - Families or persons with below average net monthly income. - Persons discharged from nationalized houses, people with disabilities, disabled and pensioners - Young people aged between 18 to 35 years; |
| Tartu Regional Energy Agency | Municipality | Local councils based on the local budget. There are no clear guidelines on how the rent should be calculated so it just seems to rather be of a symbolic meaning than to have any fiscal purpose. | Social housing in context of residential houses owned by municipalities are built by local municipalities. Often different appropriate funds are involved. | - Persons evacuated (e.g. families or people whose living place are in danger or in bad conditions.) - Families with children or member with disabilities |

4. Policy support for improving the energy performance of social housing

Two types of policy are considered below. First, the legislative perspective of public policy governing the greening of social housing. In other words, what are the national and regional laws that dictate the energy performance standards of housing construction or retrofitting projects. Following this overview, a more detailed description is provided concerning public funds that are available at different levels of the government to *incentivize and support* investments in greener social housing. This is a core component of this assessment considering the aims of the Social Green project: to leverage Regional Operational Programme funds to improve the greenness of social housing.

4.1 Legislative policies to promote energy efficiency in housing and social housing retrofitting

Table 3 shows that all partners have national regulations in their countries that set minimum energy efficiency requirements for new residential buildings, however these appear to differ somewhat in their level of detail. For example, some regulations reflect the direct transposing of the European Commission’s Energy Performance of Building Directive (EPBD) into a national context, while other are more specific, setting clear energy performance requirements in terms of maximum kWh/m² year. In most cases, the same regulations also apply for major residential retrofitting projects. In Estonia, the regulations are slightly less strict in major residential retrofitting projects in comparison to the new residential buildings. In Croatia, public procurement processes on major retrofitting projects can often also set stricter energy efficiency requirements than those defined in the law.

According to the regional self-assessments, the partner regions and their countries do not have specific policies on retrofitting social housing. The instruments that address the housing sector in general also apply for social housing.

Table 3. Energy Efficiency and social housing retrofitting. Source: Municipal Survey, 2017

| | Policy for the minimum energy efficiency requirement of new residential buildings | Policy for the minimum energy efficiency requirement of major residential retrofitting projects | Policy on retrofitting social housing in particular |
|---------------------------|--|---|--|
| Alba Iulia Municipality | Yes, requirements are set in national laws and regulations. 153 kWh/m ² year, for buildings under four floors and 117 kWh/m ² year for buildings over four floors. | Same as for new residential buildings. | No specific policy or regulation for retrofitting. |
| CCDR-N | REH - Residential Buildings Energy Performance Regulation. Description: Transposing EPBD into national law. | Same as for new residential buildings. | No specific policy or regulation for retrofitting. |
| Extremadura Energy Agency | The Technical Building Code contains the Basic Document of Energy Saving that establishes the requirements in relation to: limitation of energy consumption; limitation of energy demand (heating and cooling); thermal envelope; performance of thermal installations; energy efficiency of lighting installations; minimum solar contribution to domestic hot water; minimum photovoltaic contribution of electric energy. | Same as for new residential buildings. | No specific regulations or policies exist for retrofitting social housing. |

| | | | |
|---|--|---|--|
| Regional Energy Agency North | New buildings must meet minimum consumption of primary energy (depending on the building parameters). From 2019 all new public buildings need to be net-zero, and from 2021. All new buildings need to be net-zero (nearly-zero) buildings. For a multi-apartment building, this means max 80 kWh/m ² for northern Croatia. | Same as for new residential buildings. In public procurement processes related to major retrofitting projects, energy efficiency requirements are often stricter. | No specific policy or regulation for retrofitting. |
| South Muntenia Regional Development Agency | Yes, requirements are set in national laws and regulations. 153 kWh/m ² year, for buildings under four floors and 117 kWh/m ² year for buildings over four floors. | Same as for new residential buildings. | No specific policy or regulation for retrofitting. |
| Tartu Regional Energy Agency | 184 kWh/m ² year, for single family houses (<100m ²); 160 kWh/m ² year for single family houses (>100m ²). 150 kWh/m ² year, for multi-family buildings | 210 kWh/m ² year, for single family houses 180 kWh/m ² year, for multi-family buildings | No specific policy or regulation for retrofitting. |

4.2 Overview of policy and funding instruments in Social Green Partner Areas

Social Green is most concerned about leveraging Regional Operational Programme (ROP) policies, together with other available policy funding in order to retrofit and construct green social housing. Figure 5 shows that financial resources can come from all levels of government, and through various policy funding schemes. The European Union provides funding either through Structural Funds (European Regional Development Fund (ERDF) and the European Social Fund); or via Cohesion Funds, which is aimed at Member States whose Gross National Income per inhabitant is less than 90% of the European average. These funds can be dispersed to municipalities either via national or regional programmes, the most common of which are ROPs, which distribute ERDF funds.

