ReHousIn

REDUCING
HOUSING
INEQUALITIES

Case study report: Oslo

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

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Title	Case Study Report: Oslo
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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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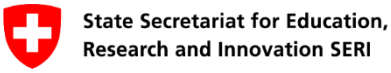

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1 Introduction

1.1 City/Town profile, challenges around just (housing and ecological) transition

Oslo, the **capital of Norway**, is both the country's largest city and its primary economic, political, and cultural centre. Located at the head of the Oslofjord and surrounded by extensive forested areas, the city combines relatively high environmental ambitions with strong demographic and housing market pressures. Over the last two decades, Oslo has experienced sustained population growth, driven by internal migration and international immigration, placing increasing strain on housing provision, infrastructure, and land use.

As of the mid-2020s, Oslo has a population of approximately 710,000 residents, while the wider metropolitan region exceeds 1.5 million inhabitants. Demographically, the city is characterised by a **relatively young population** compared to the national average, with a strong concentration of young adults and working-age residents, **although population ageing** is expected to accelerate in the coming decades (Statistisk sentralbyrå, 2025). Projections indicate a particularly rapid increase in the number of residents aged 70 and above, including a doubling of the 80+ population by 2045, which will have significant implications for housing demand, service provision, and urban planning (Statistisk sentralbyrå, 2025). Oslo is also Norway's **most diverse city**. Individuals with an immigrant background—defined as immigrants and Norwegian-born children of immigrants, most commonly from Ukraine, Poland, Syria, Somalia and Sweden (Statistisk sentralbyrå, 2025) —already constitute a substantial share of the population, and this proportion is projected to continue rising. In line with national trends, people with immigrant backgrounds are expected to make up close to one-third of the population by the mid-2040s (Statistisk sentralbyrå, 2025). This demographic dynamic contributes to the city's social diversity but also intersects with patterns of residential segregation and inequality (Cucca and Mouratidis, 2025; Ljunggren, 2017; Wessel, 2000).

Population **density** is **unevenly distributed**: while inner-city districts and selected redevelopment areas exhibit high densities, large parts of the municipality remain characterised by low-density residential development, including detached and semi-detached housing (Cavicchia, 2021). This dual spatial structure—dense inner areas combined with extensive low-density neighbourhoods—plays a crucial role in shaping both housing debates and green transition strategies (Næss and Moberg, 2021).

A defining feature of Oslo's urban geography is the **Marka boundary (Markagrensa),** a legally protected forest belt surrounding the built-up area. This boundary strictly limits outward urban expansion and has been a cornerstone of Norwegian land-use planning for decades (Cavicchia, 2023). In addition, Norway maintains strong national protection of agricultural land. Together, these constraints have reinforced a strategic focus on **urban densification** within existing built-up areas, particularly along transport corridors, former industrial sites, and underutilised land (Næss et al., 2011).

Oslo is often described as a "**green city**," not only due to the surrounding forests but also because of its extensive network of parks, rivers, and green corridors (Municipality of Oslo, 2018; Røe and Luccarelli, 2016). Approximately two-thirds of the municipal territory consists of forests and protected natural areas, while green and blue infrastructures—such as river

corridors, waterfronts, and urban parks—are increasingly integrated into planning strategies (Municipality of Oslo, 2018). However, access to everyday green space varies significantly between neighbourhoods, especially between older, low-density areas and newer, high-density developments, as green and blue spaces are disproportionately concentrated in Oslo's wealthier western districts compared to the more socio-economically disadvantaged east, which often has greater immigrant populations (Venter et al., 2023). Access to the greenbelt Marka is also uneven across Oslo, with distance posing a particular constraint for residents in certain districts, as well as for children and groups with reduced mobility (Gundersen et al., 2015; Gurholt and Broch, 2019). In addition to these spatial barriers, cultural factors can also shape patterns of use, particularly among migrant groups who may be less familiar with forest environments.

Oslo operates as both a **municipality and a county** (kommune og fylke), with a strong degree of local autonomy (Christensen and Lægreid, 2020). The city is governed by a city council and a city government (byråd), with responsibilities spanning land-use planning, housing policy instruments, transport, climate policy, and social services. Over the past **two decades**, the City of Oslo has been **governed by alternating centre-left and centre-right coalitions**. From the mid-2000s to 2015, and again between 2015 and 2023, the city was largely governed by centre-left coalitions led by the Labour Party, often in alliance with the Socialist Left Party and, in later years, the Green Party. In contrast, earlier periods and the most recent municipal election have brought centre-right coalitions back into power, led by conservative parties. District administrations (bydeler) play an important role in local service provision but have limited influence over strategic planning decisions.

Urban development is primarily governed through statutory planning instruments, including the **Municipal Master Plan** and detailed regulation plans (Falleth et al., 2010). Planning processes include formal consultation procedures (høringer), but key decisions regarding land use, density, and housing typologies are typically taken at the city level. Public land ownership is limited compared to many European cities, constraining the municipality's capacity to directly steer development outcomes, particularly in relation to housing affordability (Hanssen et al., 2024).

Norway's housing system is characterised by **very high rates of homeownership**, including owner-occupied apartments in housing cooperatives (borettslag) and condominiums (Cavicchia et al., 2024; Sørvoll and Nordvik, 2020). Cooperative housing has long been central to Norway's welfare model, promoting widespread homeownership and contributing to residential stability and wealth accumulation across broad segments of the population(Cavicchia, Cucca and Kronborg, 2025). The largest housing cooperative in Norway, OBOS, founded in 1929, operates on a cost-price principle, reinforcing owner-occupation, while limiting opportunities for speculation (Kronborg, 2014). **Rental** housing plays a comparatively limited role and is **weakly regulated**, with short-term contracts and limited tenant protection. Municipal housing represents only a small share of the total housing stock and is primarily targeted at the most vulnerable groups (Sørvoll, 2019).

Oslo's **housing market** has been under sustained **pressure** for many years. Housing prices have increased significantly faster than incomes, particularly in attractive inner-city and transit-accessible areas (Cavicchia, 2021). While ownership remains attainable for medium- and high-income households, access to suitable housing for families and lower-income groups has become increasingly constrained. Housing affordability is therefore widely recognised as a major urban challenge, even though policy instruments to address it remain limited.

In terms **of climate and environmental strategies**, Oslo has positioned itself as a **frontrunner** (Røe et al., 2022). The city has set ambitious targets for greenhouse gas reduction, aiming for near-zero emissions by 2030. Key pillars of Oslo's green transition include compact urban development, investment in public transport, reduction of car traffic, and the integration of nature-based solutions (NBS) into urban planning (Municipality of Oslo, 2018).

Densification is framed as a central environmental strategy: by concentrating growth within existing urban areas, Oslo seeks to reduce car dependency, protect surrounding natural and agricultural land, and support efficient public transport systems (Næss et al., 2011). Nature-based solutions—such as green-blue infrastructure, river restoration, urban parks, and climate-adaptive landscapes—are increasingly embedded in planning documents and development projects (Di Marino et al., 2024).

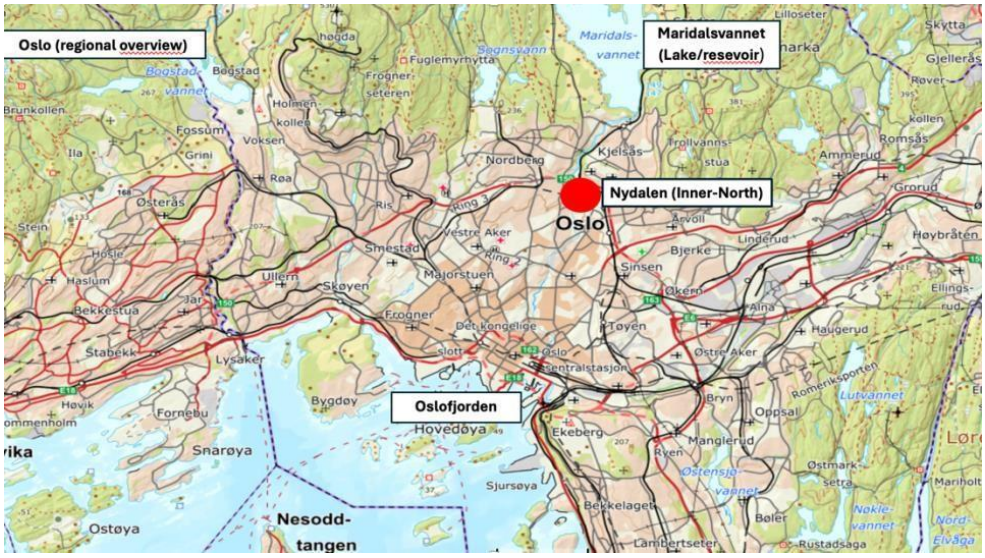
At the same time, **energy efficiency and retrofitting** of the existing housing stock represent a **less developed pillar** of Oslo's green transition. While energy use and emissions are central to national and municipal climate goals, Norway currently lacks an overarching, binding framework for large-scale residential energy retrofitting (Cavicchia et al., 2025). Measures remain largely voluntary and are shaped by existing housing governance structures, with little evidence of a coherent strategy. As a result, implementation tends to reproduce "business as usual" practices, drawing on cooperative participatory frameworks rather than comprehensive public strategies.

In Oslo, green transition policies and housing challenges are often addressed in parallel rather than in an integrated manner (Cavicchia, 2021). Densification and NBS are frequently justified through environmental and climate objectives, while housing affordability is implicitly expected to be addressed by increasing supply in the private market, and housing typologies such as smaller apartments. This separation has generated growing debate about the social consequences of green urban development (Andersen and Skrede, 2017).

The coexistence of ambitious environmental policies, strong housing market pressures, extensive low-density residential areas, and limited redistributive housing instruments makes Oslo a particularly relevant case for examining the social implications of green transitions. The city thus provides a critical context for analysing how densification, nature-based solutions, and energy retrofitting interact with housing inequalities—both in current developments and in future policy trajectories.

1.2 Green Transition Interventions in Oslo: Densification in Nydalen and Energy Retrofitting in the Cooperative Sector

This working paper is based on two empirical case studies in Oslo that capture different but complementary dimensions of the green transition and its interaction with housing inequalities: (1) **large-scale densification** combined with nature-based solutions (**NBS**) in **Nydalen**, and (2) **energy retrofitting in housing cooperatives** located in the eastern part of the city.



