



 **GREEN-LOG**

POLICY RECOMMENDATIONS

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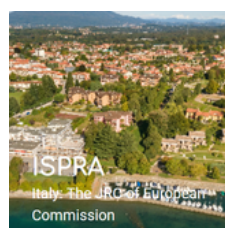
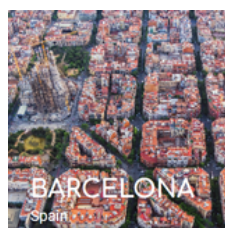
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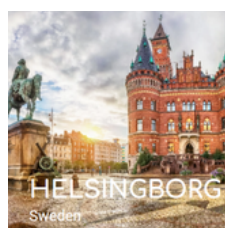
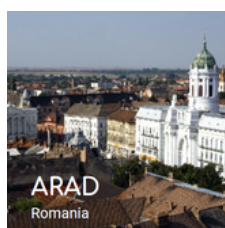
Cooperative and Interconnected Green delivery solutions towards an era of optimised zero emission last-mile Logistics

GREEN-LOG created Urban Living Labs and simulation-based city logistics platforms in five pilot regions and three follower cities to support the design, testing, and validation of sustainable last-mile delivery solutions in collaborative multi-stakeholder urban ecosystems.

Living Labs



Follower Cities



The project is centred around innovative co-creation in Living Labs (LLs) across five European cities and areas: Athens (Greece), Barcelona (Spain), Flanders (Belgium), Oxfordshire (UK), and Ispra (Italy). The GREEN-LOG approach provides a cutting-edge simulation environment for scenario building, combining multiple solutions to integrate last-mile delivery interventions with the highest possible impact on environmental sustainability and traffic reduction, while also considering their financial viability.

The approach is deployed and validated across the five Living Labs, an inclusive set of demonstration sites spanning EU regions with diverse urban logistics characteristics and varying challenges. These LLs act as city platforms for nurturing social innovation, understanding user needs, habits, and preferences, co-designing, and deploying last-mile delivery solutions, while enabling the most effective exchange of ideas.



Policy Recommendations

The policy recommendations are grouped per theme, targeting the services of the European Commission and other relevant policy-makers, transport and logistics experts working in cities, regions and local authorities, logistics service providers, and network organisations.

Cooperation models between cities and LSPs

In GREEN-LOG, two main operational models were employed: in Athens and Oxford, a logistics partner was pre-selected at the proposal stage, whereas in Flanders, the partnership reserved an operational budget and tendered and contracted the LSP closer to the pilot implementation.

Opting for pre-selection can lock projects into partners who later change priorities, as was the case when ELTA Courier left the consortium and was replaced by ACS in the Athens LL. By allocating budget and then allowing the local partners to select the LSP, there is more space for flexibility, confirmation of engagement and ability to deliver from the chosen LSP.

In the case of Flanders, although there was some initial uncertainty with this approach, it eventually made it possible to better align project timelines with the operational realities of both public authorities and private actors. The tender process relied on well-established regional collaboration structures, such as the Flanders Green Deal for Logistics. Cooperation was materialised through regular coordination activities, including weekly meetings between the parties involved, leading to the pilot's success.

Recommendations

- **Clarify roles - cities enable, logistics actors operate:** Cities should not act as logistics operators. Their role is to provide enabling conditions (space, regulation, access rules, long-term vision) and ensure a level playing field through neutral procurement and enforcement. Operational responsibilities (e.g. Micro-Consolidation Centres – MCCs) should sit with professional third-party logistics providers, who are best placed to manage parcel liability, safety and operational risks, efficiency and innovation. This division of roles reduces administrative risk for cities and increases scalability. However, cities might want to explore hybrid governance roles in non-commercial flows, combining facilitator, orchestrator and partial service guarantor functions, especially in early-stage or low-volume markets such as the example of circular food logistics. Willingness to pay exists only if social organisations are offered a guaranteed service, and the market alone will not deliver this guarantee.
- **Use regulatory incentives, not subsidies, to trigger collaboration:** Public funding for logistics solutions is politically difficult and often unsustainable. Cities should prioritise regulatory incentives, i.e. Low and Zero-Emission Zones, congestion charging, including for commercial vehicles, access restrictions, and pedestrianisation. These “landscape policies” create market pressure that makes collaboration between logistics providers or solutions, i.e. the LaaS Marketplace, economically rational, without requiring public spending;
- **At the proposal stage, when possible, use an operational budget model:** allocate funds for operations and select LSPs when the pilot is ready to run, building on pre-existing links with these providers at the local level;
- If pre-selection is unavoidable, include **contractual clauses for partner replacement and clear contingency plans** to ensure that the pilot's objectives are not jeopardised. LSPs should be involved in the pilot definition process as soon as possible.

