Where can Inclusive Neighbourhood Energy Transitions Land? Mapping Boundary Spaces in Ghent, Belgium – Lena Verlooy, Laura Shllaku and Tim Devos

Abstract
Achieving inclusive and equitable energy transitions is an urgent challenge in the face of achieving urban carbon neutrality by 2050. Especially in underprivileged neighbourhoods, policy frameworks and discourses have difficulty 'landing' – being accepted and implemented, due to social, spatial and economic challenges. In this article we conceptualise the idea of boundary spaces: community spaces critical for democratizing neighbourhood energy transitions, serving as platforms for inclusive and citizen-centred transformations. Boundary spaces facilitate knowledge exchange between experts and communities, enabling experimentation across stakeholder boundaries while addressing questions of inequality. Boundary spaces provide opportunities to challenge dominant narratives by making energy transitions visible and accessible through lived experiences. In this paper we propose four pillars constituting boundary spaces. Through participatory mapping workshops in two underprivileged neighbourhoods in Ghent, Watersportbaan and Sluizeken-Tolhuis-Ham, we identified potential boundary spaces that can catalyse community-led energy initiatives. This framework offers an approach for advancing just energy transitions that recognise local knowledge and needs and address the socio-spatial complexities of underprivileged neighbourhoods.

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In underprivileged neighbourhoods, policy frameworks such as PEDs or energy communities have difficulty 'landing' – being accepted and implemented, due to social, spatial and economic challenges. In fact, these well intended initiatives can trigger 'push factors', such as gentrification, social exclusion, and further marginalization of already disadvantaged populations. Boundary spaces emerge as crucial intermediaries in this context, helping energy transitions 'land' effectively in disadvantaged communities. By creating a platform where energy frontrunners and local residents can meaningfully exchange knowledge, these spaces democratise neighbourhood-level discussions about energy futures. Through their capacity to make abstract transition concepts tangible and accessible within everyday lived experiences, boundary spaces create opportunities to challenge dominant narratives and foster more inclusive approaches to sustainability.

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Introduction

Energy transitions are processes where 'contrasts' and inequalities between inhabitants play out: where wealthier communities often benefit from renewable energy initiatives or climate resilience measures, disadvantaged areas remain excluded from such benefits. Moreover, the needs of disadvantaged inhabitants are often misrecognised due to the little participation opportunities in decision-making processes.

To reach the EU's 2050 carbon neutrality target, the framework of Positive Energy Districts (PEDs) has been proposed as neighbourhood-level solutions aiming for net zero CO_2 emissions. While they offer potential for sustainable urban transformation, most PED efforts focus on newly developed areas (Koutra et al., 2023). Their application in dense, underprivileged urban neighbourhoods remains limited and challenging, particularly in areas marked by displacement effects, social exclusion, and marginalization. So far, PEDs have largely failed to address justice and wellbeing issues, an issue particularly relevant for underprivileged neighbourhoods where vulnerabilities are concentrated (Hearn et al., 2021).

In this article we argue for a better understanding of how energy transitions can 'land' in underprivileged neighbourhoods: referring to the need of embedding energy initiatives in the spatial, social, cultural and economic realities of the local communities, and understanding where transitions can be meaningful to the inhabitants. We do so by conceptualizing 'boundary spaces' as spaces that can be catalysts for community-led energy transitions. Boundary spaces aim to democratise energy transitions by promoting place-based knowledge exchange between local communities and experts, and by initiating a conversation based on community needs and aspirations. We argue that boundary spaces can act as tools that can navigate and overcome 'contrasts' in energy transitions.

In this article we firstly bring together relevant literature that theoretically frames boundary spaces. Secondly, as a result of collective mapping workshops in two underprivileged neighbourhoods in Ghent, Sluizeken-Tolhuis-Ham and Watersportbaan, we identify potential boundary spaces based on four pillars. We argue that these boundary spaces can help land neighbourhood energy transitions effectively, contributing to emerging scholarship on just energy transitions by shifting focus from technocratic solutions toward democratic processes.

Beyond technocracy, towards just neighbourhood transitions

In underprivileged neighbourhoods, energy transitions risk exacerbating energy injustices by proceeding without meaningful community involvement. These transitions typically unfold through undemocratic processes that ignore local contexts and socio-spatial realities (Bell et al., 2020). With decisions regarding energy transitions happening out of the public eye, because of little public participation and deliberation (Newell & Mulvaney, 2013), the needs, knowledge and skills of underprivileged communities remain misrecognised (Simcock et al., 2021), perpetuating energy injustices.

