

REPORT “EVALUATION OF POTENTIAL FINANCIAL SOLUTIONS”

Task 5.5



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SCOPE OF WORK

The scope initially foreseen for this report was to leverage on the results of the previous analysis to carry out a study identifying possible market failures, suggesting the development of a new financial instrument to overcome this issue. The results deriving from the previous reports, however, have highlighted that no proper situation of market failure can be encountered in the context of Padova. Excluding the issue of energy poverty (whose criticalities will be discussed later in the report), the current fiscal and financial scenario mapped in the Padova area shows that the financial products available can be employed by any typology of client and fit any home renovation intervention. The criticalities encountered in the market are not depending on the lack of a certain financial instrument, but still the OSS could be an important tool to facilitate the process and improve the demand for home renovation. Therefore, the scope of this work is slightly different with respect to the purpose initially contained in the Grant Agreement.

More in detail, leveraging on the insights emerged so far, the aim of this work is to clearly identify the mismatches and market gaps currently existing in Padova, and analyze how they can be exploited with the introduction of the OSS.

After having analyzed the determinants of demand (D5.2) and supply (D5.3), both in the Padova area and the pilot sites, and having investigated a potential matching between financial and technical solutions (D5.4), the next step of the financial analysis consists in providing a comprehensive analysis of the gathered results to strategically understand the role of a local OSS in providing financial support and services. In particular, the report will deeply analyze the Padova pilot area but will also provide preliminary results for Timișoara and the Bulgarian pilot sites as well. The specific objectives of the current report are:

- Reviewing the collected characteristics of the financial demand and supply in Padova, considering also new resources available and the future expected scenarios;
- Assessing what is still missing in the context of home renovation, in terms of sectors currently left out of the market or financial instruments that still can be activated;
- Understanding what are the implications for the OSS, and how can the service that it provides correctly fit into the market.

METHODOLOGICAL APPROACH

In order to understand the missing elements in the current market scenario and the necessity for the implementation of the OSS, this analysis will leverage on the insights emerged in the previous works and provide a framework of how the market has evolved, with a particular emphasis on the financial aspects.

The initial step consists in the analysis of the current state of the home renovation market at the national level: the policy developments already described in D5.3 and D5.4 provided an unprecedented boost to the market and allowed to hope for promising results also for the years to come. The analysis of the results will take into account some dimensions which were followed in the previous deliverables, such as:

- Which building typology recorded higher renovation rates;
- Which interventions were carried out;
- The age of the renovated buildings;
- The level of energy saving obtained;

More in detail, the analysis of the demand in the Padova pilot area reported in Chapter 1 will focus on the results obtained, the critical sectors at local level and what is the potential for renovation for the upcoming years, starting from the data currently available at local level describing the composition of the housing stock and the renovation needs of the territory. This chapter will be particularly relevant for understanding the impacts that the OSS could bring at the local level, what sectors can be reached and what are the actors that can be included to increase the effectiveness of the structure.

The analysis of the demand in Chapter 2 will be matched with the analysis of the financial supply, i.e. what are the available options for the citizens to finance home renovation today. This chapter will draw inputs from the outcomes of D5.3, analyzing the main financial product provided by banks in Italy to finance EE interventions. As already detected, Italian banking products are defined at national level and no local products are foreseen.



The analysis conducted in D5.3, however, will be enriched in Chapter 3 with the presentation of how the market has recently evolved, and what are the new products and financial schemes available for the final users at this moment in time.

Moving from there, the following Chapter 4 will consist in understanding what is currently missing in the market, what schemes can be improved and what can be done to further improve the renovation rates. Despite no current situation of “market failure” can be identified, there are still some issues and barriers to address in the market that, in the years to come, could have profound impacts on the renovation environment and on the services provided by the OSS.

The main inputs for the realization of the report are provided by:

- **D2.4 (“A business model canvas for a One-Stop-Shop”)**: the study of the business model of the OSS is necessary to understand how it relates with the changing context and what services are not currently offered by the market, not only from a financial perspective but also with respect to the entire renovation value chain.
- **D4.2 (“Analysis of the Households’ Energy Needs in the 4 pilot areas”)** and **D4.4 (“Case studies contracts and procedures”)**: the assessment of the potential demand for home renovation cannot be carried out without the knowledge of the drivers of the demand itself, mainly of a technical matter. Dimensions such as the building typology, the energy needs and the composition of the building stock of Padova are fundamental to quantify and determine the market context exploitable by the OSS.
- **D5.3 (“Financial Players Involvement”)**: the assessment of the financial supply provided in the Deliverable constitutes the starting point for understanding the elements that are missing in the current market scenario, and which aspects of the fiscal policy are expected to shape the market in the following years. As already anticipated, the interviews with the financial operators active in Padova provided useful insights on the main shortcomings which impact on the availability to borrow financial resources.
- Further **desk research** completes the assessment of the elements and the barriers currently characterizing the market. In particular, the desk research conducted allowed to:
 - o Get updates concerning the future policies, starting from the evolution of the Superbonus and the National Recovery and Resilience Plan. In Italy, as well as in Romania and Bulgaria, the latter instrument will further stimulate the demand for renovation as well as the supply of both public and private financial resources.
 - o Assess how the financial market has evolved in the last months, what new solutions and instruments are now available, and how these new schemes are shaping the demand for home renovations.

1. STATE OF THE ART OF THE SECTOR

The last years were characterized by the introduction of relevant policy measures changes that had a significant impact on the Italian context of Energy Efficiency and renovation interventions. Great contribution was provided from the setting, at European Level, of important decarbonisation targets which are steering the Member States towards more ambitious policies also in the field of Energy Efficiency in the residential sector. As a result, in the Italian context the market for home renovations has now assumed a pivotal role for sustaining the entire productive sector and help the recovery after the Covid-19 pandemic.

1.1. Results of the fiscal policy in Italy

The context surrounding Energy Efficiency in Italy was deeply affected by the introduction of the so-called “Superbonus”, through the “Decreto Rilancio” (Law decree 19th May 2020, n.34) in 2020. The introduction of this instrument had a relevant impact on the market. First of all, it increased citizens’ interests and awareness on the issue of Energy Efficiency and home renovation: this was possible thanks to a communication campaign that highlighted the “once-in-a-lifetime” character of the policy, leveraging in particular on the fiscal and financial benefits achievable after the interventions. After the announcement of the policy, the market reacted both from the demand and the supply sides of renovation services.

From the demand side, homeowners and condominiums were the main target recipients of the policy, while from the supply side the banks have by now steadily adapted their operations to suit the new needs of the market: new products have been developed, allowing a variety of final beneficiaries to obtain the necessary funding for accessing the renovation works.

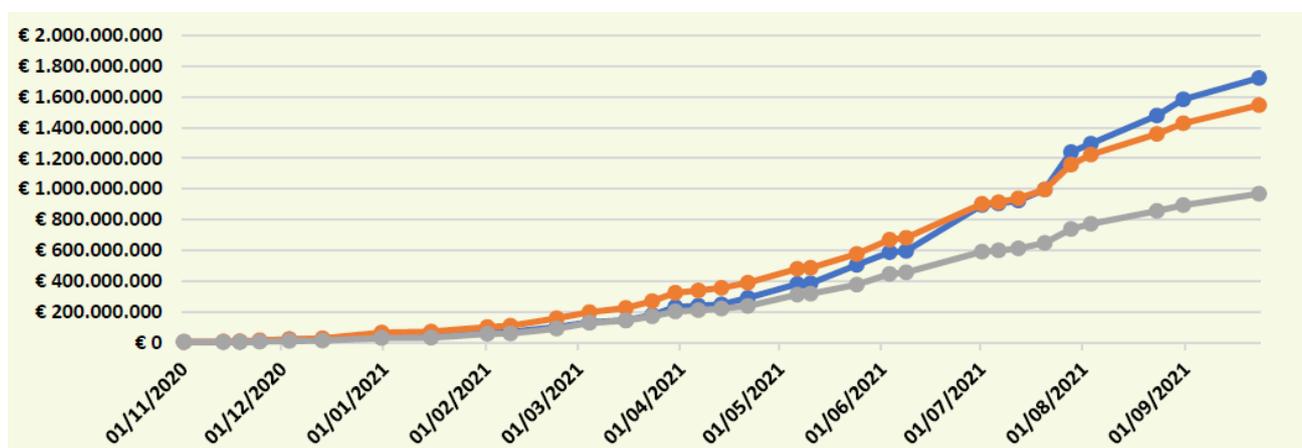


Figure 1: Investment volume activated by the Superbonus for condominiums (blue line), single-family buildings (orange line) and independent units (grey line). Source: ENEA, 2021

