



Strategic use of green public procurement in the bus sector: Challenges and opportunities



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ABSTRACT

Green public procurement is believed to have the potential to contribute to environmental improvement and diffusion of green technologies. The aim of this paper is to compare and analyse how two Swedish regions use public procurement to promote the introduction of renewable fuels in their public bus transport systems. The method is a qualitative comparative case study, based on interviews and document studies. The paper addresses the questions of what the strategic motivations are for using public procurement to stimulate renewable fuels, and what the practical challenges have been in relation to five important factors identified from previous research: strategies, requirements, costs, size and knowledge. In one region, procurement is used in a strategic way to create a local market for biofuels, which poses higher demands on political backing, information and knowledge, the way requirements are set, and an acceptance of increased costs. In the other region, procurement is used instrumentally to increase the share of biofuels in a cost-effective way that gives room for more flexibility and reduces the demands on the procurers. This paper highlights the importance of context when assessing green public procurement schemes and analyses the case-specific influence of factors on the outcome of green public procurement.

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1. Introduction

Today, transport systems are fraught with many problems and cannot be considered sustainable. Transport is a large contributor to greenhouse gas emissions while other problems include local pollution, noise, accidents and resource depletion (Hickman and Banister, 2014). A major problem is the dependence on fossil fuels and a crucial question is how new technologies and alternative fuels in the transport sector can develop and diffuse (Bongardt et al., 2013). Cities and regions are important providers of public transport with large bus fleets. In this capacity, they have the ability to take the lead in a transition to low carbon fuels and technologies. A shift to alternative fuels in the public bus sector has direct impacts by reducing greenhouse gas emissions, as well as possible indirect impacts, since public transport can act as a testbed or niche market for new green propulsion technologies and fuels.

Public transport is often carried out by private transport

operators on public tenders, and green public procurement is therefore a main tool to promote change. Comparative analyses have studied the extent of green public procurement in cities and regions, and have identified various factors fostering or hindering its effective use (Von Oelreich and Philip, 2013; Bratt et al., 2013; Grandia et al., 2013; Günther et al., 2013). However, there is a lack of detailed studies of how specific regions and cities use public procurement in a strategic way to promote environmental goals, and what challenges this implies. This paper will complement previous research with an in-depth case study of how public procurement is used as a strategic tool in two regions, demonstrating the way in which regional preconditions influence the applicability of general procurement models and advice.

In Sweden, regional public transport authorities have used environmental criteria in public procurement for some time, and there has been a remarkable increase in the use of renewable fuels in public bus transport in recent years. In 2014, around 58% of vehicle kilometres in public bus transport in Sweden were driven with non-fossil fuels, compared to only 8% in 2007 (Xylia and Silveira, 2017). Despite this successful development, we know fairly little about the actual experiences in Swedish regions of using public procurement as an environmental policy instrument.

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The aim of this paper is to compare and analyse how two Swedish regions use public procurement to promote the diffusion of renewable fuels in their public bus transport systems. The questions addressed are what the motivations are for using public procurement to stimulate renewable fuels, and what the practical challenges have been in relation to strategies, requirements, costs, size and knowledge.

The outline of the paper is as follows. First, a review is presented over how previous research has analysed the experience of green public procurement in cities and regions with a focus on five factors: strategies, requirements, costs, size of public agency and knowledge. Then, the Swedish case studies are introduced. This is followed by a comparative analysis of the two cases based on the five factors identified in the literature review.

2. Factors affecting green public procurement

The purchase of goods and services from an external source by a public organisation is termed public procurement. Procurement can be used as a policy instrument for reaching environmental quality objectives (Von Oelreich and Philip, 2013), referred to as green public procurement (GPP). In the literature, 'sustainable public procurement' is often used to describe the same activity. However, sustainable public procurement can aim broader and include all pillars of sustainability - economic, social and environmental. Other differences occurring can be the replacement of the word 'procurement' with 'purchasing'. GPP is defined by the European Commission (2016b) as:

"a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured."

