

Saudi Arabia

Centre for the
Fourth Industrial
Revolution

November 2025

Unlocking Smart Cities Innovation

A Procurement-Driven Approach



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Executive Summary

Cities face increasing pressure to deliver smarter services, achieve sustainability targets, and support innovation, all while managing limited budgets. Traditional procurement practices, which often prioritize lowest cost over long-term value, are no longer sufficient. Without reform, cities risk higher costs over time, limited adoption of new technologies, and missed opportunities to improve quality of life for their citizens.

To address this challenge, the Centre for Fourth Industrial Revolution Saudi Arabia collaborated with the Centre for Urban Transformation and the Connected Places Catapult to localize the G20 Global Smart Cities Alliance's Innovation-Friendly Procurement Model Policy and created a digital self-assessment on innovation-procurement. The assessment was designed with input from international experts and enables city leaders to benchmark their procurement practices, identify gaps, and take action based on practical recommendations.

This report also presents global case studies showing how procurement can be used as a driver for innovation: London's air quality monitoring through outcome-based procurement, Dublin's innovation challenge for water safety, and Helsinki's integration of sustainability into procurement. These examples highlight measurable impacts such as reduced pollution exposure, improved public safety, cost savings, and long-term supplier engagement.

The report concludes with a set of recommendations for city leaders and policymakers, offering a practical pathway to move from traditional procurement toward innovation-friendly approaches. It calls for immediate action, noting that the cost of inaction is high. Linking procurement reform to broader strategies such as Vision 2030 ensures that city budgets are not only managed efficiently, but also used as a tool to drive sustainability, competitiveness, and societal well-being.

Introduction

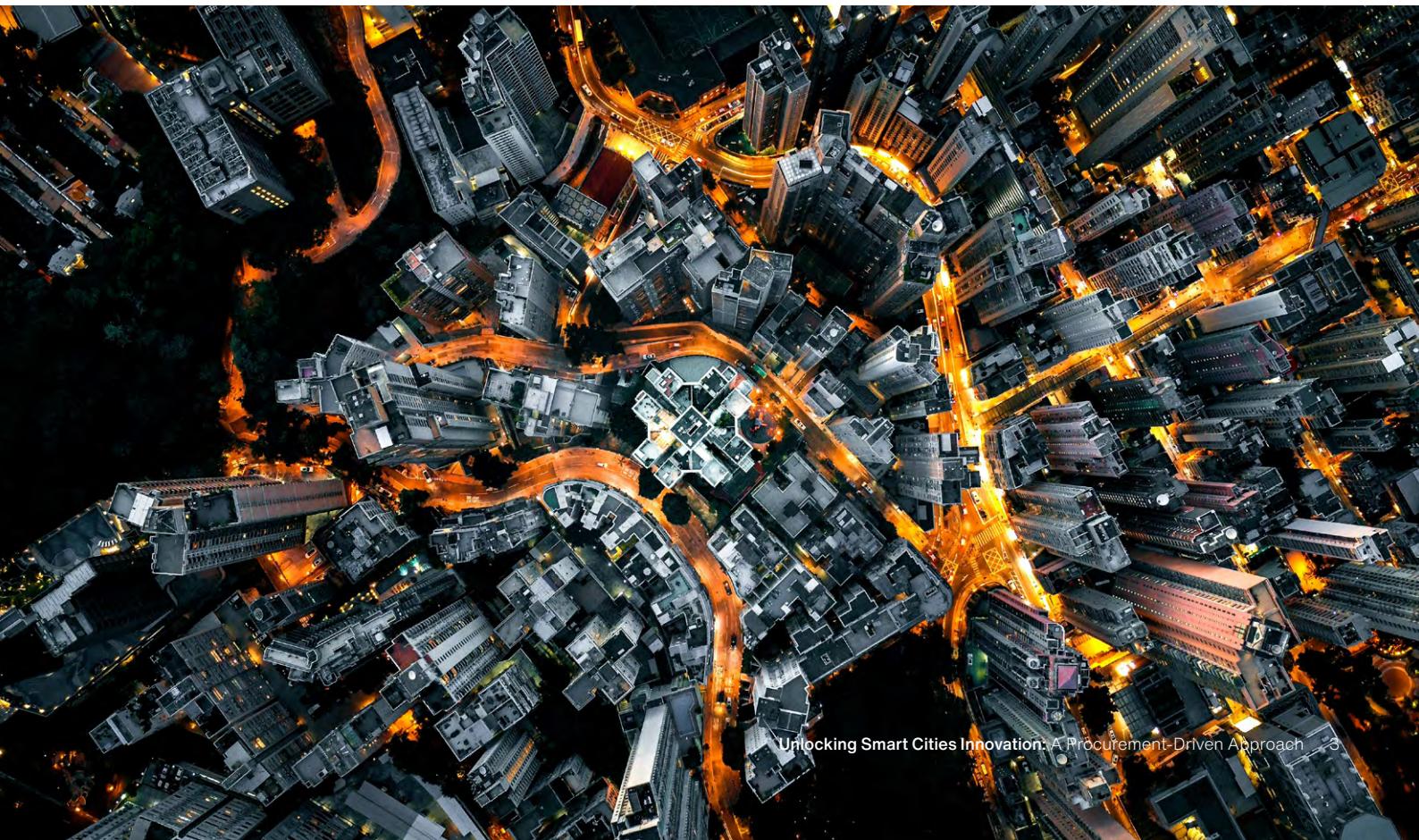
Cities worldwide are seeking smarter ways to deliver public services, enhance well-being, and advance sustainability. The Centre for the Fourth Industrial Revolution Saudi Arabia (C4IR Saudi Arabia) has taken a leadership role to help Saudi cities explore how public procurement can serve as a powerful catalyst for innovation and measurable impact.