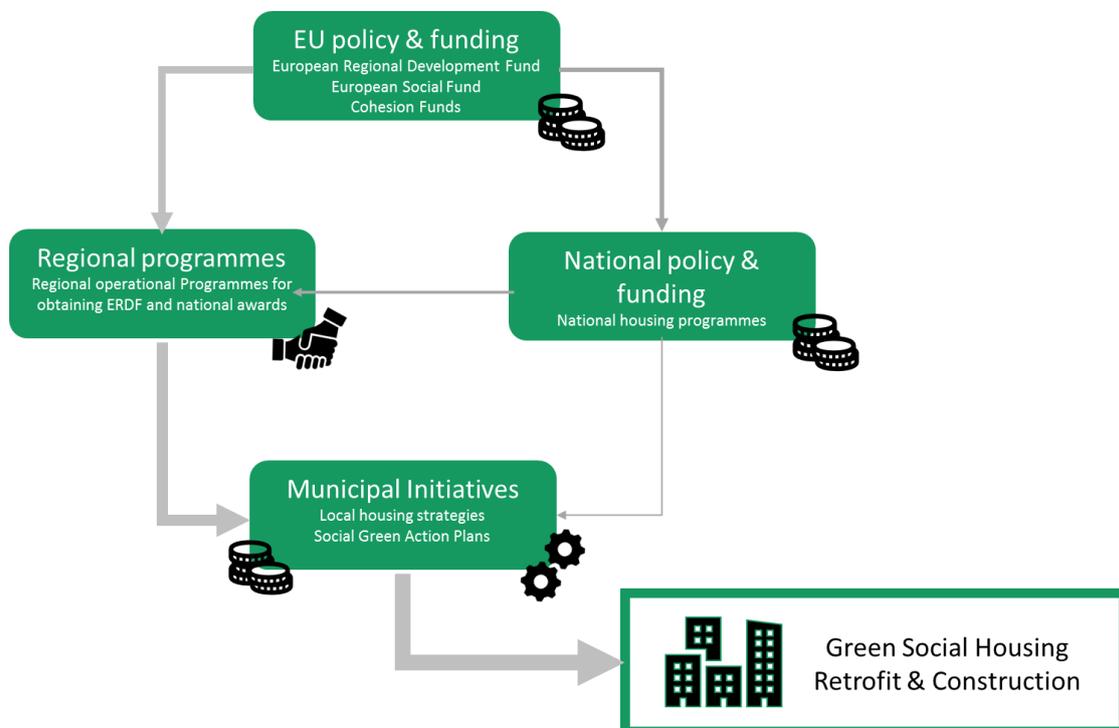


Figure 5: Scheme showing common funding sources for green social housing retrofit and construction projects. The thickness of the arrows is indicative the relative importance of public funding flows. These projects are typically managed and implemented by municipal authorities, who can obtain funds in a number of ways. The most common path would be EU funds that are distributed through regional policy, such as ROPs. National policy support, in the form of grants and the establishment of preferential loans schemes, can also be obtained via regional authorities or directly from national governments. And certainly not least, municipalities can provide funding for their own social housing initiatives.

It is most common that multiple funding sources will be used to complete a project. For example, a municipality will typically use a portion of its own funds, which in fact is mandatory for obtaining ROP funding (the Social Green project fundamentally aims to develop action plans for implementing ROP funds to improve social housing in the partner regions). They could combine these resources with available European or national funds, which may or may not flow through ROPs, and could take the form of grants or other funding schemes, such as preferential loans. A key point in this connection, however, is the role of the municipalities, which commonly own or manage at least a certain share of the housing stock in their jurisdiction. Therefore, municipalities are a key broker in the process for developing and implementing green social housing projects.

EU funding can be used to promote greening the housing sector which seems to be very important for the partner regions. Also, while all regions commented that there are national funding programmes available, their regional SWOT-analyses note that there is also a lack of available national funding. Table 4 provides an overview of the available financing instruments in terms of regional, national and European funds/programmes in all partner regions.

