PUBLIC PROCUREMENT AS A POLICY INSTRUMENT TO PROMOTE THE DIFFUSION AND USE OF RENEWABLE TRANSPORT FUELS

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The project has been financed and carried out within the f3 and Swedish Energy Agency collaborative research program *Renewable transportation fuels and systems* (Förnybara drivmedel och system).

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The aim of the research project *Public procurement as a policy instrument to promote the diffusion and use of renewable transport fuels* was to analyse how green public procurement has been used in the transport sector. The project was carried out between September 2014 and March 2017 and was based on two parallel studies. In the first study an analysis was made of how the Swedish municipalities Malmö and Östersund use public procurement to purchase green cars and electric cars in the municipal car fleet. In the second study a comparison was made of the procurement of bus traffic in the two regions Skåne and Jämtland and it was analysed how they use requirements in procurement to introduce renewable fuels in the bus fleet.

The methodological approach was comparative case studies of the municipalities and regions, and the empirical material came from a combination of document studies and semi-structured qualitative interviews. In Malmö and Östersund, five interviews were carried out with procurers and environmental strategists. In Skåne and Jämtland eight interviews were carried out with procuress, public transport strategists, politicians and representatives of private transport operators.

Procurement of electric cars in municipalities

Many municipalities in Sweden have requirements on green cars in the procurement of municipal vehicles and some also have requirements on electric cars. Malmö and Östersund are two cities that have come relatively far regarding requirements on electric cars. In November 2015 Malmö had 372 plug-in-hybrids while Östersund had 127. The organization Gröna Bilister (green car drivers) appointed Malmö the best electric car city in 2013 and Östersund got the same title in 2011. The motivation was similar for the two municipalities: they had ambitious goals, thorough information

campaigns and ongoing electric car projects. Malmö has a green car strategy which says that 80 % of the light vehicle fleet should be vehicles that are run by biogas, hydrogen or electricity. The remaining 20 % can be green cars that are run by gasoline or diesel. In Östersund, the municipal administration has to buy cars that are run by renewable fuels or electricity.

The results of the study show that both municipalities highlighted the role of public procurement to develop a local market for electric cars, and there were clear political goals that the electric car should be prioritized. The strategy resulted in increased costs for the municipalities and there was a political acceptance for this. The increased costs were however pushed on to the different parts of the local administration and at this level increased costs did become a barrier for the electric car. Cooperation and networking was highlighted in both municipalities as a success factor. This was especially the case in Östersund where there was cooperation with seven other municipalities to purchase green cars. Also internal networking between the different parts of the local administration was seen as a key factor. Neither of the two municipalities gave incentives to the local administration to choose electric cars. They did also not use economic instruments to increase the use of electric cars in general in their cities. The strategy of the municipalities was to create at demand through their administration which would also contribute to creating a second hand market for electric cars. They also sought to be role models and highlighted the significance that the municipal officials used electric cars or at least green cars.

Procurement of bus traffic in regions

In Sweden there are 21 regional public transport authorities wich are responsible for planning and procuring regional and urban public transport. There are requirements on renewable fuels in all regions and in 2016 the share of renewable fuels in the bus traffic was 68 % of vehicle kilometres. There are however large differences between the regions when it comes the share of renewable fuels, the type of renewable fuel and the requirements that are used. In the report, procurement of bus traffic in Skåne and Jämtland is compared and an analysis is made of how they design requirements in order to introduce renewable fuels. It is studies which motives and strategies they have regarding green public procurement, and what challenges they have faced in relation to requirements, costs, size of the region and knowledge/information.

Skåne and Jämtland were chosen as cases due to their differences both when it comes to public transport conditions and how green public procurement has been used. Skåne is an example of a metropolitan region with a dense public transport system, including 25 different traffic contracts in city and regional traffic. In Skåne procurement has been used strategically as a part of a broader goal to support the development of a regional biogas market and the production of biogas. Jämtland is an example of a medium sized region with a large geographical area and low population density. In the region there are less than 10 traffic contracts with one medium sized city, some smaller towns and regional traffic. In Jämtland procurement has been used as a tool to increase the share of renewable fuels at the least possible cost, in order to reduce carbon emissions. There have not been other strategic considerations.

The results of the study show that the challenges of the regions were different depending on different conditions and different ways to use procurement. In Skåne there was a marked need for political support and the clear political unity behind the biogas strategy meant that green public procurement could be used in a forceful way. In Jämtland the political arena has been less visible and there have also not been the same need for political backing.

