

Innovation Procurement and its role in supporting the transformation towards sustainable transport in cities

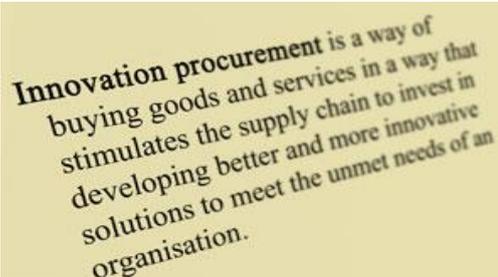
Emerging evidence from the 1st TRANSFORM Innovation Procurement workshop

This Policy Brief is aimed at European, national and city-level stakeholders who are interested in how cities can make better use of public tenders to support sustainable transport and other policy objectives. It will also have more general relevance to those who are interested in how public procurement can be used as a strategic innovation policy tool including, but not limited to, the new PPI and PCP instruments¹ for Horizon 2020 and the research & innovation agenda of the European Structural and Investment Funds (ESIF).

It is based on the evidence gathered before, during and after the 1st Innovation Procurement Workshop of the TRANSFORM project: a European network (supported by FP7) that aims to demonstrate the procurement power of city authorities to accelerate progress towards sustainable, zero carbon transport systems. In addition, it draws on some of the early lessons from practical interventions in the public tendering process of three major cities (Barcelona, Birmingham and Rotterdam). TRANSFORM is also exploring how major transport-intensive companies and innovation agencies can support more transformational and innovation-enabling approaches to procurement. More details, including references publications, can be found at www.transform-europe.eu.

What is ‘innovation procurement’

Innovation procurement is a way of buying goods and services that stimulates the supply chain to invest in better and more innovative solutions to meet the unmet needs of an organisation. It therefore has the overt objective of stimulating the market to provide new solutions that will address unmet needs but requires a more entrepreneurial and policy-orientated approach to procurement practice. This means an approach that is less prescriptive, more focussed on achieving outcomes and based on the total costs of ownership. For example, experience from the healthcare sector has demonstrated that better services can be achieved with lower cost and environmental impacts through



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¹ Public Procurement of Innovation (PPI) and Pre Commercial Procurement (PCP) are two new funding instruments in Horizon 2020 that are aimed at encouraging public demand-driven innovation.

innovation procurement. It is particularly appropriate for public sector organisations that need to be more radical in how they respond to societal challenges. The use of innovation procurement approaches by public sector organisations is now generally known as the ‘Public Procurement of Innovation (PPI)’.

Despite the increased interest it has received in the last decade, procuring innovative goods and services is still uncommon in the public sector. This is at least partly related to the difficulties that are either encountered or perceived in implementing PPI projects within a culture that is risk averse with highly structured procurement processes. Successful adoption of PPI requires policy leadership and a more resource-intensive process to be successful.

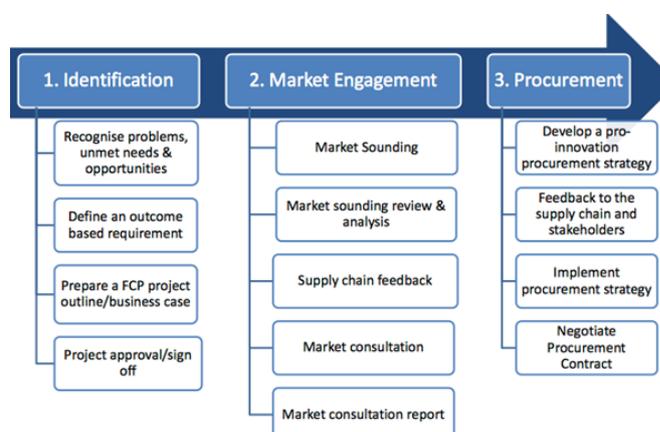
The City Authority of Madrid, like many cities, historically operated their own waste collection fleet of vehicles but the trend has been to use integrated waste management service providers. For Madrid, the procurement process was initiated more than a year before the contract award date and used an innovation procurement approach articulating its ‘demand priorities’ instead of being prescriptive about what it wanted to buy, i.e.:

- *Comfort and minimal disruption to the public*
- *Source separation and separate collection*
- *High efficiency and quality of service*
- *Minimal environmental impact*
- *In addition, for the city centre, a quiet vehicle for late/early collections and small enough to manoeuvre in narrow streets*

This encouraged the proposing of innovative solutions and a nine year, €448m contract was awarded to the successful bidder, which offered vehicles operating on gas and bioethanol. To address the city centre challenge, the supplier established a consortium to develop a completely new vehicle and secured EUREKA funding. The result was a hybrid electric vehicle with a short wheel base for extra manoeuvrability.

