NET ZERO CITIES
EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

MADLESS

Meta-Analysis Driven Logistics Emission Solutions through Stakeholder Collaboration

Second Workshop on Development of City Logistics in Helsinki, 9.2.2026

Summary of Key Results

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Helsinki

Tampere University

Workshop objectives

- **Stakeholder workshop 9.2.2026, Helsinki**
  - Objective: evaluation and prioritisation of potential emission reduction measures (19 measures) in relation to one another
  - Focus was on measures that the city can influence or that it can support or promote
- **30 participants: key stakeholders in the sector**
  - City of Helsinki (5), metropolitan-area service organisations (6), expert organisations, e.g., research, consultancy, associations (9), trade and industrial companies (transport service buyers) (5), transport companies (5)
- **Evaluation methods for emission reduction measures**
  - Small group discussions: *Four-field matrix* (feasibility × emission impact)
  - Individual task: *Prioritisation* (distribution of 100 points)

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Four-Field Matrix: Feasibility & Emission Impact

- **Feasibility -** practical ease or difficulty of implementing the measures
  - Measures that are easy to implement can be introduced within the coming years without major efforts.
  - Measures with difficult feasibility may require major investments, regulatory changes, or changes in human behaviour.
- **Emission Impact -** direct and/or indirect potential reduction of CO_2 emissions

  If a measure is implemented at full scale:
  - what share of the logistics system it would affect;
  - how wide the geographical impact would be;
  - how directly it would influence energy sources.

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Reviewed Emission Reduction Measures (1/3)

Vision	Objective	City's Emission Reduction Measure	Category
Zero-emission, smart, and data-driven delivery system	Promotion of electric vehicle fleet	A. Constructing publicly available charging infrastructure	Infrastructure
		B. Smart charging infrastructure – development of a reservation system	
		C. Financial incentives for setting up shared charging points	Regulation & Guidance
	Predictability for investment (outlook on energy sources, infrastructure, regulation)	D. Guiding procurement criteria for fleet and transport services	
	Granting traffic privileges for zero-emission delivery vehicles	E. Granting traffic privileges (traffic light priority, permitted through-routes, etc.)	
	Use of digitalisation	F. Digital tool for reserving loading areas (real-time information on loading places)	Information System
		G. Creating a real-time situational picture of logistics (digital system, data shared by companies)	
	New distribution innovations in the urban environment	H. Determining space needs for new distribution innovations (e.g. drones, robots)	Supply Chain

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Reviewed Emission Reduction Measures (2/3)

Vision	Objective	City's Emission Reduction Measure	Category
Functional urban space as an enabler of zero-emission logistics	Granting traffic privileges for zero-emission delivery vehicles	I. Use of bus lanes for freight transport	Infrastructure
	Improving efficiency of deliveries	J. Sufficient and appropriately designed loading and unloading areas	
		K. Promoting night-time deliveries for zero-emission vehicles	Regulation & Guidance
	Consolidation of deliveries, cooperation between companies	L. Establishing a shared consolidation centre in or near the city centre	Infrastructure
	Improving parcel delivery efficiency; promoting environmentally friendly fleet	M. Establishing cargo-bike distribution hubs in or near the city centre	
	Underground solutions	N. Incentives for increased use of the service tunnel	
	Promotion of environmentally friendly fleet	O. Introducing a zero-emission zone	Regulation & Guidance
	Cooperation between operators, improving parcel distribution	P. Developing and optimising the parcel locker network in terms of space needs	Supply Chain

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Reviewed Emission Reduction Measures (3/3)

Vision	Objective	City's Emission Reduction Measure	Category
Collaborative and development-oriented operational culture	Predictability for investment (energy sources, infrastructure, regulation)	Q. Increasing predictability in the sector (regular communication, visibility of city plans)	Cooperation
	Continuous dialogue between the city and logistics operators	R. Developing the current city-logistics working group or establishing a new forum focused on emission reductions	
	Steps for implementing emission-reduction measures	S. Standardised and transparent logistics emission reporting	