Despite the growing acknowledgment for the need of democratizing decisions regarding energy transitions (Szulecki, 2018), much of the discourse remains technocratic, leaning towards techno-economic determinism (Baker et al., 2014). This approach reduces transitions to technological fixes and market-driven solutions, sidelining crucial questions of power, justice, and inclusion. Moreover, as the push for climate neutrality by 2050 accelerates, urgency discourses surrounding clean energy transitions have intensified. Discourses emphasising a sense of urgency are often co-opted to justify privilege, harm, and injustice (Whyte, 2020) and the ecomodernist push for rapid decarbonization fails to consider socially and ecologically sustainable pathways (Bell et al., 2020). Creating just energy futures requires political shifts that prioritise communal wealth over private profit. Energy transitions must serve communities, aligning with their needs rather than being imposed upon them. This necessitates

collaboration and the cultivation of imaginative capacities that strengthen democracy, trust, accountability, and well-being (Bell et al., 2020).

The neighbourhood represents a crucial scale for effective energy transitions, as a 'space between home and city', manageable and closely connected to local actors (Hajer, 2020). At the neighbourhood scale, energy issues like poverty and access are tangible, enabling place-based, democratic solutions. Despite measures taken by the European Commission to stimulate energy transitions at local scales, such as energy communities or PED frameworks, landing energy transitions in underprivileged neighbourhoods remains challenging, due to various socio-spatial complexities. In the next section we therefore argue how boundary spaces offer a way to address the gap of implementing these instruments in diverse, existing urban complex contexts, where lived experiences of energy injustice and transition efforts materialise.

Landing energy transitions in boundary spaces

Boundary work has emerged as a pivotal concept in the social sciences, shedding new light on the relational dynamics that shape society. It refers to an active process through which individuals or groups shape, maintain, challenge or transform social, symbolic, material, or temporal boundaries in order to structure interactions, distribute knowledge (Langley et al., 2019; Van Gaubergen et al., 2025), and navigate relationships between distinct social worlds (Koehrsen, 2017). As such, it serves as a mechanism for enabling innovation, negotiating roles, and informing policymaking by managing the spaces between established practices and emerging possibilities (Koehrsen, 2017). In short, boundary work enables spaces where diverse social actors can deviate from routine practices and explore new, often transformative, possibilities.

In this paper we want to extend the concept of boundary work by conceptualizing the concept of boundary spaces in the context of energy transitions. Boundary spaces are the type of spaces where boundary work takes place. We want to frame boundary spaces as critical spaces for testing ideas and promoting knowledge exchange between experts and local communities in energy transition, and which operate at the intersection of top-down initiatives and grassroots activities. We argue that boundary spaces can serve as catalysts for community-led energy transitions, creating foundations for experimentation, collective action and social cohesion. Contrary to the view that experimentation has been reduced to 'a matter of efficiently managing stakeholders and socio-technical innovations', as many critics state (Sierhuis et al., 2023), we see experimentation happening in boundary spaces where different, often contradictory interests of plural urban actors coexist. Hereby, the role of boundary spaces among others would be to re-politicise and increase energy democracy in energy transitions.

In the context of underprivileged neighbourhoods, we can identify boundary spaces that act as low-threshold accessible spaces, often embedded in residents' daily activities and practices, and constituting a central role in the fabric of community life. A clear example being community centres or other places where important social welfare work takes place. By trying to understand the everyday life realities of underprivileged inhabitants and by fostering dialogues, boundary spaces can help to identify interventions for transforming underprivileged neighbourhoods (Wolfram et al., 2019). By creating time and building mutual capacity, boundary spaces foster 'thickened' relationships that enable diverse citizens to engage in 'open-ended meaning-making processes' (Giambartolomei et al., 2023).

