ReHousIn
REDUCING HOUSING INEQUALITIES

Case study report: Reggio Emilia

An extract from Deliverable 5.1, *'Case study reports on green transition initiatives and their impact on housing inequalities,'* of the ReHousIn project

March 2026

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The ReHousIn project aims to spark innovative policy solutions towards inclusionary and quality housing. To achieve this, it investigates the complex relationship between green transition initiatives and housing inequalities in European urban and rural contexts, and develops innovative policy recommendations for better and context-sensitive integration between environmentally sustainable interventions and socially inclusive housing.

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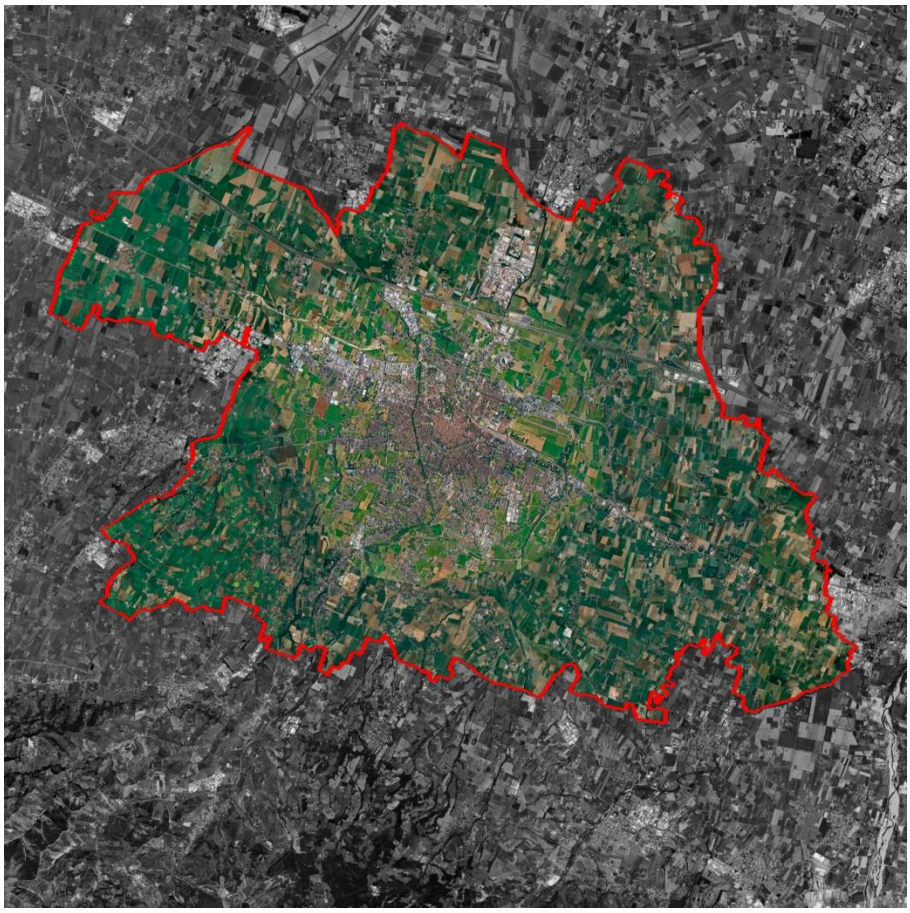

Fig. 1. Reggio Emilia municipality, by authors.

Reggio Emilia, capital city of the province with the same name, is the fourth largest city in the northern Italian region of Emilia-Romagna (following Bologna, Modena, and Parma), with a population of 171.342 (ISTAT, 2024) – an increase of 18,3% since 2001 (144.877). The population of the FUA reached 286.000 in 2022 (OECD, 2022). The city's annual per capita income is well above the national average (€ 25.026 in 2022, as compared to € 21.752, INTWIG, 2024, based on MEF data). Reggio Emilia, the region's "manufacturing core" (Unindustria Reggio Emilia, 2024), has long been characterised by its industrial heritage, which is evident in its urban development and cityscape. An important example of this is the former "Officine Meccaniche Reggiane", one of the country's most important heavy-industry manufacturers in the 20th century, situated north of the train station and currently a main site of an urban regeneration intervention – the "Reggiane Parco Innovazione" – which is transforming the facility into a hub for innovative technology enterprises and research.

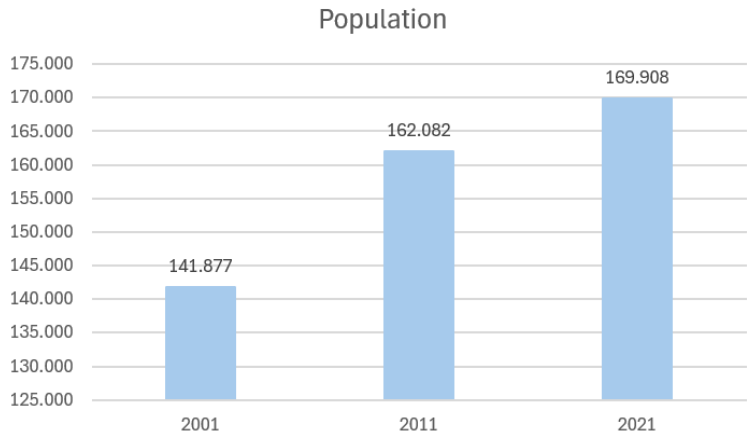

Fig. 2. Demographic development of Reggio Emilia, 2001-2021, by authors (Data sources: ISTAT 2001; 2011; 2021)

Within the region, Reggio Emilia is situated in the immediate vicinity (and thus in commuting distance) of cities of similar size: Parma, Modena and Bologna, the region's capital, which is situated 70 kilometers to the southeast. The vicinity to Bologna – a city that has experienced very strong housing market pressure in the past decade – appears to be a factor contributing to increasing rental demand and prices in Reggio Emilia (+32% since 2019 of platform prices, Immobiliare, 2026). Looking at data from the Agenzia delle Entrate (2025) – Italy's national tax authority – rental prices have grown from 2018 to 2024, with increases ranging from 10,5% (student contracts) over 24,8% (long-term), 27,5% (controlled rent), to 41,7% (mid-term) (see Fig. 3).

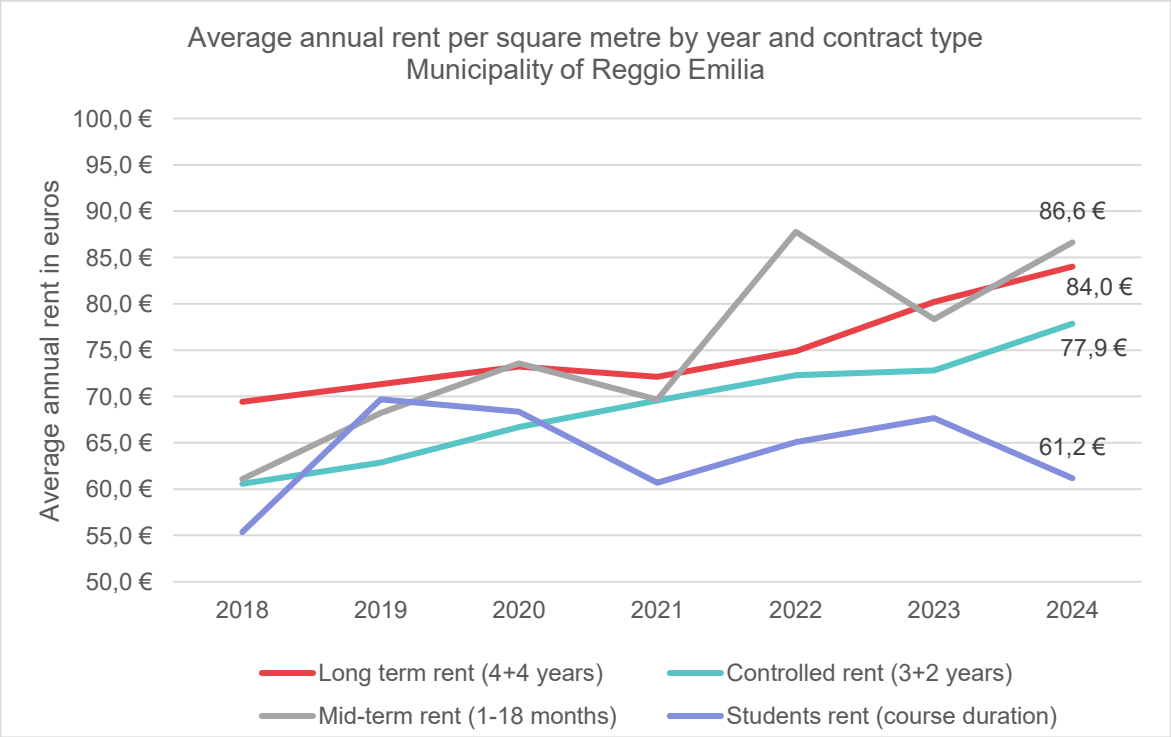

Fig. 3. Average annual rent per m² by year and contract type in Reggio Emilia, 2018-2024, by authors (Data source: Osservatorio Mercato Immobiliare, OMI, Agenzia delle Entrate 2025)

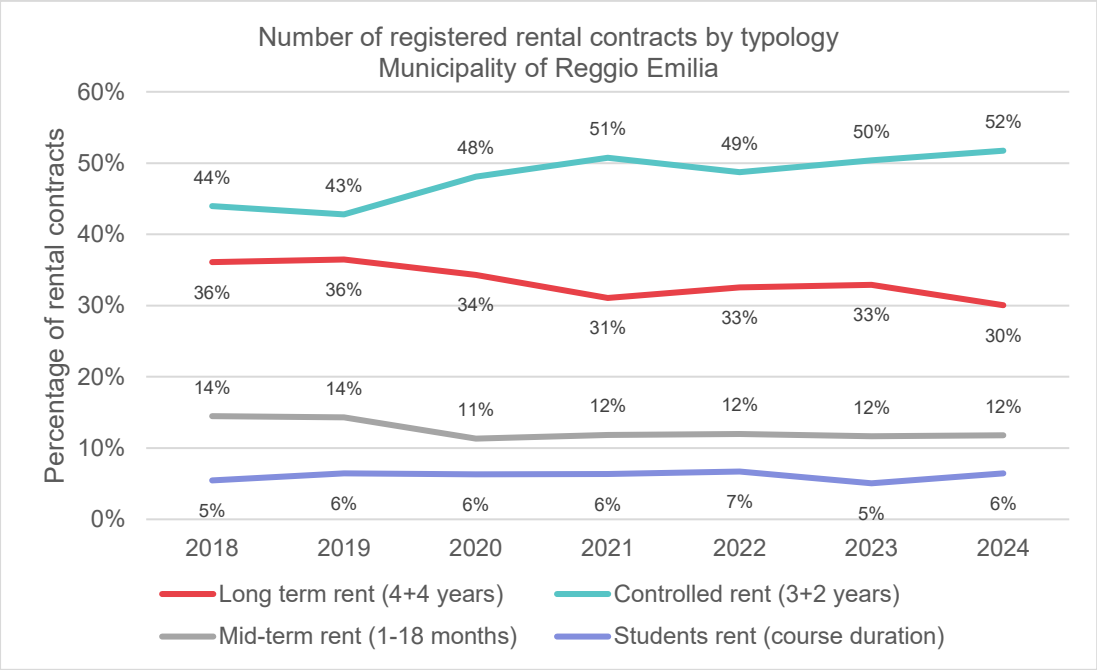

Fig. 4. Rental contracts by year and contract type in Reggio Emilia, 2018-2024, by authors (Data source: Osservatorio Mercato Immobiliare, OMI, Agenzia delle Entrate 2025)

Contrary to the national average, where controlled rental contracts (*canone concordato*, see appendix 5.2) constitute a low percentage of the private rental market (23,9% in 2024 according to OMI, 2025), in Reggio Emilia, this type of contract is predominant, accounting for 52% of the total (see Fig. 4). This figure is also significantly higher than the average for large cities (31% in 2024 according to calculations by the authors based on OMI data). This form of rental contract is very appealing to landlords in Reggio Emilia as the local agreement sets rents in this category just 7% lower than long-term contracts (see Fig. 3) with a relevant tax benefit on incomes. Indeed, landlords benefit from a national fiscal incentive, as the IMU (*Imposta Municipale Unica*) – the municipal property tax – is reduced for dwellings let under controlled rentals (a reduction of 25% of the taxable base, as per Decree Law 160/2019). In addition to the national incentive, the Municipality of Reggio Emilia has also confirmed a local fiscal incentive. This further reduces the IMU liability for 2026 for landlords that rent their properties under the controlled rent scheme (Municipal Resolution No. 11 of 2026, Municipal Budget 2026-2028). Taken together, these municipal and state-level tax concessions substantially reduce the fiscal burden on landlords participating in rent-controlled schemes.

The city's housing stock comprised 84.440 dwellings (occupied and unoccupied) in 2021. Over the past two decades, the growth of the housing stock has followed a relatively steady trajectory and has slightly outpaced population growth, increasing from 62.068 dwellings in 2001 (0.43 dwellings per capita) to 84.440 dwellings (0.50 per capita) in 2021. A strong increase of unoccupied dwellings in the same period can moreover be noted – from 3.342 to 8.434 (+152%) – with the share of vacant dwellings in the total residential stock increasing from 5% in 2001 to 10% in 2021 (ISTAT 2011; 2021).