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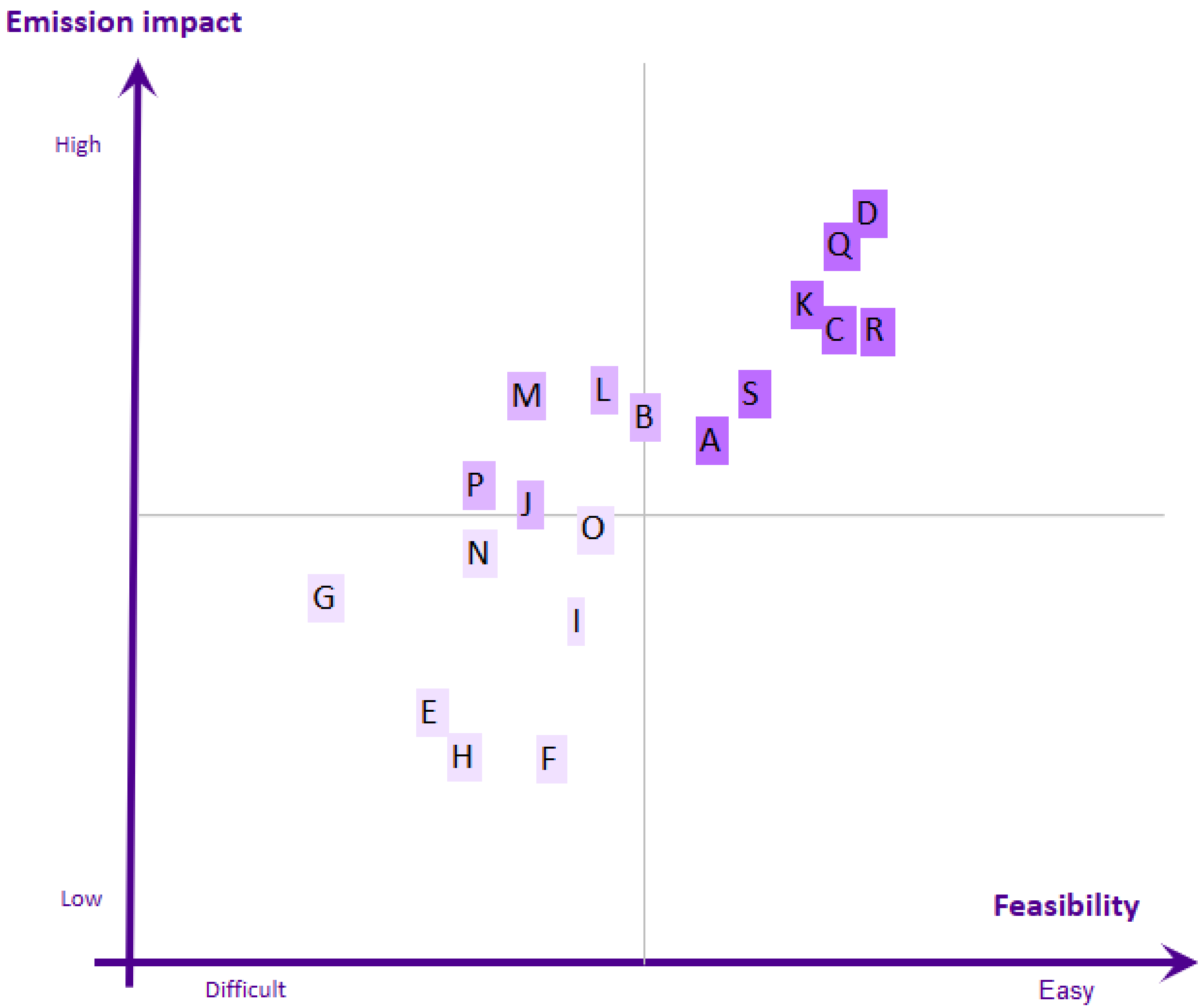
Group-based evaluation of emission reduction measures



A. Public charging points
B. Reservation system
C. Shared charging points
D. Procurement criteria
E. Traffic privileges
F. Loading bay reservation system
G. Real-time logistics data
H. Space needs for drones and robots
I. Use of bus lanes
J. Sufficient loading / unloading areas
K. Night-time deliveries
L. Consolidation centre
M. Cargo bike logistics hub
N. Increased use of service tunnel
O. Zero Emission Zone
P. Parcel-locker network
Q. Increased predictability in the sector
R. Development of cooperation group/forum
S. Standardized emission reporting

The measures were positioned on the four-field matrix by four separate groups. The figure presents the aggregated results based on each group's separate matrix.