Methodological approach

Our research examines two underprivileged neighbourhoods in Ghent with distinct characteristics: Sluizeken-Tolhuis-Ham (STH) and Watersportbaan (WSB). STH is a 19th-century dense, multicultural, area typically defined by small private houses, with minimal public and green spaces. A large part of the housing stock in STH is need of renovation. Sluizeken-Tolhuis-Ham is currently experiencing transformation driven by ongoing real estate developments, creating growing tensions between the existing residential fabric and newer developments. While STH has been included in Ghent's urban renewal agenda, energy transition plans remain fragmented. A heat study conducted for the area failed

to identify clear pathways for collective energy solutions, instead suggesting reliance on local opportunities such as geothermal energy beneath semi-public spaces or rooftop solar installations. WSB presents a contrasting urban landscape, typified predominantly be a 1960s modernist high-rise social housing scheme, requiring urgent renovation. That has been described as housing social tenants facing poverty, psychological challenges, homelessness, and substance abuse issues. Moreover, this inner-city area is marked by large campuses of different institutional stakeholders. Despite inadequate community services and human-scaled public spaces, the substantial green areas between buildings offer unique potential. Recently prioritised in Ghent's urban renewal agenda, WSB is now undergoing feasibility studies for implementing a heating network utilizing residual heat.

In these two neighbourhoods we aim to thoroughly understand the local context, so that boundary spaces can tap into the neighbourhood particularities, as the spatial, social, cultural, historical, governance and political characteristics of a neighbourhood influence the barriers and opportunities for transformation. Consequently, we use a methodology that is *spatially situated*, to address the needs and aspirations of inhabitants (Elmallah et al., 2022). Moreover, we call for a *participatory approach* to co-create knowledge, recognizing local knowledge as vital for understanding the neighbourhood particularities (Huttunen et al., 2022). Combining spatially situated and participatory approaches, we used collective mapping workshops to conceptualise and identify boundary spaces. Collective mapping is a tool that helps to understand space and its social relations. It moreover helps to capture perceptions, experiences, and knowledge of the social environment in the neighbourhood, under which power relations (Ledezma, 2023). Furthermore, collective mappings can contribute to cross-sector collaboration, as neighbourhood energy transitions will require different actors from different sectors to collaborate on a common agenda (De Moor, 2018).

Through a series of workshops, we brought together stakeholders such as social partners, city representatives, and inhabitants. To accompany the workshops and spark the conversation, we used maps informed by exploratory conversations and desktop research we conducted beforehand. To ensure accessibility to all stakeholders involved in the workshops, we aimed moving beyond a frequently used technical language in energy debates. Instead, we grounded our discussions in the everyday services that energy enables, such as caring, maintaining, working, and more, to make energy conversations more relatable and tangible.

Table 1 summarises the 11 collective mapping workshops we organised in the two case study neighbourhoods.

Table 1 Collective mapping workshops in Watersportbaan and Sluizeken-Tolhuis-Ham

Workshop Location	**Participants**
Artevelde Sports Campus (Secondary School), WSB	Neighbourhood director; Neighbourhood anchor ‘Artevelde’ Highschool; Outreach coordinator kindergarten ‘Bollekensschool’
De Vlaschaard (Local service centre), WSB	Inhabitants
De Vlaschaard (Local service centre), WSB	City official from the climate team; neighbourhood workers
STEK (Neighbourhood outreach centre), WSB	Housing support consultant ‘Woonwijzer’; Director advice centre for energy efficient living and renovation ‘De Energiecentrale’; Outreached community worker ‘Saamo’; Building superindendent social housing company ‘Thuispunt Gent’
Jan Palfijn (Hospital), WSB	City official from the climate team, from team urban renewal; Consultants involved in the energy landscape study for Watersportbaan; Technical facility manager and director ‘Jan Palfijn Hospital’
Dok Noord (Commercial site), STH	Personnel from poverty organisation ‘Kras’ and environmental organisation ‘Breekijzer’, with offices located on the Dok Noord Site
Neighbourhood centre, STH	Neighbourhood inhabitants

Neighbourhood centre, STH	Neighbourhood workers
Sint-Lucas (Hospital), STH	Administrative and strategic personnel from the 'Sint Vincentius' secondary school (programs within the study area Society and Welfare); Head of care department 'Sint-Lucas' Hospital; Rental Counsellor social housing company 'Thuispunt Gent'
Neighbourhood centre, STH	Youth worker 'Broei', Artist involved in a socio-cultural neighbourhood project 'GAST'
Amal (Agency for integration), STH	Director integration agency 'Amal', Director cultural organisation 'de Centrale', City official team urban renewal

Mapping boundary spaces: four pillars

The next sections discuss the pillars that helped us conceptualise and map boundary spaces, based on scholarly research and empirical work during collective mapping workshops. In the workshops, a wide range of initiatives were mapped. This paper focuses only on the most relevant findings to support just transitions through boundary spaces. As such, we only present a selection of the data gathered.