Data needs, collection and sharing

Cities and couriers often do not know which data to collect or how to use it, which means that generic data requests fail. There is a missing “digital translation” between policy measures and logistics operations (e.g., differing time windows across municipalities, with LSPs struggling to understand access regulations in each context).

Simultaneously, issues persist with local authorities not owning the relevant data, having to resort to third parties to fulfil their data needs. The ability for stakeholders to understand data formats is made difficult by the difficulty data providers face in complying with data models and standardising models. Urban logistics operators are using different systems, with no harmonised data, at times within the same entity. EU initiatives are pushing for more harmonisation, but challenges remain.

Further, Logistics Service Providers are cautious and usually unwilling to share their proprietary data with competitors, fearing this will make them lose competitive advantage and their slice of the market. The cooperation between ACS Courier and FEDEX in the Athens Living Lab is a particularly interesting example of how we can get LSPs to cooperate by sharing data, without jeopardising their commercial interests. This obstacle was successfully overcome through an exercise of data anonymisation, with the help of a third-party. At the start of the project, two LSPs involved - ACS and FEDEX – signed a bilateral agreement defining the rules of cooperation, as well as signing an NDA, demonstrating their willingness to cooperate. Once the pilot was up and running, the two LSPs involved provided data on a weekly basis to AUEB, an academic partner.

Recommendations

- **Start with use cases:** define policy or operational questions first, then specify the exact data needed. For emerging logistics flows (e.g. food surplus redistribution), cities should define a minimum viable dataset early in the pilot phase to assess feasibility and scalability;
- Produce short data guidance for cities and couriers: what to collect, formats, privacy considerations and suggested analyses;
- **Make open public data the default:** Cities should proactively publish and maintain open, machine-readable data on mobility patterns, traffic flows and population and land use. This data should be easy to find, download, and reuse. Open public data lowers entry barriers for innovation and improves evidence-based policy-making;
- **Develop interoperable digital tools or APIs that translate municipal rules (time windows, circulation plans) into machine-readable formats for LSPs.** APIs must exist if cities require certain information to be provided by the LSP, to ensure that no extra administrative work is required.
- **Pilot a shared regulatory dataset at the regional or national level to reduce fragmentation for LSPs;**
- **Enable trusted logistics data sharing:** To overcome issues of data ownership, local authorities should:
 - o Support neutral intermediaries (e.g. universities, research institutes),
 - o Promote NDAs and clear data-governance frameworks,
 - o Anonymise data in specific cases.

This will strengthen cooperation between public authorities and LSPs, but also create trust among these providers. EU harmonisation initiatives should ensure flexibility and scalability for operators, offering data providers tools and guidance on standardisation and compliance, making the benefits of data sharing and cooperation clear.



Consumer engagement and demand nudging

Consumer choice can steer last-mile consolidation. In the Flanders pilot, consumers were presented with time-slot pricing and consolidated neighbourhood slots, which reduced delivery stops (removed one stop at the consumer's house every four stops). The pilot demonstrated that consumers are willing to wait for their parcel delivery if they are given lower prices (i.e. deliveries were cheaper on Wednesdays). This, in turn, presents opportunities for consolidated delivery slots for LSPs, making the last-mile more efficient both from a sustainability and business-model standpoint.

Recommendations

- **Lead by example:** cities should set an example for consumers, showcasing sustainability initiatives implemented (i.e. by storytelling in a video), communicating that this is a joint effort. The same logic applies to Logistics Service Providers;
- **Design consumer-facing choice mechanisms (slot pricing, neighbourhood slots, micro-hub)** as part of pilots to raise awareness of the real cost of deliveries and nudge consumers towards more sustainable choices;
- **Tailor nudging options to the heterogeneity of the consumer**, to achieve more sustainable deliveries in each of the consumer groups/profiles;
- **Test price differentials (neighbourhood slots) to increase parcel delivery consolidation.** If dynamic pricing is not feasible, consider active stakeholder engagement (direct outreach, operational support, trust-building...);
- **Coordinate messaging:** municipalities can promote sustainable delivery options but should avoid favouring one private provider; use neutral platforms, such as the [GREEN-LOG Logistics-as-a-Service Marketplace](#) (LaaS) - or city apps where possible.



Policy alignment and scaling

Fragmented municipal rules, policies and a lack of regional policy signals hinder couriers' willingness to change and adopt more sustainable practices. Projects can create knowledge and successful pilots, but long-term change needs policy commitment from different levels of governance.