Despite the clear economic advantages introduced by the policy, the uptake of renovation initiatives was not easy to achieve, because of the persisting of certain barriers. The 2021 Report by ENEA on the state of tax deductions for energy efficiency and renewable energy sources¹ shows that in December 2020 (in the start-up phase of the mechanism) the number of incentivized interventions was equal to 1,600. A first hampering element which depended mostly on the structure of the regulatory provision, consisted in an overly complicated bureaucratic procedure, which represented significant obstacles especially for condominiums' homeowners. After the amendments introduced in May through the decree 77/2021, which had the effect to ease the documentation to submit in order to start the work, the renovation interventions started to diffuse as well for multi-family buildings, and the requests submitted increased by 220 per cent in September, with respect to the same figures in May². The following Figure summarizes the data referring to the total of certifications, eligible and realized investments, in September 2021, by building typology:

¹ "Rapporto Annuale Detrazioni Fiscali, L'efficienza energetica e l'utilizzo delle fonti rinnovabili negli edifici esistenti, ENEA 2021, available at <https://www.energiaenergetica.enea.it/component/jdownloads/?task=download.send&id=510&catid=40&Itemid=101>

² <https://osservatoriocpi.unicatt.it/ocpi-pubblicazioni-i-risultati-del-superbonus-110>

Certifications, investments and deductions	Unit / €
Overall certifications	40,029
Overall eligible investments	6,116,630,338 €
Overall completed works admitted to deduction	4,241,438,527 €
Deduction foreseen at the end of the works	6,728,293,372 €
Deductions accrued for completed works	4,665,582,379 €
Number of condominiums certifications	5,218
Overall investments in condominiums	2,843,229,619 €
Overall completed condominium works	1,724,687,337 €
Certifications in single-family buildings	20,548
Overall investments in single-family buildings	2,023,721,136 €
Overall completed renovations in single-family buildings	1,547,429,683 €
Overall certifications in independent residential units	14,263
Overall investments in independent units	1,249,679,583 €
Overall realised works in independent units	969,321,507 €

Table 1: Certifications, eligible and realized investments as of September 2021. Source: elaboration from ENEA data, 2021

As already analysed in the previous Deliverables D5.3 and D5.4, it is not the first time that the instrument of the tax deduction is used by the legislator to incentivize citizens to invest in retrofitting solutions. Despite not representing a novelty in the employed instrument per se, the extent of the deduction provided has brought up the interest of the market players operating throughout the whole supply chain, including citizens. This is mainly linked with the possibility to sell the tax credit to financial institutions or receive a discount on invoices, resulting in a significant reduction in the up-front expenses for the end users.

The interest generated after introduction of the 110% deduction percentage has caused the expansion of the home renovation market: according to the latest ENEA data (end of November 2021³), the Superbonus allowed to activate investments in the residential sector for 11.9 bn € on a national scale, 8.28 bn € of which corresponding to deductions for completed interventions. Regarding the regional distribution, the following two graphs highlight a certain asymmetry over the national territory. In particular, the Veneto region is alone responsible for nearly 1.2 bn € of activated investments, with 865 mln € of completed interventions, second only to the Lombardy region with its 1.8 bn € overall investments.

³ <https://www.energiaenergetica.enea.it/detraazioni-fiscali/superbonus/risultati-superbonus.html>

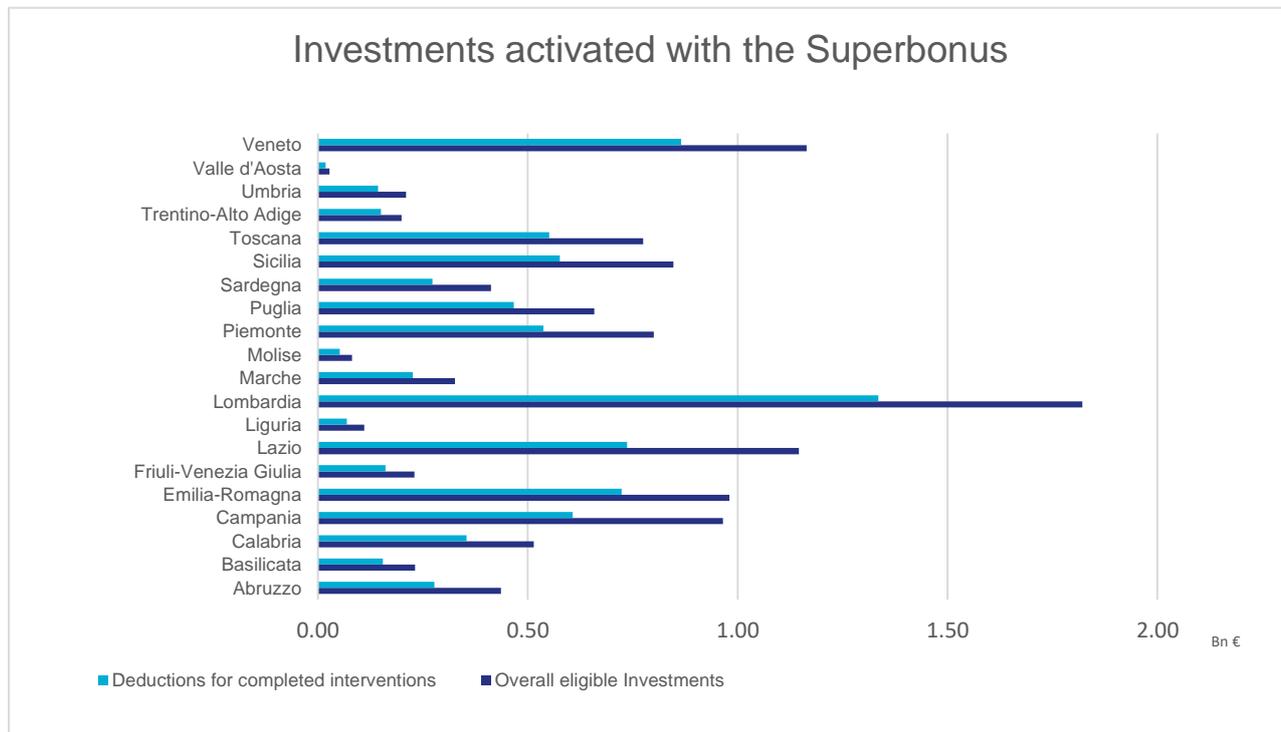


Figure 2: Investments activated through the Superbonus by region. Source: elaboration from ENEA data, 2021

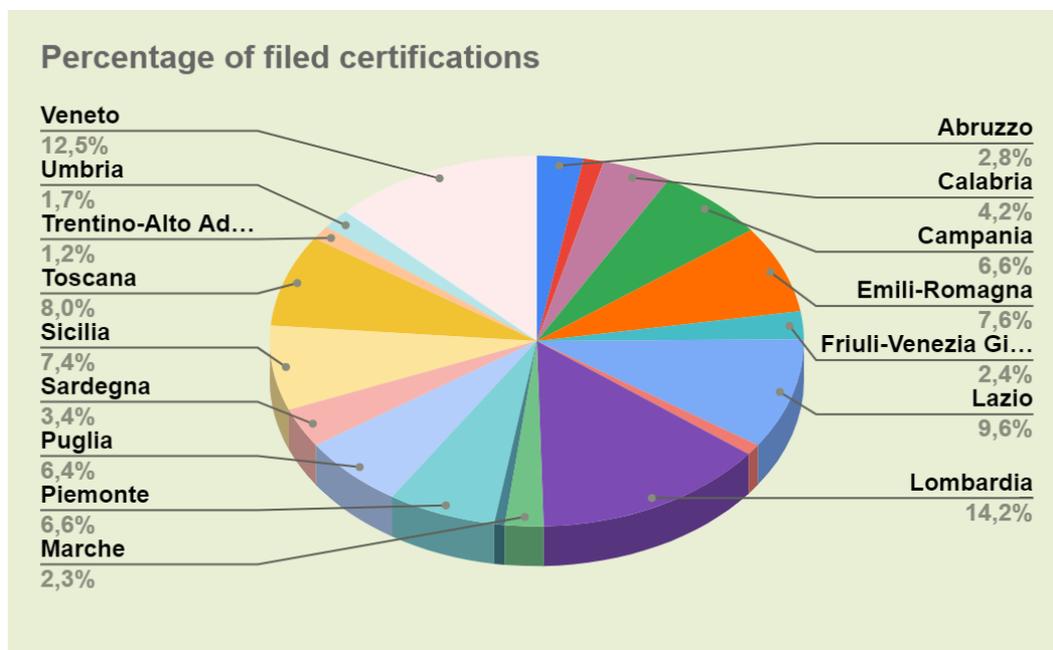


Figure 3: Filed certifications by region in percentage, as of November 2021. Source: ENEA, 2021

According to the last Report by ENEA on the state of the fiscal deductions in Italy⁴, in the year 2020 only around 490,000 investments were realized in energy efficiency renovations, corresponding to 3,336.17 million €. These data seem consistent with those computed throughout the year 2014-2019, with 2.7 million interventions and 20,309 million € of investments. The confrontation is useful to assess the impact of the introduction of the new deduction rate with respect to the old one, since up to the introduction of the Superbonus in 2020, with the “Decreto Rilancio”, the maximum achievable rate corresponded to 65% of the overall expenses. It must always be kept in mind that the interventions that were previously incentivized were the same that are promoted today, the only difference laying in the quantity of incentive offered. The Superbonus has increased the percentage to 110%, only subject to the requirement to achieve a two-steps-improvement of the energy class of the building.