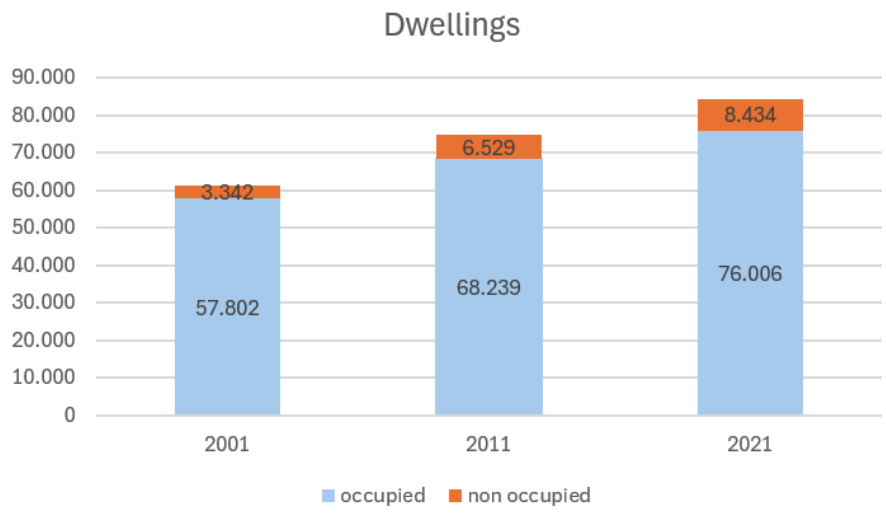

Fig. 5. Number of dwellings (occupied and non-occupied), 2001, 2011, 2021, by authors (Data sources: ISTAT 2001; 2011; 2021)

Owner occupation is by far the dominant tenure – and increasing – from 67% in 2011 to 74% in 2019. Rental tenure has decreased from 23% to 19% in the same period[1].

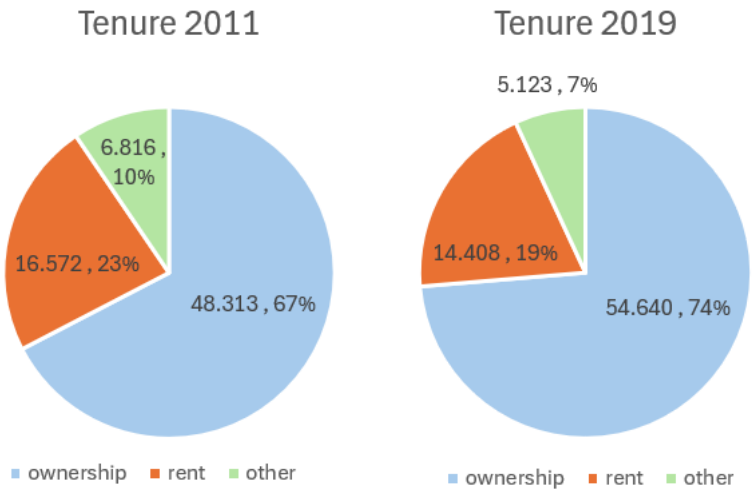

Fig. 6. Tenure change 2011 and 2019, by authors (Data sources: ISTAT 2011; 2019)

Politically, the city has historically been – and continues to be also in recent years – predominantly left oriented, largely in line with the regional level – Emilia Romagna, along with Tuscany, Umbria, and Marche, is considered Italy's "red zone" (Shin, 2001). From 2019 to 2024, the city has been governed by a centre-left coalition, headed by social democrat mayor Luca Vecchi. During his term, a new General Town Plan (PUG) entitled "For a more sustainable, attractive, and solidary city" was adopted in 2023. The plan formulates key objectives, the first of which concerns climate neutrality – strategies to reach this goal include a reduction of soil consumption (aimed at reaching zero soil consumption by 2050) and other

[1] Note: 2011 data refer to the number of households by tenure, while 2019 data refer to the number of inhabited dwellings by tenure (while dwellings are typically inhabited by one household only, some minor statistical imprecision may still exist).

measures to enhance environmental sustainability, including the further expansion of the slow mobility infrastructure, the incremental completion of green corridors, urban forestation and greening, as well as the requalification of the built stock, focusing in particular on the increase of energy efficiency and the use of renewable energy sources. In 2024, the independent candidate Marco Massari was elected as new mayor, again heading a centre-left coalition with the involvement of *Europa Verde* and *Possibile* – two parties with an explicit environmentalist orientation, therefore a continuation of this policy focus is to be expected.

As regards climate vulnerability, Emilia-Romagna has become one of Italy's most severely affected regions regarding extreme hydro-meteorological events in recent years, experiencing multiple severe floods in 2023 and 2024. In May 2023, two successive flood waves caused the overflow of 23 rivers and led to more than 50.000 evacuations. The region experienced further widespread severe flooding in September and October 2024 due to record-breaking rainfall, resulting in further damage to areas that had been devastated in the previous year, including parts of the Reggio Emilia province. These events have led to heightened public and political awareness of climate-driven risks, prompting regional and municipal authorities to focus more heavily on climate adaptation and green transition measures. In this context, Reggio Emilia's recent policy initiatives – ranging from energy-efficiency programmes to green-infrastructure strategies and neighbourhood-scale regeneration – must be understood as part of a broader institutional response to escalating climate hazards and the urgent need to safeguard communities and territorial systems from future shocks.

1.2 Green Transition Interventions in Reggio Emilia

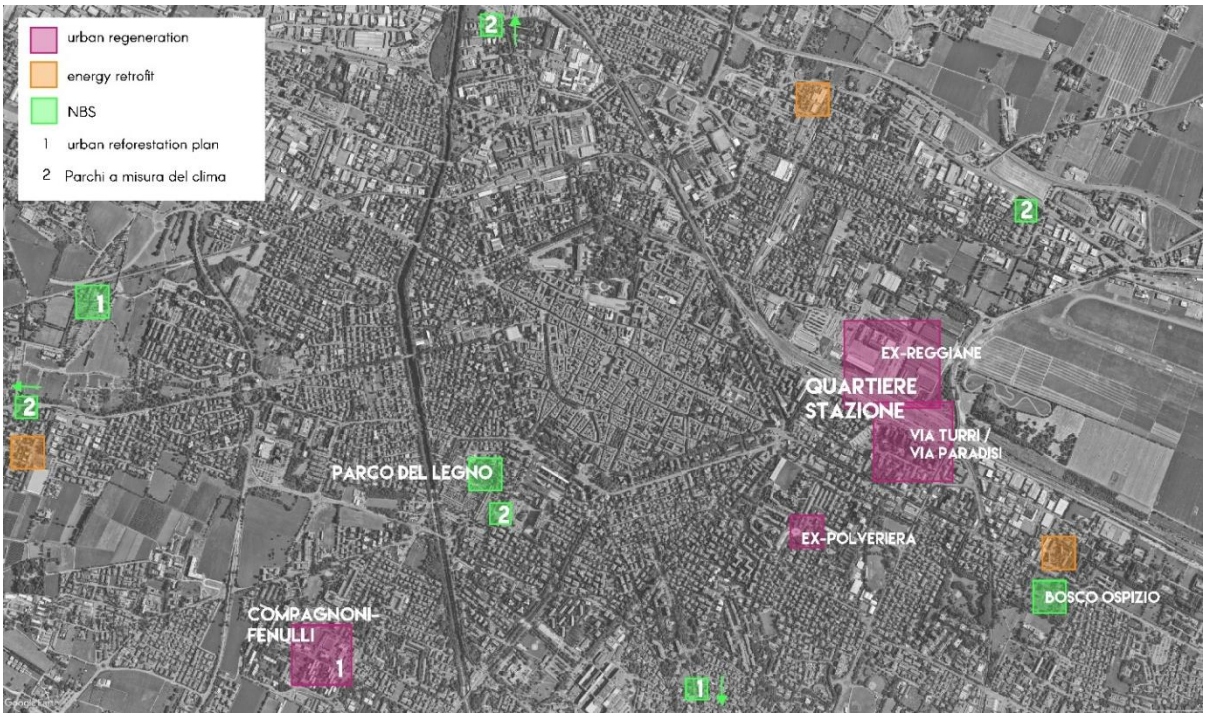

Fig. 7. Relevant retrofit, NBS, and urban regeneration interventions in Reggio Emilia, by authors

Densification and urban regeneration:

Residential densification has occurred in recent years in Reggio Emilia along with demographic development. From the 2010s onwards, densification, growth containment, and an explicit rejection of urban sprawl became a central strategic orientation in Reggio Emilia's planning framework. This orientation was implicitly established in the Piano Strutturale Comunale (PSC)

adopted in 2009, and articulated through a main urban development strategy, under the principle “La città non si amplia, si trasforma” (“The city does not expand; it transforms”) (Comune di Reggio Emilia, 2020). This strategic direction has been further underlined in the New General Plan (PUG) adopted in 2022 (receiving final approval in 2023) which – while not mentioning densification as such – emphasises the regeneration of the urban fabric and the reduction of soil consumption as main strategic objectives (Comune di Reggio Emilia, 2026). The development of new land is permitted only under very limited and specific circumstances. In the case of residential construction, this includes the realisation of social housing, and it may be authorised only in areas experiencing demographic growth and with no residual residential stock (R02).

An important recent intervention of urban regeneration including housing – albeit resulting in its de-densification – concerns the neighbourhood of **Compagnoni-Fenulli**, situated in the southwest of the city, and characterised by a high density of public housing. The neighbourhood, built between 1955 and 1963 as part of a major national plan (INA Casa, see appendix 5.2), was subjected to a substantial urban regeneration programme over the past two decades. Before the intervention, the neighbourhood entailed 538 dwellings (of which 477 of public ownership and 61 privately owned). Over the decades, the neighbourhood had experienced physical and socioeconomic deterioration and was therefore selected as an intervention site for the *Programma di Riqualificazione Urbana* (PRU, see appendix 5.2), implementation of which started in 2004.

Fig. 8. Rebuilt public housing estate, Compagnoni neighbourhood, photo by authors

The programme involved the demolition of 22 buildings and the construction of new residential blocks. Given the nature of the intervention, residents had to be temporarily or permanently relocated, and 170 households moved, of which 49 outside the neighbourhood. Importantly, the public housing company actively accommodated tenants’ requests – seeking to minimise displacement, enable return wherever possible, and take residents’ preferences into account throughout the regeneration process. To this end, a dedicated service desk was set up to

collect and manage individual relocation preferences (R03). Key objectives of the programme were to improve the quality of housing, upgrade energy performance, and create new public spaces and services, and to reduce building density, reorganising at the same time the relationship between public and private housing, thus increasing social mix. Today, after completion, the neighbourhood consists of 391 dwellings, of which 306 of public and 85 of private ownership. Main interventions included the construction of energy-efficient housing (in energy Class A), the installation of solar and photovoltaic systems, the enhancement of insulation, and the transformation of green areas, pedestrian and cycling paths. The project (for a total cost of about € 42 million) was funded through national, regional, municipal, and ACER's (the city's public housing provider) resources. (ACER Reggio Emilia, 2019)

Currently, a large-scale regeneration process is furthermore ongoing in the immediate vicinity of the city's central train station. The neighbourhood – referred to as **"Quartiere Stazione" or "via Turri/via Paradisi"** – has long been identified as a strategic site for urban transformation. In 2022, the city government launched **"R60"**, a large-scale requalification scheme. It concerns the neighbourhood's north and south of the main train station and involves an overall investment of € 76 million.

Fig. 9. Via Turri, south of the main train station, photo by authors

The project is partially funded (€ 15 million) through the PINQuA – the "Innovative National Programme for the Quality of Housing" (see appendix 5.2), established within the framework of the European Recovery and Resilience Plan. Additionally, € 25 million are provided by the Council of Europe Bank (Comune di Reggio Emilia, 2026b). The PINQuA scheme, endowed with € 2.8 billion, was promoted by the Ministry of Infrastructure and Sustainable Mobility (MIMS) as part of the country's Recovery and Resilience Plan (PNRR) following the Covid pandemic. Its aim is to improve the quality of housing and urban spaces while at the same time putting emphasis on the requalification and expansion of public and social housing, as well as the adoption of innovative management models and social inclusion strategies.
The R60 project encompasses the requalification of a 60.000m² area through various interventions, including: (1) residential densification through demolition and reconstruction of existing – mostly private – residential buildings south of the train station, resulting in the construction of 147 new social housing units; (2) greening and nature-based solutions such as

green roofs, 'hanging gardens', and the requalification of open and green spaces in both the southern and northern project area (where the former "Officine Meccaniche Reggiane" buildings are being transformed into the "Reggiane Parco Innovation") and (3) the enhancement of the slow mobility infrastructure, including the construction of an overpass for pedestrian and bicycle use to connect the currently separated neighbourhoods north and south of the station, effectively dismantling the barrier the station currently represents (Comune di Reggio Emilia & ACER, 2024).
The project ties in with ongoing policies, including the *Piano Periferie* and the *PIERS* (*Programma Integrato di Edilizia Residenziale Sociale*) (see appendix 5.2) (Comune di Reggio Emilia, 2021). Overall, the project is perceived in controversial ways, particularly regarding the area south of the train station, which over the past two decades has witnessed various conflictual dynamics: from private residential buildings left incomplete after the financial crisis of 2008 to phenomena of partial abandonment, followed by (partly, informal) occupation and arrears, largely involving low-income populations with migration backgrounds. Controversies moreover arise from the fact that the project foresees the expropriation of private owners and relocation of the remaining tenants, entailing significant social and economic costs, compounded by dissatisfaction with the communication strategies adopted by local authorities. At the same time, however, the necessity for public intervention in a context of substantial physical and social deterioration is widely acknowledged.

Nature-based solutions:
In the past years, the city administration has undertaken various efforts to enhance its environmental sustainability performance, with considerable outcomes. In the Legambiente Urban Ecosystem ranking (Laurenti & Trentin, 2023), Reggio Emilia has moved up from the 44th place in 2014 to 5th place in 2020, reaching particularly high values in terms of cyclability (2nd position in Italy regarding cycling infrastructure, to which contributed various incentives, such as the "bike to work" and cargo bike incentives), differentiated waste collection (82% of the urban waste produced vs. 62,7% on national average), and the ratio of trees by inhabitants (85 per 100). In 2019, the city adopted a Reforestation Plan (*Piano di Forestazione Urbana*) for the period of 2019 to 2024 (Comune di Reggio Emilia, 2025a), aimed at increasing greenery by 50.000 new plants within five years in various parts of the municipal territory. Between 2019 and 2022, around 11.000 trees and other plants have been planted in various parts of the city. The plan moreover ties in with the project "Life CITYAdap3", a European project with Reggio Emilia as (the only) Italian partner city. In the context of this project, four parks were selected as pilot sites ("Parchi a misura di clima") – Parco Grimaldi, Parco Primavera, Parco Biagi and via Ferravilla – for the implementation of measures to combat the effects of urban heat islands (Comune di Reggio Emilia, 2025b). The Reforestation Plan moreover ties in with a plan adopted by the Emilia-Romagna region ("Mettiamo radici per il futuro"), with the objective to arrive at 4,5 million new trees within the same period and to become Italy's "green corridor" (Regione Emilia-Romagna, 2025).