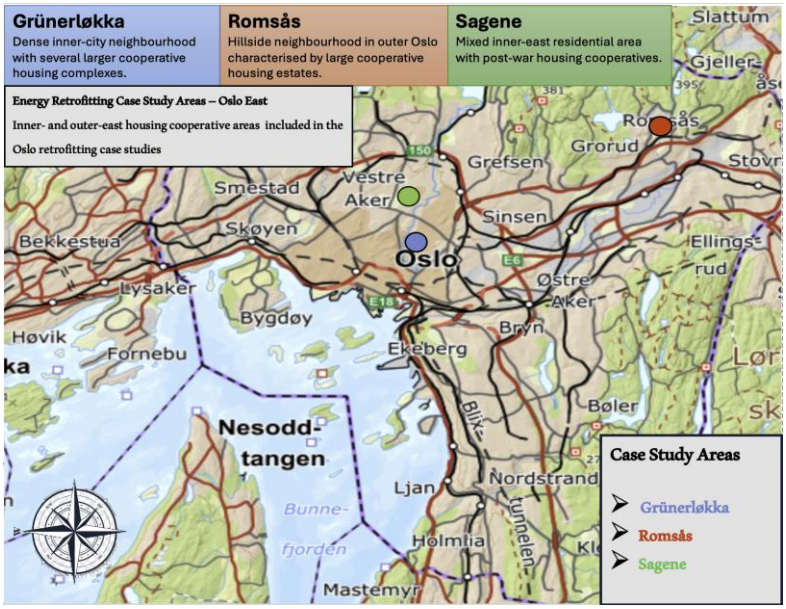
Map 1- Location of Case study area Nydalen in Oslo. Author: Didrik Wedum

Picture 1: Nydalen High Density – Picture: Roberta Cucca

Nydalen represents one of the most **advanced and emblematic examples of hard densification** in Oslo. Formerly an industrial area along the Akerselva river, it has been redeveloped since the early 2000s into a high-density, mixed-use district characterised by residential, office, and knowledge-based activities, including a major university campus (Orderud and Røe, 2002). The transformation has been driven largely by private actors, most notably **Avantor**, the dominant landowner and developer, and **OBOS**, a key cooperative housing organisation and developer, in close interaction with the Municipality of Oslo (Orderud and Røe, 2002). Public-sector involvement has mainly taken the form of planning regulation, transport infrastructure provision (notably the metro), and partial co-financing of public space. While Nydalen is widely framed as a successful example of compact, transit-oriented, and

green urban development, housing provision has been almost entirely market-based, with limited use of affordability-oriented instruments (Holmen, 2025).

The second case focuses on **energy retrofitting in housing cooperatives**, with empirical material drawn from cooperatives located in both the inner and outer eastern parts of Oslo. This case must be understood against the city's longstanding east–west socio-spatial divide (Ljunggren, 2017). While western Oslo is traditionally more affluent, eastern Oslo includes a higher concentration of cooperative housing, more socio-economically diverse populations, and, in the outer east, more vulnerable and multiethnic communities.



Map. 2 -Location of Case study areas for energy retrofitting in Oslo
Author: Didrik Wedum

Housing cooperatives across Oslo have a long tradition of maintenance and upgrading, but energy retrofitting has gained prominence only in recent years. Unlike densification, retrofitting is not guided by overarching strategies or regulatory mandates; instead, initiatives are locally driven, financed by the cooperatives themselves, and motivated primarily by economic considerations, with limited and fragmented public support (Cavicchia et al., 2025.).

Picture 2: An example of typical cooperative housing architecture in Oslo's east side. Picture: Roberta Cucca

Together, these two cases allow for a **differentiated analysis of green transition pathways in Oslo**: one **highly visible, spatially transformative**, and market-driven; the other **incremental, decentralised, and mainly embedded in private responsibility**—each with distinct implications for housing justice.

Table 1. Key data on two case study areas in Oslo.

	Densification in Nydalen	Energy retrofitting in East-side Coops
Neighbourhood characteristics (general social type, economic activities, density, etc.)	Former industrial area redeveloped into a high-density, mixed-use neighbourhood. Predominantly residential and office-based, with knowledge-intensive activities linked to the university campus. High density, strong public transport accessibility, and socio-economically selective population dominated by middle- and medium-high-income households.	Three housing cooperatives are located in eastern Oslo, including one in the outer east and two in the inner east. The outer eastern area is generally more socio-economically disadvantaged and ethnically diverse. In contrast, the inner eastern areas are former working-class neighbourhoods that have undergone partial gentrification, with rising housing prices and a mixed but predominantly middle-income population.
Duration	Early 2000s – present. Development is now largely completed, with some recent and ongoing interventions related to green space provision.	Ongoing processes since the 1990s. All three cooperatives are large, affiliated with OBOS, and have implemented upgrade measures in the last 10 years.
Funding *(be explicit if public/private, nonprofit, etc.)*	Predominantly private funding, led by private developers. Public sector involvement mainly through planning regulation, infrastructure provision	Predominantly private. Energy retrofitting is financed by housing cooperatives through bank loans, repaid by residents via monthly common costs. Limited public support is available through ENOVA and municipal

	(metro), and partial co-financing of public space.	schemes, though these are not specifically targeted at cooperatives.
Actor constellation *(aka stakeholders)*	Private developers; municipality of Oslo; public transport authorities; university institutions; local politicians; organised citizen groups and neighbourhood action groups.	Residents in housing cooperatives (shareholders), elected board of the housing cooperatives, general assembly, Municipality of Oslo, ENOVA, professionals and consultants
Aims and objectives	Redevelop brownfield land into a compact, accessible, and environmentally sustainable urban district; support densification and transit-oriented development; enhance attractiveness through green amenities and high environmental standards.	Maintaining and upgrading the housing stock, saving energy and energy costs, increasing quality of life, housing standards and increasing property values.
Specific physical measures	High-density residential and office developments; metro station and transit-oriented layout; redevelopment of industrial plots; integration with Akerselva green corridor; planned and newly approved public park connected to recent housing developments.	Facade renovations, adding insulation, installing new windows, and installing solar panels
Accompanying housing policy/ regulatory measures	Housing is largely delivered through the private market. Limited availability and use of affordability-oriented housing instruments. Emphasis on increasing housing supply through densification.	Energy retrofitting in housing cooperatives is not part of any housing policy, and there are no regulatory measures. Housing cooperatives are responsible for their own housing stock.
Key social tensions or/and benefits between greening and housing	Limited public green space relative to density triggered resident dissatisfaction and mobilisation. Citizen action influenced planning outcomes regarding green space provision, while housing affordability challenges remain largely unaddressed.	Energy retrofitting is regarded as a private responsibility, and is little contested or discussed. However, housing cooperatives are aware of the potential risk that expensive investments and upgrading measures may cause excessively high living costs for some of the residents.

2 Methods

This case study is based on **qualitative research** carried out between **mid-2025 and early 2026**. It combines semi-structured interviews, site-based observation, and document analysis. The methodological design aimed to capture how civic and institutional actors perceive green transition initiatives in Oslo and how these intersect with housing inequalities, with particular attention to governance arrangements and neighbourhood-level effects.

In total, **21 interviews were conducted with 23 participants**. Three of these interviews addressed cross-cutting themes related to the broader impacts of green urban transitions on housing inequalities in Oslo (OS01; OS08; OS12). The interview sample included current and former municipal technical staff, district-level politicians, developers, representatives of housing cooperatives, members of neighbourhood and environmental organisations, researchers, journalists, planning and energy-retrofitting professionals, activists, and

residents. Interviews were conducted in Norwegian, English, and one in another language that we don't specify to avoid compromising the anonymity of the informant. An overview of interviewee profiles is provided in Appendix 2.

Policymakers and technical staff were primarily recruited through contacts established during the preparation of, and participation in, the ReHousIn Policy Lab held in April 2025, as well as through the researchers' engagement in workshops and public events focused on housing and green transition policies. Additional participants were identified through snowball sampling. Representatives of civic organisations and neighbourhood groups were selected based on their public visibility, media engagement, or involvement in local campaigns and assemblies addressing housing, urban redevelopment, and environmental issues. Initial contact was made via institutional email addresses or professional online profiles, followed by further snowball recruitment.

Most interviews were conducted online via Microsoft Teams (14 interviews) and recorded using the platform's integrated recording function, which also generated automatic transcripts. Four interviews were carried out in person and recorded using a mobile device, with transcription produced automatically. All interviews were conducted with informed consent and transcribed in their original language. Following the interview process, one key informant decided to withdraw their consent to participate in the study. In accordance with ethical research standards, the interview was therefore deleted and has not been analysed, or included in the empirical material used for this research

Transcripts were subsequently reviewed, translated where necessary, and refined using an AI-based transcription support tool approved by **SIKT,** the Norwegian Agency for Shared Services in Education and Research.

Fieldwork also included several walking interviews and site observations: one walking tour in Nydalen with an environmental organisation representative, and two site visits to housing cooperatives included in the study. These activities supported situated observation and informal elicitation. Anonymised English-language transcripts were coded and analysed thematically using **NVivo**. Documentary analysis covered planning documents, legislation, municipal and consultancy reports, media sources, academic literature, and grey literature, which were used to contextualise findings and triangulate interview material.

A key limitation of the study is that, despite the diversity of actors included, the perspectives of more precarious or less organised resident groups are likely underrepresented. A methodological limitation should be noted regarding language use during the interviews. Most interviews were conducted in a language that was not the native language of either the interviewee or the interviewer, or of both. While care was taken to ensure mutual understanding, this may have resulted in minor imprecisions in expression, nuance, or interpretation. All interviews were conducted in accordance with ethical standards for social research. Issues of privacy, anonymity, and confidentiality were handled in line with the guidelines and requirements set by SIKT – the Norwegian Agency for Shared Services in Education and Research.

3 Civic and Institutional Perceptions of Green Initiatives in Nydalen

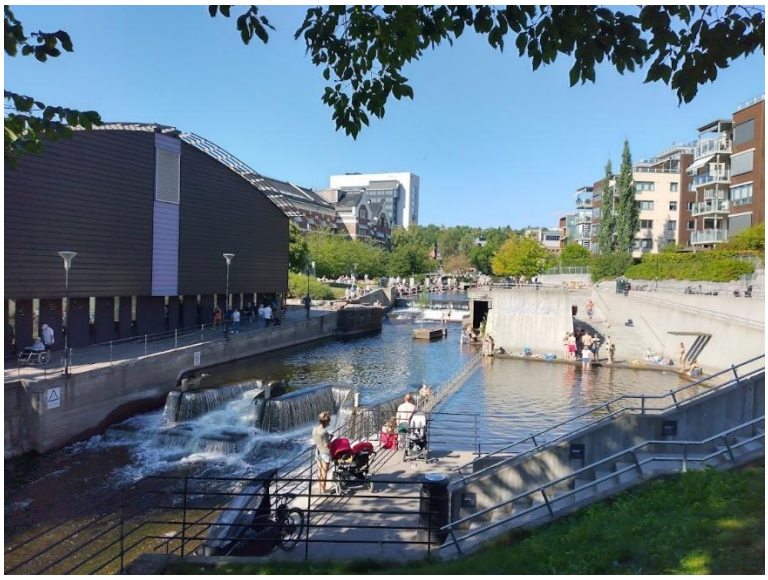
3.1 Precedents and implementation

The development of Nydalen is described as closely embedded within Oslo's long-term **densification strategy** and broader environmental policy framework. Rather than being understood as an isolated project, interviewees frame Nydalen as an early and emblematic example of how Oslo has sought to accommodate urban growth. This approach is described as relying on the protection of surrounding natural and agricultural land.

> We have a number of very strong environmental policy frameworks. As you know, we have the *Markagrensa*—the forest boundary—which creates essentially a national park surrounding the built area. You're not allowed to build anything there—not even a little fence. And then we have a high level of protection of farmland, for the obvious strategic reasons. (Municipal staff member – OS01)

Within this broader densification strategy, **the Akerselva river** emerges as a key element shaping both the physical transformation and residents' perceptions of Nydalen. The river is described as a structuring element in the historical transformation of Oslo's industrial areas, with many industries originally located along its banks. Several interviewees recall long-term public efforts to open up the river for public access, remove industrial fencing, remediate pollution, and establish the river as a green-blue backbone within the urban fabric.

