SuSMo

Sustainable Shared Mobility

Transition guidance tools on Policy, Regulation and Procurement

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Executive summary

Shared sustainable mobility has the potential to support the decarbonisation of the transport system. As part of the SuSMo project guidance and training materials are developed that will support change agents in making the shift towards shared sustainable mobility. Research identified the following areas for further work:

- Behavioural change
- Private sector engagement
- Policy, regulation and procurement
- Evaluation of the impact

The application of the proposed transition tool will provide decision makers with a better understanding of how cities can facilitate systemic change to achieve quick and optimal integration of low carbon urban shared mobility into their existing public transport system.

This research identified the following key factors for planning, regulating and attracting new mobility services:

1. Municipality and regional mobility carbon zero policy roadmap

2. National framework that allows to regulate in several fields of action

3. Clear business model and regulations in place at a local level

4. Clear plan for monitoring and reporting the evidence base results

This report outlines the necessary steps for enabling procurement for promoting shared mobility procurement and regulation to define better, decarbonising and user centric services. Cities and operators should work to:

- **Develop a sustainable transport vision for the city**
- **Develop a procurement that works for both parties in the long term**

Introduction

The SuSMo (Sustainable Shared Mobility) Project aims to catalyse systemic change by instigating behaviour change, enabling connections and collaborations, and removing barriers through policy change. SuSMo brings together leading European municipalities with experts in the transport sector to provide decision-makers with tools and knowledge to maximise the benefits and mitigate the negative impacts of shared mobility modes. Funded by EIT Climate KIC, SuSMo was launched in 2019 and has worked with city representatives and private sector shared mobility providers to establish the key needs and priorities for the effective deployment of sustainable shared mobility. Research has identified the following areas for further work:

- Behavioural change
- Private sector engagement
- Policy, regulation and procurement
- Evaluation of the impact

This report is designed as a practical toolkit that defines a roadmap to enable the procurement and its monitoring process

Theory of Change

In collaboration with the SuSMo team, MOTION (project to develop evaluation methodology at a project level) has identified the transformative outcomes, processes that need to be activated to promote transformational change, with regards to policy, procurement and regulation pathway, this resulted in figure 1 on the next page.

These transformative outcomes reflect and review the activities, outputs, and inputs of an ongoing project within the context of Theory of Change. To increase the transformative potential and allow for a structural learning, it is necessary to examine and review the underlying convictions, theories and dominant models that apply. Reassessing the criteria against which an innovation is evaluated is an additional challenge towards achieving systemic change.

The application of the proposed transition tool will provide decision makers with a better understanding of how cities can facilitate systemic change to achieve quick and optimal integration of low carbon urban shared mobility into their existing public transport system.

The transition to low carbon shared mobility calls for a common understanding of the policy frameworks and should also involve policy-areas that are not part of the “traditional” mobility ecosystem. To bring a change of perspective for those within the shared mobility system and help to manage expectations of the public and private sector. Ultimately this will enable the conditions for shared mobility to be well integrated into the transport system and result in decarbonisation.