Other recent initiatives include the requalification of the **"Parco del Legno"**, a 10.000 m² public green space with a history of agricultural use, situated between the historical centre and the city's main cemetery (*Cimitero Monumentale*). In 2022, the area, closed to the public until its reopening in 2025 (Comune di Reggio Emilia, 2025c), was at the centre of a participatory process promoted by the municipality and involving neighbourhood associations, citizens, and local stakeholders, aimed at co-designing the strategy for its regeneration, animation, and future management. The process addressed both the physical regeneration of the green space

and its future uses, focusing on accessibility, environmental education, urban agriculture, and climate-related activities (Comune di Reggio Emilia, 2024a).

Fig. 10. Parco del Legno, photo by authors

A controversial situation has developed around another green space, the so-called "**Bosco Ospizio**" – a spontaneous forest of around 4 hectares in via Emilia all'Ospizio, which has grown over the past two decades on the site of a former hospice demolished in 2005. The site is owned by a private commercial owner, who was granted building rights within the framework of a broader regeneration project (the PRU Ospizio) adopted by the then municipal government in 2006 and formalised through a legally binding planning agreement (a *convenzione urbanistica*, see appendix 5.2*)* in 2007. The project foresees the construction of a supermarket, along with healthcare facilities and a public library. While its implementation was long delayed, broad civic opposition against the project has developed over time, driven by various local civic groups that have bundled their actions within the *Assemblea Permanente Bosco Ospizio*. In recent years, the municipality had sought to revoke previously granted building rights in separate legal proceedings concerning a different redevelopment site, invoking the protection of the collective interest. However, in 2024 the Italian Council of State (*Consiglio di Stato*) ruled this attempt legally inadmissible, reaffirming that consolidated building rights established through approved planning instruments cannot be unilaterally annulled by the municipality. Although the ruling did not directly concern Bosco Ospizio, it removed the legal grounds for reopening or revising the administrative procedure of the PRU Ospizio, effectively confirming the continuing validity of the private development rights linked to the site (Comune di Reggio Emilia, 2024b; ReggioOnline, 2024).

Fig. 11. Bosco Ospizio, photo by authors

Energy Retrofit

Substantial efforts have been undertaken in recent years throughout the country to renovate public housing estates (as well as private housing and mixed condominiums – buildings in which ownership is divided between public and private actors) in context with several incentivising policies, among which most importantly the *Superbonus 110%* (see appendix 5.2). The scheme, introduced in 2020 and closed in 2023, was based on tax deductions and funded mostly through the European Recovery and Resilience Facility. Renovation measures resulting in an upgrading of energy efficiency by at least two classes were eligible for funding. In Reggio Emilia, ten mixed condominiums with 512 flats (of which 107 public) were renovated with the Superbonus 110%, with an investment of € 75,5 mio (Comune di Reggio Emilia 2024c). Additionally, the *Bonus Facciate* scheme (also operating via tax deductions, see appendix 5.2) was used to renovate the facades of 19 buildings (€ 4,4 million) (ibid.). In addition, 17 public housing buildings were renovated in Reggio Emilia through the “Sicuro, verde e sociale” programme (established through a national fund, complementary to the PNRR, see appendix 5.2) at an overall cost of € 9 million. (ACER Reggio Emilia, 2024).

Fig. 12. Residential building after energy retrofit, Compagnoni neighbourhood, photo by authors

Table 1. Key data on case study area of Reggio Emilia

	Municipality-wide	Compagnoni-Fenulli	Quartiere Stazione
Neighborhood characteristics (general social type, economic activities, density, etc.)	Medium-sized city, compact centre, well-integrated first peripheries; overall high housing and environmental quality; strong green heritage	South-western peripheral neighbourhood, high density of public housing; built in the 1950s/60s; physical and socio-economic deterioration in recent decades and limited functional and social mix (pre-regeneration)	Central and semi-central neighbourhood around the main railway station; historically strategic urban area; mix of residential, infrastructural and former industrial uses; social vulnerability, large presence of immigrant population, unfinished and partly occupied private buildings, conflictual dynamics linked to informal occupation, arrears, and expropriation
Duration	PUG 2023 entails the reduction of soil, regeneration of already urbanised territory; “no sprawl” orientation	Strategy: early 2000s Implementation: 2004-2020 (completed recently)	currently ongoing

Funding	Various sources of public funds (EU, national, regional, local); housing retrofit through national tax incentives (Superbonus 110%, Bonus Facciate) and complementary funds ("Sicuro, verde e sociale") for public housing	PRU (Programma di Riqualificazione Urbana), mixed funding, mostly public (national, regional municipal, ACER)	Mixed: PINQuA (national/European) € 15 million; Council of Europe Development Bank € 25 million; municipal funds
Actor constellation	Municipality, region, ACER, state (as regards PNRR), civic groups, private developers, intermediaries	Municipality; ACER; regional and national authorities; residents (temporarily or permanently relocated)	Municipality; ACER; national ministries; EU; Council of Europe Development Bank; private property owners; tenants; civic groups
Aims and objectives	regeneration of the existing urban fabric; upgrading and expansion of green infrastructure; climate adaptation; enhancement of housing quality and energy performance; strengthening of slow mobility; increase of social housing (ERS)	Improvement of housing quality and energy performance; reduction of residential density; introduction of tenure and social mix; creation of public and green spaces and services	Urban regeneration and requalification; mitigation of social conflict and physical deterioration; increase of social housing; urban greening; reconnection of neighbourhoods north and south of the station; enhancement of accessibility
Specific physical measures	Reforestation and urban greening; regeneration of parks; energy retrofitting of public and mixed housing; enhancement of cycling infrastructure; neighbourhood regeneration	Demolition of 22 buildings; construction of new energy-efficient residential buildings; installation of PV systems; upgrading of green areas	Demolition and reconstruction of residential buildings; construction of 147 new social housing units; green roofs and hanging gardens; requalification of open and green spaces; adaptive reuse of former industrial buildings; pedestrian and bicycle overpass
Accompanying housing policy/regulatory measures	Restriction of new development; linkage of urban development to demographic conditions, neighbourhood	Relocation of tenants (permanent or temporary); establishment of a helpdesk for collecting, addressing, and	Expropriation, tenant relocation, construction of new social housing (ERS)

	accessibility, and presence of services; social housing quotas	mediating tenants' concerns and needs	
Key social tensions or/and benefits between greening and housing	Potential of rising affordability pressures in context with energy retrofit, but overall low presence of social tensions between greening and housing	Benefits: improved housing quality, energy efficiency, public space; tensions linked to relocation, but mitigated through accompanying measures	High level of controversy and conflict: expropriations, tenant relocation, communication failures; but also: recognition of necessity to intervene in a context of long-term physical and social deterioration

2 Section 2 - Methods

15 semi-structured interviews were conducted, involving 17 respondents (two interviews involved two interviewees). The interviewee sample included representatives from the public sector – including public housing associations and public employees from the city administration, both in operational and political functions –, members of civic associations and NGOs involved in environmental and/or social and housing-related issues, as well as academic experts. A key moment in terms of sampling was the Policy Lab held at Politecnico di Milano on April 11th, 2025, focusing on the ReHousIn case study cities of Milan and Reggio Emilia. We invited representatives of key national, local and regional actors of different types (see Rehousin, 2025), five of which participated from the (local or regional) context of Reggio Emilia. Some of these participants are among those interviewed later on. We furthermore used the opportunity of the Policy Lab to collect suggestions regarding additional interviewees. As regards gender balance, while the Policy Lab was relatively balanced – with 2 out of 5 participants related to Reggio Emilia being women –, only 5 out the 17 interviewees are female (29,4%), reflecting an unequal position of women in key positions in the region (including in civic groups).

Ahead of and in parallel with the interviews, background research was conducted, involving a structured review of academic literature, grey literature, municipal planning documents and regulatory frameworks. This included, among others, the General Town Plan (PUG 2023), earlier planning instruments (PSC, PRG), policy programmes such as the PINQuA and PRU, as well as reports by the public housing company ACER Reggio Emilia. Furthermore, publicly available data sources (ISTAT, OMI, municipal statistics) and media coverage on past and ongoing interventions (e.g., Bosco Ospizio, R60) were investigated. The desk research served three main purposes: firstly, to reconstruct the institutional framework shaping housing and environmental interventions in Reggio Emilia; secondly, to contextualise the statements of interviewees within broader policy trajectories and the public debate; and, lastly, to triangulate actors' perceptions with formal planning documents and publicly available data.

Interviews were conducted between June and November 2025, and in all but one cases in person. Furthermore, fieldwork was conducted in the same period in Reggio Emilia, which included visits to relevant case study sites, photo documentation, and informal conversations with residents. The interviews were semi-structured, following a template provided by the core group of WP5, and lasted approximately one hour each. All interviews were conducted by two researchers, with one researcher guiding the discussion and the other focusing on notetaking.

All interviews were recorded, transcribed using the software TurboScribe, summarized, and coded with the MAXQDA software deductively, following a shared codebook developed within the core group of WP5. Coding results were then pseudonymized, and a table containing aliases and corresponding interviewees was safely stored. In a next step, the team of researchers identified the key topics that emerged from the interviews through an in-depth reading and discussion of the empirical material – this was aimed at surfacing recurring themes and preliminary interpretations and at establishing a shared analytical framing. After that, an LLM tool was used – through a dedicated prompt – to perform the same exercise on the anonymised material, with the aim of identifying relevant quotes, overlaps, potential biases, and themes that may have been overlooked by the researchers. The LLM tool was thus used as an additional analytical agent, supporting but not substituting the researchers' interpretative

work. The pseudonymized coding results were then summarized (with the support of the LLM tool) around the main themes that are highlighted in this report. Regarding each of the ten predefined codes (see titles in chapter 3), a team researcher read all the quotes again and created a list of relevant results emerging from the interviews regarding the specific code. Lastly, the researchers working on the report integrated the additional results emerging from the LLM tool with their own analysis.

All interviewees were informed in advance about the purpose of the research, the use of the interview material, and their rights as participants. This was done verbally prior to each interview and through the provision of a written information sheet (*Informativa sulla raccolta e sul trattamento dei dati ai sensi del Regolamento UE 2016/679 – GDPR*). The information sheet specified the scope of data collection, storage procedures, and participants' rights to withdraw their consent at any time without consequences. All interviewees signed a written informed consent form (*consenso informato*) prior to the interview.

The research presents some limitations linked to methodological choices: firstly, it may display a certain governance bias – while we benefited from strong institutional access, which enabled detailed insights into governance mechanisms, this may also have shaped certain framings closer to administrative rationales. Secondly, one of the most controversial interventions investigated (R60 / Quartiere Stazione) is still under implementation – findings therefore reflect expectations and first impacts rather than longer-term socio-spatial outcomes. Lastly, the selection of Reggio Emilia as a case study – an exceptionally well-performing city in terms of green policies, as by national rankings – carries a potential "best-practice bias": analysing a relatively high-capacity and institutionally stable city may emphasise effectiveness, while structural constraints and deeper socio-economic tensions might be less visible than in more fragile or less consolidated contexts.

3 Actors' Perceptions of Green Initiatives in Case Study Areas: Reggio Emilia

3.1 Precedents and implementation

A green heritage shaped by frontline planning choices, advocacy, and the role of indicators

Reggio Emilia's rich heritage of green spaces is widely acknowledged, interpreted by most interviewees as the result of a long-term policy trajectory characterised by an early and sustained attention to green infrastructure as well as respective planning instruments. Urban plans preceding the current General Town Plan (PUG 2023) are described as crucial in this regard, as they enabled the municipality to secure substantial areas of public green space over time.

> "The city of Reggio Emilia, through the planning instruments that preceded the current PUG […] was somewhat of a forerunner, because it adopted the concept of land-use equalisation (*perequazione urbanistica,* see appendix 5.2) and the transfer of large green areas within the framework of detailed implementation plans far before other cities. As a result, today the city

has a very significant stock of green areas." (R02, senior municipal official, urban regeneration department)

This trajectory, the interviewee further stresses, is closely linked to the positive influence of specific individuals, most notably Giuseppe Campos Venuti, an urbanist and politician whose approach proved to be particularly foresighted:

"In a way, the driving force behind this planning strategy was Campos Venuti, who had overseen the design of our PRG as early as 1999. He introduced, on the one hand, functional mix, and on the other, equalisation mechanisms, land transfers, public green spaces, and so on." (R02)

At the same time, some respondents – civil society representatives – point to ambiguities in how improvements in green provision are measured and translated into performance indicators (R10; R05). They questioned whether increases in metrics (such as the quantity of public green space per inhabitant) are due to actual substantive ecological gains or rather attributable to accounting effects linked to land cessions.

"Green space has increased, yes, but this is a controversy I raise every year with Legambiente [note: Italy's largest environmental NGO], which produces its rankings using municipal data: green space has increased and public green space per inhabitant has increased as well, mainly thanks to land-transfer areas. Where there used to be a privately owned field that was not counted as green space, three buildings were built; in order to build those three buildings, 20% of the area was set aside. These 20% of grass are then added to the green areas, becomes public green space, and therefore leads to an increase in public green space. This is why, over the last 30 years, Reggio has tripled its green space per inhabitant. But I say: enough with increasing green space per inhabitant if that increase comes at a cost – because before it was green. If there was a field, it was green; you've just changed the label." (R10, environmental expert and civic activist)

Similar concerns have also been raised regarding figures on trees per inhabitant, which are based on estimates rather than a systematic census and may include shrubs as well as trees, as he further underlines (R10).