> The aim was to open the area to the public, because it was fenced. Because it was all industrial areas, and also polluted.So all along the river there were fences. And then they got the permission to open these gates so the public could see what was behind them. (Member Environmental Association - OS02)



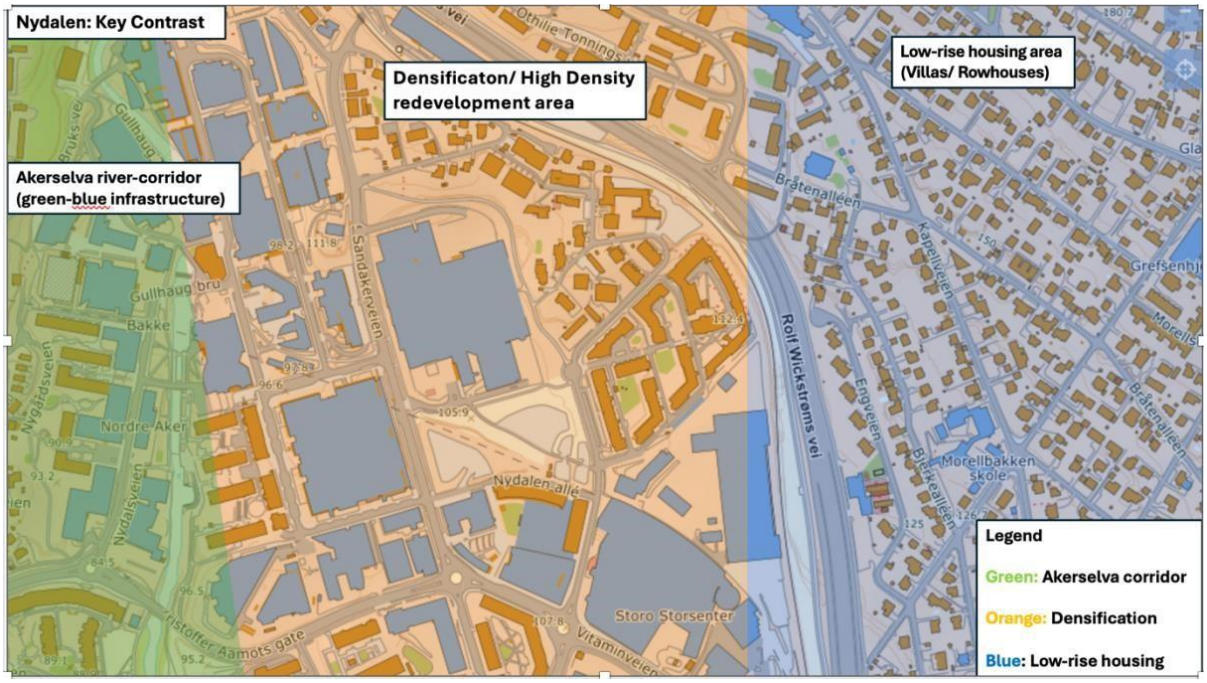
Picture 3: Akerselva and artificial swimming pool in Nydalen– Picture: Roberta Cucca

Another recurring theme concerns the decisive role played by **public transport infrastructure,** particularly the metro, in shaping the development of Nydalen. Municipal planners and planning professionals consistently describe proximity to the metro station as a critical driver of both residential and commercial development and a key condition for high-density redevelopment (OS08). The extension of the metro line to Nydalen was perceived as one of the last major metro investments in Oslo, providing strong justification for large-scale redevelopment in the area (OS08). Initially, the area was not conceived as a residential neighbourhood but rather as a location for offices and knowledge-based activities, particularly following the establishment of a private **Business School (BI)** in 2007 and the ambition to develop an ICT and innovation hub (OS13). Former municipal planners and local politicians describe the implementation of Nydalen's development as a gradual and evolving process, rather than the result of a single comprehensive master plan; housing development is described as having been introduced later, as demand increased and institutional actors relocated to the area.

> The consequence was that the area was not originally planned as a residential neighbourhood; housing came much later. A few years before I finished working there, we were preparing what we called an action programme to address this [need for housing] more systematically. But development had already happened very fast. (Member of the Environmental Association; Former Municipal Staff - OS12)

Local politicians and civic actors report that the **speed and density of development** became increasingly visible over time. Nydalen is described as having grown rapidly into a **dense and mixed neighbourhood**, characterised by a concentration of residents with high levels of education and substantial social and economic resources (OS06; OS13). As development progressed, interviewees also highlighted **growing concerns** related to high density and **limited access to everyday green space**. These issues are described as becoming more apparent in daily life, with landscape quality and public green provision perceived as insufficient relative to the scale of residential growth.

> So, in terms of transportation, densification in Nydalen makes a lot of sense because there is t-bane (metro), there, there's even a train, and there's a bus going, not far away. So it's a great place to densify. My personal wish would be to keep densifying, but also make sure there's enough space for people to live. There are some concrete areas which could have been green instead, for instance. (Local Politician District Level - OS07).



Map 3 Nydalen -Map of the site
Author: Didrik Wedum

3.2 Participation and governance (procedural)

Procedural participation in urban development processes in Norway primarily takes place through formal, legally mandated instruments such as *høringer* (public hearings), written consultation rounds, and opportunities to submit comments during the preparation and revision of zoning and regulation plans, allowing stakeholders and residents to express views but offering limited scope to influence core strategic decisions once plans are advanced. Interviewees describe civic participation in Nydalen as taking place through a combination of formal consultation procedures, organised civil society engagement, and more situational forms of mobilisation. These forms of participation are perceived differently depending on respondents' institutional positions and roles.

From the perspective of municipal planners, participation is primarily understood as being structured **around statutory planning instruments**, including regulation plans, public hearings, and formal consultation processes (OS12). Participation is described as embedded in established planning routines, particularly along the Akerselva river corridor, where engagement initiatives have been repeated over time. Former municipal planners emphasise efforts to broaden participation beyond formal hearings through surveys, exhibitions, cultural events, and temporary installations, aimed at linking participation to everyday use of the river and public space.

> We conducted surveys with schoolchildren, held exhibitions, displayed artefacts from different cultural backgrounds, and hosted concerts under the bridge. It was a way to involve people through the river and everyday experiences. (Environmental association representative; former Municipal Staff – OS12)

Organised civic society actors, particularly those engaged with environmental and river-related issues, describe participation as a **continuous, long-term, and resource-intensive**

activity (OS02; OS03). These actors report systematically monitoring planning processes, reviewing regulation plans, and coordinating written responses during consultation phases. Participation is described as most effective when engagement occurs early in planning processes, which seems to have been the case in Nydalen, before key decisions are fixed.

> We meet about once a month and discuss new regulation plans. We try to go into the startup of the process, because that's when you have more influence. These cases take many years, and we follow them closely. (Member Environmental Association - OS02)

Civic actors and activists express more **ambivalent** and critical perceptions of participation (OS02; OS03). Several respondents report having attended meetings and consultations related to construction projects, but describe these arenas as narrowly framed. Participation is perceived as focusing on technical details—such as placement of benches or small design elements—rather than on more fundamental questions regarding density, land-use priorities, or the overall direction of development. These experiences are described as generating frustration and a sense of limited influence.

> We had the opportunity to give feedback on the construction plans, and we did. But it didn't change anything. Then, suddenly, the municipality invited us to a meeting about where to put green areas. We were sitting around tables, drawing benches and flower boxes, while the big entrepreneur who owned most of Nydalen was also there. (Local activist - OS03)

Local politicians and district-level representatives describe their role as **mediating** between municipal planning processes and neighbourhood-level concerns (OS06; OS07). Participation at the district level is perceived as taking place mainly through formal hearing procedures related to building permits, schools, and local infrastructure. Several respondents emphasise that district administrations have limited scope to influence strategic decisions, which are largely taken at the city level, constraining opportunities for more comprehensive, area-wide dialogue.

Finally, both municipal planners and civic actors note that **not all policy issues mobilise participation to the same extent**. Environmental quality and access to green space are perceived as more tangible and locally actionable, while issues such as housing affordability, apartment size, and tenure are described as receiving less sustained attention at the neighbourhood level. These topics are reported to be addressed mainly within institutional working groups and professional policy arenas, rather than through broad civic mobilisation.

> There hasn't been much public debate about the regulation allowing smaller apartments. Usually, working groups are formed to discuss such matters, and we submit our opinions, but there was little time to address this issue in depth. (Representative Minorities Committee – OS05)

3.3 (In)equity (distributional)

Most interviewees describe the distribution of benefits and burdens associated with urban development and greening in Nydalen as **uneven**. While environmental improvements and new housing are widely acknowledged as positive outcomes, respondents consistently emphasise that access to these benefits varies according to **housing tenure, life stage, and location within the district** (OS03; OS06; OS08).

A central concern relates to **housing affordability, size, and residential stability**. Planning consultants and local politicians highlight that the predominance of small apartments—many of them rental units—limits opportunities for long-term settlement. Renters who, in 2021, disproportionately comprised 61.1% of the lowest income quartile and see also an overrepresentation of migrants and single parents (Cavicchia et al., 2024) are further described as particularly exposed to rising prices and as having few realistic pathways into homeownership in the area. These dynamics are perceived as reinforcing insecurity and short-term residency for those without access to ownership (OS08).

Families with children are frequently mentioned as a group particularly affected by these dynamics. Parents' representatives and local politicians describe how small apartments quickly become inadequate as households grow, while larger dwellings are perceived as scarce and unaffordable. This is described as contributing to residential turnover, with families leaving the area as their housing needs change, affecting continuity in schools and neighbourhood life.

> When my daughter started first grade, the school was full. But when you come to the second and third grade, we see that people are moving out. Usually, it's because of a lack of space. You come here as a student or a young couple, but when the children grow and need more space, you have to move out. (Member Parents' Committee - OS04)

Environmental quality and **access to green space** are also described as unevenly distributed within the district. Local politicians and civic actors emphasise that proximity to the Akerselva river is associated with higher residential quality (Berg Tveter, 2025), while interior parts of Nydalen are perceived as lacking everyday green spaces close to housing (OS07; OS03). Although the river is widely valued, respondents note that its benefits are not equally accessible due to crowding and competing uses.

> The municipality designates the area along the river as a major green corridor, yet in reality it functions more like a transport route. Cyclists, e-scooters, and joggers dominate the space, leaving little room for families or elderly people. If an area looks green on the map, it's considered sufficient, regardless of how it actually functions. (Researcher – OS09)

At the same time, interviewees consistently stress that **green spaces are essential** for wellbeing, social interaction, and everyday life, particularly for households living in small apartments without private outdoor space. Civic actors and journalists highlight that limited access to nearby green areas intensifies the effects of high density and reinforces perceptions of inequity within the neighbourhood (OS02; OS11). While the available data do not allow for a precise quantification of environmental injustice, patterns of socio-spatial segregation are evident in areas adjacent to the river. Apartments located closer to the river tend to be more luxurious and command higher prices. The case of the "Vertical Nydalen" building, for instance, illustrates a form of micro-segregation: despite its high environmental ambitions, it risks contributing to an exclusionary and socially unsustainable urban development, suggesting that proximity to high-quality green space may be unevenly accessible to lower socio-economic groups (Berg Tveter, 2025). Overall, interviewees portray distributional (in)equity in Nydalen as shaped by the intersection of **housing tenure, market dynamics, and uneven access to environmental amenities**, with ownership emerging as a key dividing line in who benefits from development-led value creation.