This report sets context for the Innovation-Friendly Procurement Model Policy³, outlines C4IR Saudi Arabia's efforts in promoting its use, and highlights how the model policy and supporting tools can help municipalities align their procurement strategies with wider economic, social, and environmental objectives.

Traditionally city procurement processes have focused on technical delivery and cost-effectiveness, often missing opportunities to engage suppliers as partners in delivering responsible, sustainable and innovative outcomes. The Innovation-Friendly Procurement Model Policy addresses this gap by guiding procurement professionals to embed critical dimensions:

- Adopt purpose-driven procurement, focusing on desired outcomes rather than rigid processes.
- Build informed, empowered teams to champion new approaches and guide colleagues toward appropriate market engagement.
- Engage a diverse range of suppliers actively as simply announcing opportunities is not enough to attract the best solutions.

By doing so, it empowers cities to adopt technologies (including emerging technologies) in ways that are not only innovative, but also may be more appropriate and effective in delivering the public service.



Making the Case for Innovation-Friendly Procurement

Public procurement represents a significant portion of government spending, and in cities, this spending often shapes the design, delivery and management of services that directly impacts the lives of residents, businesses and visitors. Rather than viewing procurement as a rigid process, innovation-friendly procurement reimagines it as a strategic tool for sourcing novel solutions, testing emerging technologies, and achieving policy goals like sustainability, public health and safety, and local innovation.

Innovation procurement is not discretionary spending but rather smart, responsible budgeting.¹ According to a report by C40 Cities, it is estimated that government spending on cities globally is “approximately \$6 trillion annually - 8% of global GDP - on goods and services”²⁰. Based on this, if cities globally allocated just 5% of their total contract spending toward innovation-friendly approaches, this could mobilize over \$300 billion annually for the innovation economy.

This reinforces the idea that existing city budgets can serve as powerful levers to address urgent challenges such as climate adaptation, public health, and social equity without the need for additional funding². For instance, London has demonstrated how outcome-based procurement can address pressing challenges such as air quality. This example is discussed in greater detail in the Global Case Studies section.

The cost of doing nothing is high. Cities risk paying more in the long term by locking themselves into contracts that often require frequent replacements or upgrades. They may also remain dependent on suppliers who provide standard, off-the-shelf solutions, rather than agile partners who can adapt and innovate to meet the changing needs of their customers. This limits the ability of cities to address sustainability goals, adopt new technologies, and improve services for citizens.



Innovation-Friendly Procurement Digital Benchmarking Assessment

The innovative-friendly procurement benchmarking self-assessment was designed to give city stakeholders a structured way to identify gaps and opportunities in their practices to unlock the potential innovation through procurement. This is a digital tool which was based on the Innovation-Friendly Procurement Model Policy, released by the G20 Global Smart Cities Alliance Task Force on Innovation Procurement in April 2024 to help cities make procurement a driver of innovation, in collaboration with the Connected Places Catapult.

The model policy was designed to provide practical guidance for local governments seeking to modernize their procurement systems (processes, planning, execution), moving beyond lowest-cost approaches to those that deliver long-term value. The model policy can be used by procurers and purchasers in public bodies to guide their approach. C4IR Saudi Arabia co-led the design of the benchmarking questionnaire.