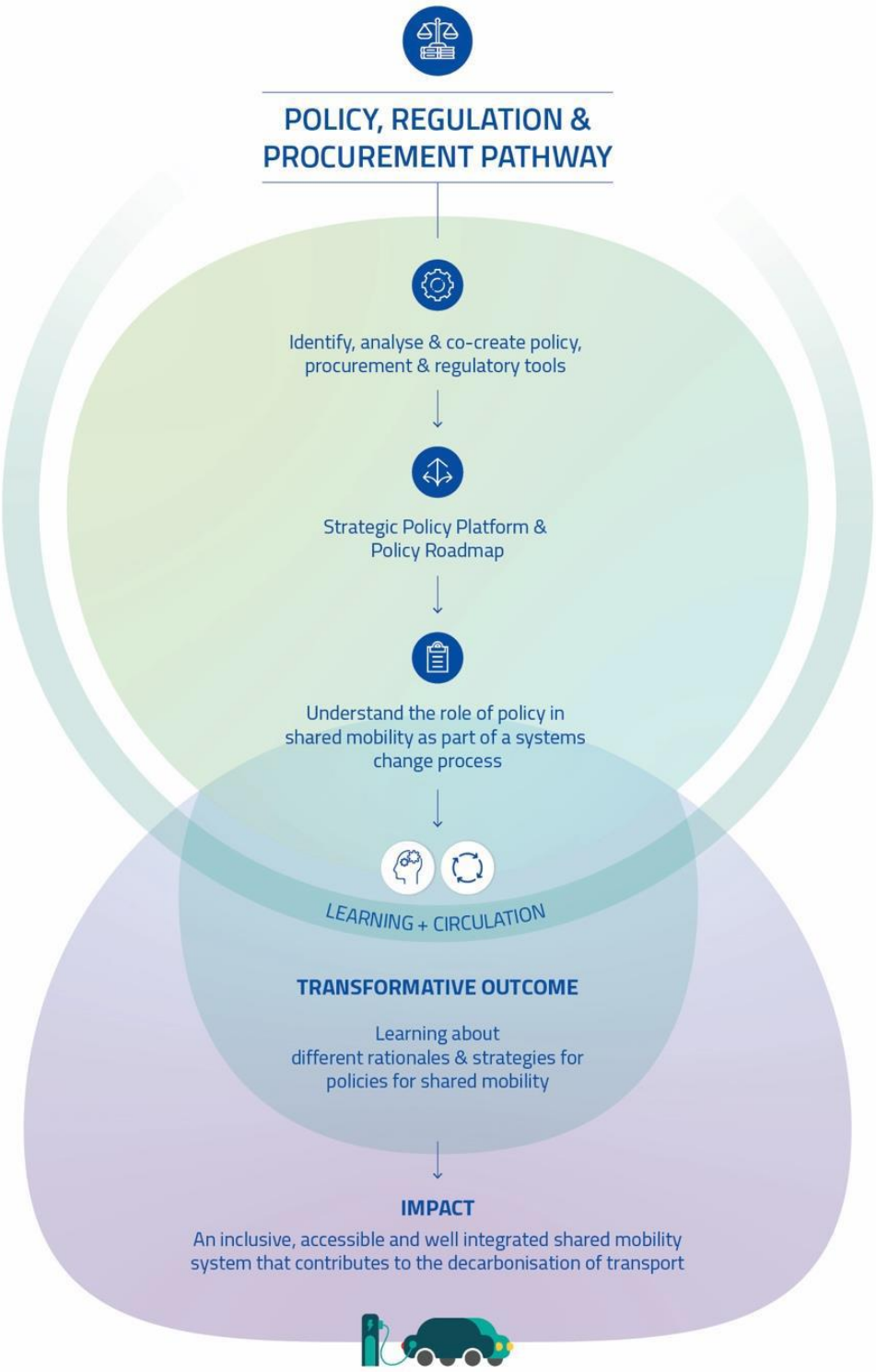

Figure 1: Theory of Change – Policy, Regulation & Procurement

Procurement & regulation

Methodology

The report is based on a research study in current practices. The study consists of both a literature review of scientific peer reviewed articles and qualitative interviews with key stakeholders (local authorities, private sharing operators, municipalities officers, university researchers, project partners). The result in this report is designed as a practical toolkit organised in 5 sections that define a roadmap to enable the procurement and its monitoring process.

1. Setting goals and regulatory framework

When setting goals, it is required to be aware of the potential positive impact of each shared mobility service. For example, the key benefits of car sharing lie on the aspects that it:

- Makes cars available to low-income neighbourhoods
- Provides a new user centric mobility service
- Reduces the number of parked vehicles and decreases congestion
- Can promote multimodality and active transit mode
- Reduces the transport emission and contributes to the decarbonization

The most important phase is to revise and assess in a holistic approach the existing sustainability and transport plans.