The Superbonus proved to be an effective policy in Italy also considering the features of the national building stock, for the large majority represented by buildings built prior to 1980. Guaranteeing a widespread renovation process is therefore a necessity considered the average age of the building, a feature which characterizes the city of Padova as well, and causes relevant inefficiencies in energy usage. As we can see from the next two tables, the Superbonus proved to be effective for renewing and increasing the overall efficiency of our national building stock. The majority of the buildings that were renovated were built between 1946 and 1980, while fewer renovation rates have been recorded for the more recent buildings, characterized by higher energy performances due to the improvement of the construction standards over the years. The age of the renovated buildings has important reflections on the results gathered in terms of energy savings, since the older the building, the more the expected energy savings: once again it is possible to notice how the buildings built between 1946 and 1980 are those whose energy performance improved the most, and that allowed to obtain the highest share of energy saved.

Construction time	Not specified	Related buildings	Less than three floors	Over three floors	Other	Overall (%)	Overall (million €)
Not specified	119.7	44.9	27.9	36.5	8.6	7.1%	237.6
< 1919	2.9	79.2	61.5	69.3	14.4	6.8%	227.3
1919-1945	3.3	78.5	41.9	69.9	9.1	6.1%	202.8
1946-1960	7.9	180.5	83.6	215	23.9	15.3%	511
1961-1970	13.7	241.6	104.8	309.9	30.1	21,00%	700
1971-1980	9.1	204.2	127	175.9	50.2	17,00%	566.2
1981-1990	6.7	112.1	98.1	102.3	40.9	10.8%	360.2
1991-2000	6.1	75	79.7	49.8	36.1	7.4%	246.6
2001-2005	2.8	26.6	34.6	18.6	12	2.8%	94.5
> 2006	6.3	78.3	55.3	37.6	12.2	5.7%	189.8
Overall (%)	5.3%	33.6%	21.4%	32.5%	7.1%	100%	
Overall (million €)	178.4	1,120.8	714.4	1,084.9	237.6		3,336.17

Table 2: Investments activated in 2020, by building age and typology. Source: ENEA, 2021

⁴ Rapporto Annuale Detrazioni Fiscali, L'efficienza energetica e l'utilizzo delle fonti rinnovabili negli edifici esistenti, ENEA 2021, available at <https://www.energiaenergetica.enea.it/component/jdownloads/?task=download.send&id=510&catid=40&Itemid=101>

Construction time	Not specified	Isolated building	Less than three floors	Over three floors	Other	Overall (%)	Overall (GWh/year)
Not specified	60.1	16.7	11.0	14.8	12.6	8.5%	115.2
< 1919	1.1	31.7	23.3	26.5	6.4	6.5%	89.0
1919-1945	1.3	31.8	16.3	25.5	4.5	5.8%	79.5
1946-1960	3.0	74.6	32.8	80.6	15.2	15.1%	206.1
1961-1970	5.9	95.4	40.5	116.4	26.9	20.9%	285.1
1971-1980	3.3	79.8	48.6	63.4	49.7	18.0%	244.8
1981-1990	2.3	40.9	35.9	31.9	35.8	10.8%	146.8
1991-2000	2.2	28.6	30.8	17.7	27.1	7.8%	106.3
2001-2005	1.0	9.6	12.6	6.4	6.6	2.7%	36.2
> 2006	1.2	24.5	12.9	7.9	6.6	3.9%	53.1
Overall (%)	6.0%	31.8%	19.4%	28.7%	14.0%	1	
Overall (GWh/year)	81.3	433.7	264.8	390.9	191.3		1,362.14

Table 3: Energy savings obtained in 2020 by building age and typology. Source: ENEA, 2021

The interventions are the same studied for D5.4. The following table, however, takes also into account the installation of PV panels, which can only be setup if the two-steps increase of the energy class is anyhow achieved with the other interventions. In the following table it is also possible to highlight the performance of the building automation softwares: despite not constituting a renovation intervention in a strict sense, investing in digitalization is still an effective way to limit the energy consumption to what is strictly needed to the users, even in case of poor energy performance of the building unit.

Intervention	2014 – 2019 (million €)	2014 – 2019 (%)	2020 (million €)	2020 (%)	Overall (million €)	Overall (%)
Condominiums	149.1	0.73%	103.1	3.09%	252.2	1.07%
Global renovation	1,684	8.29%	175.3	5.25%	1,858.8	7.86%
Thermal Insulation	4,812	23.69%	504.1	15.11%	5,316.2	22.48%
Doors and Windows	8,018	39.48%	1,112.7	33.35%	9,130.5	38.61%
Solar shields	706.7	3.48%	269.5	8.08%	976.2	4.13%
PV Panels	356	1.75%	36.0	1.08%	392.0	1.66%
Winter Heating	4,514	22.23%	1,115.2	33.43%	5,629.4	23.81%
Building automation	70.9	0.35%	20.3	0.61%	91.2	0.39%
Overall	20,309	1	3,336.17	1	23,645	100,00%

Table 4: Investments activated in 2014-2019 compared to the year 2020. Source: ENEA, 2021

1.2. Potential Demand in the Padova Area

As already anticipated, the Veneto region is the second region in Italy in terms of millions of resources invested in building renovations. This paragraph narrows the focus on the city of Padova and its performance in terms of investments activated, building typology renovated and energy saved. By looking at the available data, the scope is to assess the potential of the current and expected demand in the context of the city, and understand who can benefit the most from the services that the OSS could introduce in the market.

The table below provides an overview of the renovation investments activated in the provinces of the Veneto region, alongside the quantification of the energy savings achieved.

Province	Vertical Surfaces (m2)	Horizontal Surfaces (m2)	Doors and Windows Surface (m2)	PV Surface (m2)	Condensing Boiler	Biomass Boiler	Heat Pump	Hybrid system and heater	Heat pump water heaters	Building automation	Investment (M€)	Energy savings (GWh/Year)	Investment per person (€/person)
Verona	46,652	59,066	50,162	330.8	2,272	80	814	123	48	45	72.3	28.1	78
Vicenza	47,107	77,913	201,466	587.9	2,329	117	684	145	48	42	69.1	34.4	80.1
Belluno	18,178	25,865	10,634	662.6	694	77	48	45	18	17	24.8	11.1	122.2
Treviso	54,153	80,533	147,162	1,093.5	2,354	73	904	120	94	52	70	28.2	78.9
Venezia	46,102	42,927	90,206	983.2	3,077	72	979	133	58	26	67.9	25.6	79.5
Padova	52,475	72,048	156,178	615.1	2,918	56	825	127	63	31	70.5	32.2	75.2
Rovigo	8,161	32,961	37,729	35.3	538	14	179	36	15	7	14	6.3	59.8

Table 5: Results of the Energy Efficiency fiscal policy in the Veneto region. Source: ENEA, 2021

The table allows to confront the performance of the Padova area in the region, but also to obtain a rough estimation of the dimension of the demand of the city itself. The figures displayed in the table reflect the whole range of fiscal bonuses available in the year 2020, and therefore are not strictly related to the interventions incentivized via the new 110% tax incentive rate. The renewal of doors and windows, for example, whose results are presented in the fourth column, is not an intervention which allows, per se, to achieve the improvement in the energy performance by two energy classes, but can be combined with a more structural intervention allowing to obtain the two-steps improvement necessary for upgrading to the 110% tax incentive rate.

In order to understand the home renovation necessities for the city and the province of Padova, the first step constitutes in the quantitative assessment of the building typologies of the area. The table below contains data provided by the Italian National Institute of Statistics - Istat⁵, which describe the composition of the residential building stock of Padova in terms of building units.

	0	1	2	3-4	5-8	9-15	>15	Overall
Padova	1,316	13,422	6,409	3,727	3,452	1,780	780	30,886
Overall Province	2,492	105,423	50,526	18,124	9,423	4,144	1,509	191,641

Table 6: Number of residential buildings by housing units. Source: ISTAT, 2011

The numbers show that the building composition of the city is highly skewed towards single-family buildings, which constitute more than 50% of the entire building stock of the area. Conducting intervention in such buildings is generally easier, as also highlighted by Figure 1, because of the presence of one single owner which leads to easier procedures to handle the home renovation procedures. The decision process is on the other hand more costly for condominiums, because of two main reasons:

⁵ http://dati-censimentopopolazione.istat.it/Index.aspx?DataSetCode=DICA_EDIFICIRES#

- A higher numerosity of people that usually form a multi-family block, given that the interventions cannot start unless an overall approval of the residents is reached;
- A higher initial investment, which strengthens the previous barrier, as these interventions may not appear affordable or cost-effective to the people.