3.4 Political mobilization

Interviewees describe political mobilisation in Nydalen as a **gradual and cumulative process** that intensified between **2019 and 2025**, following the near completion of large-scale development in the area. Several respondents recall that mobilisation became more visible with the formation of the civic group *Ja til stor park i Nydalen* (Yes to a large park in Nydalen), which opposed plans to allocate a centrally located area primarily to further real estate development and instead demanded its conversion into a large public park. According to interviewees, years of sustained mobilisation—largely conducted through **social media campaigns, opinion pieces, and coverage in local and national newspapers**—eventually contributed to a political decision to develop a new public park on the site. The construction of *Schibsted Park* is planned to begin in 2026 and be completed in 2028.

Across interviews, mobilisation is widely described as emerging once the cumulative effects of density, limited green space, and traffic became tangible in everyday life. Local politicians, researchers, and journalists emphasise that mobilisation gained momentum after development was largely realised, rather than during earlier planning phases (OS07; OS09; OS11). From this perspective, mobilisation is framed as grounded in lived experience rather than opposition to development in principle.

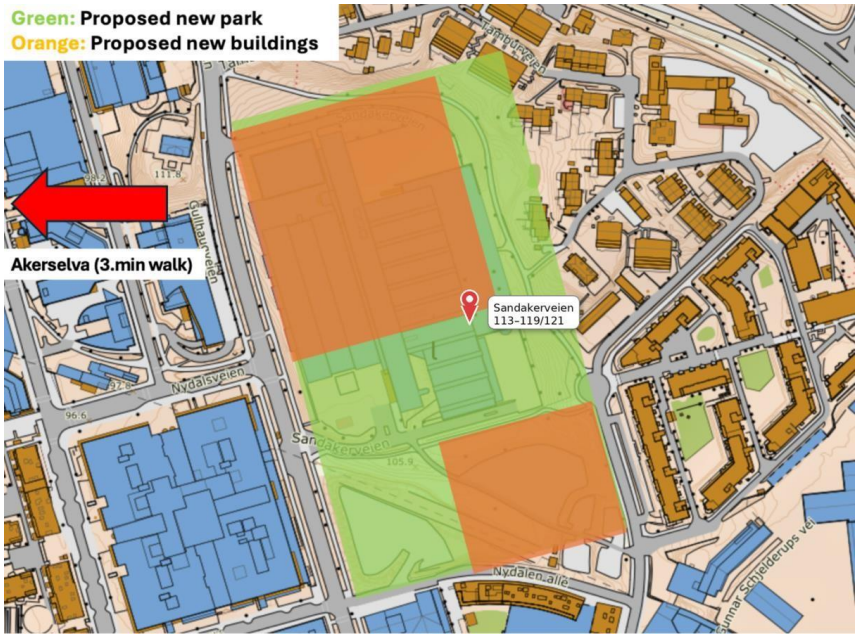
Mobilisation is not described as anti-development. Instead, respondents consistently emphasise that it focused on **specific and concrete outcomes**, particularly the lack of accessible green space in a high-density neighbourhood (OS07). The absence of everyday green areas is described as a shared concern that allowed residents to articulate common demands across different social groups.

> It was so obvious that it was becoming extremely dense, the development in Nydalen. And it was quite visible that their focus on landscape and green spaces was very limited. I think anybody could see that with their own eyes that what was going on was deeply problematic. (Local politician-OS07)

Several interviewees describe mobilisation as being fuelled by **frustration with formal participation processes**, echoing experiences described in Section 3.2. Civic actors and activists report that earlier participation opportunities were perceived as confined to technical details, with limited scope to influence fundamental questions regarding land use priorities or density. This perceived mismatch between participation and influence is described as a key trigger for more overt political action (OS03).

> They thought that Nydalen was finished. That it was a lost case. That the municipality didn't own land anymore, and that there was no money. So nothing could be done. And that was even said by the politician who serves now as the Municipal Deputy Mayor for planning. (Local activist - OS03)

Mobilisation is described as having taken multiple forms, including **direct contact with local politicians, engagement with political parties, and strategic use of media channels**. Journalists and researchers emphasise that residents were able to frame their claims in **bureaucratically legible terms**, which helped sustain mobilisation over time and gain political traction (OS09; OS11). Several interviewees note that district-level and local party organisations gradually expressed support for the demand for a new park, as concerns about density and environmental quality gained wider visibility and legitimacy (OS07; OS04).



Map 4 – Location of the New Park in Nydalen. Author: Didrik Wedum

At the same time, researchers and journalists stress that political mobilisation in Nydalen remained **bounded in scope**. While it is widely perceived as having influenced decisions related to environmental amenities—most notably the development of a new public park—concerns related to housing affordability and broader redistribution are described as largely beyond the reach of neighbourhood-level mobilisation (OS09; OS11)

3.5 Socio-ecological impacts/benefits (positive)

Interviewees describe a range of positive socio-ecological impacts associated with the development of Nydalen, particularly in relation to **mobility**, **accessibility**, and **environmental quality**. These benefits are described as tangible in daily life and widely appreciated, including by respondents who are otherwise critical of density or housing affordability.

The integration of **dense urban development with high-capacity public transport** is consistently described as supporting **climate objectives** while also improving **everyday convenience**. Informants emphasise that proximity to the metro enables low-car living, reduces dependence on private vehicles, and facilitates access to jobs, services, and leisure activities.

> It's very difficult for me to find negative aspects in Nydalen: it is very well connected to public transportation, there are very nice restaurants, pubs and shopping opportunities. During the break, I can go out and enjoy the river. I don't live here, and so it can be different for a family, but as a daytime user, this is a perfect location. (Academic staff member, local university - OS13)

Additionally, reduced car dependency and more **pedestrian-friendly streets** are perceived as contributing to both environmental sustainability and quality of life, particularly in a dense urban context.

The **Akerselva river corridor** is consistently highlighted as a major socio-ecological asset. The opening up of the riverbanks and the improvement of water quality have transformed former industrial land into accessible public space (OS09; OS02; OS11). The river is described as enabling everyday contact with nature through walking, jogging, swimming, and informal social activities, contributing to mental wellbeing and everyday recreation within the city.

> I live less than one minute from the river. And also very close to this swimming pool that they made in the river. So in summer, I literally just go down, and I can get some sun and bathe in the river, but you can also just go for a walk by the river or run. It's quite nice. So that's something I have access here. (Resident-representative minority group-OSL10)

Schools and kindergartens are also described as benefiting from the proximity of the river and the linear park. Even where green space is not directly available within schoolyards, **nature and outdoor environments along the river are actively integrated into learning and everyday activities**, contributing to children's wellbeing and environmental awareness.

> Today, Akerselva is the most used river in Oslo for walking and hiking. It's appreciated by the population in Oslo. Also, many tourists come here, and the local population uses it for jogging, for recreation, grilling, playing, and walking the dog. And it's very appreciated. So, one of the main benefits of living close to the river is that you have the river, you can look at the river, it's green, and it changes by the seasons, and you experience the 100-meter closed forest that you have. And it's especially accessible for children, and all in these daycare centres can walk here, and they can look at the nature, they can learn about the trees, they can learn about the birds. (Member Environmental Association - OS02)

Several interviewees frame these interventions as examples of **nature-based solutions** used as **sustainability strategies**. The river corridor, green-blue infrastructure, and adjacent public spaces are perceived as performing multiple functions simultaneously, including ecological restoration, climate adaptation, and social use. Former municipal planners emphasise that these strategies reflect long-term policy ambitions to integrate environmental considerations into urban development (OS12).

Finally, interviewees point to **housing-related benefits** linked to accessibility. The availability of small apartments, particularly in the rental sector, is described as enabling access to the neighbourhood for singles, students, and newcomers who benefit from good transport connections and proximity to services (OS10; OS06). At the same time, respondents note that these benefits coexist with challenges related to **housing stability and long-term affordability**, which remain unresolved for lower-income households.

> The rent that I pay is affordable, but as I said, I won't be able to continue here. Because at some point, I have to give the apartment back, and I want to buy something, and I won't be able to continue here. If I want to continue here, I would have to buy a much smaller one than the one that I live in today. (Member of a Migrant Association and resident - OS10)

Together, these elements contribute to perceptions of Nydalen as a liveable, accessible, and environmentally improved urban area, even as challenges related to housing stability, place-making, access to public green spaces, and affordability persist.

3.6 Socio-ecological impacts/benefits (negative)

Alongside recognised benefits, interviewees identify a range of **negative socio-ecological impacts** associated with the development of Nydalen. Respondents emphasise that these issues are interconnected, linking environmental pressures, housing dynamics, and social change.

A central concern relates to **green accessibility and ecological pressures on the Akerselva river**. While the river is widely valued, several respondents stress that it is heavily used and unable to compensate for the lack of everyday green space within the neighbourhood. Researchers and civic actors note that the river corridor is narrow, crowded, and shaped by competing activities, which limits its usability for children, young people, and less mobile groups (OSL09).

> When you see pictures of Nydalen, you see pictures of the river. But that's the only green place, right? You can't let your children play there before they are like 10 or 12, because they can fall into the river. You can't play ball because the area is just two meters wide. And when the weather is nice, there's no room. The river is for the whole of Oslo, so everyone uses it.
>
> (Local activist – OS03)

Environmental activists raised concerns about **ecological pressures on the river itself**, noting that past industrial pollution, ongoing runoff, and occasional infrastructural failures continue to affect water quality and aquatic life, highlighting the **fragility of the river ecosystem** despite its central role as a green-blue amenity (OS02).

Several interviewees also raised concerns about **traffic, construction disruption, and quality of life**, particularly for families with children. Parents' representatives describe traffic as a persistent challenge, exacerbated by ongoing construction projects and increased population density. Safe routes to school are described as difficult to secure in a context of heavy traffic and continuous redevelopment, with implications for everyday safety and wellbeing.

> The main problem is traffic. There are always projects going on, and Sandakerveien is under heavy construction. There are a lot of children walking alone or with parents, and also many cars. It is a challenge to secure the road to school, even with all the measures we try to put in place. (Member Parents' Committee - S04)

Housing-related impacts are another dominant theme. Interviewees consistently point to **reduced housing accessibility and affordability**, particularly for families and lower-income households. While small apartments are described as relatively accessible, respondents stress that larger dwellings are scarce and prohibitively expensive. This is perceived as forcing households to compromise on space or to leave the area altogether.

Several respondents link these dynamics to broader processes of **displacement and gentrification.** Civic actors and planning consultants describe Nydalen as part of a wider transformation affecting inner-city areas, where rising prices and new development increasingly exclude lower-income groups. Even when direct displacement is not always observed, respondents emphasise forms of indirect displacement through pricing-out and residential turnover (OS05; OS08).

> Everything is becoming more expensive, and people with less income are moving out. If you don't own, you don't benefit from the value increase.

There is no lack of expensive apartments in Oslo. What we lack is affordable housing, and the market cannot solve that. (Planning consultant; former municipal planner - OS08)

Finally, several interviewees describe negative socio-ecological impacts as rooted in **short-term planning and market-driven development**. Researchers and civic actors argue that insufficient attention was paid to long-term needs such as green space, schools, and family housing, resulting in a built environment perceived as dense but lacking in everyday livability.

The process of developing Nydalen is an example of how not to do it. You need to plan for 10, 20, 30, and 50 years. You need to plan for schools, kindergartens, and areas where people can live their lives, because the apartments are too small. (Local Activist - OS03)

Taken together, these perceptions portray Nydalen as a neighbourhood where **environmental pressures, housing market dynamics, and social change intersect**, generating uneven and often negative socio-ecological outcomes. As reported in the Report on Housing system WP4 (Cavicchia et al., 2024), national responses to the housing challenges remain fragmented and insufficient. The social rental sector is minimal, private renting is precarious, and innovative models such as shared ownership or third-sector housing remain marginal. At the local level, municipalities lack the regulatory and financial capacity to steer housing development toward affordability goals.

