



**Experience and  
impacts of  
environmental  
requirements for  
transport in public  
procurement  
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## Summary

Due to the need to address accelerating climate change, the City of Stockholm has the goal to be fossil fuel free by 2040. An element in helping to reach this goal is in working with green procurement. Since 2010, the city has intensified their work with environmental requirements for transport within their public procurement.

Environmental requirements for transport focus on vehicles and fuel with the aim to speed up the shift to the use of new technologies that otherwise has proven to be slow. The requirements are strict, but they are adapted to reflect the current state of the industry, ensuring that the risks of stifling competition and of forcing price rises is reduced. Mainly, it is about building flexibility into the procurement process in various ways, and thereby giving tenderers enough time to fulfil the requirements. Follow-up and control are areas that the city is working on, for example by requiring third party audits as a way to increase suppliers' self-regulation with respect to the requirements.

The city's experience is that it is better to work on including specialised requirements in many contracts, than to make requirements on "everything" in a few contracts. This contributes to creating an environment of trust between the procurement and environment departments, which in turn makes it easier to set more advanced requirements. Another success factor is that the city works with several tools, and through various projects has good contacts with the market.

Evaluation of the impact of the city's green procurement indicates that it has not led to price rises. Furthermore, they have not led to a reduction in market competitiveness in the short term. Results from analysis show that the requirements are set in such a way to allow companies with reasonable economic performance to fulfil the requirements over time. At the same time, research has shown that environmental requirements can lead to a modernisation that can in turn lead to a decreased number of transport companies in the long term. If old companies are replaced by new companies whose business better meets the market demands for clean and low carbon transport, this development can be seen as positive.

The city's green procurement speeds up the transition to a fossil-free vehicle fleet in an area that has few policy measures that can be

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applied. Statistics show that the share of environmentally friendly trucks is higher in Stockholm than in the rest of the country, which partly can be explained by the city's work. Several of the companies that are tendered by the city are moving towards a vehicle fleet that can completely operate on renewable fuels. The environmental benefit of the city's requirements is thus greater than the direct impact of reduced emissions of transport directly related to the City of Stockholm's work.

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# Introduction

## Background

Due to the need to address accelerating climate change, the City of Stockholm has the goal to be fossil-fuel free by 2040. To achieve this goal, a great deal of innovation is needed, and the city needs to continually seek new forms of collaboration and new ways of thinking.<sup>1</sup>

Green public procurement provides one way for the city to help achieve this goal, and the city of Stockholm has been one of the leading actors in this field. Since the 1990s, the city has set environmental standards for vehicles in for example procurement of household waste collection. In 2010, the city began to set stricter environmental requirements for transport in the procurement of transport services, and since 2014 also in supply contracts. Currently, there are environmental requirements in about ten transport service contracts and transport-intensive goods contracts.

## Purpose

This report aims to compile and help disseminate the City of Stockholm's experiences with regard to environmental requirements for transport in public procurement. It also aims to evaluate the impacts of these requirements: on prices, on the industry and on the procuring body (City of Stockholm).

This report also has as an aim to inspire others to set similar requirements by addressing the following questions:

- What has the City of Stockholm learned about how to impose good and industry-specific environmental requirements for transport?
- What impacts do environmental requirements have on prices, competition and the environment?
- What are the next steps for the City of Stockholm?

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<sup>1</sup> Stockholm City, Environment Programme 2016–2019

## **What's in this report**

The report begins with an overview of the city's experience of using environmental requirements for transport in public procurement. This overview is based primarily on interviews with representatives of the city's Environment and Health Administration.

Following this is an evaluation of the impacts of the environmental requirements. The evaluation is based on interviews and analysis of procurement documents. For each area, a contract manager at Stockholm's procurement department has been interviewed. Interviews were also conducted with three suppliers: one supplier of groceries, and two relocation companies. The documents included in the analysis are technical specifications, including questions and answers, as well as procurement reports and evaluation data for the latest procurement in each contract area. There was some difficulty in comparing the procurements due to changes made in the procurement processes between procurements. However, the comparisons made still give an overall idea of the size and direction of the impacts.

The report ends with a future outlook, based on an interview with an official of the City of Stockholm's Environment and Health Administration.

The report is structured around three examples from contract areas for which the city has set stronger environmental requirements for transport. The three contract areas are: passenger transport, furniture and office relocation, and groceries. These areas have been selected because the city has included environmental requirements for transport in procurements in these areas for long enough to allow an understanding of the impacts. More information about the contract areas can be found below.

The contact person at the City of Stockholm was Per Erik Österlund based at Clean Vehicles in Stockholm unit within the Environment and Health Administration. The study was conducted by Kristina Nyström (project manager) and Katarina Evanth, both from Trivector and quality controlled by Karin Neergaard, Trivector. The original report was written in Swedish, and the translation was performed by Anna Clark, Trivector.