The use of GPP is voluntary within the EU and each member state decides to which extent it will be implemented. In 2008, the EU set a target that 50% of all public tenders should be green by 2010. However, in 2009–2010 only 26% of the signed contracts in the EU included all core GPP criteria (Renda et al., 2012). The differences in implementation between the member states are large and in Sweden, as an example, GPP criteria were applied in 40–60% of the contracts (Renda et al., 2012). In 2014, new directives for public procurement were adopted by the EU (European Commission, 2016b). One addition is that all procuring authorities within road transport must consider energy use and environmental effects based on a commonly decided method to calculate life cycle cost (European Commission, 2016a).

In previous research, Bratt et al. (2013) argue that the position in the value chain and the volumes concerned give public procurement a great potential to drive the sustainability agenda. In Sweden, for example, public authorities consume 16–22% of GDP (Edquist, 2014). According to Marron (2003) GPP can have both direct and indirect effects. Direct effects, for example on emission reductions, can be significant when the public purchaser accounts for a large share of the market. Indirect effects from GPP include things such as induced innovation, niche market creation, cost reductions and example setting (Marron, 2003).

Reports show a rising trend for GPP, where the number of environmental requirements stipulated in procurements is increasing (Nissinen et al., 2009; Von Oelreich and Philip, 2013). Still, the progress is patchy and there are significant differences between local and regional authorities, as well as within authorities (Preuss, 2007). Much previous research does not go into sector detail, nevertheless the public transport sector is repeatedly

mentioned as a good example (Von Oelreich and Philip, 2013; Preuss, 2007; European Commission, 2016a). Much of prior research aims to identify factors which have an effect on the outcomes of GPP (Bratt et al., 2013; Grandia et al., 2013; Günther et al., 2013; Günther and Scheibe, 2006; Lundberg et al., 2015; Marron, 2003; Von Oelreich and Philip, 2013; Preuss, 2007). The following sections will discuss five of the most important factors (strategy and goals, requirements, costs, size and knowledge and information) commonly occurring in previous research.

2.1. Strategies and goals within GPP

The aim of GPP can differ between regions, this study of the Swedish bus sector will demonstrate two examples of different strategies. In previous research, the importance of an active top-management (e.g. politicians and high-level staff) is commonly seen to influence the extent to which GPP is incorporated in planning strategies and goal target settings (Brammer and Walker, 2011). It shows that, in regions where directives are more voluntary, priorities other than sustainability often dominate the procurement process (Von Oelreich and Philip, 2013). Also, the European Commission (2016b) identifies that lack of political support leads to a lack of resources devoted to GPP.

2.2. Different ways to set the requirements

The European Commission (2016a) has developed guidelines and procedures for implementing GPP and designing the requirements of contracts. A distinction can be made between minimum compliance criteria and award criteria (European Commission, 2016a). Minimum compliance criteria stipulate the minimum level of environmental performance that is needed from the bidder in order to be applicable for the contract. Award criteria are environmental criteria that can give additional points to the bidder in the tender (European Commission, 2016a). When it comes to requirements on renewable fuels in the Swedish bus sector, minimum compliance criteria are almost exclusively used. These can further be expressed in different ways. In the cases analysed in this article, two ways to set minimum compliance criteria were found: 'functional requirements' (e.g. a limit to the maximum amount of CO₂ released) and 'specific requirements' (e.g. demanding a specific type of fuel).

A report from the environmental consultant company WSP (2014), studies the outcomes in public transport for functional and specific requirements. It was seen that functional requirements usually come with lower operational and capital costs, but leave more room for interpretations and misunderstandings between regional public transport authorities and operators, making it harder for the regional public transport authorities to endorse technical development (WSP, 2014). Specific requirements on the other hand can endorse technical development and give increased control over the service production by the public sector, but may also lead to expensive technical development, restrict the competition in tenders and lead to increased costs (WSP, 2014). In general, more detailed contracts in the bus sector seem to have driven rising costs (Vigren, 2015; Lidestam et al., 2016), and some of this seems to be due to environmental requirements (Hultén, 2015).

2.3. GPP and costs

In previous research, cost is one of the strongest and most commonly identified factors influencing to what extent GPP is used, which is confirmed in this study. A main goal of procurement is to find an optimal balance between quality and low costs, which is related to New Public Management perspectives that give

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