3.7 Tensions and power dynamics between stakeholders/actors

The tensions and power dynamics described in Nydalen are primarily shaped by the **relationship between market-led development and public governance**, as well as by **multi-level and intersectoral governance** arrangements. Respondents across institutional, civic, and research backgrounds emphasise that development outcomes reflect an imbalance between **strong private actors** and comparatively **constrained public authorities**, particularly at the municipal level.

A recurring theme concerns the historical role of Nydalen as an **industrial enclave**. The area functioned for decades as a largely closed industrial zone, where landowners exercised substantial autonomy over land use and development decisions. This legacy is described as carrying over into the redevelopment phase, with early transformation driven mainly by private business initiatives rather than by comprehensive public planning (Orderud and Røe, 2002). Interviewees explain that following industrial decline, a **single private property** owner (Avantor) accumulated large portions of land, giving private actors significant control over development trajectories and limiting municipal leverage and opportunities to provide affordable housing.

If you're a landowner, as the city rarely is because they have sold off most of its land, then of course you can negotiate any sale with conditions on affordable housing. But when it comes to zoning, there are very limited possibilities to regulate housing outcomes in detail. (Environmental association representative; former Municipal Staff – OS12)

Respondents also point to governance tensions arising from the **temporal sequencing** of decisions and limited coordination across sectors. Former municipal planners (OS08; OS12) describe how offices, higher education, and economic activities were prioritised in early phases, while housing and associated social and environmental infrastructures were

addressed later, once development was already well underway. Is this sequencing perceived as constraining the municipality's ability to anticipate cumulative socio-ecological needs and address possible green gentrification threats? and to coordinate responses across policy areas.

Interviewees further highlight **multi-level governance** constraints as shaping the scope of local action. Housing-related issues are widely perceived as lying partly beyond the reach of local authorities, due to national regulatory frameworks, market conditions, and the limited public land ownership. Municipal authorities face structural limitations, as key regulatory and funding mechanisms remain under national jurisdiction. As a result, responsibility for addressing affordability is dispersed across governance levels, producing a persistent policy impasse.

Finally, some respondents point to the **blurring of boundaries between public and private** actors in Oslo in general, noting that publicly owned entities often operate under market logics. This is perceived as further reinforcing market-oriented priorities and weakening the capacity of public institutions to pursue redistributive or socially oriented objectives.

> The municipality claims it no longer owns land, so it can't intervene. But other public entities still own land, and they operate like private companies, with profit as the main goal. (Representative Minorities Committee – OS05)

Taken together, interviewees portray power relations in Nydalen as shaped by strong private landownership, limited municipal capacity, and fragmented multi-level governance, constraining the ability of public actors and participatory processes to influence housing affordability, social inclusion, and long-term socio-ecological outcomes.

3.8 Innovative governance mechanisms

Interviewees describe urban development in Norway as being shaped primarily by public–private negotiation, a governance model that relies on collaboration between municipalities and private developers rather than on strong regulatory intervention. In the case of Nydalen, however, this **negotiated approach** is widely perceived as having delivered limited outcomes in terms of accessible green space and, in particular, affordable housing. Several respondents stress that while negotiation may facilitate investment and rapid development, it has proven far less effective in securing socially inclusive housing outcomes in high-demand urban contexts such as Oslo. Several interviewees explicitly criticise the idea that market-based solutions alone—such as increasing supply or reducing apartment sizes—can resolve affordability problems. These strategies are described as reinforcing housing precarity rather than addressing structural exclusion.

> The private developers and also the politics, they believe that if we build more, it will be more affordable. Or we make the apartments smaller. So the apartments get smaller and smaller. They try to solve it with market tools, and for me, it's nonsense. (Researcher - OS09)

Against this background, some interviewees point to **specific housing initiatives** as partial examples of innovation within an otherwise market-oriented system. Civic actors and planning professionals mention the rent-to-buy strategy developed by OBOS, Norway's largest housing cooperative, as a positive mechanism that can lower entry barriers to homeownership (Cavicchia, Cucca and Kronborg, 2025). At the same time, respondents emphasise that such

initiatives are considered insufficient in scale and unable to counter broader affordability pressures generated by the housing market.

Picture 3: OBOS' new development plans around the new park in Nydalen – Picture: Roberta Cucca

A recurring theme concerns the perception that the Norwegian system of policies promoting **homeownership has historically functioned well, but is now no longer adequate**, particularly in Oslo. In this context, sort of inclusionary zoning and the development of a third housing sector are frequently mentioned as potential governance innovations.

> When it comes to zoning, as of the 1st of July this year, there is a new provision in the Planning and Building Act that allows municipalities to zone specifically for student housing and for housing associations. I don't think it's sufficient, but indirectly it means you can enable projects that do not compete on the general market in the same way as purely commercial developments. I've also often pointed out that there is a clause in the planning law that allows the city to request to purchase some housing units at market price. In my view, that clause should be amended — or possibly replaced — so that units could be acquired at a reduced price instead. (Environmental association representative; former Municipal Staff – OS12)

Planning consultants and researchers emphasise that such instruments would require national-level political intervention, as local authorities are perceived as having limited capacity to regulate prices or mandate affordability through existing planning tools.

> I think first we have to talk about it, to identify that it is like it is, and to accept it. They could change it, but it's dependent on politics, and it's not the local politics. It's national politics that has to go in and regulate housing prices, make at least a certain percentage of the housing affordable, but it does not happen. (Planning consultant; former municipal planner – OS08)

3.9 Tourism and market pressures

Interviewees describe **market pressure and housing financialization** as central dynamics shaping development outcomes in Nydalen. While Nydalen is recognised as part of Oslo's wider housing market, interviewees stress that the pressures experienced in the area are primarily linked to speculative development logics rather than to tourism or short-term rentals.

Several respondents explicitly challenge the dominant policy narrative that increasing supply alone will improve affordability. Planning professionals and researchers argue that housing production is strongly conditioned by profit expectations and that **construction activity** is perceived as **slowing** or stopping when **prices do not meet developers' return thresholds**. Although interviewees note the lack of transparent data on profit margins, they widely assume that expected returns must be high, given the scale and persistence of development.

> Norway stopped having social housing, like in the 80s. And so the argument is to build more and more and faster and faster to get the prices down and make it more affordable. But the reality shows it doesn't work like that. The prices are rising all the time, because it's totally steered by private developers and strategies. And if the prices are not high enough, they stop building. So, they wait until the prices rise again. And the public has no role in this anymore.
>
> (Planning consultant; former municipal planner – OS08)

In contrast to other areas of Oslo**, short-term rentals** and tourism are not identified as the main source of housing pressure in Nydalen. Platforms such as Airbnb are widely problematised for the impacts they have on more central areas of Oslo. However, they also recognise that specific housing typologies—particularly small apartments—are well suited to short-term rental strategies, raising concerns about future impacts.

> Smaller apartments are ideal for short-term rentals. They're attractive to people looking to profit from Airbnb, students, or middle-class individuals who can secure bank loans to buy and rent out properties. Airbnb is relatively new in Oslo—it's not like Rome or Barcelona, where it's already caused problems. But it's starting to grow, and we're beginning to see its effects. (Representative Minorities Committee – OS05)

3.10 Gaps in perceptions between civic groups and public agencies

Interview data suggest that gaps in perceptions between civic groups and public agencies are **not uniform across policy domains**. In relation to **green accessibility**, respondents from both civic and public-sector backgrounds **largely converge** in their assessments.

Interviewees consistently agree that the development model applied in Nydalen has been unable to deliver sufficient everyday green space for a neighbourhood of such high density. Both civic actors and municipal representatives describe the newly planned park as absolutely necessary, and as a corrective measure to earlier development phases where green provision was perceived as inadequate. In this respect, no significant perceptual gap emerges: the lack of accessible green space is widely acknowledged as a shared problem.

By contrast, a more pronounced **gap** in perceptions emerges **around housing affordability** and housing market dynamics. Civic actors and residents tend to frame high prices—particularly for larger, newly built apartments—as a direct indicator of exclusion and inequality, questioning the social relevance of such housing provision in a context of acute affordability pressures. Some public-sector informants, however, articulate a more systemic interpretation of how high-end housing is expected to function within the wider housing market.

An informant from the municipality explains that while complaints about the prices of large and expensive dwellings are understandable, the underlying rationale for their construction is not primarily to meet the direct housing needs of lower-income groups. Instead, such developments are described as contributing indirectly to housing accessibility through vacancy chains within the regional housing market.

> Well, for example, building big, expensive houses for rich people—or by rich people—can make sense if they are also letting out a flat on the ground floor or upstairs. Because then that creates a vacancy for somebody on a lower income, who then moves from somewhere else in the region and creates a vacancy for someone else. So one big new home with a flat to let—or even for somebody else to move out—will create a vacancy chain behind it, enabling more people to fulfil their housing needs across the whole housing market region, which is quite interesting. It's not a one-to-one system at all. It's a very complex system. (Municipal staff member – OS01)

4 Civic and Institutional Perceptions of Energy Retrofitting in the Cooperative Sector in Oslo East Side

4.1 Precedents and implementation

Energy retrofitting in housing cooperatives represents a distinctive trajectory within Oslo's green transition, shaped by the historical development of the Norwegian housing system and by governance arrangements that differ markedly from many other European contexts examined in ReHousIn. Unlike densification and nature-based solutions, which are embedded in long-term spatial planning frameworks, energy retrofitting in housing cooperatives remains **largely decentralised, voluntary, and only weakly regulated** at the national level (Cavicchia, Cucca and Di Marino, 2025) .

Large-scale cooperative housing construction in Oslo began in the 1950s, forming a substantial share of the city's housing stock. Housing cooperatives are particularly prevalent in the eastern parts of Oslo, including post-war satellite neighbourhoods traditionally associated with working-class populations, while they are less common in the more affluent western areas (Ljunggren, 2017). Crucially, cooperative housing in Norway is legally defined as private housing. Dwellings in housing cooperatives are sold on the free market, to the same prices and with the same conditions as other dwellings. Cooperative housing in Norway must not be considered as "social housing". Cooperatives typically include a mix of residents, representing people of different ages, different kinds of households and different economic situations (Kronborg, 2014). Further, each cooperative is an independent legal and economic entity owned collectively by its residents. This means that responsibility for maintenance, renovation, upgrading, and energy retrofitting lies primarily with the residents themselves.

As a result of extensive post-war construction, a significant portion of the cooperative housing stock has now reached an age where renovation and upgrading are necessary. The first wave of large-scale renovations already began in the 1990s, and housing cooperatives therefore have a long-standing experience with upgrading measures. The building stock is generally described by interviewees as being in relatively good technical condition, reflecting decades of continuous maintenance. Typical interventions over the past 30 years include façade renovations (with or without additional insulation), replacement of windows and doors, installation of new heating systems, and upgrading of bathrooms and shared indoor and outdoor spaces.

Governance and implementation are organised through the cooperative model. Each housing cooperative is managed by an **elected board, chosen annually** by the general assembly, where each dwelling has one vote. While the board is responsible for day-to-day management, major renovation or retrofitting projects must be approved by the general assembly (OS15; OS16). Such projects are typically **financed through bank loans** taken out by the cooperative and repaid collectively through monthly common costs. This financing principle is widely recognised as a cornerstone of the Norwegian cooperative housing model and reinforces a strong sense of collective ownership and responsibility.

