Annex 1

ECT2 challenge area briefs (including potential impact pathways)

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Introduction

The ECT2 call concentrates resources for enabling system transformation at city-wide scale around six shortlisted challenge areas:

- Three emission-domain based challenge areas:
  - Place-based heating and cooling
  - Urban energy systems
  - Large-scale building retrofits and renovations.
- Two cross-cutting challenge areas:
  - Nature-based solutions at city scale
  - City finance innovation for climate neutrality.
- One mobility-domain based challenge area:
  - Decarbonising urban mobility and logistics.

ECT2 connects these by creating a portfolio of interventions that deliver outcomes and learning that can be replicated across the Mission to support cities' climate-neutrality plans.

While the call guidelines define the "what" by outlining the challenge areas and the enabling conditions we want to see, cities define the "how" by taking their own context, actors and bottlenecks as a starting point for action and city-wide change.

Please note that the challenge areas are not intended to be silos. Cities can work transversally (e.g. by bringing nature-based solutions into a mobility programme or using finance as the route into one of the emission-domain challenge areas).

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Place-Based Heating and Cooling

Unlocking the enabling conditions for coordinated, placed-based heating and cooling, that can be scaled from neighbourhood-testing to city-wide transformation.

- Cities must take action to mitigate for a hotter climate while also decarbonizing heating. Without integrated place-based delivery models, they risk locking in fossil-fuel heating, unmanaged cooling demand, peak-load stress, inequitable thermal comfort, and public-space, building and energy investments that pull in different directions.

- The goal is to leverage place-based heating and cooling interventions for city scale transformation: protecting residents from extreme heat, decarbonising existing heating, and prevent fragmented household responses such as a surge of individual air-conditioning, one-off boiler swaps and disconnected retrofit decisions.

- "Place-based" means acting where heat, buildings, energy and people meet on the ground; the ambition is city-scale, whereby interventions target the governance, financing, procurement and delivery arrangements that enable what works in one place be resourced, repeated and embedded across the whole city. Strong neighbourhood pilots are welcome, but as a step rather than an end in themselves. The challenge is aimed equally and especially at cities that have already tested place-based approaches and now want to work out how to finance, govern, scale or replicate them citywide. The emphasis is less on any single measure than on the delivery models, governance arrangements and investment pathways that carry it from pilot to programme and embed it in Climate City Contracts, municipal plans, renovation strategies and public-space investment.

- Place-based heating and cooling can draw on a wide range of measures (delivered wherever they make most sense, from a single block or district to the city as a whole), including, but not limited to, passive design, blue-green infrastructure, public-space adaptation, building retrofit, shared and low-temperature heat networks, heat pumps, waste heat, storage, demand management and social-protection measures.

Why this matters now

- Urban heat is becoming one of the defining climate risks for European cities. Heatwaves in 2022, 2023 and 2026 have caused tens of thousands of premature deaths across Europe, with the highest impacts in dense, low-income neighbourhoods and in building stocks designed to retain heat. In responses to these pressures, cities lack practical mechanisms (tariffs, community ownership, public-value criteria) to make coordinated cooling affordable and fair.

- Rising urban temperatures can drive substantial increases in electricity peak demand and be aggravated by an uncoordinated response. If each household responds alone, by installing split-system AC, cities risk a self-reinforcing feedback loop: more AC would result in more wasted heat, fuelling higher outdoor temperatures and necessitating more AC. Correspondingly, heating planning is resource intensive (especially for smaller cities which need to find funding for external consultants) requiring dedicated timeframes, by which point people will have taken their own measures.

- Depending on choices made now, grid reinforcement, district heating upgrades, public-space redesign and building retrofits already planned under Climate City Contracts could make coordinated heating and cooling easier - or much harder. Moreover, the energy systems on which heating and cooling measures depend, are still largely fossil- and coal-fuelled; making this a very capital-intensive, long-horizon area. Without focused, delivery-oriented solutions, cities will continue to respond to heat and cooling issues with unstructured pilots and household-by-household decisions, rather than coherent place-based strategies.

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What is blocking progress

- No clear owner is accountable for place-based heating and cooling outcomes and there are no shared delivery models for place-based heating and cooling.

- Existing heat and vulnerability data are not used in investment and delivery decisions. Most Climate City Contracts still do not include place-based heat or vulnerability maps, despite widespread data availability. This gap affects most CCCs even though external mapping resources exist for 80+ Mission Cities. [Urban heat mapping briefing analysis; comparison with Copernicus / EEA coverage]. Moreover, weak use of existing heat, vulnerability and energy-demand data hinders investment and delivery decisions.

- Electricity and district heating networks are planned on long cycles; many cities have not yet defined how grids will accommodate coordinated demand response. Municipalities have limited local control over infrastructure owned by utilities and regulated nationally. They also face grid capacity constraints (including refusals of new renewable connections).

- Major barriers to acceptance, implementation, and scaling of climate neutral heating/cooling solutions such as heat pumps, caused by significant reservations or lack of public confidence in fitting expertise and uncertainty in relation to the best technology (e.g. District heat pumps, industrial heat pumps, utilisation of the industrial side-stream heat).

Demand signals

- Many cities are preparing or updating municipal heating and cooling plans, district heating strategies, building-renovation programmes and climate adaptation plans. These processes create a near-term opportunity to integrate cooling, heat decarbonisation, public-space adaptation, water-sensitive design and vulnerable-neighbourhood targeting before infrastructure choices become locked in.

- Demand is not uniform. Cities facing acute heatwaves need cooling-first heat-resilience models. Cities focused on decarbonising district heating, local heat networks, gas phase-out, etc. need heating-transition-first district energy models. Others need integrated place-based regeneration packages that combine public space, retrofit, NBS, thermal networks and social vulnerability. Lower-capacity or capability cities may need narrower, more practical pathways, proportionate monitoring and implementation support rather than complex system transformation in one short project.

Impact and Learning Opportunities

Cities may learn how to:

- Turn broad heat-adaptation and heat-decarbonisation commitments in Climate City Contracts into concrete, delivery-ready place-based strategies.
- Build a place-based heat and vulnerability baseline from existing European and local data, to target and prioritise action.
- Align heating, cooling, energy, grid and public-space decisions that are usually made in isolation and set up the governance and ownership models that keep provision affordable and legitimate.
- Sequence and coordinate the enabling infrastructure as a connected system rather than a series of one-off projects.
- Move from a successful pilot to city-wide delivery (resourcing, sequencing and standardising place-based approaches so they scale beyond a single district).
- Structure the financing and investment pathways that enable place-based heating and cooling to be resourced at city scale (see also City Finance).
- Embed place-based heating and cooling in city plans, budgets and Climate City Contracts, and generate evidence that supports replication across neighbourhoods and with other Mission Cities.
- Design procurement models (framework agreements, performance-based contracts, innovation partnerships or aggregated procurement) that enable city-wide implementation and replication.

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Potential Impact Pathways

The proposed pathways below set out four directions cities could pursue, each pulling a different mix of governance, data, procurement and finance levers. Each assumes a different starting point, including limited resources and data**.** A good project is one that starts with your city's current situation and focuses on what can be done to remove barriers and enable the conditions for coordinated, placed-based heating and cooling, that can be scaled from neighbourhood-testing to city-wide transformation.

Cities may opt to adopt or adapt one of these proposed pathways or develop their own, depending on local needs, fit and climate strategy priorities.