For small municipalities (under 50.000 inhabitants) that have not yet developed their own Sustainable Urban Mobility Plan (SUMP), it is necessary to define clear goals for new shared mobility services when launching a sustainable mobility strategy. The basic principles are as follows:

- Plan for sustainable mobility in the urban area
- Cooperate across Institutional boundaries
- Involve citizens and other stakeholders
- Assess current and future performance
- Define a long-term vision and a clear implementation plan
- Develop all transport modes in an integrated manner
- Arrange for monitoring and evaluation
- Assure quality

2. Public and private governance

The shared mobility tender process is composed by several activities:

A. Planning of the service
B. Understanding who will be the assets owner that is capable to offer the fleet, the IT platform and infrastructure required for the service provision.
C. Management of the service
D. Monitoring and evaluation of the service

The local administration has always a central role in phase A and D, while the other phases might be allocated to private stakeholders.

Shared mobility service procurement and governance comes in three main types: public asset and management, private asset and management or public/private asset and management. A city might opt for different administrative procedures for assigning the services, depending on the governance variation as shown in figure 2.

Shared mobility that is public owned and managed is now mostly used in situations where the market fails to provide. Public management can also be used to assure equity is more important than profitability. These services are or under public management or publicly tendered to assure the public demands are met. The disadvantage is the slow uptake of new innovations, compared to private operators, and the costs associated with providing a service which may not be profitable.

Private owned and managed services do need the authorisation of the city to manage the service according to a regulatory service framework. One of the main advantages is that this type of service do not foresee in any direct subsidies, and therefore offer the possibility to the city to implement shared mobility without dedicated resources, outsourcing any management risk. The most common administrative procedure is a concession of the service after the collection of an expression of interest by private operators. The main risk of this type of governance is the discrepancy of goals of the city and the private operator (e.g. social goals of the city versus profits for the operator.)

A public/private mix asset and management is uncommon. It is usually the introduction of experimental services in which there is not enough knowledge on the city side, and no guarantee of regaining the initial investment for the private partner.

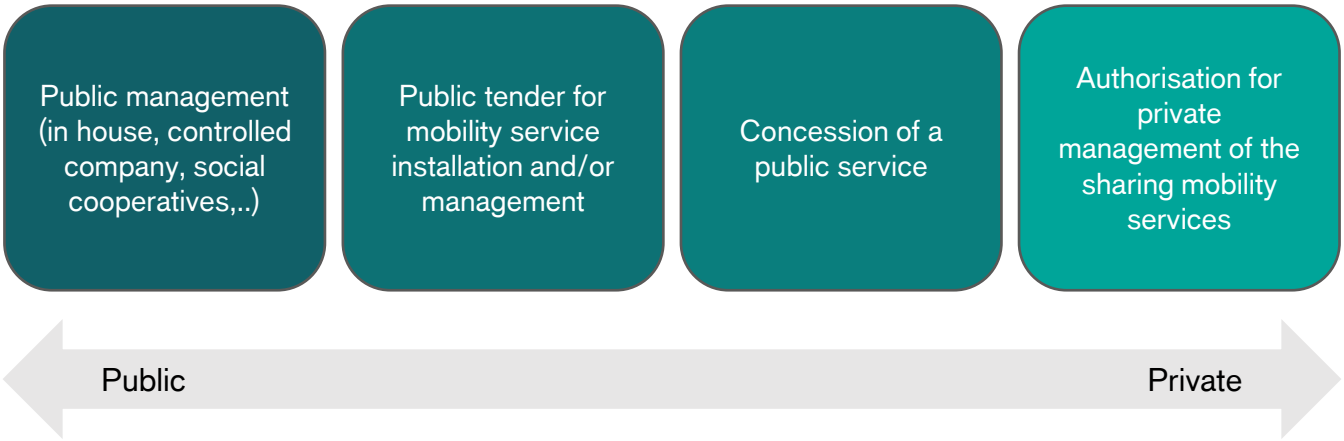

Figure 2: Different administrative procedures depending on governance type

3. Business and service models for shared mobility

The last years the shared mobility market has been volatile with a reduction and aggregation of key players and a specialisation in business segments. Despite this, Europe still supports a relatively open market that allows the participation of start-ups and newcomers.