All our interviewees consistently emphasise that maintenance and upgrading are understood as **private responsibilities rather than as housing policy issues**. In a context where homeownership is dominant, renovation is largely framed as an individual or collective homeowner obligation rather than as a matter of public intervention. As several informants

noted, energy retrofitting was not initially approached as a political issue at all, but rather as part of routine value preservation and building maintenance (OS15; OS16).

At the same time, energy retrofitting has gained **visibility** in recent years as part of broader **climate and energy debates**. Although Norway is not a member of the European Union, discussions around whether **EU energy performance** directives could eventually apply to Norway have contributed to politicising the issue. Interviewees noted that the prospect of binding requirements has raised questions about public responsibility and financial support: if private homeowners are required to implement costly measures, public co-financing is increasingly seen as necessary (OS16).

Despite these debates, there is currently **no overarching national strategy mandating energy retrofitting in housing cooperatives**, nor any legislation requiring specific measures. Retrofitting remains voluntary and is initiated, planned, financed, and implemented by individual cooperatives. Typical recent measures include additional insulation, replacement of windows, and installation of solar panels (OS17; OS18; OS19).

Motivations for retrofitting are described by our interviewees from the three housing cooperatives as multiple but predominantly economic. Reducing energy consumption and heating costs, improving indoor comfort, and increasing property values are consistently identified as key drivers. Environmental considerations and contributions to the green transition are present, but usually secondary.

> The building is from 1975 (…) The façade consisted of 10 cm thick insulation, and we are now waiting for new insulation and cladding on the outside. In many cases, the insulation was very good, but there were challenges with thermal bridges and the indoor climate (…) It was partly based on the fundamental value-preserving approach taken by the previous board, and partly to address indoor climate challenges and improve the energy situation for all residents. (Housing Coop. Board member - OS16)

The role of financial incentives further reinforces this economic framing. A representative from Enny, a solar panel provider, highlighted how environmental ambitions are often intertwined with financial considerations.

> It may be a requirement or a wish from the board and the members of the housing cooperative that they want to contribute to the green transition. They want to have an environmental profile, so it can be a bit emotion-driven. Of course, the economy is the most important thing, and then we look at what we can call green benefits – green economic benefits at the banks. (Solar energy provider - OS17)

Public support schemes exist at both municipal and national levels, notably through **Oslo's Climate and Energy Fund and the state agency Enova**. However, interviewees from both the housing cooperatives, the consultancies and the municipality stress that these schemes typically cover only a limited share of costs and are not specifically tailored to housing cooperatives, often favouring actors with stronger financial capacity.

Overall, energy retrofitting in housing cooperatives emerges as a green transition pathway that is still largely non-mandatory, fragmented, and driven primarily by economic rationales, with environmental values playing a supporting role. Compared to other European ReHousIn cases, the Norwegian context is characterised by strong homeowner responsibility, limited regulatory pressure, and growing uncertainty about how future, potentially stricter energy requirements might reshape both governance arrangements and housing inequalities.

4.2 Participation and governance (procedural)

As outlined in the previous section, energy retrofitting in Oslo's housing cooperatives is initiated, planned, and implemented by the cooperatives themselves. **Procedural participation** is therefore **structurally embedded in the cooperative housing model**, which relies on internal democratic governance rather than external planning processes. All cooperatives are governed by an elected board, accountable to the general assembly, where each dwelling has one vote. Major renovation and energy retrofitting measures must be approved by the **general assembly** and are typically financed through collective loans repaid via monthly common costs.

In this sense, residents formally enjoy a high degree of influence over decisions related to upgrading the housing stock. However, interviews reveal that this participatory model is **unevenly activated** in practice and depends heavily on resident engagement and board capacity (OS15; OS16; OS20). Several informants describe participation as a **key vulnerability** of the system, particularly in large cooperatives with low attendance at general assemblies.

> We held an extraordinary general assembly to get it [the renovation project] through. We are 661 shares, but only 45 share owners met. We are maybe 50 to 100 people who are engaged, and almost 500 we never hear from. (Housing Coop. Board member - OS15)

Other cooperatives highlight more robust routines, underlining how long-term planning instruments and institutional memory can strengthen procedural governance. One informant described the role of a long-standing "maintenance key" and systematic follow-up as crucial to enabling complex renovation processes, while also stressing the importance of individual leadership and technical expertise within the board (OS16).

Interviewees consistently emphasise that **communication is central** to making participation meaningful. Explaining why measures are necessary, how they will be financed, and what their implications are for residents is described as essential to securing legitimacy and consent. As one board member noted:

> There is a lot of communication work around this that helps people understand why we are doing the work and what it means. If we don't do that, there will be many perceptions based on incomplete information. (Housing Coop. Board member - OS16)

At the same time, procedural participation is widely described as slow and demanding (OS21). Decision-making often requires multiple meetings and, in some cases, extraordinary general assemblies, particularly when loans are involved. From the perspective of external actors, such as technology providers, this makes retrofitting processes lengthy and uncertain:

> It is a long and heavy process. Agreements can change, and in the end everything has to be approved by the general meeting (Solar energy provider - OS17)

Overall, the case highlights a form of procedural justice that is formally strong but uneven in practice, highly dependent on engagement, competence, and communication within each cooperative.

4.3 (In)equity (distributional)

One of the most striking findings of the research is that energy retrofitting in housing cooperatives is generally **not perceived as a question of politics and not discussed in**

terms of inequality. Across interviews, retrofitting is framed primarily as a technical, economic, and managerial issue, rather than as a matter of redistribution or housing justice. This reflects the broader Norwegian housing context, where cooperative housing is understood as private property and upgrading is seen as the collective responsibility of residents.

At first glance, one might expect energy retrofitting to be unevenly distributed across Oslo, given the city's long-standing socio-spatial divide between the more affluent western districts and the traditionally working-class eastern areas. However, interview evidence challenges this assumption. According to a representative from OBOS Prosjekt, the consultancy company supporting many retrofitting projects, **the capacity to implement large-scale upgrades is not lower in the eastern parts of the city**—and may in some cases be stronger.

> We notice a big difference between east and west. The housing cooperatives in Oslo East rely much more on the advice they receive from us and use almost exclusively project and construction management to carry out projects, because they realize that they do not have the expertise themselves. For example, on Romsås, I think all the housing cooperatives have carried out complete renovations, and that is one of the poorest areas in Oslo. (…) Oslo East has a large number of large borettslag, which in turn provide significant financial resources that enable them to run large projects without any major consequences. (Consultancy housing and construction services – OS18)

The same informant emphasises that **size matters more than location**. Large housing cooperatives—often found in eastern Oslo—tend to function like small organisations, with paid board positions, hired operational staff, and accumulated assets, and thus with a greater ability to carry on with a retrofit process. Smaller cooperatives, by contrast, often lack both expertise and internal capacity, making retrofitting more difficult regardless of neighbourhood affluence.

While retrofitting is therefore not perceived as geographically unequal, **distributional tensions can emerge within cooperatives themselves**. Board members consistently stress that residents differ significantly in income, life stage, mortgage burden, and financial resilience. Cooperatives often include a mix of long-term owners with low incomes, families with high debt, and more affluent households who recently purchased at high prices. This internal heterogeneity complicates decision-making and makes boards particularly cautious about financial strategies.

Several informants also express concern that **not retrofitting may itself generate inequality**, by negatively affecting property values or living conditions over time. Across interviews—including those with consultants, technology providers, and municipal representatives—there is broad recognition of a **structural tension** within the cooperative housing model: while responsibility for upgrading lies collectively with residents, **the financial risks are unevenly borne**. This tension remains largely manageable under the current voluntary framework, but several respondents note that it could become significantly more problematic if energy retrofitting were to become mandatory in the future.

4.4 Political mobilization

Although both housing and energy are policy domains with a strong political dimension, energy retrofitting in housing cooperatives has **not generated visible forms of political mobilisation**. Across the interviews conducted, energy retrofitting measures were not framed as a political issue, nor as a matter of public contestation or collective claim-making. Instead,

they were consistently understood as a **private responsibility** of individual housing cooperatives, embedded in routine practices of maintenance, upgrading, and value preservation.

This lack of political mobilisation reflects several structural features of the Norwegian housing and energy context. First, the strong tradition of homeownership and cooperative self-governance fosters a **widespread acceptance** that decisions related to building maintenance and upgrading fall within the remit of residents themselves. Second, housing cooperatives are **not currently subject to binding legal requirements** to implement specific energy retrofitting measures. As long as retrofitting remains voluntary, interviewees do not perceive it as an issue that warrants political struggle or collective mobilisation beyond the cooperative level.

Norway's position outside the European Union further contributes to this depoliticisation. While **EU-level directives** on building energy performance have triggered intense political debate and mobilisation in several European contexts, their application in Norway remains **indirect and contested**. As a result, energy retrofitting is not yet experienced as an externally imposed obligation that might provoke resistance, claims for compensation, or demands for stronger public intervention. Instead, **it is approached pragmatically**, primarily through economic reasoning and internal decision-making processes within housing cooperatives.

Nevertheless, some interviewees anticipate that this **situation could change in the future**. Should stricter energy requirements be introduced—whether through national legislation or through closer alignment with EU standards—**energy retrofitting may acquire a more explicit political dimension**. In such a scenario, demands for clearer guidance, professional support, and more robust public funding schemes are likely to emerge.

> So, politically speaking, more professionally structured advice and support in the administration may be a tool that could lead to more people taking the necessary responsibility. (Housing Coop. Board member - OS16)

In parallel to debates on governance and responsibility, the current Norwegian energy context is characterised by a **high level of public intervention in electricity pricing**. From 1 October 2025, the government introduced **Norgespris**, a state-backed scheme offering households a fixed and predictable electricity price throughout the year. The aim of the scheme is to shield consumers from price volatility in the electricity market, enhance predictability for household budgets, and reduce exposure to sudden price spikes.

4.5 Socio-ecological impacts (positive)

Interviewees consistently describe a range of positive socio-ecological impacts associated with energy retrofitting in housing cooperatives. Beyond **reductions in energy consumption**, retrofitting measures are widely perceived as improving **everyday comfort, indoor climate, and overall quality of life**. Better insulation, new windows, and upgraded façades are described as making dwellings warmer, more stable in temperature, and more pleasant to live in, particularly during winter months. Energy retrofitting is also strongly associated with **value preservation** and, in some cases, value enhancement. Several informants frame upgrading measures as a long-term investment that strengthens the housing cooperative's position within the local housing market.

> We have also talked about the fact that we need to do something about the indoor climate in terms of insulation, energy heat loss and adding value to the property. We have seen that, in

relation to the area around us, the price per square meter in our housing cooperative is lower than the average for homes sold in the neighborhood. I would think that this will have some influence on the valuation of the price [in the future] in relation to the promise that has been made. (Housing Coop. Board member - OS16)

In this sense, retrofitting is not perceived merely as an environmental intervention, but as part of a broader strategy to maintain long-term economic and environmental sustainability of the cooperative housing stock.

Interviewees also emphasise the generally positive reception of completed projects among residents. Despite concerns related to costs and temporary disruption during construction, informants report high levels of satisfaction once projects are finalised. As the same board member notes:

My impression from talking to people and the other board members along the way is that there have been few complaints about the work and there has been a lot of positive feedback about how people experience their flats and how they experience the finished product – the finished work. (Housing Coop. Board member - OS16)

Beyond individual dwellings, upgrading measures are also perceived as contributing to the **aesthetic improvement of buildings and shared spaces**, reinforcing a sense of collective ownership and pride in the cooperative.