## **The three contract areas**

### **Furniture and office removals**

This contract area handles removals of goods for schools, offices, libraries, public authority run social housing, etc. The city paid 43 million Swedish crowns for removal services in 2012, but the total amount varies considerable from year to year.

In 2013, the city performed its own procurement in this area for the first time (having previously used SKL Kommentus), and environmental requirements for vehicles were introduced. This procurement was cancelled and redone in 2015, and at this time the environmental requirements were made stricter.

### **Passenger transport**

Passenger transport includes school buses and other fixed route services for people with disabilities. In 2012, the turnover in this area amounted to 240 million Swedish crowns. Environmental requirements were introduced in 2010, and further tightened in 2013.

### **Groceries**

Within the grocery contract area, procurements are made of dairy products, dried products, cold store products, fresh produce, etc. Within this contract area, there is a primary contract area and several smaller contract areas. The procurers are primarily pre-schools, schools and healthcare providers, creating a turnover of approximately 300 million Swedish crowns, of which 250 million are within the primary contract. This contract area was the first area in which the city made environmental requirements on transport in procurement of goods, and this was done in 2014.



# The City of Stockholm's environmental requirements for transport

This section describes how the City of Stockholm has set environmental requirements for transport and what they have learnt from this work. Examples are provided from three contract areas: passenger transport, furniture and office relocation, and groceries.

## Procurement as a strategic tool

EU legislation and directives support green public procurement, and the use of procurement as a strategic tool to achieve societal goals. On the local level, political support greatly facilitates the ability to set tougher environmental requirements. In the City of Stockholm, procurement is identified as a tool to achieve two goals of the city's Environment Programme, namely *cleaner air* and *reduced fossil fuels in the transport sector*. The environment programme also states that the city should participate in the development of guiding requirements that can be used by other purchasers.

## When can you include requirements?

Two of the basic principles of the Public Procurement Act (LOU) are that any requirements must be linked to the goods or services being purchased, and in proportion to what is purchased. These basic principles offer a great many opportunities not only with regard to the direct tendering of transport services, but also in purchasing goods, if dedicated transport is required for the transport of these goods (i.e. the purchasing authority has bought the transport and "all the goods in the vehicle").

As well as for passenger transport, furniture and office relocation and groceries, the City of Stockholm has environmental requirements for transport in, amongst others, the following contract areas:

- Transport of test results
- Furniture (purchases)
- AV equipment (installation and service)
- Laundry services
- Catering services
- Coach for excursions
- IT accessories (transport)

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The City of Stockholm would like to take a step further, making environmental requirements on shared transport (when the goods to several customers run on the same vehicle), but this is currently not a possibility given the National Agency for Public Procurement's interpretation of the law.

### **Things work differently in different industries**

Each contract area is unique. Industry composition, which vehicles are used, how mature the industry is regarding environmental requirements, vehicle turnover, etc., controls which requirements can be set.

When green procurement is implemented in new areas, the city performs a market analysis in order to design the requirements to try to make sure that the number of bids is not too small, or that prices will not rise too fast.

#### **Example 1: Passenger transport**

In the contract area 'passenger transport', cars and special vehicles adapted for transporting people with disabilities, are used. There are strong requirements on reliability, punctuality, and behaviour of drivers. The suppliers are taxi companies. The taxi industry was one of the first to adopt the use of green cars, but among other vehicles (specially-adapted vehicles), the adoption of alternative fuels has been slower. The useful lifetime for taxi cars is short, while it is a bit longer for special vehicles. The overall implication is that this is the contract area where it is easiest to set stricter environmental requirements.

#### **Example 2: Furniture and office relocation**

Stockholm City's experience is that the relocation industry is divided into those companies who only compete by pushing down the price, and those who compete both with price and quality. Some companies are very driven regarding environmental issues, while others are far from satisfying even low environmental requirements. Price competition in the industry is very strong and strategic pricing occurs. The lifetime for the vehicle fleet varies but is often long, about 8–10 years. Altogether, this means that the purchaser should start slowly in introducing environmental requirements, and gradually escalate them to give as many companies as possible a chance to adapt to them.

### Example 3: Groceries

The suppliers in the food sector are accustomed to dealing with high demands on delivery reliability, quality, self-regulation regarding hygiene etc. Deliveries are mostly done "just in time", because there are limited storage capabilities at the purchaser's properties.