To offer a reliable service and avoid rollback and bankruptcy it is of paramount importance that the business model is shared between the public and private sector, and that the maximum penetration and modal share gain for each management model is taken into consideration.

The main difference in the business model characterization relies on the service management model described below:

- Roundtrip - Vehicles are picked-up and returned to the same location.
- One-Way Station-Based - Vehicles can be dropped off at a different station from the pick- up point.
- One-Way Free-Floating - Vehicles can be returned anywhere within a specified geographic zone.

Free-floating business models enable members to go from point A to point B, thereby enabling one-way trips and potentially cutting drivers' journey times (and rental costs) in half. As free-floating services are ideal for compact urban areas, they usually offer smaller cars for shorter trips, and charge based on the time travelled rather than the distance.

Roundtrip business models are more traditional as they require cars to be returned to the zone or station from which they started. For this reason, they are less flexible than their free-floating counterparts. Roundtrip business models tend to have longer on-average booking times lasting for several hours or a day, and they cater to trips of much longer distances, such as for leaving a city to visit the surrounding rural areas.

The station based or one-way system usually has an adoption level that does not exceed 1% of addressed users while the free floating might reach 10% or more, despite that the two systems follow quite different objectives and business models.

In the free-floating system, despite the higher number of pickups, the average distance travelled is lower and the system is normally used to respond to unrecurring type of trips in highly dense urban areas. The major associated costs in free-floating systems involve maintenance and repositioning along with insurance.

In station-based systems, that are usually adopted even in peri-urban areas, the service is better integrated with public transport and respond to recurring type of longer trips. In this second model there is a lower return of investment of the asset but minor management cost.

Commercial Solutions

There is a variety of available commercial solutions for shared mobility services:

- **Business-to-Consumer (B2C)** – In a B2C model, mobility providers offer individual consumers access to a business-owned fleet of vehicles through memberships, subscriptions, user fees, or a combination of pricing models.
- **Business-to-Business (B2B)** – In a B2B model, mobility providers sell business customers access to transportation services either through a fee-for-service or usage fees. The service is typically offered to employees to complete work-related trips. It is also common that B2B sharing services are provided by B2C service providers.
- **Business-to-Government (B2G)** – In a B2G model, mobility providers offer transportation services to a public agency. Pricing may include a fee-for-service contract, per-transaction basis, or other pricing models. Typically, B2G sharing services are provided by B2C service providers.
- **Peer-to-Peer (P2P)** – In a P2P model (sometimes referred to as personal vehicle sharing), sharing providers broker transactions among vehicle owners and guests by providing the organizational resources needed to make the exchange possible. Members access vehicles through a direct key transfer from the host (or owner) to the guest (or driver) or through operator-installed, in-vehicle

technology that enables unattended access. Pricing and access terms for P2P carsharing services vary, as they are typically determined by vehicle hosts listing their vehicles. The P2P carsharing operator generally takes a portion of the P2P transaction amount in return for facilitating the exchange and providing third-party insurance.

Incentives and support mechanisms to facilitate financial sustainability of shared mobility

It is recommended that where cities want to guarantee a level of service beyond what may be profitable, they explore how they can support this. This could be financial subsidies, commitment to provide communications support or enforcement. The following incentives are available for cities to allow the service to be more profitable:

- *Reducing the cost of the service* (e.g. cancel any loan for disposing of parking and access to restricted areas, offering dedicated parking slot nearby central multimodal hubs, support the marketing campaign, increase the average speed allowing the use of dedicated bus lines).
- *Increase the revenue* (e.g. define a B2G that assure a demand by public employee and that support the behaviour change in front of the citizen, offer mobility coupon (e.g. in case of demolition of second family car) to its citizen to promote the utilization of the new service, limit the free competition and allow that only one or few service providers are allowed to offer the service, direct).
- For bike sharing services more often the municipality offers *direct funding or monetization of concession on advertisement area*, subsidizing bikes provided covering the funding gap.
- *Dedicated policy measures and infrastructure investment* for the transition toward a reduction of private transport (e.g. increasing the parking fees, reducing the parking slot, imposing a tax to second family cars, supporting bike to work campaigns or investing in new cycling infrastructure).