Innovation Procurement in the public sector is sometimes confused with ‘Green Public Procurement’ but they are not the same. Green Public Procurement is concerned with the inclusion of environmental criteria in tender specifications for specified goods or services. This ensures that selection decisions are not made on price alone and tends to encourage incremental eco-innovation of established products and services. However, this rarely leads to transformation except in situations where the environmental criterion is progressively made more challenging.

The innovation procurement approach that is used in TRANSFORM is based on the FCP² methodology and has three main stages.



² Forward Commitment Procurement (FCP) is a methodology for innovation procurement that was first developed and demonstrated in the UK and subsequently adapted and adopted in the Netherlands and Poland.

The majority of activity is 'pre-procurement' (Stages 1 and 2). Implementation of these stages takes time and ideally should begin well in advance of when the innovative solution is needed. Experience has shown that a lead time of at least three years may be necessary to allow the supply chain to innovate and bring forward new solutions. Whilst many innovation procurement projects have failed, particularly at the identification stage, there are a growing number of good examples in sectors like healthcare and sustainable construction. Some have been quite radical in terms of new solutions including the formation of joint ventures and new entrants into the market. These are increasingly being showcased on the Procurement of Innovation Platform³.

TRANSFORM is aiming to both demonstrate the power of innovation procurement in the complex societal challenge area of sustainable transport in cities and also explore the scope for collaborative actions both between cities and with other stakeholders.

The urban transport problem

Transportation is responsible for around 25% of greenhouse gas emissions in Europe and the only sector that has significantly increased its emissions since 1990. Urban transport already accounts for some 40% of CO₂ emissions from road transport and 70% of other air pollutants. The direct and serious impact of air pollution on human health is well documented but awareness of this 'invisible threat' among the general population and policy makers/politicians appears low. Around one third of European citizens still live in areas with higher particle content in the air than the EU's permitted maximum and the figure rises to nearly 90% if the World Health Organization's stricter but non-obligatory threshold is used. This situation is likely to worsen without transformational change as the proportion of the European population residing in urban areas is expected to reach 84% by 2050.

This worsening situation has led to a huge range of initiatives at the European, national, regional and city levels. For example, the EU R&D Framework programmes have invested more than €200m through the CIVITAS initiative since 2002 to support cities in their efforts to innovate for more sustainable urban mobility. This has leveraged an overall public/private investment of nearly €1 billion in more than 700 demonstrator projects involving some 60 cities.

The main EU policy framework is the 2011 Transport White Paper, which is aimed at achieving:

- CO₂-free city logistics in major urban centres by 2030
- Phasing out the use of conventionally-fuelled vehicles in cities by 2050

Clearly, there is a strong EU policy commitment to sustainable transport in cities backed up with a number of measures such as research, pilot projects and legislation. There is also a need on the part of Cities to provide clean, smart and sustainable mobility for social and economic reasons. Yet Cities, for the most part, seem unwilling or incapable of driving the transformational change needed. There is an evident gap between what is required and what is happening in practice.

³ <https://www.innovation-procurement.org>

This is the issue that TRANSFORM is attempting to unravel through practical experience of intervening in the tender process of three major cities and engaging with other influential stakeholders to identify scope for joint actions.

Evidence of the need for better demand-side measures

In preparation for the 1st Workshop, members of the TRANSFORM consortium carried out a programme of qualitative telephone interviews with a mixed group of stakeholders from different countries. They were asked their opinion on what is going wrong, what can different stakeholders do, what is the potential for collaboration and examples of good practice. This led to the development of a Synthesis Report⁴ that included the following key messages:

1. Short term political and budget cycles makes it difficult for city authorities to implement credible and consistent long term plans that will transform transport in Cities. There is a feeling that transforming transport requires finance that is not available in the current economic climate.
2. Technological innovation is not the main barrier. The conditions to support the take up and scaling of innovation are lacking. There is a considerable historical legacy of planning and transport in Cities and it is difficult to fit new solutions into old frameworks.
3. A certain disconnect exists between transport policy, sustainability/environmental policies and procurement action. This sends mixed messages to the supply chain and other stakeholders.
4. The supply chain will only respond to clear, consistent, unambiguous messages about demand for new solutions. Changes in policy and mixed signals from politicians, procurers and policy leads do not provide an environment conducive to supply chain innovation and investment
5. EU Air quality regulations are not effective at driving the required air quality improvements across Europe. To be effective, regulations need to set progressively higher standards, have real bite and be enforced.
6. Cities are not using their fiscal and procurement power to transform the market nor is the power and influence of large companies as customers being used effectively for market transformation. Cities have a wide sphere of influence beyond their own direct procurements that could be used to great effect.
7. Cities need to get more involved in driving harmonisation of technologies and standards to overcome the vested interests that are holding back progress
8. Wholesale transformation will mean creating conditions whereby sustainable transport becomes acceptable and the norm for users. In other words, new alternatives need to deliver well and current solutions need to get less attractive