The grocery sector is dominated by big wholesalers. Due to the large volumes and many delivery outlets (e.g. pre-schools in the city amount to 650 delivery outlets), it is hard for smaller suppliers to make a competitive bid. At the same time, there is a request from the tendering body to get access to a larger number of smaller suppliers, to increase the supply of fresh and organic groceries. The lifetime of the vehicle fleet is relatively long, approximately 6–8 years, and the investment plan for vehicles is therefore not that flexible for smaller suppliers that only have two or three cars. Overall, this has made the city especially anxious that the environmental requirements should be made in a way that does not make it more difficult for smaller suppliers.

Heavy vehicles are counted as green vehicles according to the City of Stockholm's definition, if they fulfil any of the following:

- a) Vehicles that run entirely on electricity
- b) Vehicles that partly run on electricity
- c) Vehicles that are approved for operation with at least one other type of fuel than diesel, petrol or LPG.

## Green procurement from the point of view of suppliers

The City of Stockholm's environmental requirements for transport focus mainly on climate change and the transition to fossil-free fuels, as well as lowering emissions of noxious substances. Other examples that have been included in tenders include: requirements that suppliers have an active commitment to working on environmental issues; that studded tires should be used; or that environmental friendly car care products are used, etc.

### Requirements on vehicles and fuels

Requirements on vehicles and fuels form a common ground, occurring with small variations in all agreements in which the city includes some kind of environmental requirement for transport.

### Example: Step-by-step increase in requirements for furniture and office relocation

The environmental requirements in furniture and office relocation started in 2013, and require that cars should be green vehicles according to the national definition in the road tax law, and trucks should meet the emission requirements equivalent to Euro V or better. Light commercial trucks are allowed to release maximum 225 grams CO<sub>2</sub> per kilometre or should run on renewable<sup>2</sup> fuels. For

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<sup>2</sup> Renewable means that electricity should be produced by water, wind, sun or

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heavy vehicles, newly purchased vehicles should fulfil Euro VI, alternatively they should fulfil the city's definition of green heavy vehicles (see box). These requirements are in line with the National Agency for Public Procurement's basic requirements. Additionally, at least one heavy vehicle that is used during the period of the tender must at the latest after six months, fulfil the city's definition of green heavy vehicles.

In 2015, the requirements in the procurement were tightened, to include the requirement that at least one of the vans that is used should be able to run on renewable fuels, at the latest six months after contracting the agreement.

That a vehicle can run on renewable fuels does not mean that it always does. Therefore, the city requires such approved vehicles to do so at least 80 percent of the time.

From time to time there is need to delete environmental requirements that do not fulfil an important function. The procurement of 2013 required 27 percent renewable diesel in the diesel mixture. This requirement was deleted in the procurement of 2015. The city realised that the mixture was on its way to increase to over 30 percent renewable, meaning the existing requirement was redundant. Today, there are no requirements regarding the mixture of renewable fuels, but only that the fuel should fulfil the latest edition of the standards that are set for each fuel, and fossil-free fuels must be Swedish Environmental Class 1 (MK1)<sup>3</sup>.

*" When the sector is ready, we will proceed with stricter environmental requirements. The procurement department will decide which requirements these will be."*

*The Environment Administration*

*" We have full confidence in the Environment Administration."*

*The procurement department*

### **Limited requirements lead to cooperation between environmental experts and procurement professionals**

The City of Stockholm has, like many others, worked with green procurement for many years. In the beginning, the requirements were exhaustive, and only included in a few agreements. Over time, the way the city deals

wave power or biodiesel, FAME (for example RME from rapeseed), HDRD (second generation biodiesel), DME produced of raw materials, Ethanol ED95, Ethanol E85/E75 or natural gas that includes at least 50 percent biogas

<sup>3</sup> It should be noted that in the definition of fossil-free fuels, electricity must be produced from water, wind, sun or wave energy.

with green procurement has changed. Today, the number of requirements are limited, with a stronger focus on vehicles and fuels which can be included in many agreements.

The city realised that this approach does not only result in a probably greater environmental impact, but also increased cooperation between the procurement department and the Environment Administration. By working together in a greater number of contracts, the two departments have learnt more about each other, resulting in increased mutual trust. The environmental requirements are no longer an add-on, but have become a normal part of procurements. This also makes it easier to work on more advanced requirements, where appropriate. A good cooperation between the procurement department and the Environment Administration also helps in following up the requirements.

### **Tougher requirements in some of agreements**

**Example: A model for environmental requirements for special vehicles for passenger transport**

When the first green procurement for passenger transport was undertaken in 2010, a definition of “green vehicle” was missing for the category of specially-adapted passenger vehicles. Therefore, the city of Stockholm developed its own requirements including a model detailing the calculation of emissions.