4. Procurement model

In the EU, public procurement represents on average approximately 19% of the GDP. With this procurement volume procurers can encourage shifts in the supply of goods and services that provide momentum to developing more circular business models. This is also the reason why public procurement is mentioned as an important driver for circular economy in the EU Commission's Circular Economy Package from December 2015. Circular procurement, see figure 4, is about making agreements to ensure that the products or service that you procure for your organisation are produced in accordance with the principles of the circular economy and will be further processed after use. Such products are, for example, designed for durability, repairability and recycling and can at the end of their life cycle be broken down into components, materials or raw materials, which can then be used again in the production chain.

One of the main criticisms offered by shared micro mobility is the fact that there is no study up to date that examine the Life Cycle Assessment (LCA) cost of the services provided and circularity is not yet part of the procurement of new micro mobility services such as eScooters. Figure 3 shows the procurement model for shared mobility. Depicting all phases, from enabling procurement to the post procurement stage.

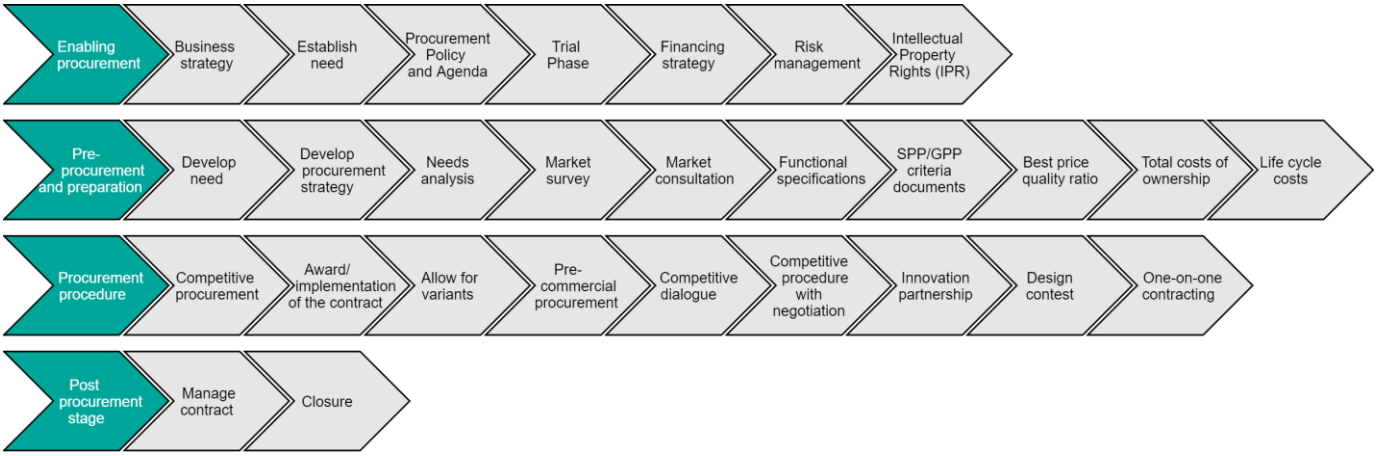

Figure3: Procurement phases

Figure 4: Circular procurement model

5. Service regulation and monitoring

The content of the service regulation is a key part of the business model and should be discussed with the operators. Most of the time the city take inspiration from other city regulations and readapts it to the local context before revisioning it during the competitive dialogue. The regulation usually contains:

- Coverage of the area, business duration and service operational mode.
- Limits on number of registered operators per city and minimum and maximum fleet size number per operator.
- Quality and specification of bikes as well as immediate disposal of damaged rental bikes.
- Restrictions on parking locations and number of bikes per parking zone.
- Penalty fees for breaches of any kind.
- Monitoring and notice procedure (such as operational stakeholder meetings, warning letter, impounding, revocation of operating permit).
- Requirement to install tracking devices on rental bikes. Smart data analytics & API Multimodal integration provision.
- Service provider technical curriculum and financial sustainability statement.