⁴ Synthesis of Evidence from Stakeholder Interviews, input document for the 1st TRANSFORM Innovation Procurement Workshop, November 2013

9. There is a broad base of what can be classed 'demand side measures' being tried out and numerous sustainable and green transport pilot projects. Yet wider take up appears limited, sporadic, uncoordinated and slow.
10. It is unclear to what extent Cities see 'carbon emissions' as their problem rather than a national issue. Air quality, congestion and their health / economic impacts are the issues that matter most to them.

These can be regarded as anecdotal evidence of a need for more integrated, strategic approaches that will create the right environment for supply chain innovation and take up of new solutions. Traditional approaches to public procurement are one of the barriers that need to be overcome if this is to be realised.

The 1st TRANSFORM workshop⁵ was held at the Electric Vehicle Centre in Rotterdam in December 2013. It considered the synthesis of evidence from the pre-workshop consultations and this was followed by a number of case examples of leadership by different stakeholders.

In answer to the question:

What is needed to make smart, green, sustainable transport a reality in Cities?

Several procurement-related themes were identified, including:

1. Long term, consistent political commitment that is embedded in procurement practice
2. Standardisation and capacity building in innovation procurement methods for transport
3. Common definitions for comparative assessment of green transport solutions

And also options for some coordination actions with major companies and innovation agencies, to enable:

4. Transport of goods into cities in a socially and environmentally friendly way
5. PPI/PCP collaboration between cities and agencies

These themes were derived from the survey and workshop discussion. They were seen as critical factors that would help to unlock transformation of transport in Cities and will be further explored to set the agenda for the 2nd TRANSFORM Workshop in October 2014.

Demand-side measures in practice

One of the key issues highlighted in the pre-workshop consultations, which is also becoming apparent in the city-led innovation procurement demonstrator projects, is that there seems to be a gap between sustainable transport policy in cities and procurement practice. This ***policy-procurement gap*** and how it can be overcome will be the subject of the 2nd Policy Brief.

⁵ Report of the 1st TRANSFORM Innovation Procurement Workshop, January 2014

A specific issue for TRANSFORM is how to position procurement within the wider landscape of demand-side actions that are being taken by some cities to address the sustainable transport and mobility challenge.

The UK Centre of Excellence for Low Carbon and Fuel Cell Technologies (CENEX) participated in the 1st TRANSFORM workshop and has since produced a case-based review⁶ of demand side measures in practice for environmentally friendly vehicles. This indicates that there are three main demand side measures that cities can take to implement sustainable transport strategies:

1. Local policy measures
2. Procurement actions
3. Other complementary actions

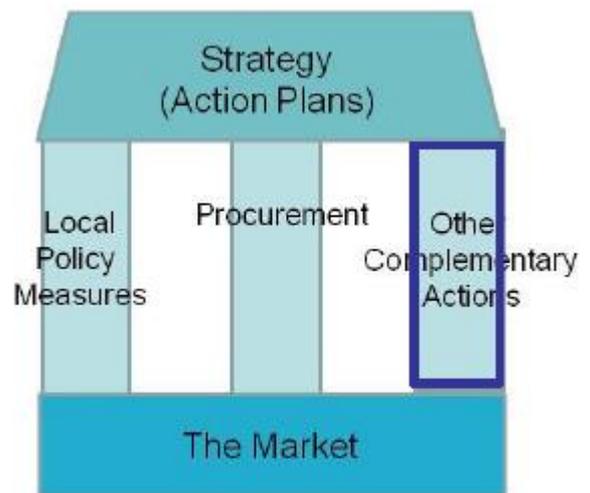
These are considered to be the type of interventions that can influence the market in a way that will support policy objectives. The CENEX report provides a wide range of examples where cities have intervened in a way that is making a difference. Most of these could be considered as examples of local policy measures (Option 1) and complementary actions (Option 3).