The self-assessment contains twenty questions grouped into four sections: Governance, Organizational Support, Processes, and Training and Transparency. Each question provides a scoring system and is linked to recommended actions, prerequisites, expected outcomes, and useful resources. For example:

- Under the category Governance, the assessment asks whether the city has outlined strategic objectives for using procurement as a tool to drive innovation, operational efficiency and economic growth, and whether there are designated departments or committees responsible for overseeing implementation.
- Under the category Organizational Support, cities are pointed to think about resourcing, cross-departmental support and access to experts and diverse range of stakeholders for promoting and implementing innovation-friendly procurement practices.

Once the self-assessment is complete, city stakeholders can understand how their procurement practices compare to the model policy principles. Additionally, where there are some gaps and opportunities, a tailored roadmap of recommendations and resources are highlighted based on their responses. The digital tool allows for accessibility and generates practical next steps for policymakers.

Through this process, the digital tool has evolved into more than a questionnaire. It serves as a practical entry point for cities to reflect on their procurement maturity, compare themselves to global benchmarks, and create targeted improvement plans. The tool is foundational in practice and presents opportunities to update and scale as new best practices for innovation-friendly procurement emerge.

Outreach and Visibility

Recognizing the need to raise awareness and promote learning across borders, the leading collaborators co-authored a World Economic Forum story titled “Innovation-first purchasing at the city level can scale climate adaptation”, published in July 2025.²

The article announces the innovation-friendly digital tool³ and shares insights for how cities can use procurement within the context of climate and sustainability goals.



Global Case Studies

To move from concepts to tangible action, it is essential to examine how cities around the world have already embedded innovation-friendly procurement into practice. The following case studies illustrate how procurement can serve as a powerful tool for addressing urban challenges, achieving measurable results, and building public trust.

4.1 Helsinki: Institutionalizing Innovation and Sustainability in Procurement

Challenge

Helsinki faced the dual challenge of reforming its procurement processes to better support institutional innovation and its sustainability mandate, including achieving carbon neutrality by 2035.⁵ The scale of this task was substantial: the City Group manages annual procurement worth more than €4 billion, of which €2.3 billion goes to external purchases such as services, supplies, and infrastructure projects.

These figures are significant because they account for nearly half of the city's total budget, making procurement one of the most influential levers for shaping outcomes across education, healthcare, transport, and environmental services.⁶

At the same time, the procurement landscape was highly fragmented, involving more than 13,000 suppliers across multiple divisions and

enterprises.⁵ Without reform, this complexity risked inefficiencies, limited accountability, and missed opportunities to use procurement strategically to drive sustainability and innovation.⁷

Approach

In 2020, Helsinki launched an updated procurement strategy anchored on three thematic pillars: “functional markets and innovation promotion,” “impact and responsibility,” and “procurement management and procurement skills,” aligning directly with the Carbon-Neutral Helsinki 2035 Action Plan.

The city committed to experimenting with new technologies and positioning itself as a development platform for innovation. It also required the integration of sustainability and environmental responsibility criteria into tendering processes. These criteria include, for example, requirements to reduce carbon emissions, improve energy and material efficiency, and incorporate circular economy practices in goods and services.

To ensure consistency and accountability, procurement practices were centralized and guided by a Procurement Steering Group. Capacity-building measures included training procurement officials, conducting maturity assessments, and enhancing governance structures to professionalize procurement across the City Group⁶.



Impact

- Helsinki's strategy established a formal and strategic framework, called "Green Public Procurement",⁷ to promote innovation-driven and environmentally responsible procurement citywide.
- By 2020, 56% of procurements included environmental criteria, a significant step toward the goal of fully sustainable procurement, while key divisions achieved over 80% compliance⁵, demonstrating successful uptake.
- Broader environmental benefits include a city-wide program to manage and reuse soil and construction materials, which saved €55 million, reduced fuel use by 8.2 million liters, and avoided 20,200 tons of CO₂ emissions since 2014. These results come from treating surplus soil as a resource rather than waste, an approach documented in Helsinki's Environmental Report 2020.⁶
- Equally important, Helsinki's experience shows that embedding sustainability into procurement requires more than individual projects. It depended on training employees to apply environmental criteria consistently and on institutionalizing innovation-friendly practices across the City Group, providing a lesson for other cities seeking to move from pilots to systemic change (see: "Recommendations for City Leadership").