It has to be highlighted, however, that the data are referred to the last available census conducted in 2011, and that they may not reflect the current building stock composition in the most accurate way. It is likely, therefore, that the share of condominiums and multi-family solutions has increased over the total number of residential buildings.

The available data describing the results of the fiscal incentives in the city in the year 2021⁶, show that the favorable policy context caused a significant boost in the demand of energy renovation, which have increased by 60%. The highest spike in the demand was registered during the two months following the simplification of the authorization procedures, with 590 requests submitted in the whole Padova area⁷. Despite no data at province level is currently available concerning the quantities and renovation rates by building typology, we can infer an increase of the demand registered by the condominiums in the Padova area as well.

In order to get a proxy of the interest of the citizens towards renovation investments, it is possible to take a look at how many queries were directed to the “Sportello Energia⁸”, the info desk managed by the Padova municipality, providing information and technical support to the final user in the field of energy and fiscal policy. In ten months of operation (from February to December 2021), the desk has received about 8,000 visits on its website and has provided information to 346 clients⁹. The queries posed by the citizens included several aspects of the renovation process, and most of them are aimed at the understanding of the current policy, with questions concerning:

- What are the procedures and the documents necessary to access the Bonus;
- From the technical side, what are the professional entities operating in the area that could provide assistance for the execution of the work;
- From the financial side, information about the current credit transfer and discount on invoices procedure
- How to intervene on historic city centers, which may be characterized by more complicated procedures

The same municipality is willing to promote renovations in the context of a wider policy aiming at improving the sustainability and the quality of life at city design level. The plan “Padova 2030¹⁰” sets the guidelines to promote the evolution and the development of the city spaces in a direction of environmental sustainability and social

⁶ <https://www.padovaoggi.it/attualita/crescita-progetti-edilizi-comune-padova-16-ottobre-2021.html>

⁷ <https://www.padovaoggi.it/economia/superbonus-confartigianato-padova-31-luglio-2021.html>

⁸ <https://www.padovanet.it/informazione/sportello-il-risparmio-energetico-del-comune-di-padova>

⁹ Data provided by the Padova municipality in the context of the PadovaFIT! Expanded project

¹⁰ https://www.padovanet.it/urbanistica/NUOVO_PI/2020_12_21_DocumentoSindaco-signed.pdf



inclusion. The Veneto region, the worst performing area in Italy by soil consumption¹¹, has published a law setting the target to stop soil consumption by 2050, limiting the urban sprawl and promoting urban regeneration and the recovery of the already existing spaces. The recovery of dismantled buildings would allow the Municipality to convert them into new industries, new services for the citizens, but also for improving the offer in the residential sector and in particular for social housing purposes. One of the potential solutions to give new life to the buildings that are currently under-utilized, is through energy efficiency interventions: according to the same report, the urban areas that could be regenerated and assigned to new uses cover an area of 82 thousand square meters, the most important of which include the areas of the old firehouses and slaughterhouse. It is not yet clear what the destination of these new buildings could be, however, they still constitute a fitting example of the necessities for renovation in the city of Padova.

The analysis of the context of Padova, in conclusion, shows that, despite the encouraging results reached so far, there is still large margin for improvement. Single-family buildings are the typology which is more likely to benefit from the renovations, because of their share in the Padova building stock, but it will be equally important to increase the renovation rates of multi-family buildings and condominiums. Two specific sub-sectors can be particularly important for improving the energy performance of the city and increase the future demand for home renovations: the first is the group of condominiums situated in the city centre. Following a trend which is common to all Italian cities, the buildings of the city centres belong to a building typology which is often one of the most difficult to renovate, because of their higher degree of ancientness, and the more complex procedures necessary to obtain the authorization to intervene. The historical centre of Padova, despite not being the area of the city with most inhabitants¹², is particularly relevant for the local University, which every year attracts thousands of students from other regions of Italy and Europe. Renovating these quarters would therefore further increase the attractiveness of the area, also thanks to lower rent prices due to reduced energy consumptions and better living conditions for incoming students. The other relevant sector in the Padova context, once again justified by the presence of the University, concerns the supply of student residences, colleges and apartments, often supplied through the University itself. The questions asked by the citizens to the energy desk have showed the need for a facilitation figure, able to provide the citizens the information needed prior to the execution of the intervention, to give a first understanding of the financial and technical options available case by case.

¹¹ 50,25% of the soil belonging to the province of Padova has been consumed so far, according to the latest data provided by Arpa Veneto (https://www.arpa.veneto.it/arpavinforma/indicatori-ambientali/indicatori_ambientali/geosfera/uso-del-territorio/consumo-di-suolo/view)

¹² Source: Padova annual municipal statistic yearbook, available at [https://www.padovanet.it/sites/default/files/attachment/Capitolo%20%20\(popolazione\)%202020.pdf](https://www.padovanet.it/sites/default/files/attachment/Capitolo%20%20(popolazione)%202020.pdf)



2. ANALYSIS OF THE FINANCIAL SUPPLY

As already anticipated in the first chapters of this report, the framework of the financial supply currently available in Italy and in the Padova area has been evolving in the last year as a consequence of the renovated interest of the market. The banks are still assuming a pivotal role as the main funds' providers for citizens or condominiums, but the possibility to assign the credit to the financial institutions, introduced with the Superbonus dispositions, represents the main element of novelty in the market, with beneficial effects both for the financial sector and the final users. The aim of this chapter is therefore to understand the new layout of the financial market, the new schemes available but also the missing elements, whose introduction could give a further boost to the renovation investments.

2.1. Current products

The analysis carried out in D5.3 described an overall positive scenario of the current involvement of financial players in Energy Efficiency for the residential sector. An adequate provision of financial funds allows to face the barrier related to the initial costs of the renovation, which is still perceived as an important obstacle to overcome, especially for interventions at condominium level.

The analysis also relied on 10 one-to-one interviews with local banking institutions: the actors contacted for the interviews operate in different geographical areas and therefore provide different kinds of products or services. These institutions include both multinational banks operating throughout Europe, but also actors focused only on financing national development initiatives.

As already anticipated, the financial institutions, at any level, are displaying interest for the renovation market in light of a broader strategy centered on environmental sustainability and investment choices that can be classified as ESG-compliant. Investing in an ESG-compliant sector or activity currently implies different advantages for the bank: from a reputational side, higher non-financial performances and ESG ratings can be achieved; from a risk management standpoint, green investments are perceived in many cases as less risky, and therefore

imply fewer capital requirements-related costs. Italian institutions are not being left out of the trend, and are adopting allocation policies increasingly more centred on sustainability issues, socially and environmentally, as demonstrated during the interviews. Given the high potential contribution of the construction sector towards reaching the decarbonization targets, investing in the sector will be a profitable business opportunity for the banks in the months and years to come. The mapping of the financial alternatives highlighted how most of the banks operating in the Padova area (including any possible institute, from the local institute to the multinational one) are financing the renovation initiatives employing two main product typologies:

- **Traditional products**, following the typical scheme of mortgage or loan, designed to help the consumer to undertake sustainable consumption and investment choices, such as the purchase of an electric vehicle or a house characterized by a more efficient energy performance. The main incentive scheme provided by these financing opportunities involve usually a lower interest rate, or a higher Loan-to-value ratio when purchasing energy performant homes.
- **New instruments**, specifically designed to promote renovation projects, exploiting the credit assignment scheme introduced with the Superbonus decree. Such instruments allow the final user to borrow the financial resources necessary to pay for the renovation works and the related technical verifications, with a reimbursement scheme based on the assignment of the fiscal credit which is generated as the renovations are progressing. Another product typology specifically targeting home renovations is the so-called “bridge financing”, a loan that allows to finance the start of the work and which exploits the credit assignment for the reimbursement process.

However, it is possible to notice how the current state of the financial supply has slightly evolved with respect to the output of the research conducted in D5.3. During the last semester of 2021, the significant increase in the demand of incentives has led the financial institutions to adapt the incentivising mechanism of their loans, so that renovation interventions could be further encouraged. In the Deliverable 5.3, it was highlighted how the incentivising scheme of the mortgages was based on the energy performance of the building purchased by the client: favourable conditions were applied only if the purchased unit belonged to an efficient energy class (A or B typically). This solution however does not have any incentivising effect on the renovation initiatives of the citizens, which on the other hand are encouraged to buy already energy-efficient homes, thus mainly new buildings.

Nowadays, products offer discounts on the interest to pay if the beneficiary decides to undertake Energy Efficiency interventions: this is a relevant novelty regarding the state of the market, since it signals the preference to finance the undertaking of renovation works, rather than the acquisitions of already efficient buildings. The discount is awarded if the energy performance is improved by two notches, a condition which has to be proven by the beneficiary and that resembles the one required by the law for the recognition of the fiscal bonus. Therefore, in the process for granting the clients with the financial resources, great attention is devoted by the banks to the activities of gathering data to correctly assess the energy performance of the buildings. The Energy Performance Certificate (APE, Attestato di Prestazione Energetica) remains the most relevant instrument to reach the scope.