Pathways	Place Based Thermal Planning and Prioritisation	Inclusive Neighbourhood Heating and Cooling	Local and District Thermal Networks	City-Wide Scale, Replication and Coordination
Main question to shape pathway	How can cities identify and make joined-up heating, cooling, retrofit, public-space and vulnerability decisions?	How can cities deliver a localised, affordable package that combines passive measures, active systems and resident protection?	How can cities establish a viable, low-carbon local or district thermal service (including sources, customers, tariffs and operator responsibilities)?	How can successful place-based approaches become a funded, governed and repeatable city programme rather than remain pilots?
Activity level – where cities intervene within the challenge area	Cities start with limited capacity and/or data. They may draw upon relevant municipal plans or CCC commitments to help identify hotspots or transition areas.	At this stage, cities have identified a priority neighbourhood and assembled basic data and have some engagement with residents and asset owners to be able to begin structuring delivery.	Cities enter with emerging or existing heating or cooling demand, some interest from grid actors and network evidence.	Cities start with evidence from pilots or existing programmes, political sponsorship, and links to city budgets, asset plans and infrastructure renewal cycles.
Intermediate outcomes – what changes during the intervention	Cities move from fragmented evidence and separate sector priorities to a shared spatial baseline and sequenced place-based delivery plan that directs investment to priority areas.	Cities shift from early-stage concepts and pilots towards a procured or procurement-ready neighbourhood package with clear affordability safeguards, responsibilities and performance requirements.	Cities move from an early network concept to a delivery-ready thermal-service proposition with an agreed ownership and operating model, connection strategy, tariff approach and investment case.	Cities move from isolated pilots and one-off projects to a city-wide operating model with standard packages, programme governance, a funded pipeline and clear rules for replication across neighbourhoods.
Long-term outcomes – What changes after the intervention	Over time, capital and delivery capacity are directed to where they can jointly reduce thermal risk, fossil-energy dependence and inequality, making heating and cooling decisions a coherent part of the city's journey to net zero rather than a source of further lock-in.	As the model is repeated, low-carbon thermal comfort becomes accessible at scale, unmanaged demand and fossil-energy use decline, and neighbourhood transformation builds public confidence in a fair and liveable net-zero transition.	Cities can connect and decarbonise demand systematically, integrate renewable and recovered heat, retire fossil assets and provide affordable thermal comfort, establishing the infrastructure and market conditions needed for a durable net-zero heat transition.	Transforms successful pilots into a city-wide transition programme; creating a credible route from local action to sustained, equitable net-zero delivery at city scale.
Levers of change	Governance and policy; Data and digitalisation; Capacities and capabilities; Partnerships and engagement.	Technology and infrastructure; Procurement; Financing and funding; Governance and policy; Democracy and participation; Partnerships and engagement.	Technology and infrastructure; Financing and funding; Governance and policy; Procurement; Data and digitalisation; Partnerships and engagement.	Governance and policy; Procurement; Financing and funding; Capacities and capabilities; Partnerships and engagement.
Conditions that increase chances of success	Cities progress faster where core datasets can be accessed and combined, partners agree on shared indicators, and there is	Cities progress faster where asset ownership is clear, procurement capacity exists, utilities are engaged early, and passive and active	Cities progress faster where accountable operators exist, network economics are evidenced and connection risk and	Cities progress faster where legal authority is clear, procurement levers are strong, and stakeholders are willing to adopt and comply

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	willingness across departments and utilities to adopt a common baseline and MRV Measurement, Reporting and Verification) approach.	measures are assessed together.	consumer protection are addressed.	with new standards and contract models.

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Urban Energy Systems

Unlocking the enabling conditions for a coordinated city energy system that can deliver electrification, clean heat and flexibility at scale.

- Cities are being asked to electrify transport and buildings, decarbonise heat, expand clean energy, manage new loads and protect vulnerable residents, but the institutions and infrastructure needed to coordinate this transition are not yet aligned. The urban energy system is still organised through fragmented infrastructure planning, split delivery responsibilities and weak coordination between cities, utilities, network operators and building owners. As a result, projects that make sense individually do not yet add up to a grid-ready, affordable and investable pathway to climate neutrality. Grid planning, district heating, gas phase-out, building renovation, mobility charging, utility investment, customer offers and finance are often treated separately, creating delays, affordability risks and missed opportunities to scale.

- The goal is therefore to build the delivery models, governance arrangements and investment pathways (e.g. Shared planning, aligned mandates with utilities and network operators, outcome-based procurement and customer offers) that turn isolated projects into a coordinated system embedded in the Climate City Contract, municipal heating and cooling plans and energy strategy.

- Interventions in this area will enable urban energy-system transformation at city-wide scale, helping Mission Cities move from fragmented energy projects to a coordinated system that can deliver electrification, clean heat, fossil-gas phase-out, storage, flexibility and demand management without overloading networks or leaving vulnerable residents behind. Activities should generate reusable delivery models, governance arrangements, datasets, procurement tools, financing approaches or implementation playbooks that can be adapted by other Mission Cities.

- Urban energy systems primarily refer to whole-city coordination of infrastructure, utilities and markets for electricity, heat, cooling, storage, flexibility, demand management and local energy generation across buildings, mobility, public space, district energy, industry and utilities.

Why this matters now

- Electrification is accelerating, and without coordinated grid and heat-system delivery, cities risk lock-in through suboptimal assets, facing delays through connection queues, and triggering equity backlash from negative affordability impacts. Decisions made now on grid reinforcement, EV charging infrastructure and heat-pump rollout will shape a city's energy system for decades.

- Three transition windows are converging, and cities cannot address them as separate workstreams. Fossil-gas phase-out requires cities to plan boiler replacement, district-heat expansion, gas-network decommissioning and customer transition together. Secondly, industrial and data-centre integration is an emerging and largely unaddressed opportunity: waste heat, industrial symbiosis, and rising AI/data-centre electricity demand are reshaping urban energy planning, but few cities currently have the tools or mandates to capture this. Lastly, affordability and acceptance cannot be treated as optional add-ons: heat-pump uptake, district-network connection costs, tariff design and energy poverty can produce public backlash if not designed into the transition from the outset, not retrofitted once problems emerge.

- While electrification ambitions are rising across Mission Cities, the delivery engine (e.g. utilities, procurement, investment, and customer offer) is not yet standardised or scalable. Cities are often left negotiating one-off arrangements with utilities and network operators rather than working from repeatable models.

- Cities are already experimenting with local flexibility solutions and energy communities, but most remain at demonstrator stage. Participating models, such as energy communities can act as practical

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tools for congestion relief and local energy access (though their viability depends heavily on local legal and market conditions that vary significantly).

- Urban electrification increases pressure on electricity networks and makes grid flexibility more important by the year. City climate contracts increasingly recognise that expanding EVs, heat pumps and electric loads (in coordination with wider sustainable strategies across mobility, thermal management, logistics, etc.) require both grid reinforcement and flexible demand-side management working together, not as parallel, uncoordinated efforts.

What is blocking progress

- Regulatory complexity, grid constraints and stakeholder coordination challenges slow implementation. Many cities also face financing gaps and limited technical capacity for deploying innovative energy solutions.

- Grid readiness and heat-transition pathways remain unclear. Cities lack clear plans, tools and market conditions to manage electrification, district-heating upgrades, flexibility needs and fossil-gas phase-out.

- Projects do not translate easily into delivery pipelines: Heat-transition projects are not bundled into investable programmes (despite many studies and pilots, there are few pipeline-ready investment cases) and procurement is not outcome-aligned (tenders tend to reward inputs instead of performance and delivery speed).

- Roles and mandates are fragmented. Cities, utilities, network operators, regulators and market actors often lack aligned incentives, investment cycles and shared delivery structures. Coordination with energy providers and DSOs is often weak, slowing the deployment of innovative energy solutions (e.g. energy communities, smart grids, demand-side flexibility, and renewable energy integration).