The requirement included a ceiling as to how much carbon dioxide specially-adapted vehicles were allowed to emit. Vehicles with room for maximum 6 (8) passengers other than the driver are allowed to emit max 160 (190) gram carbon dioxide per kilometre mixed driving, or must be approved to run on biofuel or electricity. When estimating the emissions, the share of biofuel that is used is considered. The vehicle’s tailpipe emissions are reduced by 50 percent of the share of biofuel in the fuel.

These values are almost the same as those adopted by the National Agency for Public Procurement for specially-adapted vehicles. The Agency considers the city’s figures to be tough, and they adopted their own figures only after the City of Stockholm developed their model.

The requirement for specially-adapted vehicles provides an example of when the city of Stockholm, instead of using standard requirements, has paved the way in producing their own

requirements. Another example is the city's definition of "green heavy vehicle", which was developed together with the city of Gothenburg in 2012<sup>4</sup>. Experience from the city shows that it can be positive to produce your own requirements since the procurement department's standard requirement is a compromise between many actors that do not always have equally high ambitions. On the other hand, it can also be seen as a good thing for the city if suppliers have the same requirements from different customers; this can mean that they have a better chance to satisfy them. Today it is a problem that municipalities and counties, at least in the region around Stockholm, use different requirements. Thus defining new requirements should not be seen as an aim, but only something that should be done when really needed.

### **Find the right level for requirements**

It is a balancing act to be able to move forward at the right pace for suppliers, while at the same time making enough of a difference to achieve policy goals. Risks in setting environmental requirements that are too strict are: that there will be too few bids; that the requirements will result in high price rises; or that the procurement has to be done a second time. The experience of the city of Stockholm is that this has never happened, even if the city has been at the forefront in this field with strict environmental requirements.

Experience of the Environment Administration shows that although setting requirements is a balancing act, it is important to drive forward the environmental agenda, since procurement departments often worry that the suppliers can't reach requirements. Based on the Environment Administration's contact with suppliers, the prevailing attitude is one of "give us requirements and we will figure it out". The procurement department have a different understanding of supplier's reactions; some will satisfy the requirements by a large margin, and others will find it much harder.

The city of Stockholm has signed agreements both with companies with high environmental ambitions and companies that are less environmentally driven. These results shows that the requirements are set on a good level.

### **Flexible requirements help to avoid stifling competition**

There is a risk with environmental requirements in that they can force suppliers to invest in new vehicles. This can benefit big

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<sup>4</sup> The definition was updated in 2015

suppliers with more flexibility in vehicle fleet and investment plans (which means, they buy several cars each year compared to smaller companies that buy them more seldom). There are several ways to avoid this, among other things to set the requirements as special conditions of contract instead of qualification requirements. This means that the requirement does not have to be satisfied until the contract is signed or a certain set period after the contract is signed. For example, the requirements on green heavy vehicles do not need to be satisfied until six months after the contract has been signed. The city has good experiences of using special conditions in contracts, but wants to go further still in allowing flexibility in requirements.

#### **Example 1: Average requirement in passenger transport**

The requirements on special vehicles within the agreement area of passenger transport are quite strict, with a max of 160/190 gram carbon dioxide per kilometre mixed driving. To give the suppliers the possibility to build up their vehicle fleet under their own conditions, the maximum does not exist per vehicle, but as an average for the vehicle fleet (used in the contract with the city). This means that the whole vehicle fleet does not have to change if the newly bought vehicles are good enough. The experience of this requirement is that it works, but that follow-up is complicated.

#### **Example 2: Step-by-step requirements for groceries**

Within the procurement of groceries, it was central for the city not to make it harder for smaller suppliers, and therefore a step-by-step model was used to exclude the smallest suppliers from the requirement of providing green heavy vehicles. Suppliers with up to five vehicles only have requirements equivalent to the procurement department's basic level. Bigger suppliers have an increased requirement on the number of green vehicles proportional to the size of the vehicle fleet: with 6–10 vehicles, one green truck is required, with 11–20 vehicles, three green trucks are required, with 21–30 vehicles, five green trucks are required, and so on.

The city's experiences on using this stepwise approach is that it works well to have stronger requirements for bigger suppliers. At the same time, there are threshold effects between the different size classes. Interviews with suppliers confirm this: it is shown that companies rather lower the number of vehicles than fulfil the requirements on a higher level. In future, the city will likely use a more continuous model, where the requirements are stated in percent.

## **Models for follow-up and control**

To set environmental requirements is the starting point – to follow them up is to reach the objective. Requirements without monitoring and follow-up send the wrong signals to suppliers. In the worst case, they give advantages to suppliers that do not follow guidelines. Without follow-up there is also no feedback as to how well the requirements are formed.