It is important to situate these perceptions within the broader Norwegian energy context. Energy prices in Norway are comparatively low, and at present they are further moderated by the Norgespris scheme, which provides households with a fixed and predictable electricity price. As a result, while **energy savings** are acknowledged as beneficial, they are **not always the primary or most urgent motivation** for retrofitting. Instead, comfort, building quality, and property value often emerge as equally—if not more—important drivers of positive perceptions. Also, environmental responsibility is seen as growing concerned.

I am very happy that people are trying to look ahead to the long term with regard to the green shift. The older generation who sat on the board saw it more as a cost factor, so you can see a trend in the new board, where perhaps the green shift is something you take on board and feel more strongly about, and something you are a little more committed to than you were before, so I would definitely say that it started with a cost limit, but has shifted a bit more towards thinking about the environment and how to lead the way forward. (Housing Coop. Board member - OS15)

4.6 Socio-ecological impacts (negative)

Despite the broadly positive assessment of energy retrofitting, interviewees consistently emphasise its **high economic costs** as the main negative socio-ecological impact. All board members interviewed express strong awareness that large-scale retrofitting projects place uneven financial burdens on residents, whose economic situations vary considerably. While energy measures are generally perceived as necessary and desirable, they also raise concerns about **affordability, social vulnerability, and the risk of exclusion**, particularly in cooperatives with ageing populations or low-income households. So far, more vulnerable households appear to have coped with rising energy costs through everyday “do-it-yourself” strategies and behavioural adjustments; however, they would likely face greater difficulties in

absorbing the upfront and long-term financial burdens associated with large-scale energy retrofitting (OS21). Indeed, a recurring concern relates to the **potential impact of increased monthly costs** on residents with limited financial flexibility.

> Yes, it is difficult for people to make ends meet. This is not the area (bydel) with the highest income, but what we notice, or hear feedback about, is that it is difficult to make ends meet, and that people have to work even harder to avoid increases in rent or shared costs. But the reason shared rent (felleskostnadene) is high is that it is expensive to live in Oslo. There are high fees for electricity and things like that, but at the same time, renovations have been carried out that have cost a lot of money because we are such a large borettslag, and that means large loans, so you end up paying millions in interest expenses every single month. (Housing Coop. Board member - OS15)

Board members highlight that **elderly residents are especially exposed**: many have lived in the cooperative for decades, purchased their dwellings early, and may be asset-rich but income-poor. In this context, rising common costs linked to loan repayments for retrofitting are perceived as a potential strain on everyday living conditions.

> It has been difficult for many people – especially for many elderly people. There are many elderly people living in the housing cooperative who have lived here for many years, who bought at an early stage, and who may not have the financial means to cope with increased daily costs – even though their homes are very valuable. (Housing Coop. Board member - OS16)

At the same time, informants stress that boards actively try to manage these risks through careful financial planning and incremental decision-making. While cost increases are described as challenging, they are also framed as manageable so far, thanks to a strong sense of responsibility on the part of boards to balance long-term building maintenance with residents' ability to pay.

> We are constantly calculating what this will mean for shared costs – how can we solve this but at the same time ensure that people do not end up with higher rents or shared costs?(....)But it is very rare for someone to stand up and say "we can't afford this" at a general meeting. But it's something the board discusses for every single investment we make – how are we going to finance this? What does it mean for the common costs? (Housing Coop Board Member - OS20)

4.7 Tensions and power dynamics between stakeholders/actors

In contrast to other green transition domains examined in this report, tensions and power dynamics between stakeholders play a **relatively limited role** in the case of energy retrofitting in housing cooperatives—at least under current conditions. As long as energy retrofitting measures remain voluntary and are not mandated by law, interviewees do not frame them as sites of broader political or institutional conflict.

Housing cooperatives themselves emerge as the primary arenas where decisions are negotiated and contested. Residents are simultaneously homeowners, decision-makers, and those who ultimately bear the financial consequences of retrofitting projects. **Potential tensions therefore unfold mainly within cooperatives,** rather than between cooperatives and external actors such as the municipality or private developers. Interviewees acknowledge

that disagreements may arise between residents, or between residents and elected boards, particularly around costs, timing, and prioritisation of measures. These tensions are typically addressed through general assemblies, where lengthy discussions and negotiations are common.

However, **none** of the interviewees described these internal disagreements as escalating into **major conflicts**. Instead, they are portrayed as an expected and manageable feature of cooperative governance. Even in large housing cooperatives with diverse resident profiles and varying financial capacities, interviewees emphasise that decision-making processes generally result in broad consensus, particularly when retrofitting measures are framed as necessary for maintaining building quality, comfort, and long-term value.

> There are always some critical voices, but there is no major dispute. There is always a large majority in favour of adopting the decisions. In such a large borettslag there is great diversity among the residents, and there will of course be different views and many questions, but there has been no big dispute. There is broad agreement, at least we think this is important to do. (Housing Coop. Board member - OS16)

4.8 Innovative governance mechanisms

Interviewees identify only a limited set of governance innovations in relation to energy retrofitting in housing cooperatives (OS17; OS18; OS19). Rather than pointing to new regulatory instruments or binding policy frameworks, respondents consistently emphasise the need for **improved financial support schemes, enhanced access to expertise, and more systematic information** and guidance for housing cooperatives (OS21). Innovation is thus framed less in terms of institutional restructuring and more as **incremental adjustments** to existing support mechanisms.

Board members highlight that while **financial incentives** exist, **access to them is uneven** and often dependent on individual capacity, professional networks, or the presence of knowledgeable actors within the cooperative. Several informants stress that navigating support schemes requires organisational competence that not all cooperatives possess, particularly smaller ones.

> There are incentives and support schemes, but I would like to see them expanded and made less dependent on individuals. You are dependent on having contact with a property management company or having an advisor on board. For there to be resources available to assist with planning and implementation is something that could add value, and that both the state and the municipality maintain and expand the schemes that are in place. (Housing Coop. Board member - OS16)

From the municipal perspective, interviewees describe ongoing efforts to refine and target existing grant schemes. Representatives from the City of Oslo explain that **recent adjustments in the funding and support schemes aim to improve distributional outcomes,** shifting support away from detached private homes—where grants were found to concentrate in high-income western neighbourhoods—towards housing cooperatives and condominiums, where support can reach a broader population.

> “Previously, we provided support for private homes, but we no longer do so. By providing support only to housing cooperatives and condominiums we reach more people, including

those who would not have had the resources or opportunity to apply on their own. This is a very concrete distributional measure." Municipal representative (SO19)

At the same time, **municipal actors underline** that their **mandate remains centred on climate and energy objectives rather than social equity**, which constrains how explicitly redistribution can be addressed within these schemes. This tension is reflected in ongoing efforts to improve communication and outreach while remaining within a climate-policy framework. Housing cooperatives that have implemented energy retrofitting measures emphasise the decisive role of public support in enabling projects, particularly for more capital-intensive investments such as solar panels. Without municipal grants and supplementary funds from cooperative organisations, several projects would not have proceeded.

We would not have gone for the solar panel solution if we had not received support from the Oslo Kommune. The support was crucial for making the project possible. (Housing Coop. Board member - OS15)

Finally, consultants, technology providers and researchers stress that the **lengthy and complex decision-making processes** within housing cooperatives pose a significant challenge for any future policy that might seek to mandate energy retrofitting (OS21).

4.9 Tourism and market pressures

Tourism and short-term rentals do not emerge as a relevant issue in the case of energy retrofitting in housing cooperatives. Renting out dwellings is regulated within cooperatives, and interviewees do not associate retrofitting measures with tourism-related pressures.

Market dynamics are instead discussed indirectly, primarily through the lens of property values and long-term asset maintenance. Several informants describe energy retrofitting as a way to preserve or enhance the value of dwellings relative to surrounding areas, rather than as a driver of broader market pressure. Retrofitting is thus framed less as a factor contributing to housing price inflation, and more as a **defensive strategy aimed at avoiding depreciation in an increasingly competitive housing market**.

(...) if you look at apartments – before, two-room apartments were around 4-4.5 [million] and now go for 5.5 [million], and four-room apartments that previously went for a maximum of 8 are now listed for 9.6. There is a lot of psychology involved in buying a home and living there, so hopefully the [aesthetic] expression that is now here and the standard that this contributes to will have an impact. Board Member (SO16)

4.10 Gaps in perceptions between civic groups and public agencies

In the case of energy retrofitting in housing cooperatives, gaps in perceptions between public agencies and civic actors do not take the form of open conflict, but rather emerge as **differing priorities and problem framings.** On the side of **public authorities**—particularly municipal climate and energy agencies—energy retrofitting is primarily understood as a **climate policy instrument.** The main concern is reducing energy consumption and greenhouse gas emissions, in line with municipal and national climate targets. Support schemes are therefore designed and justified mainly on environmental grounds, with limited explicit attention to social or distributional effects.

We are constantly working on communication and how we can reach out and specific points on how we can reach out more with information than what we support, because our mandate is to provide support for climate and energy measures, not social equality measures. So, in a way, we have to argue why we support the various measures, which will always take climate emissions and energy reduction into account, as that is our mandate." Municipal representative (Staff member at the Municipal Climate Agency -OS19)

Housing cooperatives, by contrast, frame energy retrofitting primarily as an **economic and managerial issue**. For boards and residents, the central concern is affordability: how investments will affect monthly common costs, residents' ability to pay, and the long-term financial sustainability of the cooperative. While environmental considerations are often acknowledged and sometimes valued, they remain secondary to cost control, property maintenance, and value preservation.

I think the residents know that the board is doing its best to keep common costs down." Board-member (Housing Coop. Board Member - OS20)

I think some of the good work that has been done is to create an understanding that the housing cooperative-model is a type of community model where everyone has a responsibility to ensure that it [the community] is maintained (Housing Coop. Board member - OS16)

5 Section 5 – Critical Analysis

5.1 Introduction: Green transitions and housing inequalities in a high-pressure context

Taken together, the case of Nydalen and that of energy retrofitting in cooperative housing in eastern Oslo provide a particularly insightful lens through which to assess the impacts of green transitions on housing inequalities in a highly pressured urban context such as Oslo. The two cases capture distinct yet complementary dimensions of Oslo's green transition. Nydalen represents one of the most advanced and consolidated examples of hard densification combined with nature-based solutions (NBS) in Norway—a strategy that is not only more developed nationally than in many EU contexts (WP3), but also increasingly central to Oslo's urban development model. By contrast, the case of energy retrofitting sheds light on a policy field that remains less developed, fragmented, and largely depoliticised, yet likely to generate significant future challenges in terms of affordability, social equity, and housing security as climate requirements intensify.

Together, these cases allow for a differentiated assessment of both **current and emerging socio-spatial inequalities** associated with green urban transitions. While Nydalen illustrates how greening and densification strategies can intersect with—and in several respects intensify—housing inequalities already under way, energy retrofitting highlights how future climate obligations may place new burdens on households within a housing system strongly oriented toward private responsibility and homeownership.

5.2 Nydalen: advanced densification and the restructuring of housing inequalities

The Nydalen case illustrates how green urban transition initiatives can reshape housing inequalities in high-pressure urban contexts. While Nydalen is often presented as a flagship example of densification combined with green-blue infrastructure—most notably along the Akerselva river—interview evidence points to a more ambivalent outcome, shaped by the interaction between environmental ambitions, market-led development, and weak coordination of housing policies.