- Affordability, acceptance and emerging energy demands are not fully addressed. This is particularly pertinent when considering the high investment cost associated with large-scale energy transition measures in fragmented multi-owner apartment block neighbourhoods.

- Infrastructure planning remains fragmented. Emerging demands and opportunities (including data centres, industry, waste heat and biogas) are often poorly integrated into urban energy planning.

Demand signals

- Many cities share the problem of weak coordination between infrastructure planning, utilities, finance and delivery. Specific demand varies by city context: Some cities need grid-readiness and flexibility models, some need clean heat and district energy transition models, some need fossil gas phase-out pathways, some need energy-community and local sharing models, and others need urban-industrial symbiosis models. All considered, there is a shared ambition for practical workflows, governance agreements, datasets, investment cases and procurement tools that help cities move from pilots and plans to coordinated energy-system delivery.

Impact and Learning Opportunities

Cities may learn how to:

- Move from isolated energy pilots to investment-ready urban energy portfolios with clear sequencing, governance and scale gates.
- Align municipal climate plans, spatial planning, utility investment plans, DSO/TSO grid planning and district heating strategies.
- Develop practical pathways for district heating decarbonisation, fossil gas phase-out, low-temperature heat networks, waste heat and heat-pump integration.
- Use minimum datasets and shared dashboards to prioritise grid upgrades, heat-network zones, flexibility potential, vulnerable households and investment sequencing.

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- Design customer-facing models that address connection costs, affordability, tenant–landlord dilemmas, heat-pump acceptance and vulnerable-household protection.
- Test governance models for city–utility–Distribution System Operator (DSO)–Transmission System Operator (TSO)–regulator cooperation where cities do not directly control energy infrastructure.
- Procure flexibility, clean heat, storage or energy management services through outcome-based and performance-oriented contracts.
- Positive Energy District concept and approach that offers tested workflows, toolsets and implementation and operation guidelines.
- Design procurement models (framework agreements, performance-based contracts, innovation partnerships or aggregated procurement) that enable city-wide implementation and replication.

Proposed Impact Pathways

The proposed pathways below set out four directions cities could pursue, each pulling a different mix of governance, procurement, financing and market-design levers. Each assumes a different starting point, from fragmented strategies and early political support through to emerging flexibility pilots and established community relationships. Cities may opt to adopt or adapt one of these proposed pathways or develop their own, depending on local needs, fit and climate strategy priorities. A good project is one that starts with your city's current situation and focuses on what can be done to remove barriers and enable the conditions for a coordinated city energy system that can deliver electrification, clean heat and flexibility at scale.

Cities may opt to adopt or adapt one of these proposed pathways or develop their own, depending on local needs, fit and climate strategy priorities.

Pathways	Baseline + Delivery Mandate (Governance Repair)	Procurement-Ready Heat Transition (District Heat and Conversion)	Flexibility and Grid-Enabled Electrification	Just Transition
Main question to shape pathway	How do we create one shared mandate, baseline and pipeline?	How do we get to tender for heat-system transition?	How do we procure Flexibility as a Service (FaaS) and unblock electrification?	How do we make the transition affordable and legitimate?
Activity level – where cities intervene within the challenge area	Cities bring a mix of existing strategies, project lists and stakeholder relationships, but these are often fragmented. Early political support exists, though governance arrangements are not yet fully aligned.	Cities start with heat strategies and studies, knowledge of district heating assets and identified priority corridors. They also have some alignment with key stakeholders and a basic procurement and regulatory context.	The initial position includes data on grid constraints, pilot projects and candidate sites, along with emerging technologies and early engagement with market actors.	Cities bring social and demographic insights, existing support programmes and established relationships with housing providers and community organisations, as well as access to some funding streams.
Intermediate outcomes – what changes during the intervention	Cities transition from fragmented plans and unclear ownership towards a shared delivery mandate, with coordinated decision-making and a prioritised pipeline of actions.	Cities move from feasibility studies and disconnected pilots towards procurement-ready heat transition packages, with clear delivery models and performance requirements.	Cities shift from isolated flexibility pilots towards structured, repeatable services that can be procured, integrated into planning and scaled across the system.	Cities move from reactive or late-stage engagement with communities towards proactive delivery models that prioritise vulnerable households and strengthen social legitimacy.
Long-term outcomes – What changes after the intervention	Cities increase the speed and reliability with which projects move from concept to delivery, improving overall investment readiness and reducing delays caused by fragmented governance.	Cities accelerate the decarbonisation of heat systems, moving from planning to actual infrastructure deployment with more predictable and scalable investment flows.	Reduced grid constraints and reinforcement costs; faster electrification of heat and transport; improved system efficiency and resilience through demand flexibility.	More equitable energy transition; increased public acceptance and legitimacy; faster adoption of solutions; reduced risk of social backlash and exclusion.

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Levers of change	Governance and policy; data and digitalisation; financing and funding; learning and capabilities; procurement.	Technology and infrastructure; procurement; financing and funding; governance and policy; data and digitalisation.	Data and digitalisation; technology and infrastructure; governance and policy; financing and funding; market design.	Democracy and participation; financing and funding; governance and policy; social innovation; learning and capabilities.
Conditions that increase chances of success	Cities progress faster where there is visible political sponsorship, a clearly named programme owner, access to core datasets, and at least one committed utility counterpart.	Cities progress faster where a priority corridor is identified, the utility can commit capital expenditure, and procurement capacity exists to develop and launch tenders.	Cities progress faster where a DSO or utility partner is clearly engaged, a specific constraint zone is identified, and there is willingness to move from pilots to formal service models.	Cities progress faster where social services and housing providers are fully integrated, funding mechanisms are accessible, and trusted community partners are engaged early.

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Large-scale Building Retrofits and Renovations

Unlocking the enabling conditions for repeatable building retrofit programmes that upgrade whole districts and portfolios.

- Cities have targets and strategies yet retrofit happens building-by-building with no repeatable engine to reach district and portfolio scale. The result is stop-start pilots, thin supply chains, uneven quality, split-incentive and affordability barriers and fragmentation between actors (including owners, installers, financiers, procurement, quality assurance, monitoring).

- The goal is therefore to build the industrial, financial and institutional delivery models that can decarbonise building stock at the pace climate neutrality requires and embedding these in municipal renovation strategies, capital programmes and Climate City Contracts.

- Interventions in this area will enable retrofit-system transformation at city-wide scale, moving from one-off projects and fragmented schemes to repeatable, large-scale renovation programmes that upgrade whole districts and portfolios by coordinating technical works, finance, procurement, quality assurance, commissioning and monitoring across many buildings and ownership types. Activities should generate reusable delivery models, governance arrangements, datasets, procurement tools, financing approaches or implementation playbooks that can be adapted by other Mission Cities.

- Large-scale building retrofits and renovations refers to the coordinated delivery of technical upgrades, finance, procurement, quality assurance, commissioning and monitoring across many buildings and ownership types, rather than treating each asset as a separate project. This list is not exhaustive.

Why this matters now

- Practically all the building assets that will be in use in 2040–2050 are already built, so every year of delay compounds lock-in and cost.

- Governance and delivery capabilities also sharply dictate the pace at which retrofit can scale. While retrofit ambition is widespread across Mission Cities, delivery reality differs strongly by governance type (public-led, market-led or capacity-constrained) meaning that without a shared delivery structure, learning does not transfer or scale easily.

- Policy and funding windows increasingly demand verifiable delivery and pipelines rather than aspirational roadmaps.