The city monitors and follows up the environmental requirements on vehicles and fuels in connection with regular follow-up meetings, which are held 1–4 times a year depending on the agreement area. Before the meeting, the suppliers are asked to send a summary of which vehicles and fuels<sup>5</sup> that has been used in work performed for the city. The Clean Vehicles unit within the Environment and Health Administration assists the procurement department with controlling that the list fulfils the requirements of the agreement and feedback is given during the follow-up meeting.

Information can be controlled with spot checks of for example receipts for purchase of fuel. The city's experience though, is that spot checks carried out by the city are not performed often enough. Other models for monitoring and follow-up have therefore been an area in which the city has been working on.

### **Example: Third party audit for passenger transport**

New in 2013 passenger transport procurements was the requirement that the supplier's reports would undergo a third party audit. The information has to be checked by an independent auditor before it is handed in to the city. The purpose with the requirement was to decrease the city's monitoring and to include the follow-up of environmental requirements in the company's own audit.

So far, the experience of third part audits is that they provide a step in the right direction, but they do not work fully. The audits do not guarantee that the information received satisfies the city's requirements, and the city's follow-up is only slightly reduced. A reason for this is lack of expertise among auditors. Additionally, given the short periods of time between controls, spot checks are often not reliable. The city is now moving towards follow-up once per year instead of twice to see if this will work better.

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<sup>5</sup> The information needed is car brand, number of passengers, registration number, the vehicle's age, energy class for summer tyres, carbon dioxide emissions/km, the fuel/fuels used for the vehicle in percentage – for each vehicle that has been used.



Since the suppliers have not satisfied the requirement for at least 80 percent renewable fuels, the city is considering imposing penalties.

### **Other environmental requirements – a question of self-regulation**

As well as requirements on vehicles and fuels, the City of Stockholm includes requirements on other equipment, both from an energy and climate perspective as well as a chemical perspective. This applies to, for example: energy markings of tyres, routines for control of types of tyres, environmental requirements for hydraulic fluids and car cleaning products. Other non-obligatory (but preferred) requirements can include courses in eco-driving, etc.

These requirements are not followed up by the city, but left to the self-regulation of suppliers. It is possible, however, that the city can perform spot checks in the future.

### **Public procurement is not the only tool**

Green public procurement works best if it is combined with other ways to influence the shift towards a fossil-fuel free city. The city has worked together with many companies in various projects, and this experience has proven to be invaluable. Public tendering bodies should not be afraid to have contact with market suppliers in between tenders. By working together with industry to drive forward developments in the field, the city gains insight and knowledge in the field and thus also contributes to creating new solutions that can be tendered in the future.

By supporting those at the forefront of new developments, the city has an easier job in applying requirements on new technologies at a later stage. One example of this is within the EU funded project Clean Truck initiated by the City of Stockholm, in which companies that were interested in evaluating untested technologies received a reimbursement for a significant part of the capital cost of green heavy trucks.

Interviews with suppliers reveal that the city's low emission zones also contribute in motivating companies which are not particularly environmentally minded in working to reduce the environmental impacts of transport. This is done by simply forbidding the dirtiest vehicles with highest negative health impacts to drive in the centre of the city.

## **Impacts on price, costs and competition**

The City of Stockholm has designed the environmental requirements for transport to reduce the risk of price rises or of stifling competition. But how have they done this, and have they achieved these aims? To answer these questions, three contract areas have been investigated in order to understand how the environmental requirements affect prices, indirect costs and competition between market players.

### **No clear effect on price**

There are no indications that the City of Stockholm has been required to pay higher prices due to the introduction of green public procurement for transport. This is based on a comparison of bids received by the City of Stockholm in three areas: passenger transport, furniture and office removal and groceries.

The comparison is made difficult due to several changes made in the contract areas over the study period. The requirements have in general been tightened, with more requirements in the areas of safety, digitalisation, organic production, etc. Within the area of furniture and office removal and passenger transport, the pricing model has changed, and this also affects the comparison.

Within the area of passenger transport, the total turnover (i.e. the cost of everything bought through contracts) decreased with twenty percent following the introduction of green procurement in transport, despite the fact that the total volumes increased. Even in the area of furniture and office removal, the prices have dropped, but there is not much data for this contract area. Additionally, an earlier agreement contained a discount system which in some cases reduced the prices retrospectively. The comparison could not take this into account. Within the area of groceries, the bids have both risen and fallen. A summary of the results is given in the table below.

<b>Agreement</b>	<b>Comparison</b>	<b>Base case</b>	<b>Result</b>
Groceries, main dairy products	Prices included in bids (comparable fields)	Fields covering about 50 % of the value	On average 10 % lower prices
Groceries, dried food and minor dairy products	Prices included in bids (spot check in comparable fields)	Fields covering about 11 % of the value	Both higher and lower prices
Furniture and office removal	Prices included in bids (comparable fields)	Fields that include removal of archives and packaged goods	Lower, but the comparison is difficult due to the now defunct discount system.
Passenger transport	Total turnover and volume	Total price	Lower total price despite increase in volume.