Local policy measures include certification schemes for regulated vehicle types (e.g. taxis, buses), designated environmental or congestion management zones, parking regulations and imposing environmental conditions in the planning consent for new developments. This also includes self-regulation of the city authority such as setting standards for its own transport fleet and operations. Other complementary actions include collaborative demonstration projects and public/private partnerships to create the infrastructure for environmentally friendly vehicles.

TRANSFORM is primarily concerned with Option 2 but the 1st Workshop has demonstrated that more holistic strategies and leadership by City Authorities can have a wider sphere of influence on the procurement behaviour of other stakeholders including transport-intensive businesses, other public sector organisations and even the general public. This integrated approach to challenge-based innovation procurement in European cities is the vision of TRANSFORM.

Of course, if there is a lack of real, and sustained, public policy commitment then it is unlikely that such a strategy will be implemented.

Stockholm City Council participated in the 1st TRANSFORM workshop and provided a case study example of how the city (through the Clean Vehicles Stockholm initiative) has increased its municipal fleet of clean vehicles from 300 to 180,000 in the past 15 years with 95% of fuelling stations now



⁶ Demand Side Measures in Practice for Environmentally Friendly Vehicles, Final Report to the TRANSFORM Project, May 2013

offering clean fuel. This long term commitment has been maintained because of the cross-party political and public support that was fostered from the outset.

TRANSFORM is exploring the issue of how to consolidate political will and intent over the timescales required for innovation to have an effect

Another risk is that strategies will be too prescriptive and based on a lack of awareness of the possibilities and how the market (and particularly bigger companies) will behave.

A major retailer (Tesco) participated in the 1st TRANSFORM Workshop and provided some insights into how myopic thinking about demand-side measures (e.g. banning night time deliveries) can result in solutions that address one issue but create another (e.g. increased daytime congestion) thus negating the possibility for more innovative (win/win) solutions. An alternative option might be set a night time noise limit, which would then stimulate innovation procurement behaviour in the private sector.

TRANSFORM is exploring the issue of bringing goods into cities in a socially and environmentally sensible way

In addition, whilst innovative SMEs in the enabling and industrial technology sector tend to respond well to innovation procurement demand messages, the established supply chain players do not generally initiate disruptive innovation unless there is a threat to their market share. This means that top down action is required to address the policy/procurement gap in those cities that have a commitment to sustainable transport. Also, there is a potential role for the innovation agencies to help the more innovative companies to overcome the barriers to entry in established supply chains where vested interests favour the status quo.

TRANSFORM is exploring the option for PPI and PCP collaboration between cities and agencies.

Market sounding and outcome-based approaches to both procurement and local regulations are therefore a logical means of creating demand for innovative new solutions. This means that there is a common need for technical standards that enable an objective assessment of what could be quite different solutions.

TRANSFORM is exploring the need for common, progressive standards for mobility

Whilst, first application solutions that are developed using innovation procurement methodologies can be replicated by others it is much more difficult to transfer the underpinning process and culture change to other organisations.

TRANSFORM is considering how the know-how that is developed through innovation procurement pilot projects can be transferred and embedded within the procurement systems of city authorities. This could range from management training to the development of innovation management standards that are customised for the public service procurement function. TRANSFORM will be producing a practical guide based on the experience of demonstration

projects in three cities and is exploring the management standards option with the European standardization organizations, CEN-CENELEC.

The 2nd TRANSFORM workshop will consider the above evidence and issues and aim to formulate multi-stakeholder collaborative active that will help cities to better address their sustainable transport challenges.

City Authorities have a wide sphere of influence for demand-driven innovation

The CENEX report, anecdotal evidence from the workshop and emerging experience from the three city-led projects indicates that procurement is not being used systematically as a strategic, demand-side tool to achieve sustainable transport policy goals. Of course, the need for reform of public procurement practice is also evident in the introduction of the new EU Procurement Directive that will be implemented in the coming years.

In the context of city authorities there are three main options where procurement-related interventions can produce a better policy outcome by creating demand for innovative new solutions, and thus support the 2011 Transport White Paper targets. These are:

1. Vehicles that are procured by the city authority for its own in-house operations
2. Services that are procured by the city authority that are transport-intensive
3. Vehicle-delivered services that are operated within the city by other public sector organisations or private companies

In addition, a complementary outcome-based approach to local policy measures, including transport regulations, can encourage innovation procurement behaviour by transport-intensive service companies that operate in cities including retailers, property maintenance and taxis.

Policy Recommendations

This 1st Policy Brief is intended to inform policy stakeholders about the TRANSFORM project and its interim conclusions. The purpose is to encourage debate at the 2nd TRANSFORM workshop in October 2014. Another Policy Brief, with recommendations, will be produced after the workshop.