What is blocking progress

- The main barriers are the fragmentation of the market, limited stakeholder coordination and the lack of governance models that enable municipalities to act as facilitators and aggregators of large-scale renovation programmes.

- Climate City Contracts and related plans repeatedly show the same structural barriers: fragmented ownership across private and public portfolios, weak bundling of projects into pipelines, procurement systems that are not designed for scale, performance-gap risks, and capacity constraints in supply chains and quality assurance.

- Multi-owner and co-owned residential buildings are a major structural bottleneck for scaling retrofit. In addition, fragmented owners and decision-making (single homes, landlords, public portfolios) make standardisation extremely hard. This is compounded by expensive upfront works, slow decision-making among apartment owners, complicated procedures, limited access to affordable finance, and the risk that renovation costs are too high for vulnerable residents.

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- Projects are not bundled into investable pipelines with repeatable unit economics and stable demand signals and procurement is not set up for scale (framework lots, EPC models, quality gates, commissioning and often rewards lowest price, not outcomes).

- Grid and heat-planning dependencies are not sequenced with retrofit pipelines (in part owing to timing mismatch).

- National heritage and safety regulations frameworks limit modifications to original materials, mandate complex approval processes, and often cause conflicts over fire safety, seismic retrofitting, and energy efficiency. Balancing ambitious energy performance improvements with heritage preservation, affordability, and social inclusion is a complex barrier.

- Data, monitoring and measurements are too weak or inconsistent to prove progress, learn, and de-risk investment. Moreover, performance gap risk (predicted vs. measured savings) undermines trust and finance.

Demand signals

- Building retrofit ambition is widespread across Mission Cities, but the ability to deliver at scale differs sharply depending on governance conditions, ownership structures, procurement capacity, finance access and technical readiness. Some cities already set explicit renovation-rate targets, showing that ambition exists even where delivery systems remain weak.

- Across Mission Cities, the shared need is for a family of repeatable delivery products cities can adapt, including public-portfolio retrofit models, district-scale retrofit approaches, one-stop-shop pathways for households and multi-owner buildings, EPC and performance-contracting templates, measurement protocols, resident journey tools, and clearer aggregation of demand for suppliers, financiers and workforce planning.

- To this end, there is a collective opportunity to turn retrofit from a series of one-off projects into a more industrialised, investable and transferable delivery system.

Impact and Learning Opportunities

Cities may learn how to:

- Create district-scale retrofit pipelines, moving from one-off retrofit projects to repeatable, large-scale renovation programmes that bundle buildings, owners and interventions into clearer delivery pipelines.
- Adapt delivery models for different ownership structures (e.g. public portfolios, private homes, landlords, multi-owner buildings and historically constrained stock).
- Improve procurement, commissioning, quality assurance and performance measurement so retrofit programmes are more trusted, more bankable and more likely to deliver real savings.
- Align retrofit delivery with grid readiness, heat planning, workforce capacity and resident engagement, rather than treating building upgrades in isolation.
- Reduce performance-gap risks through monitoring and quality assurance.
- Design procurement models (framework agreements, performance-based contracts, innovation partnerships or aggregated procurement) that enable city-wide implementation and replication.

Potential Impact Pathways

The pathways below set out potential applications cities could take up. Each one pulls in a different mix of finance, governance, procurement, data and capability levers. Each assumes a different starting point, including basic typology data and early engagement from finance partners rather than a running programme. Cities may opt to adopt or adapt one of these proposed pathways or develop their own depending on local needs, fit and climate strategy priorities. A good project is the one that matches where your city currently is with what can be delivered to tackle existing bottlenecks and blockers to enable conditions for repeatable building retrofit programmes that upgrade whole districts and portfolios.

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Cities may opt to adopt or adapt one of these proposed pathways or develop their own, depending on local needs, fit and climate strategy priorities.

Pathways	Multi-Owner Retrofit Conversion System	Public and Social Portfolio Aggregation	Heat and Grid-Ready Retrofit Sequencing	Workforce and Supplier Delivery Capacity
Main question to shape pathway	How can cities convene owners, landlords and multi-owner buildings to agree to a financed and signed retrofit package?	How can cities aggregate assets and demand into a multi-year programme with investable volume and clear delivery responsibility?	How do we avoid retrofit projects stalling because grid/heat dependencies were not sequenced?	How do we build capacity to deliver retrofit programmes without scaling defects?
Activity level – where cities intervene within the challenge area	Cities begin with identified building segments, basic typology data and early engagement from finance partners. They may also have intermediary support structures and an overview of the contractor market.	Cities start with asset registers, energy data and a known maintenance backlog. They also have procurement and legal capacity, facility managers and awareness of the contractor market.	Cities enter with draft or existing heat plans, engagement with DSOs, segmented building stock and awareness of planned infrastructure works.	Cities start with an existing or emerging multi-year pipeline, contractor networks, training providers and quality assurance bodies, and procurement plans that signal future demand.
Intermediate outcomes – what changes during the intervention	Cities move from stalled decision-making in multi-owner buildings towards a repeatable conversion system that consistently results in signed retrofit contracts.	Cities transition from fragmented, one-off building or project-by-project retrofits towards structured, programmatic delivery across building portfolios with predictable procurement and verified performance.	Cities shift from uncoordinated planning between retrofit, heat systems and grid capacity towards aligned sequencing that enables smoother, more reliable implementation.	Cities move from uncertain demand and constrained capacity towards predictable, scalable delivery systems supported by a stronger workforce and improved quality assurance (built into procurement processes).
Long-term outcomes – What changes after the intervention	Establishing a trusted and accessible conversion journey turns fragmented owner interest into sustained demand for high-quality retrofit. Long term, cities will be able to reduce building energy demand and fossil heating at scale while making healthier, more comfortable and affordable homes a visible benefit of the net-zero transition.	Creating an accountable mechanism to aggregate buildings and demand transforms retrofit into a long-term urban delivery programme. As investable volume and repeatable unit economics grow, transaction costs fall, capital and suppliers can commit with confidence, and cities gain a credible pathway to renovate whole portfolios and districts at the rate required for climate neutrality.	Over time, evidence improves subsequent investment and design, infrastructure dependencies are anticipated, and building upgrades actively enable efficient electrification and fossil-heat phase-out, making the building stock a dependable component of the city's net-zero energy system.	Long term, cities gain a delivery system that scales without multiplying defects: verified performance becomes standard practice, retrofit sustains skilled local employment, and workforce capacity is no longer the binding constraint on how fast a city can decarbonise its building stock.
Levers of change	Financing and funding; Governance and policy; Social innovation; Democracy and participation; Partnerships and engagement; Capacities and capabilities.	Financing and funding; Governance and policy; Procurement; Partnerships and engagement; Data and digitalisation.	Data and digitalisation; Technology and infrastructure; Governance and policy; Procurement; Capacities and capabilities; Partnerships and engagement.	Learning and capabilities; procurement; governance and policy; financing and funding.
Conditions that increase chances of success	Cities progress faster where a clear conversion system owner is named, finance partners are engaged early, standard building typologies are defined, and contractor capacity can be bundled.	Cities progress faster where procurement authority is established, asset owners are committed, data is accessible, and commissioning and QA capacity is available.	Cities progress faster where DSOs are actively engaged, priority zones are defined, and heat planning is linked to real delivery timelines and procurement pathways.	Cities progress faster where pipeline visibility is strong, procurement is standardised, training providers align with demand, and QA systems are embedded in delivery.

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Nature-Based Solutions (NBS) at city scale

Unlocking the enabling conditions for NBS to be planned, funded and maintained as core city infrastructure.