With respect to the more “innovative” schemes introduced after the recognition of the fiscal credit, it seems that the financing through credit assignment is the preferred option with respect to the bridge financing. The first one in fact presents a lower degree of risk for the bank, since the credit which is used to reimburse the loan has to be validated and certified as the renovation activities are executed. Lower guarantees are on the other hand associated to the bridge loan, and this brings to the application of higher interest rates.

An aspect which was highlighted by the institutions during the interviews, and that could be relevant for the definition of the functionality of the OSS, is that the client is not always completely aware of the functioning of the financial incentives made available by the law. Many of the interviewed credit institutions have reported significant time expenses, due to the requests that the client forward to the banks regarding the technical aspects of the interventions, i.e. what are the deadlines, the eligible interventions or the certifications needed to access the bonus. Providing this kind of information to citizens is not among banks' role, and it also takes time and effort. Such activity could be improved by ensuring a more effective communication towards the final beneficiaries, ideally by a third-party. In this scenario, the OSS could be a key player to bridge this informational gap, offering services to facilitate the first stages of the project in order to reduce the initial uncertainties of the clients.

Alongside banking products, interesting opportunities are related to the so-called Energy Performance Contracts (EPC). In Italy, such schemes have been widely implemented in financing energy efficiency interventions on public buildings. Indeed, they are particularly suitable for aggregated and large-scale projects, involving relevant numbers of building achieving a critical mass to also have economies of scale and significant economic and environmental impacts. In an EPC, the parties involved are typically an ESCo, financing and realizing the interventions, and the Public Authority, owner of the building stock. Usually a Public-Private-Partnership schemes is implemented and the local authority pays a fee to the ESCo which gets the initial investment paid back over the years. The fee is directly linked with the energy efficiency obtained: the more the savings, the higher the amount paid to the ESCo, and the shorter the payback period. Similar schemes could be replicated not only for local public entities, but also for those building owners who have a significant stock of buildings or could aggregate different units. In this way, interesting results could be achieved also in the residential sector, with the possibility for the final users to access the fiscal deductions as well.

2.2. New solutions

New financial schemes and solutions are emerging in the current financial context, therefore not strictly as a consequence of the growth of the EE sector. A common feature in the solutions is the promotion of an active role of the final user and the utilization of online tools and platforms which facilitate the connection between demand and supply.

2.2.1. THE GROWTH OF THE CROWDFUNDING

The first element of novelty is given by the growth of crowdfunding platforms to finance energy efficiency renovations, especially in the context of the Superbonus. Crowdfunding is an innovative financial scheme which aims at involving a larger number of people, typically through the employment of online platforms, and is becoming more and more popular for the financial necessities of specific investment projects. Crowdfunding schemes allow the final user to access an alternative form of funds with respect to the usual bank credit and to reduce the intermediation costs through the involvement of a community of smaller investors interested in obtaining financial gains. The two most relevant crowdfunding schemes are the lending-based and the equity-based, while the donation scheme is characterized by the lack of financial return for the borrower.

The structure of the **lending-based schemes**, also known as Peer-to-Peer lending, has some elements in common with the typical loan structure: after having reached the capital requested, the reimbursement plan foresees the payment of a core capital component and an interest component, at rates which are usually higher

than those applied by the financial institutions. It is currently the most employed scheme in Italy, with more than 185 million € raised in 2020 only¹³.

Equity-based schemes on the other hand are based on a structure which is more similar to a direct investment, where the lender becomes the substantial owner of a determined share of the entity or the project financed. Due to the ownership and administrative rights that are associated to the shareholder status, more rigid controls are generally performed to prevent fraudulent behaviours. In the year 2020 only, equity crowdfunding allowed to raise more than 122 million € all over Italy¹⁴.

Donation crowdfunding, which does not imply any kind of financial return for the fund providers, who altruistically donate money for specific causes. In Italy this model, which foresees a favourable fiscal treatment, is particularly diffused among foundations and non-profit entities. Thanks to this scheme, more than 31 million € have been funded in Italy over the Year 2020.

Crowdfunding schemes are becoming a feasible alternative to classic loans and mortgages in financing energy-related projects. Aside from “general” platforms, which raise investments without being sector-specific, it is possible to notice a constant growth in the availability of platforms with a sole focus on energy efficiency and energy transition projects. A study from EuroHeat and Power of 2017¹⁵, realized for the H2020 TEMPO project shows that the installation of PV and wind generation plants are the two technologies that have obtained the majority of the funds up to the year 2017 (about 70%), and that the equity crowdfunding scheme has been the most employed one. Energy crowdfunding platforms are becoming popular to finance the energy transition of the European countries, especially in Great Britain, France, Netherlands and Germany. Some positive examples can be found in the Italian context as well, like the platforms Ener2Crowd¹⁶ or EcoMill¹⁷, two of the most popular in Energy crowdfunding. But a certain degree of interest towards these new solutions has been shown by banking operators as well: institutions such as Banca Etica¹⁸ or Credit Agricole¹⁹ are exploiting crowdfunding schemes as a powerful tool for promoting post-pandemic recovery and development at the local level.

Crowdfunding schemes, however, can be applied to finance home renovation as well. A case study representative of this tendency is brought by the LIGHTNESS project financed by H2020, where the energy renovation of a condominium in the city of Cagliari was realized thanks to the Superbonus, in a project involving the development of an Energy Community. Other than the realization of the thermal coat and the installation of a 20 kWp PV plant on the roof, the energy consumptions of the building are controlled via a real time system based on block chain technologies, which also allow to have a real time report of the energy consumed by the community. The interventions allowed to obtain energy savings of about 115,000 kWh per year.

¹³ “Il Crowdfunding in Italia”, report 2020 <https://www.crowdfundingreport.it/>

¹⁴ “Il Crowdfunding in Italia”, report 2020 <https://www.crowdfundingreport.it/>

¹⁵ <https://www.tempodhc.eu/crowdfunding-as-a-novel-financial-tool-for-district-heating-projects/>

¹⁶ <https://www.ener2crowd.com/it/home>

¹⁷ <https://www.ecomill.it/>

¹⁸ <https://www.bancaetica.it/progetti-speciali/crowdfunding-banca-etica>

¹⁹ <https://www.credit-agricole.it/caring-corona-virus/crowdforldife>

As the LIGHTNESS experience suggests, Energy communities constitute a fitting example of a sector which could be affected by the growth of Crowdfunding in the upcoming years. The equity-based scheme in particular proves to be particularly fitting, since it allows each participant of the community to contribute for its realization and retain the ownership of the plants as well. The development and future possibilities linked to the utilization of Crowdfunding, however, will depend on a necessary regulatory adjustment, aimed at ensuring the highest security and transparency to the retail fund providers.

2.2.2. CREDIT ASSIGNMENT PLATFORMS

We have already seen in Paragraph 2.1 how banks profited from the introduction of the credit assignment, given their key financial role in the economic system. But the possibility to trade the fiscal credit has brought to new solutions also for people willing to trade their credits.

The institution of credit exchange platforms allows the final users (belonging to one of the categories eligible for accessing the bonus, meaning that this solution is not allowed strictly for all people but also to e.g. legal entities such as the construction company) to buy or sell a fiscal credit according to his/her financial needs. The person selling the credit aims at receiving the discounted financial amount in advance, for liquidity purposes, while the party buying the credit can exploit it to close any open position towards the fiscal agency while profiting from the value differential. The process does not foresee transactions with financial intermediaries, but the parties can autonomously find an agreement.

A recent example of such platform is “SiBonus”, developed by InfoCamere, the association of the Chamber of Commerce promoting digitalization, with the support of Sinloc. The platform shows the user what are the available credits (which have previously undergone the verification process), which is the fiscal bonus and the intervention that created it, as well as the price and the geographical location. The platform allows to trade any kind of tax credit deriving from renovation activities: up to now, 841 transactions have been registered, for an equivalent of more than 46 million € of tax credit traded, with an average discount rate ranging from 11% to 27%. Similar services are provided by the “Piattaforma Cessione del Credito”, managed directly by the Italian fiscal agency, and by Cribis, developed by Crif and Workinvoice.

The direct dialogue between the counterparts facilitates the process and allows the final user to find the better deal according to his/her needs, without the presence of an intermediary. However, there is still a significant element of risk which cannot be eliminated when peers are allowed to close deals: the verification of the credit contributes to the partial mitigation, but still, the risk persists that the amount of the credit does not coincide with the amount asked. This element of risk is reflected in the discount price, which is way higher if compared to that offered by financial institutions.

2.2.3. TAX CREDIT INSURANCES

Another new trend in the financial market consists in the creation of insurance schemes that the final citizens can underwrite in order to avoid the risk of decrease of the amount of tax credit. The typical procedure of determination of the tax credit foresees the certification of the tax credit by the technical expert in charge of supervising the work. In order to protect the citizens in case of a false statement of the expert, which would undermine the accrual of the fiscal credit, the “Decreto Rilancio” foresees the underwriting of a compulsory insurance policy for the expert in case any case of civil liability should arise.