Pillar 1 - space

Recognizing that energy transitions must become more accessible, we emphasise the importance of anchoring these transitions within visible and easily reachable neighbourhood locations. Accordingly, this paper identifies space or place as the first foundational pillar of boundary spaces. Access to local resources, such as neighbourhood amenities, public spaces and streets, serve as a focal point for collective action and community self-organization (Foster, 2013). Boundary spaces can potentially exist within neighbourhoods, functioning as vital 'touchpoints' where residents can interact and collaboratively envision the future of their community. The physical presence of welfare, educational, social, and cultural institutions—such as hospitals, schools, nursing homes, public offices, libraries, cultural centres, sports facilities, and other third spaces—serves as vital nodes within a neighbourhood's social ecology. These everyday spaces of encounter support community life and foster engagement, therefore making them valuable potential boundary spaces for connection and collaboration (Pagh & Cook, 2023).

Identifying specific places, urban commons, or everyday spaces within the two selected case studies served as the starting point for reflecting upon potential boundary spaces. However, for a place to qualify as a boundary space, this initial spatial pillar must be complemented by the other three pillars defining boundary spaces. In Watersportbaan, several locations emerged as potential boundary spaces. For instance, Jan Palfijn hospital, associated with care and health services, represents a type of institutional presence capable of fostering social cohesion. In terms of energy transition, Jan Palfijn is considered as the ideal place to install the high-temperature heat pump, enabling the extension of the residual heat network from a wastewater treatment plant to other clusters, such as the social housing blocks in WSB. The mappings however show that in WSB, there are few neighbourhood spaces, such as bars, shops, and squares where inhabitants can meet. The neighbourhood lacks vital 'touchpoints' where inhabitants can gather to imagine more inclusive energy futures. In Sluizeken-Tolhuis-Ham, existing social and physical infrastructure provides a rich basis for developing boundary spaces that are rooted in community dynamics and capable of supporting inclusive transitions. Workshop participants frequently referred to public spaces, schools, youth centres, and community kitchens as sites of everyday interaction and informal knowledge exchange. During the participatory mapping exercise, we mapped many interesting neighbourhood 'touchpoints', for instance, Sint-Lucas hospital, school Sint-Vincentius, and Amal, the integration centre of Ghent, currently working on sustainability plans.

Pillar 2 – collectivising transitions

Secondly, boundary spaces aim to make energy transitions more accessible by boosting collective organization for energy transitions by creating platforms for dialogue where collective action can emerge. These spaces are particularly important in underprivileged neighbourhoods, where existing frameworks and discourses around energy transitions tend to emphasise individualism and personal

responsibility (Damgaard et al., 2022). Individual transition measures such as solar PV panels or heat pumps are often only accessible for a small group, typically those with financial resources, property ownership, or technical knowledge (Fransolet & Vanhille, 2023; Knox, 2019; Middlemiss & Gillard, 2015; Verlooy et al., 2024). Collective approaches can enhance inclusivity, by providing affordable energy (Marzban et al., 2023), reducing vulnerability among low-income households (Parreño-Rodriguez et al., 2023), and offering spatial advantages when well-designed (Juwet, 2022). Boundary spaces can facilitate collective energy transitions through multiple mechanisms. As Joshi et al. (2022) note, social bonding and community belonging can boost residents' involvement in collective action. Boundary spaces create opportunities for meaningful interactions that build trust and mutual understanding across different community segments. In line with this, Gaupp et al. (2023) advocate for more neighbourhood-based civic participation, such as social gatherings, community activities and resource pooling, to strengthen collective agency.

To identify where transition opportunities are being collectivised, we map the planned installation of a district heating network in Watersportbaan. This initiative, led by Hospital Jan Palfijn and other major institutional stakeholders acting as transition frontrunners, presents a spatially efficient and promising solution for the neighbourhood. However, social welfare workers have raised concerns that these frontrunners may lack a deep understanding of local needs. Without a platform for collective action, residents' voices risk being overlooked. In WSB, we also map the local laundromat as collective washing could offer opportunities to save both money and energy. However, the laundromat, currently privately operated, is perceived as unsafe, with reports of increased criminal activity and relatively high prices. Furthermore, as mentioned above, WSB lacks spaces where inhabitants can gather, there is little infrastructure facilitating a sense of community, or that can help to collectivise transition opportunities. For Sluizeken-Tolhuis-Ham, the (redevelopment of) the Fluvius site has been highlighted in the mapping process, where the future site may involve a geothermal energy project for the neighbourhood. For the redevelopment, a participatory trajectory was organised aiming to involve inhabitants. We map this as an opportunity that can boost a sense of ownership and community engagement. Other collective efforts we map are Sint-Vincentius school campus, to collectively install solar panels through a group purchase and Amal, wanting to research what their site can mean for collective energy production.