The interviewed suppliers who work with the City of Stockholm agree with the analysis that prices have not been affected by the environmental requirements. Requirements regarding green vehicles can result in higher costs for suppliers since these vehicles can be more expensive, and because they sometimes need to invest in new vehicles earlier than planned. However, these costs do not result in higher prices for the City of Stockholm.

The higher prices for suppliers aren't reflected in the price of bids to the City of Stockholm, but can result in other impacts to the procurement process. This includes suppliers not entering the bidding at all, or suppliers who try to find ways to get around the requirements. The margins are too small to allow for large changes in vehicle fleets. One supplier said that the transport costs constitute about four to five percent of the total price, while the profit margin is only about two percent.

### **Few bidders are excluded due to green procurement**

The price that the City of Stockholm pays for goods and services does not only depend on prices left by bidders, but also to competition in the market. The aim of green procurement is to exclude those who cannot satisfy the requirements, but if there are too few suppliers who can satisfy requirements, then it is possible that overall prices will rise.

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The environment also benefits if many companies can satisfy the requirements<sup>6</sup>. In several areas, contracts are signed with several suppliers and suppliers are chosen either through bidding in a mini-competition or through ranking of suppliers. The larger the number of suppliers who work with the city, the larger the number who must satisfy the environmental requirements.

### For passenger transport, all satisfied the environmental requirements

Within the area of passenger transport, no supplier was excluded due to the environmental requirements. The conclusion from the City of Stockholm is that the industry is homogeneous and mature with respect to environmental attributes to the point that requirements do not stifle competition but only help the industry to be even more ambitious with regard to their work on environmental performance.

### For furniture and office removal, cautious requirements are best

Within the contract area of furniture and office removal, no supplier was excluded due to the environmental requirements. Two suppliers that were excluded were excluded because they did not satisfy the requirement of economic stability. One other supplier who was ranked last in the tender, chose to break the contract instead of satisfying the environmental requirements that would require a change in their vehicles.

*"I am bringing this company into the 21st century. Environmental requirements seem like a good thing. When we met the requirements it felt like a acknowledgement, that I am working in the right direction."*

*Supplier in the area of furniture and office removal*

The supplier who was interviewed revealed that they did not have any green vehicles when they submitted their bid, but were able to bring forward a planned investment in a new vehicle and now satisfy the requirements. The environmental requirements have in practice not influenced the company since they were not ranked in first place, and have as yet not been contracted by the city. However, the requirements act as motivation to speed up their own work in improving their environmental performance.

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<sup>6</sup> None of the city's environmental requirements on vehicles are not qualifying requirements in themselves. However, in order to qualify for a tender, the supplier must accept the specific terms of the contract regarding vehicles and fuels.

This seems to show that the environmental requirements contribute to cementing existing divisions which already existed in the industry. Some companies choose to invest in green vehicles to be able to satisfy the requirements from large tendering bodies. Other companies do not have the possibilities to do this, and must instead work for private individuals. This conclusion is confirmed both by the suppliers who were interviewed, as well as those in charge of the procurement process. Those in charge of the procurement process express some worry as to the long-term effects on the market if several of the smaller companies can no longer compete.

So far, however, the conclusion can be made that the environmental requirements have not been stifling for competition. By continuing to build flexibility into the requirements, the city can also avoid that the market becomes less competitive in the future, and gives any suppliers who wish to adapt to requirements the possibility to do so. This can be done, for example, by using a bonus system as described on page 27.

**Within grocery procurement, two were excluded**

The contract area on groceries is dominated by large suppliers who were able to satisfy the requirements, even if this meant that they were required to have up to five green heavy trucks.

In order to open up the market to a larger number of smaller suppliers, the city divided the main contract up into several minor ones, for example one regarding only fresh produce. In one of these smaller contract areas, no bids were submitted. An interview with a supplier suggested that this is probably not because of the environmental requirements, but because the contract related to small volumes spread over many delivery points which made it difficult for the supplier to be able to make a profit.

Within another smaller contract, three bids were submitted of which two did not satisfy all of the requirements (to a certain extent also environmental requirements). One of the bids was disqualified since the supplier's environmental processes lacked goals and description of their routines. The other was disqualified because they had not included a reference, and they had not ensured in time that the transport company they worked with could satisfy the environmental requirements for vehicle and fuel.