Irrespective of these ambiguities, environmental advocacy is without a doubt strongly rooted in Reggio Emilia, both reflected in institutional awareness and a long-standing presence of environmental advocacy actors. Most notably, Legambiente Reggio Emilia, the local branch of Italy's largest environmental NGO, has been active in the territory for around thirty years, engaging in a broad range of activities, including environmental education, territorial protection, active citizenship, and environmental and social justice, as explained by a senior representative (R05). Taken together, both institutional and civic attention to the topic have contributed to consolidating green infrastructure as a widely shared policy priority.

Structural transformations and increasing constraints in the local housing market over the past decades

Interviewees have described a series of structural transformations over the past decades that have strongly impacted the housing market, compounded by more recent disruptions, resulting

in a current situation of growing housing pressure. An important phase occurred in the 1970s and 1980s, when rapid urban growth triggered an intense wave of construction. As one interviewee (an environmental expert and civic activist) recalls, "*in the 1970s and 1980s there was an incredible building expansion* […] *the city went from around 130.000 to 170.000 housing units over the course of 20–30 years*" (R10). Consequently, today's housing stock, the vast majority of which built before the 1980s, is increasingly ageing, while construction activities have strongly declined in subsequent decades. As another interviewee notes, "*the overwhelming majority of the city's housing stock predates the 1980s; in the 1990s and 2000s very little was built"* (R01, senior municipal officeholder*,* public works and housing). These overarching trends were compounded by a profound restructuring of the housing market in the aftermath of the Global Financial Crisis (2009). While the initial shock was delayed in Reggio Emilia by a few years, its effects eventually proved particularly severe for the cooperative housing sector, which had historically played a crucial role in the city.

"In Reggio, the crisis – the shock – hit the cooperative sector later on. Even within the cooperative world, everyone thought they had come through the downturn unscathed; it was only around 2012 that the strongest effects were felt, continuing through to 2018–19, when many cooperatives closed, including some of the largest ones." (R08, executive representative of a local housing cooperative)

This is similarly underlined by a senior municipal officeholder (public works and housing):

The crisis resulted in the near-total disappearance of this segment, with severe impacts in terms of housing affordability: "They were the actors that guaranteed access to housing at what we might call regulated or moderated prices, and in any case they were the last ones to build condominiums or similar types of housing. As a result, that entire segment of the market has effectively disappeared. By contrast, the high-end segment has continued to operate up to the present – though the new PUG may now curb it. In short, those looking for a quality home, not to say a luxury one, can still find one; but those looking for an affordable home cannot, neither on the rental market nor in terms of purchase." (R01)

Additionally, in recent years, market-related (short-term rentals) as well as socioeconomic and demographic challenges (an increased economic precarity and difficulties in accommodating migrants) have added to these structural imbalances, as the built fabric progressively reaches the limits of its housing capacity. This, as the interviewee further describes, affects both the rental and ownership markets:

"We have moved towards a progressive exhaustion of capacity. A few years ago, there were no problems with rentals, but the rental market has since been exhausted through the forms you're familiar with – short-term rentals such as Airbnb, and various forms of dispersed migrant reception, which I personally consider a social value compared to using hotels or barracks. However, this has meant that several hundred dwellings have been withdrawn from the market. Then there was the whole issue of the Superbonus 110%, which pushed additional people out of the rental market, as many owners renovated with the aim of re-letting at higher prices. After that, saturation gradually began to affect the sales market. As a result, today there is not only a crisis in finding rental housing, but also an objective crisis in

finding homes for sale at 'human' prices or in acceptable conditions." (R01, senior municipal officeholder, public works and housing)

This is linked also to a structural gap in recent housing production, as private actors have largely withdrawn from the construction of condominiums. He further explains that

"the last condominiums built in Reggio have been entirely public projects carried out by Acer. […] there are no private economic actors who spontaneously wake up and say, 'now I'm going to build a condominium.' And I'm not talking about social housing (ERS) – there isn't even middle-income condominium housing being built. In other words, this housing typology simply no longer finds space." (R01, senior municipal officeholder, public works and housing)

These dynamics are further intensified by rising costs and declining affordability in other spheres of life, which increasingly affect not only low-income groups but also middle-income households. He further notes that "[…] *we are in a city where, with inflation, the cost of living is very high, and even a middle income is actually certainly at risk of energy poverty, food poverty, and housing poverty"* (R01).

Rising prices, moreover, are also linked to increasing costs of materials and energy as well as tighter credit conditions, which affect both construction and everyday management. As regards new construction, the executive representative of a local housing cooperative explains:

"We managed to finish two apartments; we could not carry out other building projects because they are not sustainable. This is a big problem, even for the large cooperatives. If we don't have interest rates below 3%, reductions in urbanisation charges, concessions on permits, you can't build housing […] So maintaining the existing stock is something you can manage with a spread-out and intelligent planning, looking for quotes, saving here and there, but as for new construction, we are all blocked" […] "the speculative bubble has had a very strong impact on material costs, on energy costs. I'll give a simple example: the maintenance of green areas – contract 2020 to 2024: 20.000 euros for four years. Contract from 2025 to 2029: 38.000 euros, almost double for the same service". (R08)

Taken together, these dynamics point to a housing market increasingly characterised by an ageing stock, rising costs, shrinking affordable supply, and a structural inability to reproduce intermediate housing forms, with significant implications in terms of both access and affordability.

Strong governance capacities, structural obstacles, and short institutional distances

Fieldwork and interviews clearly show that Reggio Emilia features strong institutional and governance capacities, which translate into a high level of readiness to respond to emerging policy opportunities. As emerges from a triangulation of interviews, policy documents, and project records, the municipality demonstrates a consistent ability to mobilise external resources – most notably European and national funding – and to translate them into concrete projects. At the same time, a stable, continuous funding mechanism in the housing sector is missing in Italy, and the current system of ad hoc funding through (European, national, or regional) project calls disproportionately benefits already high-performing regions and cities, thereby contributing to growing inequalities within the country. As a senior municipal official

(urban regeneration department) explains, while municipalities like Reggio Emilia possess the technical expertise to develop high-quality projects, national funding programmes tend to advantage those already equipped with such capacities, potentially widening inter-municipal inequalities:

> "If there were resources, there wouldn't be a problem; we now have a consolidated experience that would allow us to do it. […] Unfortunately, when it's done on a large scale, what happens is like with the PNRR [note: NRRP] – in the end, after four years, you just shrug your shoulders and say, 'we didn't do a damn thing, well done!' Because in the end there are the virtuous ones who managed to 'bring it home', and then there are those who didn't. In the general mass of Italy, I'd like to see how those percentages actually turn out." (R04).

Based on the interviews, an overall picture emerges of a local actor ecosystem characterised by a clear distribution of responsibilities and well-defined roles, enabling efficient coordination and communication between public institutions (for instance, the municipality and the public housing provider), private actors, intermediary organisations, and cooperative entities. Over the past decades, there has been a continuity of initiatives across the policy fields of interest, such as public housing retrofit, neighbourhood regeneration, and environmental projects. Governance arrangements appear to follow a consensus-oriented and quasi-corporatist logic, based on long-standing collaboration among organised actors and on negotiated problem-solving. This is further facilitated through short institutional distances, tied to the city's relatively compact dimensions and thus the presence of overlapping professional networks. Individuals working across different institutions typically know each other, collaborate on multiple projects, and in some cases move between roles over time.

> "[…] this is very much made up of the relationships between people, and people then change roles, change experiences, move around […] in this sense, the Reggio case is a bit emblematic, because the relationships are very tight, it's a small city, I know [R1], I know [XY], we found ourselves working together one year when we were all there, desk next to desk". (R08, executive representative of a local housing cooperative)

A long-standing trajectory of public housing regeneration and retrofit

Public housing regeneration in Reggio Emilia is a long-term, incremental process that has unfolded over several decades, and regeneration has concerned most of the city's public housing neighbourhoods. As an executive representative of the local public housing provider, ACER Reggio Emilia, which manages the city's public housing stock, underlines:

> "Our main work over these years has been urban regeneration, so all public housing neighbourhoods have been transformed, through interventions in urban design, buildings, and a more general reorganisation of spaces […] Compagnoni is the most visible one because it was the most recent, but all the other neighbourhoods were redeveloped before as well, and always with the same logic. So basically, the old public housing neighbourhoods have all been redeveloped". (R03)

In addition, incremental improvements in building performance have been integrated into everyday management practices.

> "[…] we [note: through ACER] manage 2.100 public housing units, so every time we intervene – even when just replacing a broken boiler – we obviously replace it with one that improves energy performance". (R01, senior municipal officeholder (public works and housing)

Over time, the approach has been continuously recalibrated in response to changing regulations, knowledge, and technical standards. It reflects a process of cumulative policy learning and calibration, demonstrating an adaptive approach to policy learning in terms of public housing retrofit and regeneration rather than a single moment of transformation. An executive representative of the local public housing provider explains that

> "Energy efficiency is a relatively recent issue, and […] efficiency objectives have changed over time depending on regulations and the knowledge that developed over time […] we started with Class C interventions in 2005/2006/2007, and today we are talking about Class A interventions. In retrofitting, the aim has always been to achieve the maximum possible in each historical period – today, with current knowledge and technologies, the objective is near zero consumption, even if this is difficult to reach." (R03)

3.2 Participation and governance (procedural)

From participatory tradition to recent tensions: the limits of civic influence in contemporary governance

Reggio Emilia is widely recognised for a long-standing tradition of bottom-up participation, embedded in a political and administrative culture shaped by decades of left-wing governance across municipality, province and region. Interviewees frequently situate current debates within this historical trajectory, recalling how neighbourhood-based institutions – particularly the *circoscrizioni*[2] – once served as the primary interface between local communities and the municipal administration. This multi-level political continuity has been shown to facilitate dense governance networks and a degree of vertical coordination that administrative personnel and members of civic groups still regard as distinctive to the Emilia-Romagna region, where civic voice is expected to travel through layered institutional channels rather than bypass them. However, representatives of groups organising both around the right to the city and environmental justice also observe that the ambition of participatory governance has gradually

[2] *Circoscrizioni comunali* were decentralised internal units of the municipality, created to bring local government closer to residents. These institutions were not to be considered autonomous local authorities, but rather as components of the *Comune*, characterised by a degree of functional autonomy. The purpose of the circoscrizioni was twofold: firstly, to facilitate participation, and secondly, to enable local consultation and the management of basic services at a neighbourhood scale. Over time the role of these institutions has undergone a progressive weakening. The result of these processes has been a loss of key institutional channels through which communities were able to exercise territorial voice and everyday democratic oversight. Today, in some cities they have been replaced by other participatory bodies, while in others they survive in modified forms with less power and autonomy.

encountered structural constraints (linked to the progressive weakening of local authority autonomous action), institutional fragmentation and resource limitations, producing tensions between participatory ideals and contemporary governance.

Across several interviews, actors highlighted the abundance of formal participatory tools available in Reggio Emilia. A variety of experiences have been identified as contributing to a rich institutional repertoire in involving residents in regeneration processes. These include the co-design of public spaces in regeneration processes, social-management services that have been introduced almost two decades ago within the public housing system, and creative forms of micro-engagement, including projects co-developed with children. The local public housing provider, ACER Reggio Emilia, moreover, demonstrates a serious commitment to long-term investments in mediation, social needs assessment and conflict resolution. Such initiatives are designed to facilitate the involvement of tenants during the retrofitting and relocation phases in regeneration processes.

Nevertheless, numerous interviews with civic groups have repeatedly highlighted concerns regarding the effectiveness of participatory instruments in the city. A recurrent theme pertains to the selectivity and ritualisation of participatory processes, which are frequently characterised as lacking adequate resources, or centred on one-off events as opposed to sustained dialogue. Civic actors engaged in mobilisations related to climate, the right to housing and the right to the city have described institutional openings, including *Consigli Comunali Aperti* (open town council meetings), popular motions and climate-justice regulatory tools, as façade gestures whose practical influence remains limited.

> "We know that talking about participation is easy, but doing it is difficult because it is a complex, multifaceted social composition in a society where the tendency to participate has also decreased compared to the past, and the means of communication have changed. It is not easy, but when we intervene, especially in a residential context, we believe it is essential not to take fictitious paths. If participation is to be done, it must be done, I think, by accepting contradictions and conflict, otherwise it can become a bit of a cosmetic measure that is applied on top, and then that is an area where many political forces seek their own consensus." (R12, Activist involved in a local civic group focused on housing, immigration, social inclusion)

This perception of non-responsiveness is particularly evident in the context of major regeneration projects, as evidenced by disputes regarding Bosco Ospizio and via Paradisi/via Turri (see chapter 1.2). Activists emphasised that proposals aimed at preserving spontaneous woodlands or maintaining ecological corridors were systematically overlooked. Furthermore, despite municipal commitments to climate discourse, NGOs and activists criticise that urban planning is not able to alter development decisions despite changing priorities and continues to prioritise land take and construction-led value creation, thus contradicting stated environmental objectives. Despite formal opportunities to present nature-based proposals or ecological evidence, interviewees recount that municipal responses reinforced the inevitability of already-approved projects, leaving little scope for renegotiation. Public-private arrangements – such as urban-transformation companies or private investors holding pre-existing legal agreements – further delimit institutional room for manoeuvre, contributing to the sense that participation cannot influence already-codified development trajectories.

Such tensions have been cited by groups advocating for climate justice and housing rights movements, who frame participation as a "fetish" rather than a substantive opportunity for co-decision.