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High Emission Impact – Easy Feasibility

Practice	Key observations
A. Construction of publicly available charging infrastructure	Public charging for heavy-duty vehicles seen as a bottleneck; competing land-use needs and the suitability of locations for the routes were emphasized; electricity price and investment burden polarise operators; some highlighted the primacy of depot/terminal charging.
C. Financial incentives for establishing shared charging points	Shared-use charging received support (charging during loading/unloading, additional charging opportunity during breaks in winter season); challenges include allocation of costs and reluctance to share critical infrastructure; functionality requires incentives and trust.
D. Guiding procurement criteria for fleet and transport services	A strong steering instrument — can change demand quickly; price still decisive, so strict criteria may reduce competition; need for predictability and transition period so small operators can keep up.
K. Promoting night-time delivery for zero-emission vehicles	Potentially effective (reduced congestion, faster delivery, incentive for electrification); challenges include noise, public acceptance, organising reception of goods, and night-work costs; suitable pilot locations (e.g. schools) mentioned.
Q. Increasing predictability in the sector	Critical for investments; linked to procurement criteria, zero emission zones, and charging infrastructure; political cycles perceived as short — need for clear direction and timetable.
R. Developing the cooperation group / emission-reduction forum	Cooperation seen as essential for many measures (night delivery, data use, shared infrastructure); easy to implement, but impact depends on decisions and execution; existing cooperation structures/networks/forums not widely known.
S. Harmonised and transparent logistics emission reporting	Opinions divided; useful if linked to steering and decision-making (e.g. procurement criteria); considered unnecessary if it remains isolated measurement.

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High Emission Impact – Difficult Feasibility

Practice	Key observations
B. Smart charging infrastructure – development of reservation system	Considered beneficial only when there is sufficient capacity; the risk of "stealing time slots" (necessitating sanctions/monitoring); the need to ensure ease of use; does not solve the fundamental problem if there are too few charging points.
J. Sufficient and appropriately designed loading and unloading areas	A concrete daily problem; need for more capacity, better placement and design; data and monitoring help prevent misuse; space competition in street areas.
L. Establishing a shared consolidation centre in or near the city centre	High emission-reduction potential but significant financial risk; lessons from earlier pilots emphasise location and viability; underground solutions discussed; city seen as enabler, not operator.
M. Establishing cargo-bike distribution hubs	Opinions varied: large benefit for last-mile vs. small overall impact and viability challenges; winter conditions; space requirements; alternative lighter models such as "van + bike meeting point".
P. Developing and optimising the parcel-locker network	Concentration can reduce door-to-door deliveries; challenge to find space, especially in city centre (nodes, safety); risk of encouraging over-ordering of consumers.

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Low Emission Impact – Difficult Feasibility

Practice	Key observation
E. Granting traffic privileges	Often small emission impact; implementation complicated (legacy control systems); challenges in identification and fairness.
F. Digital tool for reserving loading areas	Can reduce circling, waiting, and idling; sensors/monitoring are feasible; does not help if there are too few places — tension between system and infrastructure.
G. Real-time logistics situational picture	Potentially impactful but very difficult (data sharing, competition law, data protection, interoperability); clear use cases (charging, loading bays), but ownership/financing are unclear.
H. Determining space needs for new distribution innovations (drones, robots)	Drones were seen as controversial; may have negative impact on basic delivery tasks but justified in specific cases (e.g. medicine transport); robots require further investigation; small overall impact; rules and airspace management are important.
I. Use of bus lanes for freight transport	Limited impact; risk of impairing public transport flow; monitoring and identification were considered challenging.
N. Incentives for increased use of the service tunnel	High potential but difficult; bottleneck in property connections/lifts; benefits broad, costs fall on individual properties — responsibilities and financing unclear.
O. Introducing a zero-emission zone	Effective measure, but acceptance, political climate, and vehicle availability are barriers; length of transition period and zone extent critical; concerns over city-centre vitality and detour traffic.