- NBS already features in most climate plans yet stays a set of pilots because of a lack of sectoral integration. Cities lack the delivery systems to make NBS methodical, maintainable and investable. Without clear responsibilities, lifecycle finance, planning standards, asset data, private-land models and operational skills, NBS remain a collection of pilots rather than a core infrastructure system.

- The goal is therefore to establish NBS as core urban infrastructure alongside energy, water and mobility with clear ownership, service levels, maintenance budgets, asset data and private-land models embedded in planning, capital works, procurement and Climate City Contracts.

- Interventions in this area will enable nature-based infrastructure at city-wide scale, moving from scattered greening projects to methodical, investable and maintainable green-blue infrastructure that cools neighbourhoods, manages water, reduces flood and drought risk, restores biodiversity and improves liveability. Activities should generate reusable delivery models, governance arrangements, datasets, procurement tools, financing approaches or implementation playbooks that can be adapted by other Mission Cities.

- Cross-cutting applicability: cities may enter through a specific need (such as cooling a heat-vulnerable district, managing stormwater) and combine NBS with other challenges such as retrofit, heating and cooling, or public-space investment.

- Nature-based solutions refer primarily to green and blue systems, planned and managed at city, district or landscape scale with clear service levels, maintenance responsibilities, asset data, investment plans and governance arrangements.

Why this matters now

- NBS matters because it protects urban habitability. Heatwaves, flooding, drought, biodiversity loss and poor public-space quality are increasingly experienced together, especially in dense and vulnerable neighbourhoods. NBS can address these risks simultaneously when it is planned as connected green-blue infrastructure rather than isolated amenities.

- While individual greening initiatives have been implemented, there is a need for a more systematic approach that combines NBS, urban-greening, water-sensitive design and climate-resilient public spaces with wider transition measures. Systems-modelling suggests that combined packages of NBS with energy, mobility and building interventions could contribute to total emissions reductions of up to 57% by 2030 in selected EU city contexts. If considered as real ecosystems (with owners, service levels and investment plans) NBS can become “green utilities” that sit alongside energy, water and transport in the city’s core systems.

- The timing of infrastructure renewal makes this a lock-in issue as well as a climate opportunity. Streets and sewers commonly have lifespans of around 30–50 years, meaning that failing to integrate NBS into current renewal cycles can lock cities into higher-risk, more carbon-intensive grey infrastructure pathways for decades. A key boost to this is that residents increasingly expect cooler, greener, healthier neighbourhoods. That said, trust erodes if visible projects do not scale or are poorly maintained.

What is blocking progress

- Key barriers include fragmented governance, limited long-term maintenance funding, difficulties in measuring impacts and the need to better integrate NBS into mainstream urban planning and investment frameworks. Responsibilities remain split or unclear, and no single owner feels responsible for the end-to-end NBS system in a neighbourhood or corridor.

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- Cities can often fund construction, but not the long-term ecological maintenance, staff skills, monitoring and operating budgets required for NBS to keep performing. Additionally, municipalities struggle with limited cross-departmental coordination and difficulties in integrating NBS requirements into procurement and investment planning processes.

- Data and measurement mechanisms are not yet fit for purpose. Without standard data, it is hard to build strong investment cases. Consequently, the value case is difficult to prove. Cities struggle to quantify cooling, flood reduction, health, biodiversity and ecosystem-service benefits in formats that convince finance departments, infrastructure teams, politicians and private owners.

- Another key issue is how to engage businesses and other stakeholders in developing green business models and investing in green infrastructure, especially considering competing land-use pressures in urban areas. Cities need practical mechanisms to work with housing associations, schools, businesses, private landlords and communities.

Demand signals

- Demand varies across city types. Some cities need common delivery models (e.g. how to run a sponge-city corridor programme, a roof-greening scheme for housing associations, or a neighbourhood pollinator network) or reuseable resources such as design pattern-books, standard contracts, grant templates, data schemas, MRV dashboards and maintenance playbooks), while other others require clearer market signals (aggregated demand for services such as green infrastructure planning, NBS construction, ecological maintenance, pollinator habitat design, or soil restoration). Many need governance, finance and maintenance systems that turn pilots into durable programmes.

Impact and Learning Opportunities

Cities may learn how to:

- Move from pilot projects to city-wide NBS programmes.
- Build governance and maintenance models for long-term stewardship.
- Develop investment cases for cooling, flood resilience and public-health outcomes.
- Integrate NBS requirements into planning, procurement and infrastructure renewal.
- Mobilise private landowners, housing providers and businesses.
- Monitor ecosystem-service outcomes using shared indicators and data standards.
- Design procurement models (framework agreements, performance-based contracts, innovation partnerships or aggregated procurement) that enable city-wide implementation and replication.

Potential Impact Pathways

The proposed pathways below focus on stewardship rather than design (e.g. clarifying who owns and maintains what, getting NBS requirements into procurement and investment planning, and building a value case that a finance department will accept). A good project is one that starts with your city's current situation and focuses on what can be done to remove barriers and enable conditions for NBS to be planned, funded and maintained as core city infrastructure.

Cities may opt to adopt or adapt one of these proposed pathways or develop their own, depending on local needs, fit and climate strategy priorities.

Pathway	NBS as a City Infrastructure Programme	Sponge City and Blue–Green Corridors	Buildings and Private Plots Participation Models	Stewardship, Maintenance and Ecosystem Performance
Main question to shape pathway	How can cities create city-wide NBS programmes with clear targets, budgets, owner teams, and MRV?	How do we deliver sponge city corridors and cooled, shaded microclimates in priority districts?	How can cities make participation on private and community land simple, worthwhile and scalable?	How will green-blue assets be maintained and managed so they continue to deliver measurable services over their full life?

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Activity level – where cities intervene within the challenge area	Cities begin with climate and adaptation plans, early NBS pilots and risk maps. They also have initial political support and working relationships across departments, utilities and community actors.	The starting point includes flood and heat-risk mapping, knowledge of upcoming street or drainage works, and existing inventories of trees and drainage systems. Cities also have mobility and public realm strategies to build on.	Cities bring building and land-use data, alongside early greening initiatives such as green roofs or urban gardens. They also have access to housing networks, business communities and biodiversity studies.	Cities typically start with some understanding of their urban canopy, existing planting programmes, and maintenance structures. They also have environmental data and organisational arrangements that shape how green infrastructure is managed.
Intermediate outcomes – what changes during the intervention	Cities evolve from fragmented projects towards structured, utility-like management of green infrastructure, with a prioritised pipeline, service standards, funding responsibilities and common MRV.	Cities shift from disconnected street, drainage and green interventions towards coordinated delivery of blue–green corridors using consistent design and procurement approaches.	Cities move from isolated greening efforts across private and community spaces towards coordinated, city-wide participation with clear incentives, delivery structures and an aggregated project pipeline.	Cities evolve from ad-hoc planting and maintenance approaches towards a lifecycle stewardship model with accountable owners, funded maintenance, workforce requirements and performance monitoring.
Long-term outcomes – What changes after the intervention	Treating NBS as core infrastructure establishes the institutional conditions for nature to be planned, financed and governed as a permanent part of urban development.	Reduced flooding and heat stress; safer and more attractive streets; improved active mobility and public space quality; stronger confidence in NBS as core infrastructure.	Creating a repeatable model for participation on private and community land enables cities to expand transformation beyond the assets they directly own mobilising city-wide contributions to resilience and net zero.	Transforms NBS from a short-term capital project into a dependable urban service, protecting long-term biodiversity, public-health and resilience outcomes and sustaining confidence and investment in nature as an enabling condition for a climate-neutral city.
Levers of change	Governance and policy; Financing and funding; Data and digitalisation; Procurement; Capacities and capabilities; Partnerships and engagement.	Technology and infrastructure; governance and policy; procurement; financing and funding; democracy and participation.	Governance and policy; Financing and funding; Social innovation; Democracy and participation; Partnerships and engagement; Procurement; Data and digitalisation.	Governance and policy; Financing and funding; Capacities and capabilities; Data and digitalisation; Procurement; Partnerships and engagement.
Conditions that increase chances of success	Cities progress faster where there is visible political sponsorship, willingness to clarify ownership and budgets, access to baseline data, and engagement from utilities and community actors.	Cities progress faster where upcoming street or drainage investments can be aligned, procurement teams accept performance-based approaches, and there is political willingness to reallocate street space.	Cities progress faster where housing providers and businesses are willing to participate, administrative systems can support incentives, and community organisations are engaged early.	Cities progress faster where inventories or data can be built or improved, maintenance systems can adapt, and political support exists for treating green infrastructure as critical urban services.