The city can provide additional request to fulfil socio-economic targets, requesting special programmes or fleets for promoting social inclusion of low-income neighbourhoods, low density areas as well as dedicated vehicles for vulnerable people or families.

GDPR fulfilment and provision of aggregated data are required to allow the mobility agency to monitor the performance and to assure the integration with local public transport. Meanwhile more rarely operators are keen to share customer profiling and other sensible information that represent a market competitive advantage. This represents a challenge, especially when a service operator is out of the market and is not disclosing/sharing the knowledge and user preferences knowledge.

Not much is being discussed about the monitoring of the policy objective and the data format to allow it. In this regard, the request of month report of the activities and the definition of Key Performance Indicators (KPIs) allow the private operator to be aligned with the policy goals of the public authority. The KPIs should be based on realistic requests for data and its potential knowledge.

Learnings & recommendations to speed up transition

A good structure, contracts and responsibilities go hand in hand with increased knowledge of effects, benefits of sharing schemes and guidance on how to implement the schemes. Both aspects are needed to create sustainable sharing systems that are part of, and leading the transition towards, a carbon neutral future.

Recommendations sharing

Include sharing in more policy areas. In order to create an optimal policy framework, sharing itself should be included in other policy areas, as it covers different topics such as mobility, public space, new housing developments and even social cohesion and work. Integration shared mobility in all these fields avoids conflicting legislation.

Support shared mobility as a sustainable solution to be integrated into SUMPs. An action plan for sharing services to be effective is for them to be included in SUMPs as a component of the overall transport system. To maximise its social, environmental, and economic benefits SUMPs should involve best practices such as: the integration of vehicle sharing in new households, development of mobility hubs, monitoring of the used space as KPI.

Integrate shared mobility in your parking management plan the integration of (car) sharing in parking policy and spatial planning enables cities and project developers to reduce the number of parking places in certain areas, resulting in financial profits and more open space.

Ensure an EU legal framework for shared mobility. The framework should clearly define indicators to be recognised as a shared mobility operator with "room for innovation". This framework will ensure a level playing field and a concept lead by socioeconomic impacts prior to revenue maximisation.

Adopt a mix of suitable mobility sharing models. Aiming for a suitable mixture of (car) sharing models is key to start new services with a dedicated fleet in areas which are not yet on the radar of car sharing providers: for instance, in less urbanized regions or the countryside.

Be a shared mobility user too. Local governmental cars do not travel more than 10 000 km per year, why not replace them with shared cars, promoting car sharing at the same time and optimise fleet costs?

Recommendations on promoting a sharing ecosystem

Invest in effective public transport, safe walking and cycling infrastructures Future investments in public facilities, for example in "mobility hubs" (physical locations combining different sustainable mobility modes), should be thinking from a pedestrian or cyclist point of view.

Tell citizens and stakeholders the benefits of car sharing. The transition from car ownership to the use of shared vehicles takes time. It is a mental shift which is not easy to make, but once people learn and/or experience themselves, they tend to adopt it quickly. Therefore, governments and local authorities could inform and communicate on the advantages of car sharing for improving the quality of life for inhabitants.

Rethink fiscal systems to create a mobility budget VAT rates for car sharing are fluctuating around 20% in all European countries, similar or same levels with those for car rental. Since car sharing has a proven positive effect on public space, modal shift and liveability of neighbourhoods, VAT rates for car sharing could be reconsidered. In addition, current fiscal incentives for company and salary vehicles must be reformed as they are one of the biggest thresholds for further growth of car sharing. Fiscal stimuli for a mobility budget should be also considered.

Invest in on- and offline MaaS. Smart technology helps to improve user friendliness of car sharing, making it easier to book, access and use sharing mobility services.

SuSMo

Successful model for policy, procurement and regulation

To speed up the implementation and use of shared cars and other types of shared vehicles, efficient procurement is key. To make sure that the goals of the city are met, regulation of the service is crucial. This report gives a clear roadmap to successfully introduce sustainable shared mobility, from procurement to regulation.

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