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Other key findings

- **Overlapping land-use needs are a shared constraint**
  - Limits charging infrastructure, hub solutions, parcel lockers, and loading areas → monitoring and management of use become increasingly important.
- **Investment capacity divides operators**
  - Large operators progress more easily with their own infrastructure; for small operators, public charging prices and initial investments are critical → need for support and predictable policies.
- **Digital solutions have potential**
  - However, ownership, financing, and data-sharing challenges (competition law / data protection) slow down progress
- **Phased implementation is important**
  - Night-time delivery introduced gradually, considering new technologies for reducing noise
  - Low Emission Zones with long transition periods
  - Innovative solutions can be implemented in specific use cases

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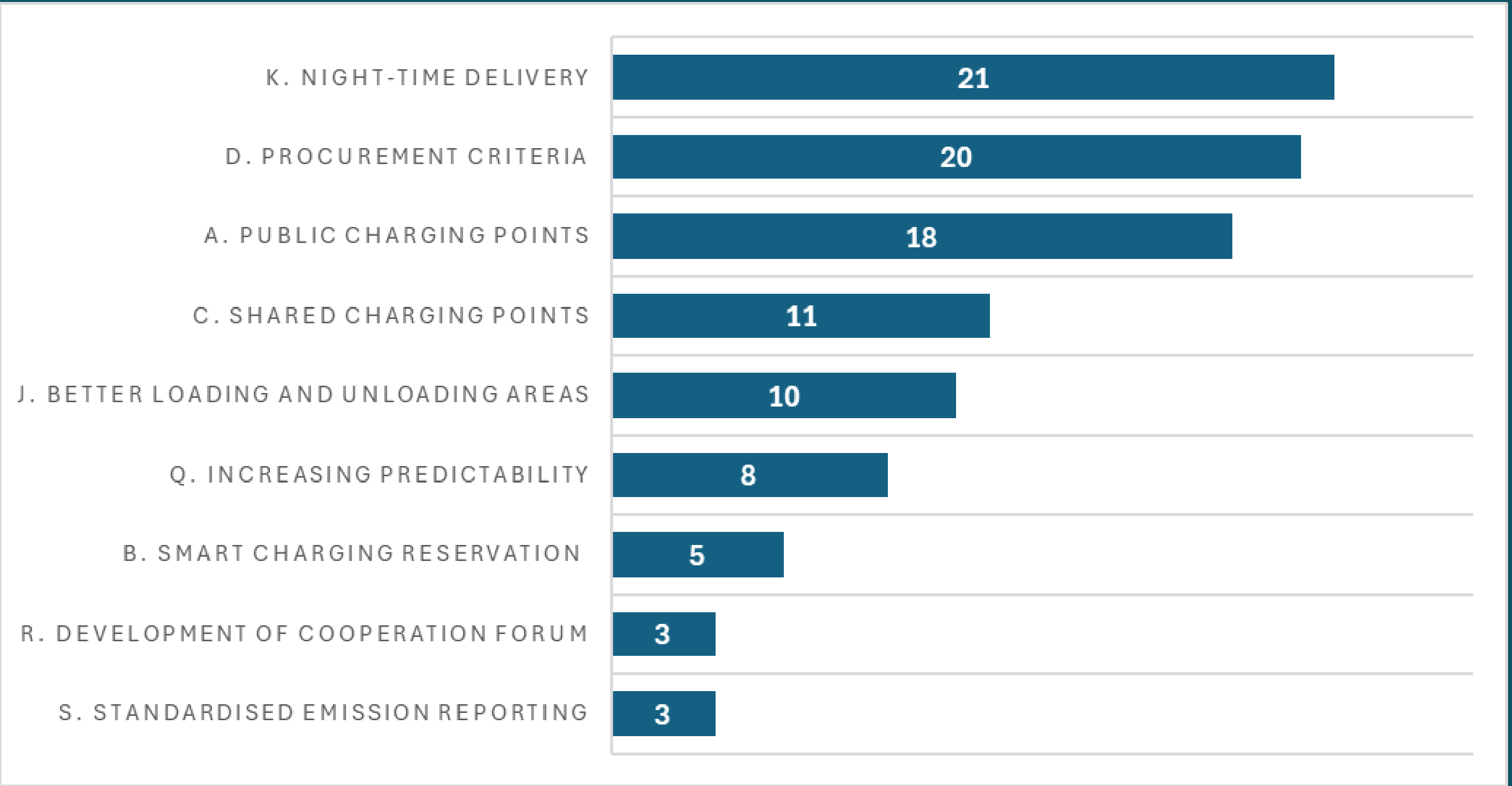
Results of the 100-point prioritisation