Green transition initiatives in Nydalen have not directly generated housing inequalities, but they have contributed to **intensifying and restructuring them**. Densification around the river and major transport infrastructure has driven up land values and housing prices, reinforcing processes of social selection. At the same time, the environmental qualities associated with the river corridor and the area's green branding have increased neighbourhood attractiveness, further amplifying market dynamics. In this context, green infrastructure functions less as a compensatory public good and more as a value-generating asset within a predominantly market-driven development model.

Crucially, the Nydalen case also reveals the **limits of the green transition even on environmental or green quality terms**. Although green-blue infrastructure and NBS are formally embedded in planning frameworks and widely mobilised in policy discourse, their implementation has been uneven and insufficient (Venter et al., 2023). Interviewees consistently note that public authorities either lacked the capacity or acted too late to negotiate the provision of accessible, everyday green spaces with private developers. As a result, green infrastructure has been largely concentrated along the river corridor, while interior parts of the district remain highly dense and undersupplied with proximate public green areas. Even along the corridor, high densification means that the blue spaces can be overused and feel crowded, thus undermining the "nature experience." This spatial imbalance has generated tensions around environmental access and everyday liveability, particularly for families and residents living in small apartments. Ecological concerns related to residential development located too close to the river further underscore the fragility of the green transition outcomes in practice.

Housing-related impacts are already clearly felt. Interviewees describe declining affordability for ownership, limited availability of larger dwellings suitable for families, and high levels of residential turnover. While the rental market has enabled access to Nydalen for highly educated, medium-income singles and couples—often newcomers to Oslo—this access is widely perceived as temporary and insecure due to weak tenant protections and short-term contracts. As household needs evolve, particularly with the arrival of children, remaining in the area over the long term becomes increasingly unfeasible.

Looking ahead, respondents expect these dynamics to intensify rather than diminish. Without stronger coordination between densification, NBS, and housing affordability policies, Nydalen is likely to consolidate as a socially selective neighbourhood, characterised by high environmental quality for some—particularly households located close to the Akerselva or the new park—and growing exclusionary pressures for others.

5.3 Energy retrofitting in housing cooperatives: strengths and vulnerabilities of a private-responsibility model

The case of energy retrofitting in cooperative housing in eastern Oslo illustrates a different, yet equally revealing, dimension of Oslo's green transition. It reflects core characteristics of the Norwegian housing system: a high level of homeownership, a strong emphasis on private responsibility, and a limited integration between housing affordability policies and climate strategies.

Housing cooperatives represent a substantial share of Oslo's housing stock, particularly in the eastern parts of the city. The cooperative model facilitates maintenance and upgrading by pooling responsibility and enabling collective borrowing, making large-scale renovations possible even where individual households would struggle to finance them alone. In this sense, the cooperative structure constitutes a relative strength: many cooperatives—including those in less affluent areas—have successfully implemented energy-efficiency measures, contributing to building quality, comfort, and long-term value preservation.

At the same time, this model also reveals significant vulnerabilities. Energy retrofitting is currently voluntary and not embedded in any overarching national strategy. While there is increasing awareness of energy use and climate concerns, retrofitting remains primarily driven by economic considerations—such as reducing energy costs or increasing property values—rather than by social or redistributive objectives. Importantly, energy retrofitting is not widely perceived as a political issue by residents or boards, reflecting the broader depoliticisation of housing maintenance within a system centred on private ownership.

If energy retrofitting were to become mandatory in the future—through national regulation or alignment with EU standards—these vulnerabilities could become more pronounced. Higher common costs associated with retrofitting may disproportionately affect economically fragile households, including elderly residents and those with limited income despite high housing wealth. While displacement has not been observed in the cases studied, interviewees acknowledge the risk that some households could be forced to move, thereby missing out on the long-term benefits of retrofitting, such as increased property values and lower energy expenses.

Moreover, differences in organisational capacity, knowledge, and access to information may lead to uneven retrofitting outcomes across cooperatives. Cooperatives with fewer resources or less experienced boards may struggle to plan and implement complex projects, potentially creating a future pattern of uneven housing quality and value across the city.

5.4 Housing justice dimensions: procedural, recognitional, and distributional

Across the two cases, several critical housing justice issues emerge. **Distributional justice** concerns are most visible in Nydalen, where exclusionary pressures operate primarily through affordability, dwelling size, and life-course dynamics rather than direct displacement. Small apartments and a relatively accessible rental market facilitate entry for students, newcomers, and medium-income singles and couples, but this accessibility is highly temporary. Families and households requiring larger dwellings face increasing constraints, leading to outward mobility as needs change. Vacancy-chain arguments—whereby high-end housing is expected

to free up family dwellings elsewhere—are widely questioned by interviewees and appear to function more as a planning rationale than as an empirically robust mechanism.

In the case of energy retrofitting, distributional issues are less visible at present but loom as future risks. While retrofitting can raise property values and reduce energy costs, the financial burden is borne unevenly, and those forced to sell early may lose out over time.

Procedural justice displays a striking asymmetry. In Nydalen, civic participation ultimately proved effective in relation to green space provision: sustained mobilisation, media attention, and public debate led to the reallocation of land and the decision to develop a large public park. This demonstrates that participatory mechanisms can, albeit belatedly, influence environmental outcomes. By contrast, housing affordability and tenure remain largely outside participatory arenas, framed as technical or market-driven issues beyond neighbourhood-level influence.

In the cooperative retrofitting case, procedural participation is formally strong—decisions are taken democratically within general assemblies—but participation is uneven in practice, with a small share of residents often carrying the main responsibility.

Recognitional justice gaps cut across both cases. Low-income households are largely absent from Nydalen, both empirically and in planning rationales, reflecting the lack of instruments aimed at enabling their inclusion. Elderly residents and older couples appear indirectly in vacancy-chain narratives, yet their actual mobility is uncertain and constrained by attachment, affordability, and limited alternatives. Finally, the design and use of green infrastructure in Nydalen privilege mobile, able-bodied users, limiting accessibility for children, elderly people, and those with reduced mobility. Several interviewees implicitly point to groups whose needs and constraints are insufficiently recognised within current retrofitting practices. Elderly residents, long-term owners with low or fixed incomes, and households who bought their dwellings at an early stage are repeatedly mentioned as potentially vulnerable to rising common costs. Yet these groups are rarely recognised as such within policy frameworks, as energy retrofitting is primarily understood as a technical and economic issue rather than a social one. The dominant assumption that homeowners are generally capable of absorbing increased costs contributes to rendering these vulnerabilities largely invisible.

Recognitional gaps also affect households with limited financial literacy or reduced capacity to engage in complex decision-making processes. While the cooperative model is formally democratic, effective participation often presupposes time, knowledge, and confidence in dealing with technical and financial matters. Residents who lack these resources risk being marginalised within internal deliberations, even when decisions have long-term consequences for their housing security.

5.5 Comparative overview and concluding reflections

Analytically, Nydalen can be situated within a cluster of hard densification combined with NBS on brownfield and infrastructural sites in municipalities under sustained housing market pressure. Densification is justified through environmental objectives—compact development, public transport integration, green-blue infrastructure—yet implemented in a context where housing affordability is largely delegated to market mechanisms (Cavicchia, 2023).

The **primary stressor in Nydalen is not tourism but housing market pressure** driven by speculative development, rising land values, and a weakly regulated rental sector. The actor

constellation combines strong private developers, a municipality with limited land ownership and constrained regulatory tools, and highly resourceful civic groups capable of mobilising around environmental—but not housing—issues.

The energy retrofitting case highlights a different vulnerability: the **reliance of retrofits on private responsibility within a sector that will likely face increasing climate-related demands**. While the cooperative model has important democratic strengths, there is the risk that cooperatives are not able to limit inequalities if stronger regulatory requirements are introduced without adequate support.

Taken together, the Oslo cases show that green transitions are not neutral processes. Without stronger coordination between environmental ambitions and housing policy—particularly around affordability, tenure security, and recognition of vulnerable groups—green urban development risks producing forms of sustainability that are environmentally visible yet socially partial.

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Appendix 1 – Glossary

Avantor-A major private real estate developer and landowner in Oslo, particularly influential in large-scale redevelopment projects such as Nydalen, with a central role in shaping urban form and land-use outcomes.

Borettslag- A housing cooperative ownership model common in Norway, where residents own shares granting the right to occupy a dwelling and collectively own and manage the building through a democratically elected board.

Bydel- An administrative district of Oslo responsible for local welfare services (such as health, childcare, and social services), but with limited authority over land-use planning and housing development.

Enny-A private energy service company specialising in solar energy solutions for housing cooperatives, often developing shared-risk and shared-investment models for photovoltaic installations.

ENOVA-A state-owned agency under the Norwegian Ministry of Climate and Environment that provides financial support for energy efficiency and renewable energy measures in buildings, industry, and infrastructure.

Felleskostnader (Common costs)-Monthly shared costs paid by residents in housing cooperatives (borettslag), covering loan repayments for common debt, maintenance, utilities, and the operation of shared facilities and services.

Markagrensa-A legally protected boundary surrounding Oslo's built-up area that preserves forests and recreational land, strictly limiting urban sprawl and reinforcing densification within existing urban areas.

Norgespris-A national electricity pricing scheme introduced by the Norwegian government that offers households a fixed and predictable electricity price, partially shielding consumers from market volatility and high energy costs.

Nurse Index-The nurse index is an indicator of housing affordability used in Norway and it is

expressed as the percentage of dwellings sold in a specific year that a nurse can afford to buy. In 2025, this percentage was 16,7% in Stavanger vs. 2,5% in Oslo.

OBOS- Norway’s largest cooperative housing organisation and developer, involved in both housing provision and property management, and a key actor in urban development and housing cooperatives in Oslo.

Appendix 2 – Key interview data and transcripts

#	Position of Interviewee	Sector/company	Date of interview	Media
OS01	2 Municipal staff members (urban planning)	Public sector	27-May 2025	Teams
OS02	Member	Environmental association	28-Aug 2025	In person
OS03	Local activist (local park initiative)	Civil society	28-Aug 2025	In person
OS04	Member	Civil society (parents' committee)	11-Sep 2025	Teams
OS05	Representative	Civil society (minority committee)	26-Sep 2025	Teams
OS06	Local politician (district level)	Local government	6-Oct 2025	In person
OS07	Local politician (district level)	Local government	16-Oct 2025	Teams
OS08	Planning consultant; former municipal planner	Consultancy / former public sector	17-Jan 2025	Teams
OS09	2 Researchers	Research institute	20-Jan 2025	Teams
OS10	Member of a Migrant Association and Resident	Civil society	21-Oct 2025	Teams
OS11	Journalist	Media	23-Oct 2025	Google Meet
OS12	Environmental association representative; former Municipal Staff	Civil society / former public sector	6-Nov 2025	Teams
OS13	Academic staff member local university	Higher education	14-Nov 2025	In person
OS14	Withdrew consent after interview	—		

OS15	Board member	Housing cooperative	02-Oct 2025	Teams
OS16	Board member	Housing cooperative	03-Oct 2025	Teams
OS17	Employee	Private company (Solar energy provider)	08-Oct 2025	Teams
OS18	Employee	Consultancy (housing and construction services)	13-Oct 2025	Teams
OS19	Staff member	Municipal climate agency	28-Oct 2025	Teams
OS20	Board member	Housing cooperative	04-Nov 2025	Teams
OS21	Researcher	University	13-Jan 2026	Teams