Table 4: Financing instruments. Source: Municipal Survey, 2017

| | European Funds available through Regional Operational Programmes. If yes, brief description. Also reference if other regional funds are available to retrofit social housing? | Do they deal exclusively with social housing? | Are national funds available to retrofit social housing? If yes, brief description. | Do they deal exclusively with social housing? | Has a financing model been implemented to allocate national and/or European public funds to private building owners? | Degree of integration between national and regional funding programmes? |
|-------------------------|---|---|--|---|---|--|
| Alba Iulia Municipality | <p>Regional Operational Programme for 2014 -2020 - Centre Region has three investment priorities in relation to retrofitting:</p> <p>1) Investment priority 3.1: Supporting energy efficiency, intelligent energy management and renewable energy use in public infrastructures, including public buildings and the housing sector.</p> <p>2) Investment priority 3.2: Promoting strategies to reduce carbon dioxide emissions for all types of territories, in particular urban areas, including promoting sustainable urban mobility plans and relevant measures to mitigate adjustments.</p> <p>3) Investment priority 9.1: Community Led Local Development.</p> <p>1-2) are under <i>Axis 3: Supporting the transition to a low carbon economy</i> and 3) is under <i>Axis 9: Supporting the economic and social regeneration of the disadvantaged communities from the urban area.</i></p> | No | <p>Two national programmes are available in Romania for retrofitting the residential sector:</p> <p>1) The National Green House Program 2) The National Green Plus House Program</p> <p>Homeowners and legal entities (municipalities, public institutions, ecclesiastical institutions) can apply for funding in both programmes. In programme no. 1, funding is available for installing, replacing or supplementing classic heating systems with green, renewable energy (e.g. solar panels, heat pumps.). In the second programme, the funds can be used for deep energy retrofitting such as thermal insulation of exterior walls, roof for new/existing single-family houses).</p> | No | No | <p>The ROP is co-financed through the ERDF, national budget, municipalities and tenants' association funds.</p> <p>The co-financing rates applicable to eligible expenditure are:</p> <ul style="list-style-type: none"> • 60% of the total eligible expenditure of the projects - the ERDF and the national budget; • 40% of the total eligible project expenditure – Applicant (Municipality) and Owners' Association. |
| CCDR-N | <p>The "Norte 2020" Regional Operational Program (2014-2020) has two thematic objectives with available funding for retrofitting social housing:</p> <p>1) Thematic Objective 4 "Boost the transition to low carbon economy in all sectors" under Priority axis 3. <i>Low Carbon Economy</i>. The investment priority 4c "Support energy efficiency, intelligent energy management and the use of renewable energy sources in public infrastructures, namely public buildings and the residential sector".</p> <p>2) Thematic Objective 9 "Promoting social inclusion, combating poverty and any discrimination"</p> | <p>1) Yes, see far right column.</p> <p>2) No</p> | <p>Five national funds are available:</p> <p>1) Social Housing Rehabilitation Programme 2) PROHABITA: National Financing Program for Housing Access 3) PER: Special Programme for Rehousing 4) Reabilitat para Arrendar/Reabilitate for Rent Programme. 5) IFFRU 2020</p> <p>All of them comprehends different retrofitting actions and target groups. Also the funding mechanisms differ</p> | <p>1) Yes 2) Yes 3) Yes 4) No 5) No</p> | <p>Programmes 1), 2) and 3) are directed towards municipally-owned residential buildings, whereas programmes 4) and 5) can be used to retrofit privately owned dwellings.</p> <p>More specifically, IFFRU offers a fund for investing in privately owned dwellings within buildings in which most of the dwellings are publicly owned. The programme was designed to ensure that privately owned dwellings do not</p> | <p>The National Programme "Social Housing Rehabilitation Programme" is itself funded by all ROP in Portugal, including ROP NORTE 2020. From ROP NORTE 2020, a significant part of the total amount allocated to the <i>Investment priority 4c</i> (107,019,526 EUR) is directed to the national Social Housing Rehabilitation Programme. This is one example of a high degree of inte-</p> |