In order to further strengthen the protection for the final user, financial institutions have developed insurance products, this time targeting directly the final users and the recipients of the bonus. These products allow the beneficiary to counterbalance potential losses in case of amounts unduly received (even in case of credit already sold) or in those cases where the works have already started but the timing requirements for the bonus have not been respected. In case of legal disputes, some insurances provide also a service of legal assistance for the client, through comprehensive services not strictly limited to the financial support necessary for the legal expenses²⁰. The duration of these contracts is generally of ten years, a period of time which allows to complete the renovations and the procedures necessary for potential recovery of the fiscal credit. The premiums range from 1% to 3% and are applied to the underlying value of the insurance contract, which coincides with the investment of the renovations.

2.3. What is missing

The evolution of the market highlighted so far has showed that, strictly speaking, no situation of proper “market failure” is currently verified. There are however some schemes whose application can be helpful in further supporting the home renovation environment, or that can be helpful in reaching sectors that are currently overlooked and not properly exploited.

2.3.1. WARRANTY SCHEMES

What emerges from the Italian context is the substantial lack of financial instruments able to guarantee the fund providers from potential solvency issues of the final client. With respect to the residential sector, the introduction of assurance schemes would protect the financial providers from two risks:

- The potential insolvency of the borrower
- The risk of mismatches emerging with respect to the initial investment plan, for example in case of increase in commodity prices

Introducing such instrument could be particularly beneficial for certain categories of clients that struggle to access the financial resources because of their complex governance structure, which make them perceived as riskier by the financial providers. It is more difficult, for example, to interact with a condominium, given the multitude of people that at times may fail to reach an agreement on certain issues. Another example can be made referring to the energy communities, where the interests of different entities and subjects may sometimes conflict.

In the Italian context, the main experience of financial instruments providing guarantees for undertaking energy efficiency investment is provided by the National Energy Efficiency Fund. This financial scheme supports renovation projects at higher scale, promoted by Enterprises and Public Administrations (and due to these limits does not fit the needs of the residential sector). The financial support is provided not only through guarantees on single investments (30% of the overall budget), but also through subsidized loans (the remaining 70% of the

²⁰ An example of such product is offered by Nobis: <https://www.nobis.it/assicurazioni/casa/super-bonus-protetto/>

budget). However, due to the difficult procedures to go through in order to be granted with the funds, the performance of the instrument so far has been relatively poor, and its potential to boost energy efficiency remains largely untapped. Introducing a similar scheme also in the residential sector could be helpful in mitigating the risks and further boost private investments. Similar experiences in Italy (although belonging to different sectors of the economy) have proven that the introduction of warranty schemes allow the banks to invest even in riskier activities: the example is the introduction of a scheme to encourage first home purchases for people under 35 years of age²¹.

2.3.2. PRODUCTS TARGETING ENERGY POVERTY

With respect to potential market mismatches, the current financial supply seems to fit a wide range of requests from the market. Despite “market failure” would not be the most proper expression to deploy, it is possible to notice how no financial provider is currently offering a specific scheme to tackle the issue of energy poverty.

The definition of energy poverty, recalled by the National Energy and Climate Plan, implies the impossibility of purchasing the minimum pool of energy-related goods and services. The persistence of the three conditions of high energy prices (which has recently worsened), low income and poor energy performance of the buildings, is what makes it particularly difficult to intervene on these issues through the classic market schemes. There isn't any product, in the current market scenario, targeted towards families and individuals at higher probability of suffering from this situation, with the risk that the people that are more in need of energy renovation could be potentially left out of the market.

The analysis of the results of the Superbonus displayed in Chapter 1 shows an uneven geographical distribution at national level of the renovation demand, which so far has been concentrated in northern Italy. Most of the families and final recipients of the bonus belong to a middle-high financial status, and are endowed with a financial capacity that could have allowed them to conduct the renovations in the old policy scenario (i.e., with lower deduction rates) as well. On the other hand, the latest data from ENEA²² show that 2.3 million families in Italy are currently suffering from energy poverty, and that these families are mostly concentrated in the regions of Southern Italy (the condition affects 13% to 22% of the population). In the period 2016-2018 the figures have worsened at national level, with 40 thousand more families suffering from this condition.

The mechanism of the discount on invoice or the credit assignment was initially designed to facilitate the interventions also for people without an adequate financial capacity, allowing the final user to invest a lower amount of resources of his own. Not all the construction companies are however willing to apply this scheme, since it can imply liquidity risks on the long term. In this framework, the OSS could be helpful to provide informative support and facilitate the contact between the final clients in energy poverty conditions and the firms offering discount on invoices. It is in fact more difficult for these people to access traditional loans, since the financial risk perceived by the financial counterpart remains too high.

²¹ The scheme was introduced through the “Decreto sostegni-bis”, Law decree 25th May 2021, n. 73, and foresees the activation of a fund which allows people under 35 years of age to finance more than the 80% of the amount for purchasing the first home.

²² <https://www.enea.it/it/Stampa/news/energia-enea-in-italia-oltre-2-3-milioni-di-famiglie-in-poverta-energetica>

Developing an adequate instrument to tackle this issue is fundamental, since lower incomes are generally associated with poorer buildings’ quality and therefore inefficient energy performances: possible solutions include the development of a subsidized loan, or guarantees which could envisage the participation of public actors. These solutions could foresee also the participation of local banks, in light of two main features that differentiate them from national players:

- A higher attention towards the achievement of impacts at local level
- A more flexible organizational structure which generally implies a higher readiness of the institutions to adapt their supply to the local needs

2.3.3.A THIRD PARTY FACILITATING THE RENOVATION PROCESS

Aside from the sheer financial mechanism, what the market needs is a subject able to facilitate the process, not during the phase of implementation, but in the previous one where the uncertainties are stronger. Providing the right information at the right moment and facilitating the knowledge of the legal and financial framework, allows to have a clearer picture of the project from the beginning and eases the process of obtaining the funds. A clear and understandable communication could be a helpful tool to reach a common agreement in case of multi-family buildings and condominiums, to make sure that the advantages deriving from the investments are correctly perceived by the more “sceptical” homeowners. This is exactly the role that the OSS facility could assume in the current market, as will be later discussed in the conclusions.

	Loan	Discount on Invoice	EPC	Crowdfunding
Single-family houses				
Multi-family houses				
Energy Communities				
Energy poverty*				

Table 7: Financial matching between demand and financial options.

*Energy poverty has been defined without a specific focus on the building typology.

The table provides an example of what kind of financial matching the OSS could provide with respect to the typology of customer willing to renovate their houses and the financial schemes available, following the evidences of this report. Each subsector (represented in the rows of the table) is paired with a potential financial solution (displayed in the columns of the table). The combinations have been classified according to their degree of feasibility and diffusion in the market: the darkest cells correspond to those combinations more diffused in the market, and therefore easier to activate, such as the loans for single-family and multi-family houses. The lighter cells, on the other hand, correspond to less feasible combinations. There are combinations theoretically feasible, but currently not available in the market, highlighted with a “medium” blue (as for the subsidized loans for clients suffering from energy poverty), while others reflect a combination theoretically unfeasible (such as for the application of an EPC to single-family houses, due to the higher scale requirements required for the activation of such solution), and are highlighted with a pale blue.

3. FUTURE PERSPECTIVES

The scenario which characterizes Energy Efficiency investments in Italy was revitalized by the introduction of the Superbonus, whose major quality, excluding the mere financial returns, was to raise and renovate the awareness in a market where fiscal incentives were already available. Today, the market has a major sensibility in the issues and technicalities of the sector than previously to the introduction of the norm. Despite this, Italy has still a long way to go before reaching the figures which would guarantee to meet the targets in terms of annual renovation rates set at European and national level. The renovated interest for the sector however, consequence of the new financial instruments activated and an overall favourable law regime, implies that future positive scenarios are conceivable for the setting of the OSS.

3.1. The role of the NRRP and evolutions of the Superbonus

The current focus of the Italian policy is centred on the reconstruction of the productive sector after the COVID-19 pandemic. The instrument and policy which is currently attracting the attention of institutions and the economic system as a whole consists in the National Recovery and Resilience Plan: given the relevant amount of resources that were mobilized by the European Union and that will be allocated in the Italian context, the Plan is perceived as an unmissable opportunity to promote the development in areas that are crucial for the long-term competitiveness at both national and local level. In particular, the improvement of the energy efficiency in the national building stock, especially in the residential sector, is perceived as a strategic national development tool.