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City Finance Innovations for Climate Neutrality

Unlocking the enabling conditions to turn climate plans into investible and sustainable pipelines that draw in public, private and community capital.

- Cities do not have the mechanisms to fund climate plans and projects at scale. Projects are not packaged into investable pipelines, de-risking responsibility is split, budgets and debt rules are constrained, and most emissions reductions depend on non-municipal capital. Cities stay grant-dependent, projects stay un-bankable, and the investment gap to 2030 goes unmet.

- Cities need investable delivery systems. The goal is therefore to build the models, instruments and governance (i.e. pipeline governance, investment-case and MRV templates, green bonds, ESCO/EPC, blended and guarantee structures, and the capacity to orchestrate capital) that turn climate plans into repeatable, socially just, investable delivery embedded in city budgets and programmes.

- Interventions in this area will enable the financing of climate delivery at city-wide scale, moving from fragmented funding bids and stand-alone projects to investable climate-neutrality pipelines that attract and align public, private and community capital. Activities should generate reusable delivery models, governance arrangements, datasets, procurement tools, financing approaches or implementation playbooks that can be adapted by other Mission Cities.

- City finance innovation refers to the models, instruments and governance arrangements to fund climate priorities, risk-sharing, delivery partners and verification, rather than treating finance as a separate activity at the end of project design.

- Cross-cutting applicability: cities may enter through a specific domain (financing retrofit, clean heat or NBS) rather than finance in the abstract; finance often works best as the route into delivery in another challenge.

- This challenge area is intended to fund the earlier-stage, replicable enabling work (governance models, investment-case and MRV templates, etc.) rather than deal-by-deal project or investment vehicle structuring. Once a project reaches sufficient maturity and carries a revenue or blended-finance logic, coordination will be made with the Capital Hub (via their City Finance Specialist) to support delivery through investment-readiness, financial structuring and/or capital facilitation.

Why this matters now

- Analysis of the CCC IP estimates that €307bn in incremental expenditure will be needed for all 100 EU-located Mission Cities to meet their climate neutrality 2030 target, and that 80% of this capital will have to come from private sources. Municipal budgets alone cannot close this gap. Grants can play a role in de-risking early-stage projects, but the scale of investment required means cities must increasingly design projects that can attract repayable finance (loans, equity, green bonds, Energy Service Companies - ESCOs and blended instruments). Furthermore, legal limits on municipal debt are a real constraint for many cities, materially restricting capital expenditure even where climate investment needs are clear. Emissions reductions therefore depend on influencing non-municipal investment decisions and on finance models that can mobilise wider actors. This makes the city's role as orchestrator and enabler, rather than sole funder, essential.

- 2030 commitments force decisions in the next 3–5 years that will lock in emissions trajectories for decades. Many cities face hard financial constraints and have limited experience with green instruments, slowing action even where needs and plans are clear. Equity pressure is high: energy poverty and affordability constraints require targeted finance design, otherwise the transition cannot scale politically or socially. Across Climate City Contracts, project ideas often exist, but they are not bundled into investable pipelines, and cities remain dependent on EU or national funds with complex eligibility and timing. Some cities are already building finance innovations, including green bond

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portfolios, ESCOs and dedicated funds, but resources and learnings are not yet reusable across the cohort.

What is blocking progress

- Across Climate City Contracts, the same finance pattern recurs cities have project ideas, climate commitments and partial funding sources, but struggle to package these into investable pipelines with clear governance, bankability and delivery logic.

- Limited budgets, administrative capacity and split responsibilities (across municipal departments, utilities, private actors and agencies), prevent cities from orchestrating end-to-end investment pipelines at scale. Compounding this, limited experience within municipalities with green bonds, ESCOs, Public-Private Partnerships - PPPs and blended finance creates risk aversion and slows deployment.

- Other barriers include access to capital, insufficient private investment and the need to build investor confidence around municipal climate projects. Projects exist, but they are not packaged into financeable programmes with standard documentation, risk allocation, replication rules or substantiated data.

- When funding sources exist, cities report limited capacity to structure bankable climate-smart projects. This dovetails with grant dependencies, where project design is built around grant eligibility rather than investment logic. Consequently, projects struggle to attract repayable finance or scale beyond the grant cycle.

Demand signals

- Finance innovation is relevant across Mission Cities not as a specialist sub-topic, but as a recurring condition for whether climate action can move from strategy to implementation. The demand is not for one uniform finance instrument, but for shared methods and reusable tools that help cities build financeable climate portfolios.

- The strongest common demand lies in pipeline-governance methods, standardised investment-case templates, Monitoring, Reporting and Verification - MRV packages, green bond frameworks, ESCO and Energy Performance Contract - EPC models, PPP structures, subsidy and blending approaches, and practical tools for linking climate priorities to de-risked capital flows. There is also a clear demand for support in transitioning from grant-dependent project cultures to programmes designed from the outset to attract repayable and private finance and for city teams to develop the internal capacity to act as credible orchestrators of multi-actor investment.

Impact and Learning Opportunities

Cities may learn how to:

- Move from funding bids to investable climate pipelines and build investable climate portfolios from fragmented projects.
- Act as orchestrators of climate investment and create governance structures for pipeline management.
- Choose and adapt fit-for-purpose financing instruments and develop bankable business cases across retrofit, energy and NBS.
- Design projects that can attract repayable finance and blend grants, public finance and private capital.
- Build the evidence base investors need and Use MRV systems to support investment decisions.
- Design financially viable pathways that protect vulnerable residents and address affordability challenges.
- Design procurement models (framework agreements, performance-based contracts, innovation partnerships or aggregated procurement) that enable city-wide implementation and replication.

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Potential Impact Pathways

The pathways below set out four proposals cities could take up, each pulling a different mix of levers, including finance, governance, procurement, capability and participation. Each assumes a different starting point, including a project list and an understanding of municipal budgets rather than a mature pipeline. Cities may opt to adopt or adapt one of these proposed pathways or develop their own depending on local needs, fit and climate strategy priorities. A good project is the one that matches where your city currently is with what can be delivered to tackle existing bottlenecks and blockers to enable the conditions that turn climate plans into investible and sustainable pipelines that draw in public, private and community capital.

Cities may opt to adopt or adapt one of these proposed pathways or develop their own, depending on local needs, fit and climate strategy priorities.