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| | under Priority axis 5. <i>Urban System</i> . The investment Priority 9b "providing support for physical, economic and social regeneration of deprived communities in urban and rural areas". | | between the national funds, but programme no. 2-5 have all agreements with private lenders who can offer subsidized loans. | | compromise the retrofitting of the building or neighbourhood in which this kind of dwelling are integrated. On the other hand, the programme Reabilitar para Arrendar /" Rehabilitate for Rent Programme " can be used to retrofit <i>private housing</i> as long as buildings have an age equal or superior to 30 years and are located within an "Urban Rehabilitation Area". | gration between national and regional funds existing in the Norte Region in Portugal. |
| Extremadura Energy Agency | Regional Operational Programme Extremadura 2014-2020 has one thematic objective and two specific objectives in relation to retrofitting: <i>Thematic Objective 4:</i> Boost the transition to low carbon economy in all sectors: • Priority 4c: "Support energy efficiency, intelligent energy management and the use of renewable energy sources in public infrastructures, namely public buildings and the residential sector" • Specific Objective "OE.4.3.1. Improve energy efficiency and reduce CO2 emissions in buildings and public infrastructure and public services". • Specific Objective "OE.4.3.2. Increase the use of renewable energy to produce electricity and thermal energy in buildings and public infrastructures, mainly by encouraging small-scale power generation in places close to the consumer". <i>Extremadura Regional Plan for Rehabilitation and Housing: PEEVE Programme</i> is another regional fund available in Extremadura. Private owners can apply for funding for energy efficiency and renewable energy improvements. | No | Three national funds are available: 1) National Plan for Housing Rental promoting, building renovation and urban regeneration 2013-2016. 2) National Programme of aids for renovation of existing buildings: PAREER CRECE Programme (Diversification and Energy Saving Institute - IDAE) 3) Loan Line for housing renovation of Official Credit Institute (ICO) These programmers are directed to different actions that improve energy efficiency. Programme no. 1 and no.2 have specified types retrofitting actions related to the programme whilst no. 3 is available for any action that improves energy efficiency of buildings. | No | To some extent. There is no specific programme who target social housing. However, the grant in the three national policies and PLEEVE can be requested <i>by any citizen who</i> meets the requirements: The maximum amount for beneficiary is 15,000€ and there are 3 grant lines: 1) General line: The beneficiary's income does not affect the aid received. Percentage of the budget action: 60% 2) Line against energy poverty: Directed to people and families with low incomes. Percentage of the budget action: 100% 3) Line for building coverages for people over 65 years: Directed to people over 65 years with low income, being the action specifically on housing coverage. Percentage of the budget of the action: 100% | |
| Regional Energy Agency North | Regional operational programme competitiveness and cohesion 2014 – 2020 has an <i>investment priority 4c2: reduction of energy consumption in residential buildings</i> which is used to carry out national programmes. In this case the <i>National programme for energy renewal of multi apartment buildings from 2014 to 2020</i> . | No | One national fund is available: <i>National programme for energy renewal of multi apartment buildings from 2014 to 2020</i> . Retrofitting actions in this programme need to provide 50% energy savings. Examples of | No | Yes. Representatives of building tenants or housing managers who can be both privately and publicly owned, can apply to <i>National programme for energy renewal of multi apartment buildings from 2014 to 2020</i> unless the properties are protected as of cultural | The funds in ROP competitiveness and cohesion 2014-2020 under Investment priority 4c2 are used to carry out the <i>National programme for energy renewal of multi apartment buildings from 2014 to 2020</i> . That is, these |

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| | | | <p>measures are thermal insulation of exterior walls and high efficiency lightning.</p> <p>The funding mechanism is divided into 60% from the national programme and 40% self-finance where there are possibilities to get green bank loans provided by banks in Croatia.</p> <p>Representatives of building tenants or housing managers (public or private) can apply for the programme unless the properties are protected as of cultural heritage and given that some other criteria also are fulfilled.</p> | | <p>heritage and given that some other criteria also are fulfilled.</p> <p>In other words, regardless of their ownership (public or private), housing managers or representatives of building tenants can apply for funding in one national programme in Croatia.</p> | <p>two programmes are integrated with each other.</p> |
| South Muntenia Regional Development Agency | <p>Regional Operational Programme for 2014 – 2020 - South Muntenia Region has two priority axes with two investment priorities available for retrofitting:</p> <p>1) Priority axis 3: supporting the transition of a low-carbon economy. <i>Investment Priority 3.1: Supporting energy efficiency, smart energy management and use of energy from renewable sources in public infrastructure, including public buildings and housing.</i> Examples of retrofitting activities: i) Activities to increase energy efficiency of residential buildings (thermal insulation of the exterior walls); ii) Rehabilitation and modernization of the heating and hot water distribution system; upgrading the heating system; replacement of fluorescent and incandescent luminaires, in common spaces, with high energy efficiency ones.</p> <p>2) Priority axis 9: Supporting the economic and social regeneration of the disadvantaged communities from the urban area is financed the construction and rehabilitation of social houses. <i>Investment priority 9.1: Community Led Local Development.</i> Funding is available for investments in social housing infrastructure - building / rehabilitation / modernization.</p> | No | <p>Two national programmes are available in Romania for retrofitting the residential sector:</p> <p>1) The National Green House Program 2) The National Green Plus House Program</p> <p>Homeowners and legal entities (municipalities, public institutions, ecclesiastical institutions) can apply for funding in both programmes. In programme no. 1, funding is available for installing, replacing or supplementing classic heating systems with green, renewable energy (e.g. solar panels, heat pumps.). In the second programme, the funds can be used for deep energy retrofitting such as thermal insulation of exterior walls, roof for new/existing single-family houses).</p> | No | No | <p>SM RDA as Intermediate Body for Regional Operational Programme for 2007-2013 and 2014-2020 was responsible for preparing the regional programming documents, based on which the Operation Programme for 2007-2013 and 2014-2020 was substantiate. In this regard, starting with 2011, SM RDA prepared the Regional Development Plan which is the main programming document related to the financing needed at the regional level, either we spoke about European funds, international, national or local funds. The Regional Development Plan is the instrument through which the region shall promote the priorities and interests in economic and social fields, representing, in the same time, the contribution of regional policy to the development of national policy - represented by National Development Plan.</p> |
| Tartu Regional Energy Agency | <p>Regional Operational Program for Cohesion Policy Funds 2014-2020 has two priority axes available for retrofitting:</p> | No | <p>One national programme is available:</p> <p><i>KredEX</i> which is a programme designed for municipalities and building</p> | No | <p>Yes. The "Kredex subsidy" means a grant on renovation expenses if a building is renovated to nZEB-</p> | <p>The KredEx scheme is both a national programme and a regional programme because there are no formal regions in Estonia with</p> |