> "…this difficulty, this communication deficit with regard to Via Paradisi and the redevelopment project, which in itself is not necessarily wrong, but the way in which it was proposed or imposed is certainly wrong in our opinion, because it did not involve the residents in the process. We would say that participation, as it was proposed, often seems like a "fetish" rather than something that truly offers the opportunity to participate." (R12, Activist involved in a local civic group focused on housing, immigration, social inclusion)

Furthermore, the structural underfunding of participation is presented as a significant governance constraint. Several project schemes – such as the PINQuA, financed through the NRRP – formally require social-dimension involvement yet provide no dedicated resources for immaterial measures like participation (Wolfgring 2023), leaving public administrations unable to accompany residents through complex regeneration transitions. Several interviewees have placed such challenges within a broader political context. The devolution of housing competencies to regional and municipal authorities without concomitant financial transfers creates governance bottlenecks and limits municipal capacity to maintain participatory commitments.

Overall, the findings portray a governance landscape where participatory infrastructures are abundant but frequently unable to shape substantial outcomes. The tension between Reggio Emilia's participatory tradition and contemporary experiences of procedural, selective or symbolic participation emerges as a central theme, particularly in contexts where environmental and housing justice claims intersect with redevelopment logics.

3.3 (In)equity (distributional)

Uneven access, mixed outcomes: the contradictory distributional effects of retrofitting incentives

Distributional inequities emerge across several domains of housing and environmental policy in Reggio Emilia, including affordability pressures, uneven access to retrofit incentives, and disproportionate impacts of regeneration on vulnerable residents. However, among all interventions discussed by interviewees, the Superbonus 110% scheme stands out as the most explicitly identified driver of distributional (in)justice. Across multiple accounts, the scheme is seen as producing significant unevenness in access, outcomes, and long-term benefits, reinforcing rather than alleviating existing inequalities at multiple scales.

Indeed, several interviewees expressed strong ambivalence about the Superbonus 110% – some stressed that it favoured those with the financial and administrative capacity, as well as organisational stability to access the incentives (R04, senior municipal officeholder; R11, representative of a local property owners' association). However, where it was implemented in multi-dwelling contexts – such as large condominiums and public and cooperative housing – the policy was found to have progressive distributional effects. A professional who has

overseen numerous Superbonus projects positively notes that it has enabled energy retrofits that would otherwise have been economically unfeasible for residents of low-income private condominiums, public housing and rental housing cooperatives (R15). In these cases, residents experienced significant improvements in thermal comfort and energy expenditure, resulting in a substantial transformative impact.

> "We poked our noses into flats that you would say these people could never have afforded to renovate in their lifetime. We saw situations, flats that were in a truly appalling state, walls that were rotten, people who had no way of doing anything about it. So, from that point of view, it was an extremely positive thing because certain renovations could never have been done if it weren't for this system, which of course also had its problems". (R15, Technical professional involved in energy retrofit projects)

It is important to emphasise that energy inequality produces broader social inequality: renovated dwellings increase in value while non-upgraded units stagnate or decrease in value, thus reinforcing long-term differences in wealth, well-being and housing stability. In an attempt to address this issue, an executive representative of a local housing cooperative (R08) reported that they internalised redistribution by modestly increasing rents in properties where savings had been made, to finance works where incentives could not be deployed.

Both administrative personnel and professionals emphasised deficiencies in the design of the Superbonus 110% scheme, converging on the notion that its universal design, independent of income, social need or restrictions on the effective use of the dwelling, coupled with high administrative barriers, had regressive effects. As has been repeatedly commented also during the ReHousIn Policy Lab (see Rehousin, 2025), there is broad consensus that those who possessed both the financial means and the social capital to access funds more quickly have benefited more. As data moreover show (ENEA, 2024), the Superbonus was largely utilised by owners of single-family houses and functionally independent units, and in many cases regardless of whether the property served as their primary residence. However, as pointed out by several interviewees, in Reggio Emilia, the stakeholders' ecosystem was instrumental in shaping the allocation in a way that diverged markedly from the national trend.

In an effort to enhance the efficiency of the allocation of funds for the retrofitting of public housing estates, the local public sector has implemented measures to streamline the process. What proved to be crucial was the fact that the municipality supported retrofit interventions in condominiums with mixed (public and private) ownership situations, where private owners also were in favour of retrofitting. Furthermore, ACER Reggio Emilia, as the entity managing the city's public housing stock, played a key role in the implementation of the bonus. Nevertheless, the presence of an intermediary actor proved to be of pivotal significance. IREN (see appendix 5.2), a public-private multiutility in which the municipality holds a 50% stake, was responsible for coordinating all aspects of reporting and organising a network of local companies, acting as general contractor at the city level, as well as providing advance funding for all interventions. This allowed IREN to exert a significant influence on the construction sector. In this context, building contractors had a natural tendency to prioritise large-scale condominium projects over smaller, lower-risk alternatives. This decision was influenced by the financial security provided by a reliable partner reducing the risks associated with such ventures. IREN functioned as a direct financial intermediary between the central state – the Superbonus was designed in a

highly top-down manner – and the beneficiaries (i.e., the private citizens, but also public and cooperative actors).

> "The company coordinated all aspects of reporting and hiring companies, mainly in the local area. It acted as the general contractor for all 110 [note: Superbonus 110%] condominium initiatives, which were very significant projects. So, you could say that it was a tool used to coordinate and lend credibility to the 110 operations, which were very complex to manage in themselves. I won't hide the management difficulties from you – I encountered them all – because there were issues of administrative management interpretation and financial anticipation. It was necessary to anticipate all the financial interventions. Iren played that role, as did Eni and other multi-utility companies, but there were few private companies with this level of activity, as there was significant cash flow in terms of resources introduced, tens of millions invested, and then withdrawn when the credit was transferred. Advance funding is a delicate matter. It was an important role for the Turin, Reggio and Parma area, which comprises member municipalities. In my opinion, IREN played an important role in connecting the law and its complexity with end users, i.e. citizens who were experiencing difficulties. I imagine a condominium administrator who has to interpret the law and get started". (R04, Senior municipal officeholder, urban regeneration and sustainability)

The impact of incentives for energy retrofitting on tenure security in the private rental market is also a significant factor highlighted by interviewees. As a representative of a tenants' union (R06) has noted, renovation constitutes a rare exception to the prevailing norm of protecting tenants from eviction after the initial term of the rental contract has ended (the first term before tacit renewal is four years for standard contracts and three years for controlled rentals).

> "There is an issue: beyond the Superbonus, renovation that is incompatible with the tenant remaining in the property is one of the reasons – one of the few reasons – why I, as the owner, can terminate my tenancy agreement at the first expiry date, giving that type of justification". (R06)

The interviewee moreover reports that some landlords have been exerting pressure on tenants to vacate their apartment – prior to the termination of the initial contractual period –, as they wished to retrofit using the Superbonus incentive.

> "Linked to the 110%, we had a few cases where several tenants came here to talk because their landlords told them they had to leave because they had to renovate, even though the contract was still in force: it had not yet expired. So, they were trying to find a way to get rid of them for that reason". (R06)

Furthermore, representatives of both the landlords' association and the tenants' union (R11; R06) have reported that the energy class of dwellings was included among the criteria for requesting an increase in rent during the most recent open discussions on the territorial agreement (see *canone concordato* in appendix 5.2). This finding suggests that, even within the more regulated rental typology, energy retrofitting could be among the factors contributing to rising rents in the future. The distribution of benefits from energy retrofitting in Reggio Emilia is thus ambivalent. It is evident that tenants residing in dwellings that have undergone retrofitting measures experience a reduction in energy expenditure and increased thermal

comfort. However, it must be noted that these financial benefits are eroded by less tenure security and by an increase in rents, even within the confines of regulated contractual agreements.

3.4 Political mobilization

Path-dependent conflicts and grass-roots mobilisation: How planning legacies shape contemporary conflict

Interviewees describe Reggio Emilia as a city with a long and stratified tradition of political mobilisation, particularly around the right to housing and more recently the right to the city and climate justice. Mobilisation takes multiple forms – environmental activism, housing-rights struggles, scholarly advocacy – often overlapping and reinforcing each other. Representatives of civic groups have emphasised the manner in which mobilisation around the issue of housing intensified during the years of the subprime crisis (R12). This period saw grassroots groups engaging in anti-eviction actions, mutualistic support, and the occupation of vacant properties. Civic groups nowadays frame their trajectories as moving from the right to housing towards a broader right to the city – claiming not only access, but participation in the city's development and management – explicitly linking housing insecurity, welfare infrastructures, and ecological questions (R09; R12).

> "From the idea of the right to housing, we tried to expand on the right to the city, so the idea that if it is true that the city is built by the people who live there, then we can also try to claim not only a right of access but also a right to participate in some way in the development and management of the city. From this, we opened to a whole series of issues that necessarily intertwine with those concerning the environment and ecological issues, but also the whole sphere of welfare, including schools, healthcare, educational services and transport". (R12, activist involved in a local civic group focused on housing, immigration, social inclusion)

Parallel to housing struggles, there has been a growing mobilisation on environmental concerns. Traditional environmental associations such as Legambiente and WWF operate alongside more recent movements like Extinction Rebellion. These groups are joined by neighbourhood assemblies, informal committees and community-based social centres, creating hybrid forms of mobilisation. This results in campaigns that combine public demonstrations, research-informed advocacy, media engagement and formal institutional interaction.

The respondents describe a city in which institutional decision-making frequently triggers organised collective responses, especially when residents perceive tensions between long-standing planning decisions and current social or ecological priorities. It has been reported by both administrative and civic representatives that environmental conflicts are frequently rooted in long-standing, path-dependent planning decisions whose contemporary implementation clashes with current sustainability norms.

> "So, let's say that conflicts over environmental issues often arise, I would say almost all of them, over the implementation of previous urban planning decisions that are no longer considered appropriate for the present day. So, the latest major committees and public

discussions in the city on environmental issues concern green areas that may have been designated 40 years ago for building expansion, but which have been forgotten over the years. Then the owner, the investor, let's say, decides to put their money into it. [...] interventions which, despite legal action by the municipality against the owners of the areas, have retained an irrevocable building right. This generates a fundamental misunderstanding among the population, because it is clear that today we all talk about sustainability, but then someone takes a 5-hectare area and builds a nice supermarket on it: this is difficult to understand from a common-sense point of view when it comes to the environment. On the other hand, there are legal constraints that are insurmountable for us, in the sense that when someone sues the developer and goes before a Regional Administrative Court, the Regional Administrative Court rules in favour of the developer". (R01, senior municipal officeholder, public works and housing)

Indeed, the dispute around Bosco Ospizio (see chapter 1.2) has emerged as the most emblematic contemporary case of political mobilisation in Reggio Emilia. In this initiative, various social actors have converged to protest the commercial development of a long-abandoned plot where spontaneous woodland grew over the course of two decades. Legambiente, Extinction Rebellion, local residents, scholars, and long-standing environmental activists engaged in a dynamic organisational structure centred on the *Assemblea del Bosco Ospizio*. It is important to note that mobilisation in this context is not confined to the domain of 'green' protection. Rather, it is articulated as a struggle over integrated issues such as urban liveability, access to services, climate justice, and the distributive outcomes of regeneration.

"It is also true that we are part of the Bosco Ospizio assembly. As far as the Ospizio issue is concerned, we always come back to the topic of land consumption in favour of large-scale distribution. [...] We have joined forces with other organisations and all the citizens who see this green area as a 'lung' of the city that should be protected, not only for us, but for future generations too. Unfortunately, dialogue with large retailers and even the municipality has not always been as fruitful as we had hoped. [...] Even though we collected more than 40,000 signatures from people who said they did not want it, and despite the efforts of so many citizens, top-down politics still leaves people feeling uninvolved and excluded." (R05, Senior representative of a local environmental NGO)

The range of actions encompasses institutional engagement, active participation in council debates, as well as sustained surveillance of the area and direct civil disobedience. Despite extensive public support, as well as the undertaking of local institutional justice action, "acquired building rights" (*Diritti edificatori acquisiti*) impose constraints on the municipal authorities' capacity to manoeuvre, thereby becoming both a legal argument and a political flashpoint in this dispute. The persistence of irrevocable development rights has been a source of frustration for residents, who find themselves unable to reconcile the construction of new commercial facilities on green areas of a high environmental value with the prevailing municipal discourse on sustainability.

Furthermore, environmental activists highlighted the historical lineage of this struggle (R09; R10). The Bosco Ospizio dispute has been influenced by the legacy of previous environmental conflicts in the city, including campaigns against developments at Via Luxemburg and the Quinzi–Piaggia park, where commercial development occurred on green corridors and former

parks. The case thus represents a broader cycle of urban-environmental contestation extending over more than a decade. Consequently, Bosco Ospizio serves as a prime example of the potential for civic mobilisation, while simultaneously highlighting the inherent limitations of institutional responsiveness.

3.5 Socio-ecological impacts/benefits (positive)

Housing energy retrofit produces tangible socio-economic benefits and housing comfort

Housing energy retrofit in Reggio Emilia has been described as producing tangible socio-economic benefits, including for low-income households. Interviewees have underlined that even if actual energy savings often are below expected savings (particularly where energy price increases offset savings), retrofit interventions structurally reduce exposure to energy poverty by lowering consumption and improving comfort.

> "Maybe we expect 100 and get 70, but 70 are achieved; that is, the improvement in terms of reduced bills is there when you replace a window, an old boiler, when you redo the external insulation, when you replace the roofing membrane with innovative materials. That is, the interventions in themselves always generate a positive impact; then of course we can discuss about the magnitude of the impact and whether it is commensurate with the investment made and with expectations." (R01, senior municipal officeholder, public works and housing)

Others emphasise that benefits not only regard environmental performance but also cost containment for economically vulnerable tenants in public housing contexts, whose energy expenses often outweigh the cost of rent itself. In Reggio Emilia, energy retrofit thus emerges as an important factor contributing to housing affordability in contexts of increased vulnerability.