To realise sustainable urban logistics ambitions, there is a need for an integrated approach, combining measures providing incentives for private operators to clean their fleets and distribution, and policies to speed up the transition. An example is given by the Flanders GREEN-LOG cities, which are rolling out a series of strategies and policies to contribute to the wider ambition of decarbonising urban mobility, as well as logistics, such as:

- Introduction of low-emission zones and traffic circulation plan, development of a pre-SULP guideline in Ghent,
- Leuven Climate Contract (LKN 2030) brings together businesses, city authority, academia and the community, also focusing on sustainable urban logistics,
- Covenant for Sustainable Urban Logistics, bringing together logistics companies in Mechelen.

Recommendations

- **Establish a single public entry point for pilots and projects**, reducing uncertainty for private actors and speeding up implementation. It also helps with data sharing towards companies. Urban logistics pilots often fail due to fragmented public administration;
- **Simplify and harmonise administrative procedures for EU-funded** or EC-approved projects, with short-term flexibility embedded within long-term strategic frameworks;
- **Integrate logistics into long-term land-use planning**: zero-emission urban logistics needs to be embedded in long-term land-use strategies, not treated as an afterthought;
- **Align infrastructure with logistics goals**;
- **Ensure coherence and enforcement across policy levels**;
- **Use long-term pilots to produce clear policy packages** (what data, what regulation, what incentives) that regional/national authorities can adopt later. Short-term pilots risk underestimating long-term feasibility due to insufficient time for behavioural adaptation, network effects, etc. Policy frameworks should allow for extended pilot phases or phased scaling approaches (need for pilots in multiple phases);
- **Advocate for clear policy timelines** (e.g., zero-emission entry dates) so couriers can plan investments (i.e. fleet renewal);
- **Define a clear, well-defined and enabling EU-wide regulatory framework for autonomous navigation and delivery**: as technology develops and implementation starts, a concerted effort by public authorities is necessary to provide clear yet flexible regulations and promote the adoption of these innovative services for the benefit of users. This need is evidenced by the outcomes of Ispra's Living Lab;
- Efforts are still needed to ensure that regulatory activities defined at the central European level are effectively coordinated and translated into practical implementation at the local level, including developing local knowledge, skills, and processes to manage and adopt these services.



Local innovation systems as enablers for R&I

The inclusion of local intermediary partners in each Living Lab (LL) is an enabler for the success of the pilots. An ideal LL partner team should include the city, a research institute/university, and an industry partner (i.e., LSP if the model chosen is to pre-select these, as mentioned above), following a triple-helix approach. In the Flanders Living Lab, the role of VIL (Flemish Logistics Institute), as an intermediary across Ghent, Leuven and Mechelen, improved coordination and dissemination, while the impact analyses were supported by the academic partner, the University of Antwerp.

Beyond Flanders, GREEN-LOG pilots that combined city authorities, logistics providers and local research partners produced stronger, actionable insights, with local evaluators who understand the pilot context improving data collection and relevance and academic partners serving as trustworthy intermediaries, preventing potential trust issues among the parties involved.

Lastly, in contexts where smaller cities have fewer civil servants or staff skilled with the appropriate expertise, the support from intermediary knowledge entities can make a big impact on the quality of actions implemented.

Recommendations

- **Include a neutral intermediary in multi-city pilots** to coordinate communication, manage operations and bridge public-private expectations and ambitions, as well as connect with other non-local project partners;
- **Require a local research/evaluation partner for each pilot** (academic or consultant) to collect, interpret and translate data for both local policy-makers and project-level evaluation.

Capacity building for small and medium-sized cities

Many small and medium-sized cities lack staff and technical expertise to decode logistics data or run pilots, and they can benefit from external support and repeated, practical pilots.

Recommendations

- **Fund capacity building** (training, toolkits, short secondments) for municipal staff on logistics data, stakeholder outreach and pilot management;
- **Support intermediary organisations** (e.g. social networks, NGOs, logistics coordinators) as key actors in scaling circular logistics ecosystems, particularly in SME-dominated contexts;
- **Create modular pilot templates that cities can adapt** (micro-hub, consumer slotting, retailer aggregation) to reduce design overhead;
- **Future research and innovation priorities to support SMCs:** The implementation and deployment of last-mile delivery services using autonomous navigation could be supported, with direct large-scale involvement of public authorities, to deploy a long-term service, rather than focusing on pure research and development.



About the Publication

This Policy Recommendation brochure is a summary of the suggestions brought forward in the project deliverable, which can be consulted on the [GREEN-LOG website](#) and the [GREEN-LOG community on Zenodo](#), titled:

D5.10 GREEN-LOG Policy Recommendations

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