Pathways	Climate Investment Governance and Portfolio Prioritisation	Aggregated, Investment-Ready Delivery Pipelines	Repeatable Financing and Risk-Sharing Vehicles	Just Finance, MRV and Market Confidence
Main question to shape pathway	How can cities align scarce project-preparation capacity and limited capital around a single, prioritised climate investment portfolio?	How will small or fragmented projects and demand be aggregated into programmes with investable scale and repeatable unit economics?	Which financing and delivery vehicle will allocate risk, attract capital and remain usable beyond a single transaction?	How will finance reward verified climate outcomes while protecting affordability and building lasting confidence among residents, investors and delivery partners?
Activity level – where cities intervene within the challenge area	Cities begin with climate plans, project lists and an understanding of municipal budgets. They also know their key stakeholders and the funding opportunities and constraints they face.	Cities start with a prioritised pipeline and supporting feasibility studies, alongside cost data and relationships with funders and delivery partners.	Cities start with a sufficiently mature pipeline, legal, treasury and procurement capacity, potential public, private or community capital, and evidence on risks and revenues.	Cities enter with evidence of financial barriers, existing regulatory and tariff frameworks, social vulnerability data and current subsidy programmes.
Intermediate outcomes – what changes during the intervention	Cities move from fragmented project ownership and competing priorities towards a shared investment mandate with coordinated governance processes.	Cities transition from early-stage or stalled projects towards an aggregated pipeline of structured, finance-ready proposals with clear documentation and decision pathways.	Cities shift from uncertain and ad-hoc funding approaches towards structured, repeatable financing vehicles that mobilise both public and private capital.	Cities move from misaligned incentives and fragmented financial conditions towards stable, climate-aligned systems that embed social equity and affordability safeguards.
Long-term outcomes – What changes after the intervention	Enable scarce public capacity and capital to be directed towards the combinations of interventions most capable of transforming urban systems. Over time, climate priorities move through consistent decision gates, weak or duplicative projects are stopped or combined, and the city develops a credible, sustained investment pathway from its Climate City Contract to net-zero delivery.	Cities increase the proportion of projects that reach funding or tendering stage, creating more consistent and scalable investment pipelines. With more interventions moving from ambition to implementation, market confidence and delivery capacity grow, and capital can flow at the pace and scale required for city-wide transformation towards net zero	Over time, public capital can be used strategically to mobilise private and community investment. Successful structures can be reused across sectors, creating a durable financing system for the long-term transition of urban infrastructure and services to net zero.	Enable climate finance to scale without deepening inequality, strengthen confidence among residents and investors, and sustain the political and financial support required to complete a fair, accountable and enduring net-zero transition.
Levers of change	Governance and policy; Financing and funding; Capacities and capabilities; Data and digitalisation;	Financing and funding; Procurement; Governance and policy; Data and digitalisation; Capacities and	Financing and funding; Governance and policy; Procurement; Partnerships and engagement;	Financing and funding; Governance and policy; Social innovation; Democracy and participation; Partnerships and

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	Partnerships and engagement.	capabilities; Partnerships and engagement.	Capacities and capabilities.	engagement; Data and digitalisation.
Conditions that increase chances of success	Cities progress faster where there is political sponsorship, a named finance owner, access to budget data, and willingness from departments and utilities to align around a shared pipeline.	Cities progress faster where a clear priority domain is selected, cost and technical data are available, and at least one funder or financing partner is engaged.	Cities progress faster where there is sufficient project volume, treasury and legal capacity, and early interest from investors or delivery partners.	Cities progress faster where regulatory authority is clear, vulnerability data is accessible, and strong coordination exists with social services, housing providers and utilities.

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Decarbonising Urban Mobility and Logistics

Unlocking the enabling conditions for a coordinated city-wide system that delivers reliable zero-emission movement and the reallocation of street space towards cleaner, safer and more productive uses.

- Despite efforts to decarbonise urban mobility and logistics (e.g. via Climate City Contracts, sustainable urban mobility and logistic plans, access regulations and pilot projects), responsibilities, infrastructure, data, contracts and incentives are spread across many actors who operate independently, meaning solutions are not aligned, cannot scale, and fail to deliver system-wide change.

- Urban mobility here refers to the end-to-end models that reduce car dependence (via active travel, shared mobility and other accessible alternatives to private car use), unlock visible public value and make street-space reallocation easier to scale. Urban Logistics includes last-mile freight, service vans, construction logistics and other commercial trips that enter, circulate within or supply dense urban areas.

- The focus of the challenge is on how people, goods and services move through urban areas, and how cities can redesign the governance, infrastructure, rules and delivery models that shape those movements. The ambition is for city-scale transformation via well managed urban mobility systems that provide reliable access to goods and services and reallocate street space towards cleaner, safer and more productive urban uses.

- This challenge applies regardless of whether a city has already introduced low-emission zones, mobility plans, micro-hubs, parking reforms or freight pilots. Cities that have not introduced these measures yet should not wait for more proof. Approaches have already been tested widely in cities around the world and most cities, already have mobility plans in place. What is missing is not more testing or more planning, it's implementation.

- The priority is to implement mobility and logistics plans in a coordinated way, replicating, scaling or transferring what has already been learned elsewhere. To achieve this, cities must first build the governance, financing, and coordination models that let these plans actually get delivered and scaled across the wider urban system.

Why This Matters Now

- The next five years represent a critical transition window. Decisions being taken today on new housing developments, commercial districts, transport infrastructure, depots, logistics facilities and parking provision will shape travel demand and emissions patterns for decades.

- E-commerce growth, platform-based delivery services and changing patterns of economic activity continue to increase pressure on urban freight systems, while public expectations for cleaner air, safer streets and more attractive public spaces continue to rise. Cities sit where those two pressures meet, and it is in the planning and delivery of new mobility and logistics schemes that the gap between them can be collaboratively resolved.

- Many cities are introducing or expanding Low Emission Zones or Zero Emission Zones under Urban Vehicle Access Regulations. Without complementary measures covering logistics operations, kerb allocation, loading activity, parking management and alternative delivery models, these measures may struggle to achieve their full impact. Decisions taken for logistics reshape the wider mobility system, and decisions taken for mobility reshape logistics, so cities acting now can coordinate across both rather than run them as separate programmes that pull against each other.

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What is Blocking Progress

- Responsibilities remain fragmented across transport, planning, public works, economic development, parking authorities, enforcement agencies, public transport operators, logistics providers and private developers. No single actor is accountable for delivering integrated urban mobility and logistics outcomes. As a result, mobility, freight, parking and public-space decisions are often planned separately even though they compete for the same limited street space.

- Cities frequently develop individual pilots such as microhubs, cycling projects, parking reforms or access regulations without a coherent pathway for city-wide implementation and scaling. Cities struggle to move beyond pilots because they lack standardised delivery models, business cases, procurement approaches and evidence that can support wider implementation. In addition, cities often lack reliable information on deliveries, loading activity, kerb usage, parking occupancy, service trips and logistics performance.

- Logistics hubs and consolidation centres often struggle to achieve long-term viability because planning policy, procurement, access restrictions and commercial demand are not sufficiently aligned. In certain instances, urban logistics measures lack the long-term vision for successful implementation. At the stakeholder level, SMEs, local businesses and logistics operators face uncertainty around vehicle transitions, changing regulations and investment requirements.

- Electrifying heavy-duty vehicles is complex. Charging-infrastructure availability and rest-time regulations aren't yet designed around electric-fleet operations. The benefits of decarbonising often accrue to large operators and cities, while smaller actors bear the disadvantages (affecting work organisation, routes and schedules). Inflexible criteria in public procurement can compound this, putting small companies at a further disadvantage.

- Parking remains politically sensitive, forcing cities to confront the disconnect between a privately owned asset (cars) and the assumed 'right' to use public street space for parking. Public resistance, behavioural dependence on private car use and concerns about accessibility can make reform difficult even where evidence suggests broader public benefits. Moreover, enforcement capability is often insufficient (despite being a potential source of income). Access regulations, parking controls, loading rules and kerb management systems lose effectiveness when compliance cannot be monitored and enforced consistently.