> "[…] it becomes above all an issue of countering the phenomenon of energy poverty; this is the main objective, thereby containing housing costs because they are not sustainable, especially since the type of users we have is very poor and pays very low rents but instead has very high running costs, particularly for energy for heating. […] wellbeing and savings are the two main things residents notice straight away". (R03, executive representative of the local public housing provider)

Collective redistribution of savings through energy interventions

Several interviewees have mentioned mechanisms through which the benefits of energy retrofit and other energy-related interventions are being redistributed to a more collective level. An example of this has occurred in a context of cooperative housing based on undivided ownership, where economic savings generated through the retrofit of some dwellings (financed through the Superbonus 110% scheme) were redistributed to support maintenance in non-retrofitted dwellings:

> "We took two or three households as a sample and said, give us all your bills from previous years and the ones from this year; we saw that they were spending half, some even 70%

less in costs. So then we said, let's redistribute some of these savings, so that the cooperative can carry out other maintenance works in the houses where the 110 interventions were not implemented. So, we therefore increased the rents a bit, especially in the buildings where the 110 actions were carried out. […] the increase was significant — around 60 to 100 euros — but starting from rents well below the agreed thresholds". (R08, executive representative of a local housing cooperative)

Similarly, in a public housing context, an energy community is being established (see also chapter 3.8), intended as a collective infrastructure rather than as means to generate cost-savings for individual households:

"The characteristic of this energy community […] will be not so much to leave the tenant an annual saving that does not make much difference – because we are talking about 100 euros per year – but rather to use it to develop resources that are then transformed into social activities in the area. So those resources that come from the activity of the energy community will be used within that territorial context for activities shared with citizens and with the municipality's social services". (R03)

Green interventions and NBS as infrastructures enhancing wellbeing and social inclusion

Nature-based solutions and green infrastructures have been frequently associated with improved wellbeing. Interviewees underline the importance of NBS interventions for citizens, given conditions of increased climate stress:

"Depaving operations, reforestation, or other forms of adaptation of public space should certainly be pursued precisely for people's basic wellbeing – even just being able to leave the house in summer without dying from the heat, for the elderly, children, etc. – I think the benefits by now are obvious even to the most skeptical ones." (R01, senior municipal officeholder, public works and housing)

Similarly, community gardens and requalified public spaces have been mentioned as important for promoting social interaction, particularly for fragile groups:

"Community gardens, for instance in Compagnoni and in the Rosta Nuova, have encouraged social inclusion and contact with nature, especially for the most fragile groups, i.e., the elderly and low-income families". (R05, senior representative of a local environmental NGO)

Another recent positive example cited regards a former parking lot transformed into a *piazza*:

"The intervention carried out in Piazza del Popol Giost. It used to be a parking lot, on a somewhat sensitive street: close to Via Emilia, a spot where asylum seekers and immigrants would gather, a hotel that hosts asylum seekers…a very multicultural place considered problematic. They collaborated with the Via Roma committee and rebuilt the square in a "green" way: new seating, trees integrated into the seating…There has been a lot of criticism, but from the citizens' point of view the impact has been positive: from a parking area it has become a square." (R09, an activist involved in a local environmental civic group)

3.6 Socio-ecological impacts/harms (negative)

(Subtle) mechanisms of displacement and pricing out – but no green gentrification

Energy retrofit – including but not limited to the Superbonus 110% – has been mentioned as a clear price driver, since "*many renovated with the aim of re-entering the market at higher prices*" (R01, senior municipal officeholder, public works and housing)**.** This dynamic is further amplified by legal provisions which allow the early termination of rental contracts in cases of renovations incompatible with continued occupancy, which "*is one of the few reasons that allows landlords to terminate a lease at the first expiry*", as a representative of a tenants' union (R06) explains. He further elaborates on the landlords' perspective, highlighting an inherent problem linked to public subsidy schemes like the Superbonus, namely that benefits are retained by private individuals instead of being collectively redistributed:

> "I receive an advantage from the state which I then turn into an additional advantage – when I carry out the works, I let the rental contract expire without renewal; at that point I have my renovated apartment, and at that point I ask for more. I can ask for more because the market is free." (R06)

While retrofit thus clearly appears to be contributing to increasing housing price dynamics, the hypothesis of green gentrification in Reggio Emilia has not been confirmed by the interviews. NBS and the element of green infrastructure within broader regeneration interventions appear to be much less relevant. The interviewee (R06) moreover acknowledged that "*if I redevelop a neighbourhood – also with green spaces – it is obvious that this has repercussions on the market*" (R06), however, most respondents don't believe that green infrastructure on its own plays a crucial role. This is linked also to the fact that Reggio Emilia has a rich and widely distributed green heritage, as the representative of a local property owners' association (R11) states: "*I don't think that's the case* [note: green gentrification] *in Reggio Emilia; we already have many parks, and I hope they will remain.*" One respondent, an activist involved in a local civic group focused on housing, immigration, and social inclusion (R12), further underlines the value of parks in Reggio Emilia as spaces that are used across the demographic and socioeconomic spectrum. He states that these spaces function as generators of encounters between

> "different worlds […] perhaps there are projects, not necessarily green ones, that can have this kind of effect, with a tendency to change the composition of certain neighbourhoods; but it seems to me that with green spaces this is not the case – there are parks that, the more I experience them, seem to me to be very heterogeneous in how they are used." (R12)

Regeneration through demolition

One of the most conflictual recent (and currently ongoing) interventions, as introduced in chapter 1.2, regards via Turri/via Paradisi (Quartiere Stazione), where the regeneration project "R60" foresees the expropriation and demolition of existing housing and its replacement with new – mostly social housing (ERS – *edilizia residenziale sociale*, see appendix 5.2). An affected resident – and member of a local residents' committee (R14) created to safeguard the present owners' interests – defines the operation as "*objectively anachronistic*", criticising both the criteria and legitimacy of the displacement plans:

"Essentially, we are talking about replacing some people with other people. On what basis? What is the criterion that makes one person better than another? How do we decide that this person will take better care of the neighbourhood? Is it a punishment? Are we not good at managing the neighbourhood, so now it's time for someone else to do it in our place?". (R14)

He moreover contests the project's ecological rationale: "*from an ecological point of view, I see nothing ecological in demolishing houses that are perfectly standing*" (R14), and perceives compensation mechanisms as inadequate, resulting in worse housing conditions for those affected: "*you give me €100.000 for 200m² and then ask €200,000 for 60m². This is the risk."* (R14).

Other interviewees perceive the situation from different perspectives, stressing that the neighbourhood suffers from severe issues related to physical deterioration, public order, and informality. As argued by the representative of a tenants' union (R06), some owners have welcomed the opportunity for relocation, as their homes had become unsellable and living conditions deteriorated.

"They said, 'we live badly here, but no one will buy this flat; what can we do?'… Which, in my view, having been given that possibility, they were quite happy, because at least it gave them a hand to get a flat elsewhere." (R06)

He further stresses that overcrowding and social vulnerability, particularly linked to the strong – and partly informal – influx of an immigrant population in the neighbourhood over the past years, have been produced by exploitative practices. He noted that "*it was Reggio residents themselves who took advantage of immigrants, their weakness and desperation – who didn't know where to go –, which created the phenomenon*" (R06). At the same time, institutional actors acknowledge governance and communicative failures that have contributed to intensifying the conflict.

"Difficulties that have occurred so far are partly due to a mistake by the administration, for which I take responsibility – that is, my mistake, since I held the political mandate – in not having taken sufficient care of communication before the project became public. And so this immediately generated a non-positive climate." (R01, senior municipal officeholder, public works and housing)

The implementation of construction works

Negative impacts due to the implementation of interventions, particularly during construction phases, have moreover been noted by several interviewees. Substantial retrofit and regeneration work has generated extended disturbances, as a technical professional involved in energy retrofit projects (R15) explains:

"We have had condominiums where people remained for months - not to say years - caged in by scaffolding, with residents so exasperated that at a certain point they even cut the scaffold netting because they wanted to see outside; sometimes the air conditioners were dismantled because work had to be done, so during the summer they were constantly without air conditioning". (R15)

Moreover, in some cases, temporary (or permanent) relocation has been necessary, proving particularly difficult for households with little economic resources and social support networks, as underlined by a senior municipal officeholder (public works and housing):

> "The real difficulty is making an invasive intervention coexist with residents who, in any case, do not have many resources – it's not like one can say, "they're fixing my house, so I'll go live with my aunt, my mother, a friend." Often these are situations where there is no family support network, or the network is not able to provide the support that would be needed at that moment during construction; therefore, it's about managing the human side of construction work.". (R01)

3.7 Tensions and power dynamics between stakeholders/actors

Colliding priorities and unequal power in housing and environmental governance

Tensions among the different stakeholders in Reggio Emilia's housing and environmental domains influence policy outcomes and governance practices. These dynamics emerge from divergent interests and asymmetries in decision-making power among different levels of public institutions, as well as unequal access to information among residents, private actors, and environmental movements. The interviews reveal how these tensions culminate in environmental conflicts and tensions between affordability and sustainability goals, as well as in planning practices.

Environmental conflicts represent a primary category of tensions. Activists engaged in the defence of sites such as Bosco Ospizio have reported disputes with municipal authorities, who are perceived as reluctant to acknowledge the ecological value of contested areas.

> "The most recent experience is of conflict with the local administration over an urban regeneration plan involving the destruction of four hectares of natural woodland that has developed in an uncultivated, urbanised area. Demolitions date back thirty years, and the area has been abandoned for twenty years. Nature has flourished there without any investment, planning or projects, and now they want to destroy it. We therefore presented these arguments to the City Council, but they essentially ignored them, stating that the planned scheme is sustainable and inevitable from an economic point of view because the investor and property are private and the agreements were in place when the property was sold twenty years ago. We pointed out that agreements can always be revised because the world has changed in the last twenty years". (R13, Academic researcher and environmental activist)

Public and political responsibility for environmental preservation is subject to regulatory constraints and market dynamics, generating frustration among civic groups and resulting in a loss of political engagement. Nonetheless, municipal authorities have limited options for redirecting existing building rights, even when specific developments are widely contested, as previously mentioned.

A "paradox of transition"

A further set of tensions arises from the structural contradictions between environmental objectives, affordability, and social equity in the housing sector. Professionals active in the public housing sector have articulated the challenges associated with adhering to stringent energy efficiency standards while ensuring that construction costs do not exceed available budgets and that the resulting technological systems do not present unnecessary burdens for low-income residents.

> "Is hyper-insulating a building really worth it in terms of investment costs? So, in my opinion, we need to take a considered approach to things. In fact, the buildings we have designed in this case seek to strike the right balance between the available resources. The primary objective is certainly to provide people with a roof over their heads, first and foremost, and then to reduce the running costs for families as much as possible, but without burdening them with additional costs. And that should be a crucial objective". (R07, Private-sector professional involved in urban regeneration)

As mentioned in several interviews (R01, senior municipal officeholder, public works and housing; R07), a "paradox of transition" has emerged, namely that sustainable options remain unaffordable, and ecological compliance increases building costs beyond what controlled rents can support. As one respondent highlighted, residents of public housing estates moreover encounter obstacles that are associated with the technical complexity of contemporary systems. Their limited familiarity with sophisticated ventilation and heating technologies often diminishes the efficacy of ecological upgrades and contributes to the premature failure or lack of usage of such systems, highlighting how technological infrastructures can perpetuate inequalities by presuming skills that not all users possess and increase drastically the costs. There is the risk that substantial resources will be transferred not to direct policy targets, with the actual benefit being marginal compared to the crucial value of the home, but to the technological and operational supply chain implementing the retrofit.

> "I believe that green logic must also include the sustainability of the overall resources at stake, which also include the social, economic and managerial resources that come downstream of users. [...] The risk is that resources will be transferred not to the primary beneficiary, the assignee or tenant of that dwelling, but to the economic-managerial and technological-industrial supply chains that create their long tail on that technology. Technology must certainly be at the service of man, first and foremost "homus habitantis". (R07, Private-sector professional involved in urban regeneration)

Finally, municipal officials (R01, senior municipal officeholder, public works and housing; R04, senior municipal officeholder, urban regeneration and sustainability) highlight a persistent misalignment between municipal-regional and national levels of governance. National funding frameworks tend to favour high-visibility projects over the routine maintenance essential to public housing management, while regional bodies (in the case of Reggio Emilia) share strategic goals with municipalities but lack stable financial resources. This results in implementation issues, where institutional actors converge on principles but diverge in practical capacity, generating delays, fragmentation, and uncertainty in long-term planning.

3.8 Innovative governance mechanisms

Innovation in planning tools and incremental policy-learning

Innovation in policymaking clearly emerges from the introduction of new quality-based and performance-oriented planning tools in Reggio Emilia in recent years. One of these instruments are the *accordi operativi* (operational agreements), which substitute fixed indexes for specific sites with tailored project approvals, requiring the project applicant to demonstrate quality across different (social, environmental, spatial, landscape, and economic) dimensions (R02). As a senior municipal official (urban regeneration department) explains, *"the index results from the quality of the project"* instead of being a predefined entitlement (R02). As another interviewee (R15, technical professional involved in energy retrofit projects) confirms, "*With the instrument, you actually have the possibility to assert elements of quality; there is the possibility to implement it through competitions, including design competitions.*" The *accordi operativi* moreover require a social housing (ERS) quota of 20-30% to be realized by developers, thus directly linking planning approval to social and affordability-related aims.