Pillar 3 - alternative value chain

The third pillar of boundary spaces aims to recognise that neighbourhood energy transitions can contribute to creating neighbourhood value in more than only financial terms. Transitioning to fossil free communities can increase overall wellbeing for inhabitants which are currently not accounted for in business models deciding to advance in renewable energy infrastructures. Scholarly research has reckoned the 'alterative value', more than merely financial value, community renewable energy projects can create. For instance, health benefits are discussed, (Howden-Chapman et al., 2023; O'Neill et al., 2003) or opportunities for local skill development and providing new jobs (Brummer, 2018; Caramizaru & Uihlein, 2020; Moreno & López, 2008). Because boundary spaces are low-threshold spaces, they can tap into the needs that are prominent in a neighbourhood for alternative value creation.

In Watersportbaan we map how the social housing units are in need or renovation, and how social welfare organization Saamo has addressed this issue by composing a group of volunteers that does small fixes, such as blending the heating, in the apartments of neighbours awaiting the renewal of the apartments. This 'klusbrigade' project helps strengthen capacity by offering training and coaching to volunteers and residents. For Sluizeken-Tolhuis-Ham, we map how Amal needs a large-scale renovation by 2030, and that this has triggered the question of what this actor and their site might mean for the neighbourhood in the future. Ideas are being formed how the actor can open-up or give back to the neighbourhood. Similarly, we map the Sint-Vincentius site and Sint-Lucas hospital, both of which are transitioning to fossil-free operations and exploring ways to open up more to the neighbourhood. While still in the early stages, these transitions present valuable opportunities—not only to contribute to the neighbourhood's decarbonisation but also to strengthen their role in supporting and benefiting the local community.

Pillar 4 – social praxis

The final pillar for the conceptualization of the boundary spaces tries to ground energy transitions in daily life. This enables energy issues to be more relatable by enabling to lower the threshold for conversations on neighbourhood energy transitions. By this connection we aim to move away from the technocratic approach of energy transitions and exclusionary narratives and connect to daily praxis: learning, working, caring, feeding, connecting, relaxing, and maintaining. As Bouzarovski and Petrova (2015) highlight, drawing attention to the everyday uses of energy, and the vulnerabilities that arise when these services are inaccessible, is an entry point for articulating the challenges of energy poverty. Bouzarovski (2018) suggests moving beyond thinking only in terms of specific sources of energy, to focusing on energy services, such as transportation, heating, cooking, or lighting, rather than for the energy itself. Energy use is deeply intertwined with social praxes and daily routines such as working, shopping, visiting friends and family, and going to school (Shove, 2017; Shove & Walker, 2014). By recognizing this, we aim to make energy discussions more accessible to underprivileged communities through boundary spaces, enabling them to actively participate in shaping transitions in their neighbourhoods, voicing their needs, and co-creating solutions that truly serve them.

In Watersportbaan, Jan Palfijn hospital dedicated to care can extend their function to energy-related actions, as care requires energy, offering an entry point for energy transition discussions to take place. Another example is the local laundromat. Laundromats, as informal everyday spaces, support social praxes like maintaining personal belongings and socialising. They offer opportunities to promote green energy through daily routines, raising awareness about energy transitions. These spaces, where people spend time together, can serve as boundary spaces for meaningful conversations and initiatives that encourage sustainable energy use in daily life. In Sluizeken-Tolhuis-Ham, different social praxes are intertwined throughout various parts of the neighbourhood. For instance, at Sint-Lucas Hospital, next to caring, activities such as feeding, engaging, connecting and energy converge in the shared spaces and restaurant. People go there for lunch, hope to meet others, or use the hallways as a shortcut. There are a lot of opportunities for energy in the sustainability plans of the hospital. Amal is another interesting space where newcomers gather for integration courses. As newcomers are a hard-to-reach group to involve in energy transitions, Amal can play an important role in bringing transitions closer to their target group.