Another difference between the regions was the way requirements were designed. Skåne has for a long time had specific requirement on gas buses. This has helped them building a market for biogas but has also resulted in in increased costs, and difficulties have arisen because of lack of supply of biogas. In the latest procurements Skåne has abandoned the strict focus on biogas and the requirements demand the use of renewable fuels without stipulating which kind. Jämtland chose from the start to have functional requirements without choosing a specific fuel. The private operators in both regions also argue in favour of functional requirements. The decision between specific requirements on fuel or technology and more open functional requirements is not always an easy one. The functional requirements have the advantage that they let the market actors choose the solution that they think is best, which is usually more cost effective. Specific requirements on the other hand make it possible to steer towards a fuel or technology that the region wants to support.

Concerns over increased costs connected to green public procurement have often been a main reason why more far-reaching environmental requirements are not used. The results of the cases partly confirm this picture, but also show that how the cost barrier is perceived depends on the context and the strategy of the region. In Skåne the biogas strategy meant that the political acceptance of initially increased costs was high and costs were not seen as a major barrier. In Jämtland there was a higher concern over increased costs and the risk that this could affect other public transport goals such as the amount of bus traffic being supplied.

The size of the regions was not a decisive factor whether green public procurement was used or not, which is also confirmed by the fact that all regions in Sweden have requirements on renewable fuels. There were, however, differences in how the regions perceived their own role. Skåne, being a metropolitan region, perceived that they had a larger influence on the market than they did in Jämtland. Although the ambitions were not as high in Jämtland green public procurement was still a tool that to a large extent influenced the introduction of renewable fuels.

The last factor to be analysed was the need for, and access to, knowledge. The results show that who needed knowledge and what knowledge was important, differed between the regions and the type of requirements that were used. With functional requirements, as in Jämtland, the need for knowledge was mainly perceived to lay with the operators. In Skåne, the procurers rather had the view that both knowledge about the market and monitoring was important in order to implement the regional biogas strategy.

Conclusions and policy implications

The aim of this project has mainly been to increase the understanding of the challenges with green public procurement and how these have been handled in a few selected cases. It is however possible to point to some policy implications of the study.

General policy implications:

- Laws and regulations do not constitute a barrier to use green public procurement in the transport sector.
- Increased cost is not a general barrier for green public procurement but is rather dependent on the context.
- Clear political goals and political backing is of great significance for an effective green public procurement.

- Cooperation between actors is important both in order to increase the amount of goods or services to be procured, and to develop and share knowledge.

Policy implications for municipal procurement of electric cars:

- It is not enough to include electric cars in the list of cars that can be purchased, but this has to be complemented with an incentive structure that encourages the local administration to choose electric cars.
- Green public procurement should be complemented with other local policies to support the introduction of electric cars.

Policy implications for regional procurement of bus traffic:

- There is not one best way to design requirements on renewable fuels in the bus fleet, but the choice of requirements depends on political goals and regional conditions.
- Functional requirements are most commonly used in bus traffic procurements but specific requirements on fuel or technology can be motivated.

Project output

Scientific articles:

- Aldenius, M. and Khan, J. (Under review) *Strategic use of green public procurement in the bus sector: challenges and opportunities*. Journal of Cleander Production.
- Palm, J. and Backman, F. (Under review) *Public procurement of electric vehicles as a way to support a market: Examples from Sweden*. International Journal of Electric and Hybrid Vehicles.
- Palm, J. and Fallde, M. (2016) *What Charaterizes a System Builder? The Role of Local Energy Companies in Energy System Transformation*. Sustainability, vol. 8, No 3, 256, pp 1-16.

Conference presentations:

- Aldenius, M. (2016) Strategic use of green public procurement in the bus sector: challenges and opportunities, paper presented at *the Swedish Association for Energy Economics (SAEE) conference*, Luleå, Sweden, 23-34 August 2016.
- Aldenius, M. (2016) *Strategisk användning av hållbar upphandling i bussektorn: utmaningar och möjligheter*, paper presented at *Nationell konferens i transportforskning*, Lund, Sweden, 18-19 October 2016 and *Transportforum*, Linköping, Sweden, 10-11 January 2017.
- Backman, F. (2017) Energy Efficiency and Community of Practices, poster *presented* at First International Conference on Energy Research and Social Science (ERSS), Melia Sitges, Spain, 2-5 April, 2017.

Reports:

- Khan, J., Palm, J., Aldenius, M., Backman, F. & Norinder, H. (2017) *Grön offentlig upphandling i transportsektorn*, f3 Rapport 2017:04 (Final report of the project).
- Backman, F. & Palm, J. (2014). Literature review: Public procurement of innovation, Report No 20141101, Linköping University: Department of Thematic Studies - Technology and Social Change.