A further innovative tool adopted in Reggio Emilia is the *Riduzione dell'Impatto Edilizio* (RIE, Reduction of Building Impact) index, which operationalises climate adaptation measures in a binding way:

> "It is primarily aimed at reducing the urban heat island effect and at addressing increasingly pressing issues related to flooding. In practical terms, it is an index that is calculated through an algorithm, which we have borrowed from the original model, from the Municipality of Bolzano. The index is calculated depending on the type of intervention and the use that is being introduced, and it must reach a minimum threshold. Therefore, I can no longer think, for example, of having a completely impermeable courtyard area. I must in any case leave deep, permeable portions or provide a certain number of trees. Alternatively, if I cannot do so in a traditional way, I can install a green roof. I can use rainwater harvesting systems as well". (R02, Senior municipal official, urban regeneration department)

Continuous ecological networks have moreover been introduced at the urban scale, consisting of a mapped system of green nodes and corridors across the municipal territory. These are accompanied by binding provisions for private owners, who are required to ensure that green spaces within their properties *"safeguard, restore or implement"* missing links in this network, thereby allowing its incremental completion over time (R02). Additionally, mobility-related regulations have been introduced, which allow for the complete waiver of mandatory parking requirements in areas of high accessibility (R02). A further innovative planning tool consists in incentivising temporary uses in areas where properties cannot yet be definitively transformed. In such contexts, the municipality actively promotes the installation of activities and services with a social character, intended as instruments to mitigate social tensions: by introducing services, cultural initiatives or community-oriented activities, they operate as social "presidia" or magnets, attracting people from outside the neighbourhood and fostering new forms of encounter and visibility (R02).

As regards public housing, social management tools have been introduced as early as 2007, as an executive representative of the local public housing provider (R03) explains. Initially, these were aimed at mitigating conflict and supporting tenants with fragilities, and

subsequently broadened to include project-related tasks addressing social dimensions and implications, as well as the facilitation of transformation processes:

> "We have had a social management service since 2007. [….] we have three or four people whose profession is social management, which over time has also become social planning. They started out as social mediators; today, it is much more developed, because it goes beyond social mediation activities – that is, conflict regulation – and today they also work on project design aimed at understanding problems and needs, and on prevention in relation to issues of social inclusion. All of this is also part of the interventions […] at the moment, we have a programme for adapting dwellings from the point of view of accessibility where older people with disabilities live, and therefore there is the issue of understanding what the problems and needs are, because this then has to be translated into projects related to accessibility […]." (R03, executive representative of the local public housing provider)

Lastly, an example of tentative innovative policymaking has been the introduction of a special zoning category for co-housing projects some years ago – foreseeing large, shared spaces and a form of indivisible ownership – in 'interim areas', "*areas of stitching or reconnection, perhaps between productive and residential zones*", where regular residential use was not permitted. The category was recently abandoned due to limited adequate proposals and regulatory misuse through potential developers.

> "Unfortunately, over the years the proposals that came in were always trying to get around these rules. So they might say, yes, I'll give you a residential project with a shared laundry, a shared children's play area, but in the end they were private residences." (R02, senior municipal official, urban regeneration department)

However, the examples discussed above demonstrate a policy approach in which experimentation, trial and error, and policy learning is practiced, and planning evolves through incremental adaptation in response to feedback and transforming priorities and needs over time.

Innovation through collaboration and strong actor networks

Tying in with the previous section, a recurring and peculiar driver of innovation in Reggio Emilia lies not only in policy instruments but also in the actors' ecosystem, characterised by collaborative arrangements encompassing the public administration, housing providers, universities, civic groups, industry, and intermediary figures. Such collaborations have proven essential in overcoming typical bottlenecks in implementation. One example of this concerns the application and upscaling of the Superbonus 110% scheme, for which the role of the local multi-utility company IREN (see appendix 5.2, and chapter 3.3) demonstrated to be crucial. Acting as a general contractor, IREN bundled financial intermediation and technical coordination, enabling economies of scale and reducing risks for both public and private actors. IREN addressed one of the main structural obstacles of the Superbonus – i.e., cash-flow constraints and financial uncertainty for construction firms, substantially reducing their risks (R04, senior municipal officeholder, urban regeneration and sustainability) – by advancing payments and managing bank relations directly. As another interviewee, a technical professional involved in energy retrofit projects (R15) explains:

> "IREN paid the companies every month, regardless, covering the progress of works […] and then independently handled the whole issue of credit transfer with the banks […] they managed to find a financial balance, and that made them a very important." (R15, Technical professional involved in energy retrofit projects)

Collaboration was also crucial in terms of its application to mixed condominiums (combining public and private ownership), which are typically a major hampering factor in housing retrofit (both in reaching consensus and in implementation). To resolve this node, the municipality and the public housing provider ACER adopted a shared governance approach – wherever technical and legal conditions allowed, the public actor would systematically vote in favour of the intervention and co-finance it. This enabled the retrofitting of dozens of mixed condominiums in the city (R01, senior municipal officeholder, public works and housing).

Moreover, collaboration has proven to be an important driver of technical innovation and experimentation in the public housing sector. ACER has an outstanding leadership, is strongly rooted in various European housing policy networks (its former President being the current president of Housing Europe) and has engaged in various partnerships with universities through European projects, testing integrated retrofit approaches that combine energy efficiency, material innovation, thermal regulation, and indoor comfort. Experimental projects have moreover targeted the mitigation of heat stress and urban heat island effects, demonstrating that research-based collaboration has informed building-scale interventions and potentially contributes to broader urban climate change mitigation strategies (R03, executive representative of the local public housing provider). Similar activities have been pursued by the municipality through cooperation with industry actors, such as Confindustria Ceramiche, within the framework of an EU-funded LIFE project focusing on bio-based materials and climate-adaptive building envelopes (R01, senior municipal officeholder, public works and housing).

Currently, an energy community is being set up in a public housing context in Reggio Emilia – one of the first of its kind in the country – explicitly linking green transition aims with social objectives. The intervention foresees the reinvestment of savings achieved through the energy community in the neighbourhood, using them for social purposes. As various interviewees (R01, senior municipal officeholder, public works and housing; R03, executive representative of the local public housing provider) stress, the objective is to finance collectively defined social activities – for instance, educational, recreational, or welfare-related services. Apart from economic, ecological, and social benefits, the approach contains less tangible positive impacts as well:

> "The idea that, within public housing, in a working-class neighbourhood, it is possible to install panels in the context of energy communities, with the aim of reducing energy costs as well as increasing sustainability, but also of generating a small, let's say, community return to be reinvested in social actions for the neighbourhood. Let's say, in the United States they call it energy democracy. Maybe we are a bit behind, but the idea, precisely, that something traditionally thought of as a weak point – that is, the fact that in working-class neighbourhoods there is often a concentration of public housing stock and therefore many social criticalities, and so on – can instead become a strength." (R01, senior municipal officeholder, public works and housing)

In parallel, local civic actors have sought to promote and facilitate access to knowledge on renewable energy communities through capacity-building measures. As the senior representative of a local environmental NGO (R05) underlines, efforts have focused on "*creating a general framework and supporting implementation*" through targeted training initiatives for technicians and the creation of collective solar purchasing schemes, intended to lower entry barriers for citizens and smaller actors.

Finally, collaboration is being discussed as a strategic horizon for future social housing (ERS) projects, particularly through potential attempts to combine the institutional role of public administration and ACER with the organisational and managerial expertise of the cooperative housing sector. This includes ongoing reflections on how cooperative practices – for instance, in terms of community organisation – might contribute to new public ERS developments. As an executive representative of a local housing cooperative notes (R08), this would require a coordinated effort among multiple actors, including ACER, cooperatives, and trade unions – "*there need to be many people who say, let's take a leap of faith and make a first test – the famous prototype*", while acknowledging that such an approach has so far remained difficult to implement in practice.

3.9 Tourism and market pressures

Affordability crisis and reconfiguring housing vulnerability

The interview material contributes to reconstructing a broader narrative of the changing socio-economic profiles of households affected by housing crisis in Reggio Emilia.

> "Over the last ten years, we have seen the city grow and become more densely populated. Above all, the issues that have emerged follow the trends seen in other Italian and European cities, i.e. problems related to rising rents and short-term rentals. Unlike in other cities, these are not only aimed at tourists, but also at other groups, such as temporary hospital workers and doctors. […] There are also problems such as the racialisation of the rental market, meaning that if you have a non-Italian surname, it is much more difficult to find a home to rent, even if you have one or two salaries and a full-time job. […] Reggio's population is changing: the university has expanded, and new faculties have been established. This has led to an increase in the number of students living away from home, who perhaps were not so numerous before. […] However, we can say that the problem is widespread: it is more difficult to find an affordable rental property, prices are very high, and it is an issue that creates a lot of debate and discussion, but it is difficult to find answers." (R12, Activist involved in a local civic group focused on housing, immigration, social inclusion)

During the 1990s and early 2000s, those most exposed to housing precarity were predominantly low-income families – typically single-earner households – who had been severely impacted by the economic downturn. A significant share of affected residents were migrants from North Africa, many of whom faced the paradox of being employed in the construction sector while simultaneously experiencing difficulties accessing adequate housing and, in some cases, contributing directly to the development of the very neighbourhoods in

which they could not afford to live. Since that period, the city has undergone substantial demographic and spatial transformations. Intensified urban development and increasing residential density have reshaped both housing demand and the social composition of those facing exclusion from the formal housing market. In line with trends observed in other European metropolitan areas, the profile of residents affected by housing vulnerability has progressively diversified. Today, even dual-income households struggle to access homeownership and are increasingly pushed into a private rental market characterised by rising costs, racialised patterns of exclusion, and early but significant impacts of studentification and touristification.

> "On the one hand, there is more than just the ecological transition; we should try to act for a just housing transition, away from the logic of the speculative market, where there are obviously many increasingly exclusionary dynamics that now prevail over ordinary housing rental options, even at free market values". (R07, Private-sector professional involved in urban regeneration)

Interviewees depict a long-term disconnection between housing costs and household resources that renders "affordability" a moving target and a source of routine injustice. Rising rents are perceived as structurally entrenched, with any downturns limited to moments of macroeconomic crisis, while purchasing power erodes in both nominal and real terms. This macro-backdrop inflects micro-practices in local Reggio Emilia rental market, inducing a general expulsion trend, in favor of new temporal forms of living in the city (e.g. students, temporal workers and, increasingly, tourists).

> "In my opinion, Reggio is a bit different: it's not like Milan, where at some point someone comes along and says, "I'm going to drive down property prices, buy it up, fix it up, kick out the poor people and speculate". No, that's not happening yet. But there is a creeping form of expulsion due to the dynamics of the cost of living and also inflation. […] because you're in a context where private salaries are historically very high, but they're very high in certain categories, such as metalworking, while in the service sector they're low and in line with the rest of Italy. […] let's say that being middle class in Reggio is definitely more difficult. It's a medium-sized city, but it has a very high cost of living. And so, if there is gentrification, it is due to this: that is, a housing market that is becoming increasingly elitist and tends to expel those who are struggling". (R01, senior municipal officeholder, public works and housing)

3.10 Gaps in Perceptions Between Civic Groups and Public Agencies

As has emerged, the relationship between the institutional sphere and civic actors is overall positive and cooperative but also entails moments of conflicts and frustrations. It has been observed by several activists for housing and environmental rights that top-down dynamics in participatory action limit the influence of bottom-up mobilisation (R09; R10; R12). Even large-scale campaigns – such as the collection of thousands of signatures, as has occurred in the Bosco Ospizio case – have limited impact in the face of existing legal obligations arising from private development agreements. Respondents from both civic and institutional backgrounds

highlight that communication failures have occurred (R01; R05) and that public consultation procedures are insufficient instruments to satisfy collective demands. Despite these tensions, political mobilisation has proven to be a persistent force in Reggio Emilia. Whether through environmental activism, housing rights advocacy, scholarly engagement or neighbourhood-level initiatives, collective action represents a crucial mechanism through which residents express opinions and concerns. While the capacity to change planning decisions (often taken by previous municipal governments) is limited, political mobilisation nevertheless plays a significant role in the public debate.

4 Critical Analysis: Reggio Emilia

Housing inequalities in Reggio Emilia are primarily structured along economic and tenure-based lines, with two groups emerging as particularly exposed – low-income households dependent on public housing or informal living situations and, increasingly, middle-income households against the backdrop of a widening mismatch between salaries and costs of living, and thus an ongoing erosion of purchasing power. Differently from larger metropolitan contexts, tourism and short-term rentals so far play a comparatively limited role. Instead, broader macroeconomic pressures – inflation, rising material and construction costs, and tighter credit conditions – are perceived as main stressors in determining access and affordability of housing. These dynamics are compounded by longer-term structural transformations, most notably the collapse of a substantial share of the cooperative housing sector in the city after the Global Financial Crisis, which historically provided affordable and intermediate housing solutions. The decrease in relevance of this intermediary segment has left a structural gap in the local housing system, alongside a near halt in the construction of new condominium housing.

At the same time, Reggio Emilia overall presents itself as a stable and well-functioning urban context. Most neighbourhoods investigated are of a decent quality, including a well-maintained housing stock, extensive greenery, and good mobility infrastructure. Its urban fabric is well composed and cohesive, with a compact city centre and adjacent first peripheries merging together relatively smoothly. Peripheral areas overall do not appear to exhibit extreme deterioration or socio-spatial marginalisation, reflecting a long-standing planning tradition, relative economic wellbeing, and continuous maintenance of the existing stock. The city moreover features a very rich ecosystem of actors, characterised by dense and recurring relationships, facilitated by the city's compact scale, political and institutional continuity, and long-standing personal acquaintance among key individuals. Cooperation is common, but conflicts also exist, for instance between public authorities and civic groups. Participation mechanisms are widespread but are sometimes perceived as formalistic, leading to frustration when civic demands are not substantively integrated into decision-making processes.

Against this broader structural backdrop, green transition policies interact unevenly with housing inequalities – as the analysis has shown, there are considerable differences between the types of policies and interventions that have been subject to this investigation – housing retrofit, nature-based solutions, and densification/urban regeneration.

Among the three, housing energy retrofit has demonstrated to be the most critical policy field as regards impacts on housing inequalities and distributive effects, as it has, as mentioned by

several interviewees, contributed to the emergence of pricing out dynamics in some cases. The most recent example is the Superbonus 110%, a state subsidized tax incentive scheme, where no policy mechanisms ensuring a socially just redistribution or mitigation of negative impacts have been put in place – e.g., a temporary cap on rent increases, or rental contract cancellation protections.