Concerning the energy efficiency sector, the three main lines of interventions of the NRRP include:

- Improvement of the Energy Efficiency of the **Public Buildings**, with 0.8 billion € devoted to the school facilities and 0.4 billion € dedicated to the judicial buildings;
- 0.2 billion € to foster the diffusion of **District Heating Technologies**;



- 13.95 billion € to increase the level of energy efficiency of **Public and Private buildings**

The largest share of the funds will be destined to further improve the energy performance of buildings in the residential sector. It has also been already confirmed that the incentives of the Superbonus will be further extended in time, given the success of the measure in stimulating the private market. The details of the extension of the fiscal benefits have been defined in the new budget law related to the year 2022 (Legge di Bilancio 2022), which has extended the initial deadline for the submission of the proposals, initially set at the end of 2021, according to the building typology as follows:

- End of 2023 for condominiums and multi-family buildings of 2 to 4 units owned by individuals, and for buildings owned by social housing entities (so called Istituti Autonomi Case Popolari – IACP), on condition that 60% of the work is completed by the end of June 2023;
- End of 2022 for single-family houses, only if 30% of the works are completed until June 2022;
- End of 2025 for the reconstruction of the buildings in the areas affected by earthquakes, mainly the municipalities of central Italy.

Future developments of the fiscal instruments will also affect the amount of the deductions. From the beginning, the rate of 110% was expected to be limited in time, due to the excessive burden on the national budget. The “Decreto Rilancio”²³, estimated an initial cost for the public budget of 12.38 billion € over the years 2020 to 2032²⁴, but the recent extension of the norm implies an overall investment by the public actors of 31.7 billion € until 2026²⁵. A more financially sustainable solution, according to a long-term perspective, foresees the gradual decrease of fiscal deductions associated with the interventions. The budget law of 2022 has in fact introduced decreasing deduction rates in the following years, in particular:wing:

- The 110% will be kept until the end of 2023;
- decrease to 70% in 2024;
- Further decrease to 65% in 2025

Further elements of novelty could be introduced to streamline the request process and diminish the documentation that the beneficiary is asked to provide. The mechanisms of credit assignment and discount on invoice will be kept for the expenses incurred up to the end of 2025 in case of interventions able to access the Superbonus, while for the remaining tax instruments the schemes will be available only up to 2024. More controls however have been introduced with the recent “Decreto Antifrode” (law decree 11 November 2021, n. 157), in order to halt the increase of the prices and limit the spread of fraudulent behaviours of price inflating with the goal to obtain illicit fiscal returns.

²³ Law decree 19th May 2020, n.34

²⁴ Source: <https://osservatoriocpi.unicatt.it/ocpi-pubblicazioni-i-risultati-del-superbonus-110>

²⁵ <https://www.ilpost.it/2022/01/11/problemi-superbonus/>

Coming back to the sectors impacted by the NRRP, further investments in Energy Efficiency will be carried out with respect to the following:

- **Culture and tourism**, with the improvement of the energy performances of cinemas, theatres and museums;
- Development of the **local communities**, with interventions aimed at promoting energy efficiency of the local administrations;
- The **transportation** sectors, intervening on the energy performance of stations and railway hubs

Despite the unquestionable expected impact of the NRRP, there are still some issues that will require further clarifications in the upcoming months. The open issues are related in particular to the understanding of the practical implementation guidelines with which the funds will be invested into feasible projects able to involve local actors and communities. A first call for proposal has been presented for the renovation aimed at improving the innovativeness, inclusiveness and sustainability of schools, including energy efficiency renovations as well: in this context, the ability of policy makers at the local level will be crucial in promoting effective renovation projects.

Another significant risk, more of a general character and not strictly related to the NRRP, is that the new dispositions will introduce elements of discontinuity with respect to the current status, and that more efforts will have to be put in order to understand the new rules and consequently adapt the financial supply. Long term stability and certainty of the legal regime, on the other hand, are conditions that the financial institutions perceive as particularly favourable for their supply in the energy efficiency sector.

3.2. Open issues of the current financial schemes

After an initial slow uptake and diffusion of the Superbonus, some shortcomings have emerged with respect to the practical implementation of the scheme, which limited the diffusion of renovation actions especially in condominiums.

A first limit, partially offset after the amendment of May 2021²⁶ that helped streamlining the process, concerns the quantity of documents to submit, necessary to grant the access to the fiscal benefit. The initial documents required verifications that were difficult and time-consuming to obtain and caused the slow down of the entire process, but the numbers recorded in the following two months show that the direction of the development of the policy is the correct one.

The excessive focus on the Superbonus and renovations on single buildings could prevent the diffusion of projects which aim at achieving higher scale renovations, targeting communities and districts. An example of this tendency is represented by the diffusion of the energy communities: the energy communities are promoting the transition towards a more sustainable and inclusive system of production and consumption of energy from renewable energy sources (involving sometimes also solutions to recover and fit the buildings for the production of renewable energy). The current approach at the basis of renovation policies may be overly focused on single

²⁶ The "Decreto Semplificazioni", law decree 77/2021 of 31st of May 2021

buildings, and this may hamper the undertaking of more impacting projects and thus bring to inefficiencies in the long term. The underlying barrier preventing the transition towards such approach may however lay in the complex governance procedures linked to projects involving a multitude of subjects: such issue is still a significant barrier that limits the investments in condominiums, where an agreement between a large number of people with different views, ideas and financial capabilities is requested. In this context, the presence of a third subject, such as a coordinator or homeowners associations could be fundamental in communicating the benefits and solving potential controversies arising between the residents. Moreover, following this approach, renovation interventions would not be conducted as stand-alone, but could be integrated into structured projects that include other digitalization and renewable energy transition components (such as electric vehicles charging station or smart meters). It is however still early to define if and to which extent the Energy Communities will impact on the activities of the OSS: much will depend on the level of support and legitimation that the legal system will offer to this new solution in the years to come.

Two of the most substantial shortcomings of the fiscal policies' scheme emerged so far involve the evolution of the prices and the potential fraudulent use of the instrument which undermines its degree of effectiveness. It has been possible to notice, especially during the last months, how the prices of the interventions have been increasing well beyond their "fair" value. Two are the possible reasons behind this increase: the first one lays in the overall increase of the raw material prices, which has been causing a widespread uncertainty among the companies in the construction sector. The increase of the price introduces a disturbing element in the market, limiting the potential for new demand and bringing uncertainties also for the financial institutions. This tendency is particularly detrimental for the companies of the construction sector: high prices reduce drastically their profit margins, since the compensation for their services are determined according to fixed price lists set up at regional level, and introduce further difficulties from an organizational point of view. The issue of the higher raw material costs sums up to another tendency for the companies, i.e., the lack of workforce: the introduction of the fiscal scheme was seen as a way to bring new life to a sector currently undergoing a moment of transition in the Italian context. However, the National Association of Constructors (ANCE) estimates that in 2022 there will be more than 265 thousand vacancies, and that this will impact mostly on the availability of qualified workforce²⁷. Needless to say, the Covid pandemic emphasized even further the slow down and the difficulties that the sector was already going through.

The second problem lays in the tendency to exploit fraudulently the increase in the prices of the interventions allowing to declare eligible for the Superbonus expenses that are enormously inflated compared to their original value. The situation was signalled by ANCE, which urged the government to act to counterbalance the increase in prices. These fraudulent behaviours constitutes a fraud towards taxpayers and the public budget and has the effect to slow down the renovation projects and delay the creation of new jobs and economic recovery which was expected as a consequence of the expansion of the industry. As a response to the issue, the government has recently approved a regulatory proposal ("Decreto Antifrode", law decree 11 November 2021, n. 157), that has introduced a compulsory verification aimed at assessing the fairness of the interventions from a financial standpoint, to limit the tendency of increase of the prices and fraudulent behaviours. On the one hand, this new element could bring more benefits in controlling the increase of the prices, bringing more stability and clarity to the actors involved in the value chain, a condition particularly favourable for financial institutions. On the other hand, this provision increases the documentation that must be submitted from the beneficiary, and could be potentially harmful in slowing down and complicating the permitting procedures.

²⁷ Rapporto Congiunturale Sull'industria delle Costruzioni, ANCE, 2020

The inflated prices, in turn, had a negative effect on the efficiency of the whole scheme, meaning that the results reached so far could have been achieved by employing a significant lower amount of resources. A criticism that is sometimes made against this fiscal policy is that the introduction of the 110% rate has not provided a stronger boost with respect to the previous lower incentives, but that it has resulted only on higher costs and more inefficiencies for the public actors (especially given the already pressuring issue of the Italian public debt). Focusing only on the figures, table 3 shown in the previous paragraphs seems to give support to this idea, with the numbers following the previous trend and not showing any substantial increase. A crucial point which has not to be missed, however, is the broader effect that the new policy had on the market beyond the mere analysis of the figures: not only it has brought more awareness and curiosity on the demand side, but it gave rise to a whole new branch of financial needs and solutions, which have profoundly impacted on the operation of the financial actors. These positive externalities will positively affect the growth of the market in the following years, bringing even more interest and paving the way for the setup of the OSS.



4. IMPLICATIONS FOR THE OSS

This chapter draws the conclusions from the analysis contained in the previous chapters, with implications from the structure and the services of the OSS for both the Padova and the pilot areas of Romania and Bulgaria.