4.2 London: Tackling Air Pollution with Real-Time Sensors

Challenge

London faced persistently high levels of toxic air, with children, vulnerable residents, and commuters at particular risk. Traditional monitoring relied on a small number of expensive fixed stations, which were insufficient to provide the hyperlocal insights needed to design effective interventions.

Approach

The Greater London Authority used an innovative partnership procurement model in collaboration with Connected Places Catapult. Instead of buying off-the-shelf equipment, the city structured tenders to allow suppliers and research partners to co-develop and test new types of calibrated, lower cost sensors.¹⁹ This procurement approach reduced the barrier for

suppliers to introduce emerging technologies and enabled the city of London to expand its monitoring network in stages. By mid-2022, the network included more than three hundred sensors, and in 2025, the Mayor of London announced further expansion with an additional 146 monitors and devices distributed to community groups.^{17, 18}

The expanded sensor network provided near real-time air quality data at a neighborhood level, which allowed city officials to design more targeted interventions such as traffic management in pollution hotspots, stronger enforcement of emissions rules, and public health alerts for schools and vulnerable communities¹⁸. By making all data publicly accessible, the program also increased accountability, enabling citizens and local groups to push for faster responses to air quality concerns.⁸

Impact

- **Pollution reductions:** Among sensors with sufficient data from 2021 to 2022, 16 locations saw decreases in NO₂ levels, and twenty-one locations saw reductions in particulate matter (PM_{2.5}). The most significant improvements were at a site in Greenwich with a 20% NO₂ reduction, and at Tower Hamlets with a 33% PM_{2.5} reduction⁸.
- **Community engagement:** The Community Program awarded sensors to sixty groups by early 2025, empowering local organizations to actively monitor and respond to air quality concerns⁸.
- **Proof of procurement model:** By allowing suppliers to test and validate innovative monitoring solutions through procurement, the city created a market for scalable and lower-cost technologies that can now be adopted by other cities.



4.3 Dublin: Public Safety Enhanced Via Collaborative Procurement

Challenge

Dublin City Council manages about 140 life-saving ring buoys across waterways, but vandalism and theft created a recurring safety hazard. An estimated fifteen buoys went missing each week, costing over €20,000 annually to replace and, more critically, placing lives at risk when safety equipment was unavailable during emergencies.^{14, 15}

Approach

Through Smart Dublin's innovation challenge procurement process, the city invited startups to co-develop a solution. The process was designed in two stages: piloting prototypes through a limited procurement contract and then scaling the best-performing solution through a broader framework agreement. This structured procurement approach reduced risks for the city, supported small suppliers, and ensured that the chosen solution met performance standards before rollout.^{13, 16}

The result was a low-cost sensor system attached to ring buoys, sending real-time alerts when tampered with or removed. More than six hundred smart sensors have since been procured and deployed across eight Irish local authorities.¹²

Impact

- **Faster replacement times:** Inspectors are now alerted immediately when a buoy is missing, instead of waiting up to four weeks for manual checks.¹²
- **Reduced costs:** The city expects lower long-term costs from fewer lost buoys and longer equipment lifespans, compared to the previous cycle of frequent replacements.¹⁶
- **Market creation:** The procurement process created a market entry opportunity for startups, and the sensor solution has now been replicated across multiple local authorities, showing how procurement can drive both innovation and scalability.^{12, 15}



Case Studies Key Takeaways

These cases illustrate how procurement can move beyond transactional processes to become a strategic lever for change. Despite different contexts, the case studies share several success factors:

- A clear articulation of challenges, whether environmental, social, or safety related. Additionally, it points to an economic case for procurement systems to leverage innovation responsibly.
- Innovation-oriented procurement design that stimulates new technology adoption, partnerships, and outcome-based criteria, giving cities the tools for more targeted interventions and enforcement.

- Measurable outcomes, such as expanded data networks, reduced safety risks, and institutional shifts toward greener and smarter procurement.

Cities globally can replicate this pathway by first benchmarking their procurement practices with the Benchmarking Tool,⁴ then launching small-scale pilots, and scaling them into broader policies.