Demand signals

- Cities may differ in scale, geography and governance arrangements, but many face similar transition challenges:
    - Demand for freight-sensitive Zero Emission Zones, UVARs and access-management systems that work for businesses as well as climate objectives.
    - Demand for viable consolidation hubs, logistics facilities and last-mile delivery models that can move beyond pilot status.
    - Demand for integrated approaches linking logistics, parking, public transport, active mobility and public-space transformation.
    - Demand for better use of kerb space through parking reform, loading management, dynamic allocation and street-space reallocation.
    - Demand for practical tools that integrate mobility and logistics requirements into development planning and urban regeneration.
    - Demand for common datasets, monitoring approaches, procurement models, governance templates and implementation playbooks that help cities move from experimentation to delivery.
    - Demand for stronger market signals that support investment in zero-emission logistics fleets, cargo-bike ecosystems, charging infrastructure, logistics hubs and digital management systems.
    - Demand for quiet, low-noise delivery solutions and off-peak or night-time logistics models that are acceptable to residents and viable for operators.

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  - Demand for charging and loading infrastructure that keeps pace with fleet electrification and rising delivery volumes.
  - Demand for coordinated governance models that align cities, regions, national government and logistics operators around shared, predictable rules.
- While cities do not need identical solutions, many need comparable delivery frameworks that can be adapted to local circumstances.

Impact and Learning Opportunities

Cities may learn how to:

- Move from isolated mobility and logistics projects to coordinated city-wide delivery programmes.
- Develop viable models for consolidation hubs, micro-hubs and zero-emission last-mile logistics.
- Integrate mobility and logistics requirements into planning, regeneration and major development programmes.
- Build public legitimacy for kerb-space reallocation and parking reform by connecting changes to visible public benefits (including street NBS/greening measures which help build public acceptance of parking removal).
- Create governance arrangements that align municipalities, logistics operators, businesses, developers, public transport agencies and communities.
- Generate reusable evidence, tools, case studies, business models and implementation approaches that support replication across Mission Cities.
- Design procurement models (framework agreements, performance-based contracts, innovation partnerships or aggregated procurement) that enable city-wide implementation and replication.

Potential Impact Pathways

The pathways below set out four routes cities could take. Each one pulls in a different mix of governance, enforcement, data, procurement and participation levers. Each assumes a different starting point, including mobility plans, parking strategies and logistics studies that remain fragmented. Cities may opt to adopt or adapt one of these proposed pathways or develop their own depending on local needs, fit and climate strategy priorities. A good project is one that starts with your city's current situation and focuses on what can be done to remove barriers and enable the conditions for a coordinated city-wide system that delivers reliable zero-emission movement and the reallocation of street space towards cleaner, safer and more productive uses.

Cities may opt to adopt or adapt one of these proposed pathways or develop their own, depending on local needs, fit and climate strategy priorities.

Pathways	Integrated Mobility and Logistics Governance	Zero-Emission Access and Managed Curb Systems	Consolidated and Zero-Emission Urban Logistics Networks	Car-Dependence Reduction and Street-Space Transformation
Main question to shape pathway	How can cities create a shared operating model for mobility, logistics, parking and street-space decisions?	How can cities implement urban vehicle access regulation such as ZEZ and kerb-management systems that support climate goals while maintaining access?	How can cities move from isolated logistics pilots to viable city-scale delivery networks?	How can cities systematically reallocate space to support wider climate, mobility and public-space objectives?
Activity level – where cities intervene within the challenge area	Cities typically begin with mobility plans, parking strategies, logistics studies, stakeholder relationships and existing governance arrangements that remain fragmented.	Cities bring access regulations, emissions and traffic data, kerb inventories, enforcement powers and experience with parking or vehicle-access management.	Cities enter with logistics demand data, identified sites, planning frameworks and early hub or consolidation concepts.	Cities bring parking inventories, occupancy data, pricing systems, public-space ambitions and identified priority corridors or districts.
Intermediate outcomes – what changes	Cities move from fragmented responsibilities towards a shared	Cities transition from disconnected regulations towards integrated access-management	Cities move from stand-alone pilots towards a structured network of hubs,	Cities move from isolated parking interventions towards coordinated programmes that

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during the intervention	governance framework with agreed priorities, datasets, responsibilities and delivery pipelines.	systems that combine enforcement, kerb management, loading operations and zero-emission objectives.	operators and delivery models with clearer commercial and operational foundations.	permanently reallocate kerb space at scale alongside sustainable mobility and public-space improvements.
Long-term outcomes – What changes after the intervention	Faster and more coordinated delivery of mobility transition measures, improved investment readiness and stronger institutional capacity.	Reduced transport emissions, improved air quality, more efficient street-space allocation and greater confidence among operators and users.	Lower freight emissions, increased adoption of zero-emission delivery models, reduced congestion and improved logistics efficiency.	Reduced car dependence, safer and quieter streets, more attractive and accessible public spaces, better public transport and space for active mobility and more resilient urban environments.
Levers of change	Governance and policy; data and digitalisation; learning and capabilities; partnerships and engagement; financing and funding.	Governance and policy; enforcement systems; data and digitalisation; technology and infrastructure; procurement.	Land-use planning; technology and infrastructure; financing and funding; procurement; governance and partnerships.	Governance and policy; enforcement systems; financing and funding; democracy and participation; public-space design and infrastructure.
Conditions that increase chances of success	Cities progress faster where political leadership supports coordinated decision-making, datasets can be shared across departments and key delivery actors are engaged early.	Cities progress faster where legal powers are clear, enforcement resources exist and operators participate in codesign processes.	Cities progress faster where suitable sites are available, planning policy supports logistics infrastructure and operators commit to utilisation.	Cities progress faster where visible public benefits can be demonstrated, revenue use is transparent, communities are engaged early and political support exists for curb-space reallocation.

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Description of Acronyms

Acronym	Meaning
AC	Air Conditioning
ARANER	District cooling company/reference (unclear context)
CCC	Climate City Contract
CCCR	City Commercial Centre Re-Conceptualisation
CLMS	Copernicus Land Monitoring Service
CO_2	Carbon dioxide
DSO	Distribution System Operator
EEA	European Environment Agency
EIB	European Investment Bank
EPC	Energy Performance Contract
ESCO	Energy Service Company
EU	European Union
EV	Electric Vehicle
EAFO	European Alternative Fuels Observatory
GHG	Greenhouse Gas emissions
GIS	Geographic Information System
GUHVI	Global Urban Heat Vulnerability Index
HDV	Heavy-Duty Vehicle
ICCT	International Council on Clean Transportation
IMO	International Maritime Organization
LEZ	Low Emission Zone
LGV	Light Goods Vehicle
MRV	Measurement, Reporting and Verification (not explicitly defined in document)
NBS	Nature-Based Solutions
NHESS	Natural Hazards and Earth System Sciences (journal)
NOx	Nitrogen oxides
NZC	NetZeroCities (Mission support platform)
$PM_{2.5}$	Fine particulate matter (air pollutant)
PPP	Public-Private Partnership
RFF	Resources for the Future (research institution)
SLA	Service Level Agreement
SOP	Standard Operating Procedure
SKU-like	Stock Keeping Unit–like (standardised delivery packages, conceptual usage)
TSO	Transmission System Operator
UCC	Urban Consolidation Centre
UHI	Urban Heat Island
UVAR	Urban Vehicle Access Regulation
WRI	World Resources Institute
ZEZ	Zero Emission Zone

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