4.1. Padova Pilot Area

The analysis conducted in the previous chapters has shown the recent developments and the current needs of the renovation market in the residential sector. From a financial point of view, the context described is particularly favourable for undertaking renovation investments, in the current months and in the years to come. The introduction of the fiscal incentives had the effect to expand and introduce new elements in the current market, with relevant novelties especially on the financial side. Despite certain barriers that still need to be overcome, it is possible to assume that the market will keep growing in the following years, and that further support to the renovation environment in Italy will be provided to further exploit the results achieved by the current policies.

The barriers and shortcomings highlighted in the financial market have shown however that the services provided by the OSS can be particularly beneficial for sustaining the further growth of the market, especially in the residential sector. The OSS is in fact able to offer a series of complementary services and act as a facilitator of the whole process, without conflicting with the services already available in the market.

From a financial point of view it has been noted how the entire value chain related to the provision of the funds is already adequately covered by the market. Disregarding the warranty schemes and the products targeting energy poverty, where an active intervention of the public actor could be envisaged, the analysis has shown that the range of the products currently available is in line with the needs expressed by the final users, and that currently there are no market spaces that could be exploited by new financial products provided by the OSS. The same can be said from a technical point of view, since the Superbonus has helped in fostering the recovery of the construction sector as a whole, even though the general increase in the raw materials' prices can constitute a hampering factor from the demand side.



The interviews with the financial institutions have however highlighted that there is still a significant information gap, which slows down the activity of the financial providers and in turn has cascade effects on the whole efficiency of the process. The final clients are often not aware of key elements of the renovation process, such as the entity of the fiscal returns, or the interventions and procedures to go through in order to access them. The effect of this lack of knowledge is that banks are overwhelmed with costly and inefficient tasks that are out of their scope and slow down their activity: this is the market space that could be exploited by the OSS, which would have the effect of facilitating the knowledge of the current financial scenario and the current availability of the products, to leave room for the banks to focus solely on the allocation of the funds.

The added value that the OSS can provide lays therefore in the initial stage of the whole renovation project, more precisely when the final user is in the process of understanding the context of fiscal bonuses and the financial products available in the market. The services which are currently lacking should be aimed at bridging the starting information gap of the final user, reducing the perceived complexity and solving any possible doubts regarding the type of interventions to undertake or the possibilities that the fiscal policy currently offers. In a following stage of its consultancy service, the OSS could be helpful in assisting the final client to understand the basic aspects of the renovation. After having identified the type of intervention to carry out and the financial options, the final user is in the conditions to interact with the construction firm and the bank (or alternatively a general contractor in charge of following both aspects), and receive a more tailored technical and financial assistance.

In this scenario, therefore, the OSS is not perceived as a provider of financial resources per se, but as a facilitator of the entire process. The OSS does not constitute a further competitor to the operators already active in the market: on the contrary, its activity is particularly beneficial for the banks and the firms in charge of executing the work, whose market and reach potential could be further expanded. From a financial standpoint, the role of the OSS consists in presenting the citizens with the financial options, while at the same time matching the optimal financial solution according to the request and the technical solutions expressed by the counterparts (for example through the deployment of a model similar to the one designed in D5.4). The potential solutions to explore are not limited to the comparison of the conditions of the different loans provided by the financial institutions, but include also alternative financial schemes which could be more cost-effective in presence of particular conditions, such as EPC contracts or crowdfunding initiatives: the OSS would help the final client for the setup of these alternative schemes as well. In order to fulfil this purpose, however, it is fundamental that the OSS can count on long-term partnerships with local entities operating in the area, such as general contractors, or technical and financial providers who could exploit it as a way to increase their market shares. Long-term partnerships, moreover, would have positive and long-term repercussions on the local economy as a whole.

4.2. Romania and Bulgaria Pilot Areas

The situation is slightly different concerning the development of the OSS in the two remaining pilot areas, due to the differences related to the overall context. From the fiscal perspective, both Romania (Timișoara) and Bulgaria (Smolyan and Vidin) cannot count on the same incentives that made possible the expansion of the interventions in Italy. The analysis conducted in D5.3 has shown that the financial sector did not adapt as a consequence: the vast majority of the renovation initiatives are conducted with resources made available by the government, covering the vast majority of the investment expenses (in some cases up to 100%). The private initiative and the funds provided by the bank do not play the central role that they are demanded to cover in Italy, since the Energy efficiency renovations are generally carried out through the use of public resources. The

different context, however, does not mean that the OSS could not be equally beneficial in fostering the market of retrofitting and home renovations.

Relevant differences have emerged from the analysis of the Timisoara pilot area. If, on the one hand, it was clear how the local banks are trying to encourage the market of energy efficiency, on the other it is possible to notice how the private initiative to undertake such investments remains pretty scarce in the residential sector. A better impact was obtained only thanks to the introduction of grant schemes and European resources, managed at the national level, which helped the final beneficiaries in bearing a large share of the expenses of the renovations (60% in the case of the Energy Efficiency House Program, but also 80% in the Thermal Rehabilitation Program, which deploys resources from local budgets as well). On the other hand, despite the availability of such schemes, the impact of the financial resources provided by the private sector remains scarce. In the following years, however, a strong commitment is expected by the local government in providing further financial support for home renovations, especially in the context of the economic recovery after the pandemic.

This context can be particularly favourable for the development of the OSS, which has already been pointed out as a key tool to improve the quality of the communication towards the citizens (a similar role was envisaged for the OSS in the Padova area as well). Their action could be key to present the citizens with all the possible financial solutions currently available in the market, from the public national grants to the private resources.

The financial context highlighted in the Bulgarian pilots of Smolyan and Vidin has showed the central role of public funds to foster energy efficiency renovations. The positive experience of the grants activated in the last years, which allowed the final users to finance the totality of the investments, has created expectations in the citizens regarding the future policies. It is expected that this measure will be replicated in the same way in the following years, while in reality the economic sustainability of the measure constitutes a relevant obstacle to further exploit this grant scheme. The availability of these incentives has implied a smaller degree of utilization of banking resources as well: there is currently no specific product targeting home renovation, but rather only general-purpose schemes that can as well be employed for the purpose. On the other hand, though, it is expected that the National Recovery and Resilience Plan will be crucial in providing more financial resources, perhaps with the employment of grant instruments but without financing the entire amount of the expenses: the specification of the role of the OSS in light of the NRRP is however still uncertain, and will be clearer as soon as the criteria defining the access to the financial resources will be made available

Similarly, to what has been highlighted for the Italian context, it is unlikely that the OSS could provide financial resources of its own. It is however more plausible to imagine a role of support towards citizens and business with information, technical assistance and advice on regulatory, technical and financial matters related to their energy efficiency projects, in particular throughout the procedures for accessing the grant. The context has in fact shown how the bureaucratic and permitting procedures necessary to obtain the bonus are perceived as overly complex and may sometimes discourage the undertaking of the investment, especially in condominiums. Given its potential role for the local development, the OSS could be set up at municipality level, consisting in a separate office employing experts in charge of administrative, technical and social/communication tasks. To complement the supply towards the final user, similar information services could be provided to integrate the phase of financial assistance and guidance: an example of such service can be constituted, for example, by the presentation of the financial products currently available in the local banking market.

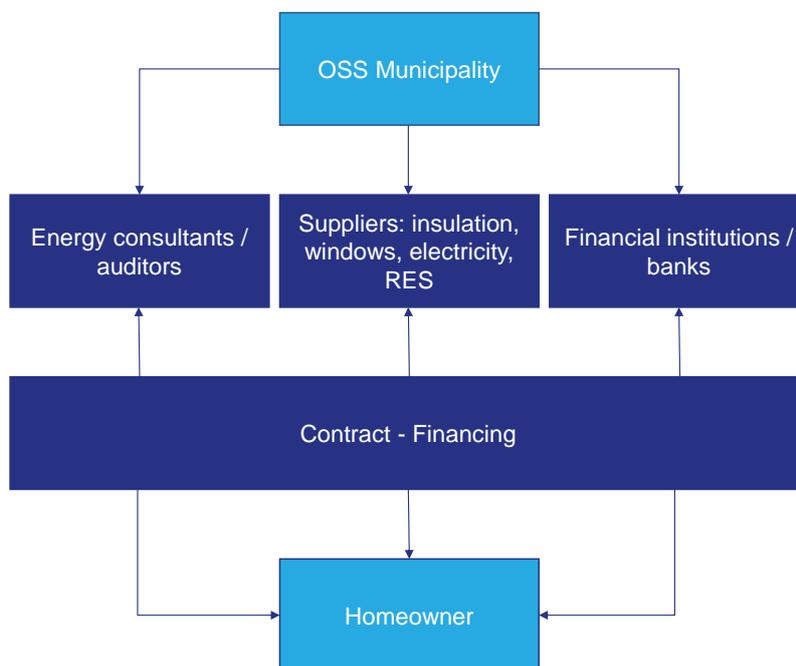


Figure 4 - Bulgaria OSS - Scheme