Recommendations for City Leadership

Cities might find it difficult to move from traditional procurement to innovation-friendly procurement. Drawing on the Innovation-Friendly Procurement Model, lessons from international case studies, and insights from early self-assessment, a practical pathway includes four steps: benchmarking current practices, building capacity and skills, piloting innovation projects, and scaling successful models into citywide strategies. Based on this pathway, city leaders and policymakers can take the following actions:

- 1. Institutionalize Innovation-Friendly Procurement Policies:** Adopt and integrate innovation-friendly procurement into city strategies in a phased manner, guided by insights from the online self-assessment benchmarking tool. The tool can reveal whether reforms should focus on governance, budget allocations, or employee capabilities. Cities should not only adjust policies and budget processes but also invest in training employees in advanced methods such as pre-commercial procurement, outcome-based tendering, and innovation partnerships. Linking institutional reform with targeted skill development ensures procurement is treated as a true lever for innovation, not only an administrative function.
- 2. Engage Startups, SMEs, larger businesses and other stakeholders through Co-Creation:** Go beyond standard supplier relationships by creating opportunities for collaboration with startups, SMEs and other stakeholders. Examples include innovation challenges, co-creation labs, and test environments where new ideas can be tried safely before being scaled.
- 3. Share and Scale Success Stories:** Document and share examples of successful innovation-friendly procurements at local, national and international levels. Highlighting what has worked in practice builds confidence among city leaders, supports peer-to-peer learnings, and encourages wider adoption of good practices.

While these recommendations provide a practical starting point, they do not capture the full range of challenges cities face in reforming procurement. For example, legal frameworks, budgetary restrictions, and political dynamics can all shape how far and how quickly change is possible.

This report is therefore best viewed as one contribution within a wider body of work. City leaders can draw on the insights and tools presented here alongside other national and international resources, adapting them to their own context. Future efforts could focus on generating more data from pilots, sharing lessons from cities at different maturity levels, and deepening collaboration across sectors.

Conclusion

Innovation-friendly procurement offers cities a clear pathway to use their budgets to unlock the potential of procurement to drive and access the most appropriate innovation to address public service goals and improve the quality of life. However, achieving these benefits requires more than a vision. It calls for commitment to change management, skill development, and leadership that treats procurement as a driver of innovation. Looking ahead, the following strategic opportunities highlight how innovation-friendly procurement can create value across multiple domains:

- **Economic Growth:** By creating demand for new products and services, procurement can stimulate local industries and create jobs. For example, Dublin's innovation challenge created a new market for startups supplying smart safety sensors, which has since scaled across multiple Irish authorities (see Dublin case study).
- **Sustainability:** Cities can procure solutions that reduce carbon emissions, increase energy efficiency, and protect the environment. Helsinki has embedded sustainability criteria into more than half of its procurements, saving €55 million and avoiding over 20,000 tons of CO₂ emissions through more efficient resource management (see Helsinki case study).
- **Technology Localization and Adoption:** Encouraging local suppliers to offer innovative solutions helps localize tech while meeting national digital transformation goals. London's procurement framework supported the co-development of new low-cost air quality sensors with suppliers and research partners, creating technologies that are now available for wider adoption (see London case study).
- **Citizen Quality of Life:** Procurement of smart technologies (e.g., sensors, AI, clean mobility) improves daily life for residents. For example, in Dublin, local governments launched joint procurement for sensor-equipped ring buoys to address the high incidence of drowning due to theft of lifesaving equipment. The innovation improved public safety and citizen trust in local services (see Dublin case study).

- **Responsible Technology Adoption:** Innovation-friendly procurement helps cities integrate ethical considerations such as data privacy, and sustainability, into their contracts. Helsinki's structured procurement governance ensures that innovation projects include environmental responsibility and accountability, aligning smart city initiatives with long-term societal goals (see Helsinki case study).

The recommendations in this report provide city leaders with a practical roadmap for moving from cost-focused procurement to innovation-friendly procurement approaches. Some initial steps have been taken, such as the introduction of the digital benchmarking tool. To build on this, cities will need local pilot projects, peer-learning opportunities, and closer work with local and national procurement entities.

Contributors

Authors

Muhammad Al-Humayed

Smart Cities Lead
C4IR Saudi Arabia

Anu Devi

Lead, G20 Global Smart Cities Alliance, Urban
Transformation
World Economic Forum

Sam Markey

Founder and Managing Director
Recurve

Acknowledgements

Basmah AlBuhairan

Managing Director
C4IR Saudi Arabia

Waleed Gowharji

General Manager of Projects and Initiatives
C4IR Saudi Arabia

Nouf Alfayez

Seconded Fellow
C4IR Saudi Arabia

Muneera Alshunaifi

Seconded Fellow
C4IR Saudi Arabia

Authors Note

We would also like to acknowledge all the stakeholders who have contributed to the development of the [Innovation-friendly Procurement Model Policy](#) and Digital Assessment Tool. Without their participation and expertise, this effort would not have been possible.

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