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| | <p>1) Priority axis 2.6 Energy Efficiency Investment</p> <ul style="list-style-type: none"> • <i>Priority 1:</i> Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including in public buildings, and in the housing sector <ul style="list-style-type: none"> ○ <i>Specific objective 1:</i> Energy efficient housing sector and street lighting, and increased share of renewable energy in final consumption. <p>2) Priority axis 2.9 Sustainable Urban development: supporting sustainable development strategies of five larger urban areas in Estonia (one of them being Tartu).</p> | <p>associations (building owners) wishing to retrofit their apartment buildings for improved energy and resource efficiency. It functions as a combined grant and preferential loan guarantee. Any private building association (public or private) owning apartment building can apply for funding. An apartment building is defined as a residential building with three or more dwellings. The houses must be built before 1993.</p> <p>KredEx also has agreement with private lenders, i.e. with Swedbank and SEB bank administer the preferential loans to building owners.</p> <p>Funding mechanisms, see column to the right.</p> | <p>ready state (nZEB minus micro-generation). The grant may be applied for 15%, 25% and 40% of the total project cost depending on the level of integration in the reconstruction of the relevant apartment building. There is also an availability to apply for a preferential loan to cover the remainder of the costs, whereby the cost savings from the energy retrofit are used to pay back the loan.</p> <p>Any private building association (public or private) owning apartment building can apply for funding.</p> | <p>any meaningful administrative power. Regional units - counties will be abolished as of January 1st, 2018. NUTS 3 subdivision does not correspond to any presently existing administrative division.</p> <p>The KredEx scheme is furthermore funded by European funds, i.e. through the Regional Operational Program for Cohesion Policy Funds 2014-2020.</p> |
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In general, all partner regions have established strategies that promote European funds to be used for greening the housing sector. However, the number of available funds and the degree in which they target social housing varies significantly between the partner regions (see Table 4). The KredEx scheme in Estonia is a good example of a **national scheme** funded by European regional funds. Any private/public building association can apply for funding through Kredex in the form of a grant on renovation expenses (up to 40% of the total building cost) with an availability to apply for a preferential loan to cover the remainder of the costs. The scheme has also agreements with private lenders for subsidized or preferential loans, which is the case for only a few Social Green partners (see Table 4).

Two other Social Green partners have developed national programmes that use ROP funding. In Norte, there is a national programme that deals **exclusively with the social housing sector**, which target municipally-owned residential buildings. Regional Energy Agency North (Croatia) also uses ROP funds to support its national housing programme, however, it does not target social housing exclusively. Instead both private and public actors can apply for funding in Croatia as long as they are representatives of building tenants or housing managers. Generally speaking, it was noteworthy that most of the financing instruments do not specifically target social housing. Norte was the clear exception in this regard, where their ROP contains specific measures to fund public social housing interventions in deprived communities. However, this reflects the ownership structure of the social housing sector in the Norte Region, with a relatively large share owned by municipalities (c.f. Table 2).

In general, there are both regional, national and European funds available in all partner regions for retrofitting the housing sector, but only a few of them deal exclusively with social housing (all of them in Portugal). Most funds are directed to residential buildings with public ownership which do not reflect the housing sector in general in all partner regions. Several national programmes (at least one programme) are available for all Social Green partners, but the SWOT-analyses note that there is also a lack of available national funding which indicates that the challenges of receiving financial support for retrofitting the social housing sector is prevalent among the Social Green partners.

5. Progress in retrofitting social housing

5.1 Green retrofits

The extent to which green retrofits have been done in the partner regions varies considerably and detailed information is not available in most cases. As described in Table 5, 7.1% of the social housing stock in Norte Region was retrofitted in 2012 and 9% in 2015, but there is no data available on the total share of retrofitted social housing. The extent to which green solutions were adapted in these retrofits is also not clear, but the general activities point to existing knowledge and political support towards improving social housing. In Tartu, there is no specific category for social housing, but 5% of all multi-family dwellings have been retrofitted using green retrofits. In Alba Iulia, social housing dwellings are new and many green solutions were already applied during their construction, but further green solutions could still, in principle, be implemented.