Future boundary spaces in Watersportbaan and Sluizeken-Tolhuis-Ham

By stacking the four pillars as foundational building blocks during the collective mapping workshops, we were able to identify several compelling future boundary spaces where neighbourhood energy transitions can take root, but also what might be missing in the neighbourhood for just transitions to happen. For instance, in WSB, where Jan Palfijn could be a good opportunity searching a link between the collective heating network and local needs, inhabitants have little participation opportunities. Moreover, the conversations are driven by a technocratic language, where instead, connecting it to daily praxes could democratise the conversation. Furthermore, the local laundromat presents an intriguing opportunity. Its connection to everyday praxis like care offers potential for raising awareness about energy conservation. Collective washing could help lower costs while also strengthening social ties among residents, making it a valuable potential communal space. However, the current privately-run laundromat is expensive, does not reinvest value back into the neighbourhood, and is perceived as unsafe due to criminal activity. Furthermore, the local laundromat offers interesting potential, with its connection to a daily praxis, like caring, it can help to raise awareness on saving energy. As collective washing can decrease costs and moreover boost connection between residents, it is an interesting space. However, the privately run laundromat is expensive does not redistribute created value to the neighbourhood. Additionally, residents find the place unsafe due to criminal activity and are in search of other laundry options.

In STH, the Sint-Vincentius school campus and the Sint-Lucas hospital stand out as promising future boundary spaces. Sint-Vincentius is exploring a collective purchase of solar panels, while Sint-Lucas is aiming to become more open and connected to the surrounding neighbourhood. Both institutions are deeply embedded in the social fabric of STH, and, through their daily praxes of learning and caring, offer strong entry points for more inclusive conversations around energy. Additionally, the planned

redevelopment of the Fluvius site holds potential, with future possibilities for collective energy production and the integration of a new school. However, this transformation will unfold over a longer timeframe. A final promising opportunity in STH is the Amal site, which sits within a larger building block and requires significant renovation. Amal aims to create a diversity campus in collaboration with social inclusion organizations, opening up to the neighbourhood. This space holds boundary potential through possible collective energy production, tied to large-scale renovation. Amal wants this diversity campus to be meaningful for the broader neighbourhood, searching for win-wins. It is moreover a space that attracts newcomers, often a 'hard-to-reach' group when it comes to energy transition initiatives. In other words, interesting opportunities can arise at this site.

Conclusion

In this paper we aim to understand how energy transitions can 'land' in underprivileged neighbourhoods by conceptualizing boundary spaces. Boundary spaces are the spaces where knowledge exchange between experts and local communities can be supported. They function as catalysts for community-led energy transitions by fostering experimentation and collective action while explicitly addressing questions of inequality, responsibility, and justice.

Boundary spaces can help to democratise the debate on energy transitions in urban underprivileged neighbourhoods by aiming for deep collaboration with marginalised communities. To do so, we conceptualised boundary spaces based on four pillars and empirically tested them. These four pillars can be seen as the necessary building blocks constituting a boundary space. First, they are physical spaces with low-threshold accessibility, integrated into the neighbourhood fabric as gathering places where residents, experts, and other stakeholders can interact. These tangible locations, often community centres or other public facilities, serve as local anchors for collaborative action. Second, boundary spaces aim to collectivise energy transitions by moving beyond individual responsibility frameworks that disadvantage low-income communities. They enable shared planning, collective purchasing, and community-based energy solutions that distribute benefits more equitably across diverse socioeconomic groups. Third, boundary spaces create and redirect value to the neighbourhood by identifying opportunities to channel transition-related benefits back to the community. Fourth, they connect to daily praxes such as working, meeting, and maintaining. By integrating energy discussions into everyday activities, boundary spaces lower participation thresholds, making transitions tangible and relatable. This practical approach enables broader participation in energy saving behaviours and fosters greater awareness. Together, these pillars establish boundary spaces as critical infrastructure for landing energy transitions in ways that serve marginalised communities in underprivileged neighbourhoods.

Our research in two underprivileged neighbourhoods in Ghent has demonstrated how the boundary space framework offers multiple analytical and practical advantages. Through collective mapping workshops, we identified potential boundary spaces, such as the site of Amal in Sluizeken-Tolhuis-Ham, that will serve as sites for future research. Beyond identification, the concept provided a versatile viewpoint to map different everyday social praxis and reveal their possible connections to energy transitions that might otherwise remain invisible. This helped expanding the frame of reference for relevant actors that need to be involved in the energy transition of the neighbourhoods, bringing previously overlooked stakeholders into the conversation about neighborhood energy futures. Lastly, boundary spaces help to spatialise the conversation on energy transitions and look for concrete localities in the neighbourhood.

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