The two companies which were disqualified due to the environmental requirements had lower prices compared to the company which won. This is the only indication that this study has

found that the environmental requirements have directly affected the price of bids which the City of Stockholm has received. At the same time, it is not only due to the environmental requirements that these companies were disqualified, but it seems that they were not used to responding to the types of requirements as specified in tenders. The overall conclusion is that the requirements do not stifle competition.

*”There are many new areas where we need to work together with different departments in order to set the right requirements. Sometimes, we feel like a liaison office”*

*Department of public procurement*

### **Stifling competition or creative destruction?**

There is research which shows that environmental requirements in the form of low emission zones in cities can bring about modernisation and make the industry more efficient, and reduce the number of companies that work with urban deliveries.<sup>7</sup> If the companies that disappear are replaced with new ones built on the premise of offering transport that better supplies the market’s demands (e.g.

green vehicles, cycle couriers, deliveries that don’t require ownership of a vehicle), then this can be thought of as a positive change<sup>8</sup>. If the development only leads to establishing a monopoly for established actors, then the development can be seen as more worrying, a conclusion supported by an interview with a supplier in this study. In order to avoid such risks, the market effects should be followed up over time. The procurement body should, as the City of Stockholm has done, aim to set requirements that open the way to more innovative solutions in procurement processes (see page 26).

### **Green procurement takes time**

The cost for the City of Stockholm in working with green procurement is not only about the price they pay in specific tenders. There is also a cost for all of the time spent in developing the process and following it up. It is also of interest to investigate the amount of time required for staff working in the city to work with these environmental requirements in procurement.

### **Increased need for research and expertise**

The procurement department spends more time on research and market analysis now than they previously did, but it is not just the

<sup>7</sup> Trafikanalys, PM 2016:5, Urbana Godstransporter

<sup>8</sup> Creative destruction is a phrase that describes the change process that follows important technological or economic developments.

environmental requirements that contribute to this extra time. There has been a general trend towards more complicated procurements, with the city making more far-reaching requirements in many areas.

The environmental requirements are mainly technical, and are also changing all of the time. It is impossible for the procurement department to have the expertise needed, and they need to work together with the Environment Administration.

### **Small increase in the number of questions**

The procurement department's work in answering questions during the procurement process has not increased significantly. In the year in which tighter environmental requirements were introduced in the primary contract for groceries, 90 questions were asked. None of them were about the environmental requirements. Within the procurement of passenger transport, 28 questions were asked of which 4 in some way related to the environmental requirements. Within the furniture and office removal area, 9 questions were asked, of which 3 were related to the environmental requirements. The questions were most often answered by staff working within the Environment Administration.

### **Follow-up takes a lot of time, especially for the environment department**

Procurements are performed once every third, fourth or fifth year. The follow-up of the contract is done however at least once a year, with many contracts that need to be followed up. Thus the extra work related to follow-up is more problematic than any extra work related to a longer procurement process.

*"If the environment is important, we should set requirements, and follow them up. We don't see it as an extra cost, just something we should do"*

*Procurement department*

For the procurement department, the stricter environmental requirements have resulted in a few extra days' work per year within each contract area. The staff within the Clean Vehicles unit within the Environment Administration are required to put a relatively large amount of time in supporting the procurement department, approximately 15 percent of a full-time job. This time should be weighed against other options to achieve similar impacts with regard to meeting environmental and climate goals.

Working with procurement as a tool to achieve policy goals is not viewed negatively by the procurement department. In fact, based on several interviews held with staff in the department, they believe that their work has been taken to a new level, and they feel as though they are participating in helping to achieve the city's goals, and their job satisfaction has increased.

## **The city's requirements contribute in a neglected area**

The city has focused its requirements on bringing about a technological shift, with a focus on moving towards a fossil-free fuels, while other measures such as eco-driving, route planning and freight consolidation have been toned down.

There are both pros and cons to this strategy. One supplier believed that the requirements were misguided, and that focusing on freight consolidation would have much greater impacts, since the existing setup means that there are many small deliveries with relatively large vehicles.

At the same time, the focus on a technological shift in vehicle fleets is strategically important in order to attain the long-term goal of a fossil-free vehicle fleet. Today there is a lack of effective policy options to reduce CO<sub>2</sub> emissions from heavy vehicles, and as regards to vans, the numbers have rocketed over recent years in Sweden, resulting in increased GHG emissions. Transport Analysis (a Swedish government agency for transport policy analysis) observes that even though there are green heavy vehicles available on the Swedish market, the renewal of the vehicle fleet for road freight transport is far too slow for the sector to be able to contribute to the Swedish climate change goals<sup>9</sup>. Statistics of the number of green heavy vehicles sold in Stockholm is higher than in other parts of the country, and this can in part be explained by the city's work in this area<sup>10</sup>. Several of the companies tendered by the city have, partially thanks to the environmental requirements, moved towards having a vehicle fleet entirely run on renewable fuels. The conclusion here is that there is a benefit to the environment that is greater than the direct impact of reduced emissions of transport directly related to the City of Stockholm.