There are energy efficient building solutions in use in all partner regions. This implies that technologies and local technical building knowledge is available. This was also confirmed in Section 4 (Table 3) which described how the energy efficiency standards for retrofitting are the same as for new building construction in most partner areas.

Table 5: Extent of green retrofits in the partner areas. Source: Municipal Survey, 2017

| | Percentage of social dwellings where green retrofits have been done | What kinds of energy efficient solutions are applied in housing in general? | What kind of energy efficient solutions are applied in social housing? |
|---|---|--|--|
| Alba Iulia Municipality | 100% The social housing sector is relatively new in Alba Iulia and in the buildings many new green solutions are already included, but further greening measures can be taken. | - Thermal insulation - Installation of thermos-paned glass units - Efficient heat production systems - Purchasing of equipment with high energy efficiency class (luminaires, heating, appliances, electronics, etc.) | Same solutions as in housing in general (see previous cell). |
| CCDR-N | No available data on the share of green retrofits among all social housing retrofits. In 2012, general retrofits were made in 7.1% of the social housing stock, and 9% in 2015. No data available on the share of entire social housing stock retrofitted in total. | Weather sealing, improving thermal insulation of roofs through green roofs; elimination of thermal bridges in facades, replacement of simple glazing and window frames by modern energy efficient windows and installation of solar thermal collectors for sanitary water heating. | Interventions for thermal insulation in walls, floors, roofs and blinds, and replacement of single glass by double glazing and improvements in Horizontal Sliding Wall systems. Interventions related to interior lighting, energy management systems, ventilation systems and use of renewable energy for self-consumption. |
| Extremadura Energy Agency | 0% | - Improving the thermal envelope. - Installation of heating, cooling, hot water production and ventilation systems. - Improvement of the energy efficiency of lift and lighting installation. - Improvement of efficiency of water supply facilities. - Generation of green spaces and gardens. | Social housing must comply with the same regulation as the rest of housing. |
| Regional Energy Agency North | Social housing has not been retrofitted. | Thermal insulation of whole building (facade + roof), mostly using ETICS systems. Replacement of old wooden windows with PVC windows. Installation of high efficiency heating/cooling systems that uses renewable energy sources (heat pumps, biomass boilers, solar collectors...). Buying high energy class of house appliances. LED lighting, energy management systems. | Thermal insulation of whole building (facade + roof), mostly using ETICS systems. Replacement of old wooden windows with PVC windows. Installation of thermostatic valves on radiators for better regulation on heating. |
| South Muntenia Regional Development Agency | New dwellings are built with energy efficiency measures already included. Existing social housing have not been retrofitted. | Thermal insulation of the exterior walls and windows; Retrofitting and modernization of the heating and hot water distribution system (installation/repairing/replacing the thermal power plant/block scale; the purchase and installation of alternative systems for the production of energy from renewable sources - solar panels solar panels thermal, electrical, heat pumps and/or thermal on the biomass, etc.; Upgrading the heating system; Energy efficient lighting. | Same solutions as in housing in general |
| Tartu Regional Energy Agency | 5% of all multi-family dwellings, as there is no social housing category. | -Thermal insulation -Improvement of windows -Heating, ventilation and air conditioning systems (HVAC) -Efficient heat systems -Renewable Energy Systems (RES) | Same solutions as in housing in general as there is no social housing category. |

5.2 Enabling green building through programmes, institutes and certificates

In most partner regions, only lawfully required energy performance certificates are in use. In Norte Region, there are also three voluntary certification schemes for buildings that comply with a set of environmental, social and economic requirements.

Among the partner regions, only Tartu noted that a national green building council is in place. In the other partner regions, actors who are working with energy issues in general also have a role in relation to greening the housing sector (mentioned e.g. in Extremadura and the Croatian cities).

Table 6. Green buildings programme, institutes and certificates. Source: Municipal Survey, 2017