However, the case of Reggio Emilia also reveals how the involvement of a powerful intermediary – IREN (see appendix 5.2) – coordinating reporting, organizing local contractors, and, importantly, advancing funds – has reshaped the distributive effect of the incentive by channeling the interventions toward large condominium projects and effectively mediating between the central state and final beneficiaries. In other parts of Italy, ENI (see appendix 5.2) – together with other multi-utility companies – implemented a comparable approach; however, only a limited number of public and private enterprises were sufficiently capitalised to support similar initiatives, even when repayment was backed by a state guarantee. At the local level, the presence of such actors and their interconnected ecosystems played a pivotal role in enabling the widespread distribution of the incentive, thereby extending access to a larger and more diverse group of beneficiaries. Nevertheless, at the national scale, this pattern further illustrates the instrument's inherently regressive nature. Marked territorial disparities have emerged between regions where consolidated public-private stakeholder ecosystems were able to operationalise and channel the incentives, and those where the absence of such actors significantly constrained implementation capacity. These asymmetries underscore structural differences in local institutional strength, market maturity, and the availability of intermediary actors – factors that together shape unequal access to state-supported measures and ultimately weaken the policy's distributive effectiveness.

However – again, differently from many other Italian contexts – retrofitting incentives in Reggio Emilia have been applied extensively within the protected housing stock – particularly public and cooperative housing – resulting in tangible positive outcomes for tenants, such as an increase in wellbeing, thermal comfort, and reductions in energy costs for economically vulnerable households. In these cases, energy retrofit has thus clearly acted as a protective measure against energy poverty. Again, the readiness and institutional capacities of actors involved have been key prerequisites for reaching this outcome – in particular ACER Reggio Emilia, the public housing provider, and the municipality as owner of the public stock – whose past experiences, built on incremental learning in retrofit and a gradual streamlining of procedures over the past decades, allowed them to take advantage of emerging opportunities. This, as previous research on public housing regeneration has shown (Wolfgring 2024), is by no means granted in a national comparison.

As regards green initiatives in the narrower sense – urban greening and nature-based solutions –, no negative impacts have been perceived by interviewees, who quite unanimously reject the notion that such interventions have triggered green gentrification and who overall don't consider the factor 'green' as particularly relevant in existing gentrification dynamics in Reggio Emilia. Green amenities are not perceived as drivers of displacement or rent increases, nor as a differentiating factor in neighbourhood attractiveness which would selectively benefit higher-income groups. This perception appears to be linked to the fact that the city features an important green heritage of high quality, a large number of parks distributed across the city, allowing most residents to benefit from everyday green qualities within short reach. As has

also been stressed by several interlocutors, parks are used intensely and by socially heterogeneous groups, catering to a broad demographic spectrum.

Gentrification tendencies – which are widely perceived as having intensified over the past years – instead rather appear to be the result of a convergence of different structural factors, including inflation and broader costs of living increases, an increase in material costs and therefore a reduction of construction, and rising socioeconomic pressures in periods of economic crisis. These dynamics are further reinforced by longer-term path dependencies, most notably the aforementioned decline of most local housing cooperatives in the aftermath of the Global Financial Crisis in Reggio Emilia, with important implications on middle-income housing. Nature-based solutions in the city, however, appear to be largely decoupled from housing market pressures, acting neither as a trigger nor as an accelerant of displacement dynamics or rent increases.

As regards the impacts of densification and urban regeneration on housing inequalities, the picture is more ambiguous. Firstly, hard residential densification at the neighbourhood scale has not been encountered in Reggio Emilia. While the housing stock has increased over recent decades, this growth has largely followed demographic growth and has been spatially distributed across the city rather than being concentrated in specific neighbourhoods. Large-scale redevelopment projects of the city's industrial heritage – such as the recent transformations of the ex Reggiane into a technology and innovation cluster, and of the Polveriera into a cultural, educational, and creative hub, have entailed no residential component and thus do not constitute cases of residential densification in the strict sense. While indirect or spill-over effects on the surrounding residential fabric cannot be excluded in the future, so far these interventions have not directly contributed to housing-related pressures.

Past (Compagnoni) and current (via Turri/Quartiere Stazione) urban regeneration projects with a significant residential component have focused primarily on the recomposition and diversification of the housing offer, the upgrading of public space, and addressing social issues, rather than increasing residential density. In the case of the Compagnoni neighbourhood – characterised by a large density of public housing – the project involved demolition and new construction, necessitating temporary and, in some cases, permanent relocation. While these processes generated disturbance and temporary uncertainties, interviewees largely describe them as having been resolved without major conflict, supported by negotiation and institutional mediation. Quartiere Stazione, on the other hand, is a far more conflictual case, and has produced strong controversies even ahead of its implementation. Here, the municipality is dealing with a highly complex situation of informal occupation, arrears, overcrowding and exploitation of an immigrant population, as well as physical and social deterioration. Strong measures, including expropriation, demolition, a recomposition of the housing fabric – entailing the substitution of private with mostly social housing – and substantially a thorough reorganisation of the neighbourhood are being taken by the municipality. The endeavour has triggered strong contestation, particularly among some of the remaining private owners. Expropriation and demolition measures entail forced displacement, while the compensation offered is considered insufficient. In this case, even before implementation, tangible impacts in terms of housing inequalities can clearly be anticipated: while some households are likely to benefit from improved housing conditions and access to social housing, others face loss of property and displacement. Due to the delicate nature of the project, mitigation cannot rely on financial compensation alone, but also requires

substantial efforts of communication, mediation, and social accompaniment both in managing the transition towards a newly composed neighbourhood and in addressing emerging grievances.

5 Appendix 1 – Glossary

5.1 Abbreviations

ACER	Azienda Casa Emilia-Romagna, see also 5.2
ENI	Ente Nazionale Idrocarburi, globally operating Italian energy company focused on producing and supplying oil, gas, and low-carbon energy
ERP	Edilizia Residenziale Pubblica, (Public Housing), see also 5.2
ERS	Edilizia Residenziale Sociale (Social Housing), see also 5.2
Legambiente	Major Italian environmental NGO operating at the national and local levels
MEF	Ministero dell'Economia e delle Finanze (Ministry of Economy and Finances)
MIMS	Ministero delle Infrastrutture e della Mobilità Sostenibile (Ministry of Infrastructures and Sustainable Mobility)
PIERS	Programma Integrato di Edilizia Residenziale Sociale (Integrated Social Housing Programme), see also 5.2
PINQUA	Piano Innovativo Nazionale per la Qualità dell'Abitare (National Innovative Programme for Housing Quality), see also 5.2
PNRR	Piano Nazionale di Ripresa e Resilienza (National Recovery and Resilience Plan – NRRP)
PRU	Programma di Riqualificazione Urbana (Urban Regeneration Programme), see also 5.2
PRG	Piano Regolatore Generale (General Master Plan)
PSC	Piano Strutturale Comunale (Municipal Structural Plan)
PUG	Piano Urbanistico Generale (General Town Plan)

5.2 Terms and Concepts

ACER	Azienda Casa Emilia-Romagna, the network of provincially organised public housing agencies operating in the Emilia-

	Romagna region; in this study, ACER (or ACER Reggio Emilia) refers to the agency responsible for managing social housing in the province of Reggio Emilia.
Bonus facciate	A national Italian tax incentive (introduced in 2020) providing tax deductions for the renovation and restoration of building façades, aimed at improving urban building quality.
Canone concordato	Type of controlled rent contract. The Italian rental sector was reformed by Law 431 of 1998, which abolished rent control in the private market and introduced 4 new rental contracts typologies: a) The standard four-year lease (contratto ordinario), which automatically renews for more 4 years if not terminated; b) Mid-term rental rental (contratto transitorio), applicable only when temporary accommodation is required by tenants or landlords, lasting between one and 18 months; c) Student rentals, a specific and non-compulsory type of contract lasting the duration of the study plan; d) The 'controlled rent' (canone concordato) contract. This incentivised contract type, with rents set below market levels, can be stipulated for a minimum duration of three years with two years of tacit renewal, and is subject to lower taxation than ordinary contracts. Rents must be within a range defined by the territorial agreement: a document negotiated at a municipal level between tenant unions and landlord associations.
Convenzione urbanistica	A legally binding planning agreement between a municipality and a private developer, regulating the implementation of an urban development project and defining obligations such as infrastructure provision, public space, or affordable housing quotas.
ERP	Edilizia Residenziale Pubblica – public housing, allocated on the basis of income and needs criteria, owned and managed by public bodies (public housing agencies and municipalities
ERS	Edilizia Residenziale Sociale (social housing), a category of regulated affordable housing in Italy, targeting households that do not qualify for traditional public housing (ERP). ERS can be developed by public or private actors and often involves mixed funding or planning obligations.
IREN	Iren S.p.A. is a publicly controlled multi-utility company operating in Northern Italy (including Reggio Emilia), providing energy, water and environmental services. The company played a coordinating and financial intermediary role in the implementation of the Superbonus 110% scheme.
Perequazione urbanistica	"Land-use equalization" – An Italian urban planning instrument that redistributes development rights among all landowners within a designated planning area. Instead of assigning building rights only to specific plots, the total allowable development volume is calculated for the entire area and proportionally allocated to each owner, regardless of whether their parcel is designated for construction or public use. This allows municipalities to designate

	certain plots as public green space, infrastructure, or services without direct expropriation. Owners of land reserved for public purposes are compensated through transferable building rights that can be exercised on other buildable plots within the same planning unit. In this way, public land (including parks and green corridors) can be secured while maintaining equitable treatment among landowners.
Piano Periferie	“Programma straordinario di intervento per la riqualificazione urbana e la sicurezza delle periferie” (extraordinary intervention programme for urban regeneration and safety of the peripheries), a national funding scheme introduced 2016 to promote integrated regeneration, public space improvement and social inclusion initiatives in urban peripheries.
PIERS	Programma Integrato di Edilizia Residenziale Sociale (Integrated Social Housing Programme), see 5.2 a public programme promoted by the Emilia-Romagna region, fostering the increase of public (ERP) or social (ERS) housing, integrating residential development with urban regeneration measures
PINQUA	Piano Innovativo Nazionale per la Qualità dell’Abitare (National Innovative Programme for Housing Quality), see 5.2 a national funding programme established within the framework of Italy’s Recovery and Resilience Plan (PNRR) to support urban regeneration, public (ERP) and social (ERS) housing and neighbourhood regeneration.
PRU	Programma di Riqualificazione Urbana, a national programme introduced in the 1990s (Law 179/1992) to finance integrated urban regeneration projects through agreements between municipalities and the state, typically combining public and private resources.
Sicuro, verde, sociale	A national programme (within the complementary plan to the PNRR) financing safety and energy-efficiency upgrades of public housing (ERP).
Superbonus 110%	National instrument (partly funded through the NRRP) incentivising retrofitting in the residential sector, based on tax deductions of up to 110% of the intervention costs, existing from 2020 to 2023
Canone concordato	Type of controlled rent contract. The Italian rental sector was reformed by Law 431 of 1998, which abolished rent control in the private market and introduced 4 new rental contracts typologies: a) The standard four-year lease (contratto ordinario), which automatically renews for more 4 years if not terminated; b) Mid-term rental rental (contratto transitorio), applicable only when temporary accommodation is required by tenants or landlords, lasting between one and 18 months; c) Student rentals, a specific and non-compulsory type of contract lasting the duration of the

	study plan; d) The 'controlled rent' (canone concordato) contract. This incentivised contract type, with rents set below market levels, can be stipulated for a minimum duration of three years with two years of tacit renewal, and is subject to lower taxation than ordinary contracts. Rents must be within a range defined by the territorial agreement: a document negotiated at a municipal level between tenant unions and landlord associations.
INA Casa Plan	National plan which linked the construction of workers' housing to economic recovery, existing from 1949 to 1963, producing around 355.000 dwellings, financed through contributions of employers and employees.

6 Appendix 2 – Key interview data and transcripts

#	Position of Interviewee	Sector/company	Date of interview	Media
R1	Senior municipal officeholder (public works and housing)	Comune di Reggio Emilia	16/06/2025	In person
R2	Senior municipal official (urban regeneration department)	Comune di Reggio Emilia	16/06/2025	In person
R3	Executive representative of the local public housing provider	ACER Reggio Emilia	17/07/2025	In person
R4	Senior municipal officeholder (urban regeneration and sustainability)	Comune di Reggio Emilia	14/11/2025	In person
R5	Senior representative of a local environmental NGO	Legambiente	18/07/2025	In person
R6	Representative of a tenants' union	SUNIA Reggio Emilia	17/07/2025	In person
R7	Private-sector professional involved in urban regeneration	Officine Urbane	17/06/2025	In person
R8	Two executive representatives of a local housing cooperative	CCPMC	17/07/2025	In person
R9	Two activists involved in a local environmental civic group	Extinction rebellion	18/07/2025	In person
R10	Environmental expert and civic activist	-	15/09/2025	In person

R11	Representative of a local property owners' association	ASPPI Reggio Emilia	15/09/2025	In person
R12	Activist involved in a local civic group focused on housing, immigration, social inclusion	Casa Bettola	26/09/2025	Online (webex)
R13	Academic researcher and environmental activist	CER	16/09/2025	In person
R14	Member of a local residents' committee in an area undergoing regeneration	Comitato abitanti di via Paradisi	18/07/2025	In person
R15	Technical professional involved in energy retrofit projects	Centro cooperativo di progettazione	16/06/2025	In person

7 Appendix 3 – Visuals

Fig. 13. Via Turri, Quartiere Stazione, photo by authors

Fig. 14. Building after energy retrofit, Compagnoni, photo by authors

Fig. 15. Building after energy retrofit, via Selo, photo by authors

Fig. 16. Film screening in Parco del Legno, photo by authors

Fig. 17. Parts of the “ex-Reggiane” after transformation, photo by authors

. Fig. 18. Bosco Ospizio as a trigger of political mobilisation, photo by authors

8 Appendix 4 – References

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