- *The prioritisation included measures assessed as the most impactful in the four-field matrix (Slide 7).*
- *Participants distributed 100 points freely among the measures based on which they wished to propose for further analysis.*
- *Consolidation centers, cargo bike logistics hubs, and parcel-locker networks were omitted from prioritisation.*



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TOP 3 - Prioritisation

Practice	Advantages	Challenges	Summary
K. Night-time delivery for zero-emission freight vehicles	• Acts as an incentive to invest in electric fleet • Reduces congestion, hence faster delivery • Reduces emissions (less idling / queuing) • Readiness among operators to scale quickly	• Noise and residence acceptance • Night-work costs • Updating the rules and regulations • Organising reception of deliveries	• Significant emission impact possible → requires cooperation and clear rules
D. Procurement criteria	• City can influence rapidly through its own procurement, setting an example • Speeds transition to low-emission fleet • Market dialogue supports smooth implementation	• Investment impacts for companies • Strict criteria may reduce the number of bidders (operators) • Need for predictability and transition periods	• Impactful measure → requires careful preparation and market dialogue
A. Public charging infrastructure	• Fundamental requirement for fleet electrification • Locations along routes / rest areas • City as landowner can influence placement	• Competing land-use needs • Grid capacity limitations • Electricity pricing • Special needs and characteristics of heavy-duty vehicles	• Essential foundation → requires investments and spatial solutions

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Summary (1/2)

- In the four-field evaluation, 19 measures were placed into three quadrants:
  - High emission impact – easy feasibility (7 measures)
  - High emission impact – difficult feasibility (5 measures)
  - Low emission impact – difficult feasibility (7 measures)
- The most interesting measures are in the upper quadrants (high emission impact – easy feasibility):
  - Public charging points, Shared charging points, Procurement criteria, Night-time delivery for zero-emission vehicles, Increased predictability, Development of cooperation group/forum, Standardised emission reporting.
- The consolidation centre, cargo-bike logistics hub, and development of the parcel locker network emerged as measures with significant emission-reduction impact, although their practical feasibility was considered partly challenging.
- Some measures were seen to have a certain level of emission-reduction potential, but also notable implementation challenges – and the evaluations varied to some extent between the different groups.
  - Example: zero-emission zones, real-time data solutions, increased use of the service tunnel.

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Summary (2/2)

- The top 3 measures from this workshop based on prioritisation were:
  1) Night-time delivery for zero-emission vehicles
  2) Procurement criteria
  3) Public charging points

  → Short-term actions enable practical progress, achieve emission-reduction potential, and accelerate the transition in energy sources
- Evaluation of feasibility and emission impact involves multiple perspectives — evaluation of measures is not straightforward.
- Implementation requires careful planning and examination of requirements, timelines, responsibilities, and stakeholder roles.
- Limited urban space, challenges in data sharing, and differing operator resources (e.g. investment capacity) were key factors restricting implementation and influencing the realistic implementation of measures.

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