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<sup>9</sup> Trafikanalys, Rapport 2015:12, Lastbilars klimateffektivitet och utsläpp

<sup>10</sup> Stockholms stad, 2013, Strategi för miljöfordon och förnybara drivmedel



## The future

If the city is to achieve being fossil-fuel free by 2040, with progress spread out evenly across the coming years, then a tenth of the heavy vehicles in the city should be using renewable fuels. Today the figure lies at 5 percent for the city, and 2,5 for the region for heavy goods vehicles. So as not to push forward the required technological shift, the requirements for vehicles must be continually tightened. The City of Stockholm has several thoughts as to how they can work towards these goals.

### **More goods – and the whole transport chain**

According to the prevalent understanding of LOU (public procurement legislation in Sweden), requirements for transport can only be applied to the last mile, i.e. delivery to the final customer. For most goods, this is a very small part of the total transport chain. It is considered as a weakness that requirements cannot be made for the whole transport chain, both from the point of view of the City of Stockholm as well as transport suppliers who work globally with reducing their negative environmental impact.

The city has therefore recently used the contract area purchase of office furniture as a test case, in which the city requires that the supplier publishes CO<sub>2</sub> emissions from the whole transport chain, according to the EU Standard EU16258. By making this type of information requirement in procurement can be valuable, since it signals the importance of the issue for the tendering authority. It is also a step in the direction of making requirements for reducing negative environmental impact, rather than on activities that are assumed to lead to reduced negative environmental impact (for example purchase of new vehicles) which steers more directly towards the goal, and avoids very detailed tender specifications<sup>11</sup>.

### **”CO2 bubble” counteracts rigidity**

The detailed requirements for vehicles and fuels are useful to drive forward developments. But sometimes they miss the target. When the city tendered AV equipment and wanted to apply environmental requirements on the delivery vehicles, the response from the supplier was that of course they could satisfy the requirements, but they preferred to continue making deliveries by bike or public transport.

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<sup>11</sup> Network for Evaluation of Transport Measures, [www.transportmeasures.org](http://www.transportmeasures.org)

## **Experience and impacts of environmental requirements for transport in public procurement**

26 (27)

Finding models that open up for the possibility of more creative solutions from the suppliers is desirable, and that work has been started at the city's transport department, with one good example being the use of a model with a "CO<sub>2</sub> bubble". This means that the city should state the maximum amount of CO<sub>2</sub> that the supplier can emit while performing duties for the city, during the whole contract period. Such a model leads to constant improvements during the contract period. Additionally, this model contributes to good management with a great deal of freedom and openness to find creative solutions, and the city would like to try this in other types of contracts.

### **Environmental requirement as award criteria**

Today, the city only uses environmental requirements as qualifying requirement, or as specifications in the terms of the contract, i.e. requirements that the supplier must satisfy in order to have a chance to win the contract. This means that the requirements must be kept to a level that does not exclude too many, or risk price rises.

One way being considered by the city to specify tighter requirements for those who are able and want to satisfy them is to specify the requirements as evaluation criteria. Making a choice between price and environmental requirements is then done automatically in the tendering process, and the procuring body can make specific requirements without risking a lack of bids being submitted.

Another possibility is to include environmental incentives in the contract. This means that the supplier who chooses to drive with renewable fuels receives higher compensation, or a bonus. This model can particularly be applied in cases where the contract area suffers from downward pressure on prices.

## Final remarks

This synthesis of the City of Stockholm's experience with green procurement of transport shows both strength in the city's work as well as areas with room for further development.

The city's greatest strength is in how they have built up a strong organisation with a great deal of expertise in the area. The city is also willing to try new things, and evaluate them. This means that the city can actively work in driving the development forward, not only in setting requirements, but also through cooperation with industry. By contributing to the development of national guiding requirements which can be used by other public bodies, the city has also shared its experiences with others.

The City of Stockholm has many thoughts as to how their work can be further developed. Four areas that have been identified as especially important to work with are:

- Encourage innovative solutions in procurement, which can replace transport by car, or reduce transport demand, for example through changed behaviour of both supplier and purchaser.
- Continue developing methods for follow-up and control
- Evaluate impacts on the market over a longer time period
- Develop models for procurement that both make it possible for the city to use more advanced requirements and at the same time allow suppliers the possibility to make the necessary changes

The city has already started working with these aspects. Taking into consideration the slow speed of change in the transport industry, there is still a lot left to do.