| | Are there any local or regional green building programmes, councils or institutes? | Are there any green building certificates in housing and social housing in use? |
|--|--|--|
| Alba Iulia Municipality | No. | Obligation of energy certificate was introduced by Law 159/2013 amending and supplementing Law 372/2005 on the energy performance of buildings. |
| CCDR-N | <p>There aren't green building councils or institutes in Portugal. Some relevant national programmes on energy efficiency in residential buildings are:</p> <ul style="list-style-type: none"> - PNAEE is essentially implemented through regulatory measures (e.g. imposing penalties on inefficient equipment, minimum energy performance requirements, mandatory energy labelling, mandatory energy audits), fiscal differentiation mechanisms (e.g. positive discrimination) and financial support through funds for energy efficiency programmes, such as: FEE, PPEC, FPC, FAI and FC. PNAER 2020 establishes guidelines for the introduction of renewable energy sources in three major sectors: heating and cooling, electricity and transport. - PNAER 2020, which establishes guidelines for the introduction of renewable energy sources in three major sectors - heating and cooling, electricity and transport. - Eco.AP translates a set of energy efficiency measures for execution in public services, bodies and equipment, contributing to the achievement of the objectives set out in the PNAEE and in the PNAER 2020. - Social Housing Rehabilitation Programme 2017 | <p>There are two types of building certificates in Portugal:</p> <ul style="list-style-type: none"> - Energy certification: Under SCE, energy efficiency certificates are granted to housing units. In the Norte Region, the number of social housing dwellings with energy certification was of 2,149 in 2015. Environmental certification: if the building complies with certain good environmental, social and economic practices, it receives a certificate according to the score obtained in the various parameters and criteria. In Portugal, there are 3 types of voluntary environmental certification: LiderA, Domus Natura and SBtool-PT. <p>Since 2009, energy certification is mandatory for all buildings in Portugal. Environmental certification is optional.</p> |
| Extremadura Energy Agency | <p>There are some municipal initiatives which reduce taxes for sustainable construction works, such as building permits. Regarding green building programmes, currently the regional regulation is included in the PEEVE programme. Extremadura Energy Agency (AGENEX) has as one of its priority axes the improvement of energy efficiency in buildings and dwellings. The Construction Technology Institute (INTROMAC) also carries out several innovation projects about green buildings.</p> | <p>At national level, the Energy Efficiency Certificate for buildings is applied. Building Energy Certification is a requirement derived from Directive 2002/91/EC on energy certification and Directive 2010/31/EU on building energy performance and was partially adapted to the Spanish law by Real Decreto 235/2013, 5th of April.</p> |
| Regional Energy Agency North | Yes. Various institutions operate in the green buildings domain, e.g. the regional energy agencies, and at national level the national energy institute. | There are energy performance certificates which determine net primary energy consumption of the building. They are the same for social and non-social buildings, but differ for housing and public sector. |
| South Muntenia Regional Development Agency | No. | There is an energy performance certificate which determines net primary energy consumption of the building. |
| Tartu Regional Energy Agency | Estonian Green Building Council. | Energy Performance Certificates are mandatory for all new and retrofitted buildings. The EPCs do not make distinction between social and other dwellings. There requirements are different for multifamily houses (three or more dwellings) and small houses (one or two dwellings). |

6. Discussion: Main challenges and opportunities for greening social housing

In their regional self-assessments, the partners defined the strengths, weaknesses, opportunities and threats of greening the social housing sector in their region together with local stakeholder groups. Analysis of each partners' SWOT, combined with the analysis from the previous four sections, provides some noteworthy results.

First, and as also shown in Table 3, national legislation, regulations and policy rarely address retrofitting social housing explicitly. This implies a type of "policy deficit", where a coordinated national strategy on improving social housing (both public and private) could be developed to coordinate efforts (and funding) among local, regional and national public administrations. However, in Croatia it is expected that the social housing sector will be specified as a separate category in policy regulations in the near future. This type of improvement would go hand-in-hand with deficit noted in Section 4, in terms of developing a coordinated European approach that not only allows, but promotes, the implementation of European funds for investing in social housing, regardless of the ownership structure.

Second, the partners highlighted the importance of access to EU funding to invest in social housing retrofits. For example, the Croatian cities of Krizevci, Zagreb, Varaždin and Virovitica identified a lack of funding at the local, regional and state levels, which is likely to further increase the need to ensure EU funding. Alba Iulia mentioned insufficient access to funding for new social housing construction and retrofitting, but they do have national funding programmes towards social issues in general, which is considered an opportunity. In Extremadura, funding is generally available for energy efficiency and renewable energy purposes, but social housing is not targeted in particular. Tartu has access to European funding for retrofitting through the national programme KredEx, but limited funding available for new social housing construction. Again, further development of European funding protocol specifically for social housing – mobilised through Regional Operational Programmes – is necessary.

Third, several specific issues need to be taken into consideration when targeting vulnerable groups associated with social housing. For example, gentrification and displacement of the vulnerable tenants because of green retrofits. Another challenge noted by Regional Energy Agency of the North is the lack of a comprehensive system for monitoring and regulating social housing tenants. In many cases the result is that retrofit social housing is created that exceeds the quality of non-social housing, which in turn leads to tenants taking advantage of the system to ensure that they can continue living in social housing even if their socio-economic situation does not justify it. Another risk is energy cost recoupment, where social housing tenants are sometimes made to pay for the saved energy in order to fund the retrofit itself. In local situations of high energy poverty, this means that retrofitting does not necessarily lead to a decrease in energy poverty. This highlights the need for a two-pronged approach to policy: a general framework (funding and guidance) at European and/or national levels, plus local and regional governmental responsibility for coordinating the policy implementation to respond to the specific local challenges and characteristics they face. For the latter, it is important that the local and regional actors in the sector have high competence in the specific issues related to retrofitting social housing. Here, regional or national green building councils or regional energy agencies can take an important role in distributing knowledge.

Fourth, in order to retrofit social housing, cooperation between different municipal departments (e.g. social departments, technical departments) is needed. Public actors also need to be able to cooperate with private actors and civil society, including tenants or tenants' associations. In the case of Northern Croatia, in Zagreb there is considered to be potential in connecting the public sector and civil society. In Krizevci, there is already good cooperation between the city and the social welfare centre and in Varaždin there is good inter-sectoral cooperation in the city. In Tartu, wide partnership and involvement of key stakeholders is identified as a strength. In Extremadura, some challenges are related to limited involvement of the private sector, but other partners do not mention private sector involvement – an area where the work of the Social Green partners directly improves the network of stakeholder interaction. Sharing experiences of these processes will thus be an important output of the project.

Fifth, local or regional level political support is also essential to be able to secure the funding and implementation of retrofitting processes in social housing. In Tartu, strong political support is identified as a strength, whereas in Zagreb it is a challenge that city leaders do not prioritise social housing retrofitting or other social issues. In Norte Region, a challenge is that there is no impact evaluation or monitoring of greening interventions to social housing in most cases. Better monitoring and evaluation could be beneficial in other regions too, not least to be able to provide evidence on the results of retrofitting to decision-makers and thereby contribute to securing political interest and access to funding to similar future actions.

Sixth, the Social Green project can provide a good basis for increasing the competence and knowledge among the project partners and among their stakeholder groups who are invited to participate in the project's learning activities. For example, most local partners experience a lack of knowledge among tenants and citizens living in social housing about environmental and energy issues. Therefore, more direct awareness-raising is needed, which in turn needs funding and public support. Likewise, other partners also face challenges in terms of implementing sufficient energy performance monitoring schemes, which are needed to secure future access to European funding by proving the success of current initiatives. These are clear aspects where mutual learning and knowledge exchange can provide added value, for within the Social Green project and between other INTERREG projects.

Seventh, and as noted in previous sections, most partners do not experience a lack of availability or access to suitable technological solutions. Again, this reiterates the crucial importance of getting the policy and funding schemes right at all four levels of public administration – local, regional, national and European.

7. Concluding remarks

The regional self-assessments illustrate that the partner regions have both challenges and existing solutions related to greening the social housing sector. This offers potential for learning between the partners, as one partner may already have solved a challenge that another one is struggling with, and can provide useful lessons and advice. There is also a big potential for learning together between partners with similar challenges.

While energy retrofits in the housing sector are commonplace, green retrofits in social housing are comparatively less common in the partner regions. This shows that technologies and know-how are

available, but there is a policy, funding and/or administrative deficit that inhibits increasing retrofitting of social housing. This was clearly documented in the regional self-assessments, each in terms of a lack of funding instruments, knowledge, facilitation platforms and policies addressing green social housing retrofits. Green building councils and regional energy agencies can play important roles in providing information and increasing the knowledge on building energy efficiency, and should be created and/or mobilized more often. However, they can't do it alone. **National and especially European funding needs to be made available specifically for retrofitting social housing stocks, regardless of the ownership structure.** This will require a clearer definition of social housing that includes housing in both the public and private domains, which reflects the reality of housing ownership in Europe. Likewise, specific space for developing regional strategy and funding mechanisms need to be opened up within the processes of creating Regional Operational Programmes.

Romania's Centru region, where Alba Iulia is located, was among the worst performers of the Social Green partners according to the baseline indicators in Section 2. At the same time, they have the largest share of social housing where energy efficient green solutions have been applied. In contrast, the Norte region is among Social Green's best performers in terms of the baseline indicators, and like Alba Iulia, has performed well in terms of share of social housing retrofits. Local areas in regions with wide variance in their underlying socio-economic situation have both managed to work proactively to implement green improvements in their social housing stock. This shows that measurable success is possible in all regions if the local political will and facilitative insight is provided. This should motivate the ambitions of all regions and municipalities to continue their processes of learning and investment. But it should especially motivate the European and national authorities to improve their efforts in devising policy and funding schemes that can empower local and regional authorities to maximise their potential. This will be a key step to the EU achieving its 2040 energy and climate targets.