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The Swedish National Procurement of EVs and PHEVs

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Abstract

The City of Stockholm and Vattenfall have together with SKL Kommentus Inköpscental AB carried out a national Swedish procurement resulting in frame work agreements regarding electric vehicles (pure electrical vehicles and plug-in hybrids) from five different suppliers (both passenger cars and light duty van). The contracted suppliers are: Chevrolet, Citroen, Mitsubishi, Renault, Vantage/Avancee.

Both public bodies and private companies were invited to join the procurement. A total number of 296 partners/buyers have stated an estimated purchase volume of 1 250 electric vehicles/year. The contact period stared on October 1, 2012 and is for two years but may be prolonged for a total time of four years.

The Swedish Energy Agency is providing financial support with approximately 5000 €/vehicle for the first 1000 vehicles that are bought through the procurement frame work contracts.

Keywords: car, EV, PHEV, policy, promotion, van

1 Why a national Swedish EV procurement?

The dominating factor to start of the procurement was that production of electric vehicles was announced from several auto manufacturers. Despite the fact that Sweden has been very active with clean vehicles of different kinds since the late 1980s it was not certain that the electric vehicles would be easy go get a hold of. Many other countries all over the world appeared to offer stronger incentives to buyers and automakers of electric vehicles. Sweden therefore strongly needed to market its interest, benefits and advantages as a pioneering market for electric vehicles

2 Partners

The electric vehicle procurement was undertaken by a partnership initiated by the City of Stockholm and the state-owned electric utility company Vattenfall. The City of Stockholm has participated in many clean vehicle procurements before, both nationally and internationally, and also led a few of them. Vattenfall has been one of the strong actors for the electric vehicle development in Sweden over several decades.

3 Aim

The main aim of the procurement was to improve Sweden's position in the list of countries suitable for early electric vehicle deliveries. Other objectives were to contribute towards a cleaner and quieter vehicle fleet, and make it possible to buy/lease EVs and PHEVs under the best conditions. For public organisations the joint procurement saves time and money since the process is done in partnership rather than individually.

Quantitative goals stated: participation of at least 150 organisations in the group of buyers, demand for at least 6,000 vehicles in total and at least 8 offers given from the vehicle manufacturers.

4 Time frame

Invitation to participate in the joint procurement:
October 2010
Phase 1: Qualification of bidders
December 2010 – February 2011
Phase 2: Tender phase
March 2011 - August 2011
Contract start date:
October 1, 2011

5 Funding

The Swedish Energy Agency approved funding for the electric vehicle procurement project. The dominating part of the public funding (SEK 55 million SEK) is intended for vehicle funding. For each electric vehicle, the funding is 25 per cent of the additional cost or maximum SEK 50,000 per vehicle. This subsidy is available for the first 1 000 vehicles delivered. Each participant is grated subsidy for at least one vehicle.

6 Method

Swedish procuring entities (municipalities and county councils) and private organizations were invited to participate in the joint procurement process in the autumn of 2010. The procurement was a two phase procedure in line with EU and national Swedish public procurement laws. The first phase was a qualification of bidders and the second phase was an invitation to tender, including the vehicle specifications, submitted to qualified applicants. The key aspects in the specification are listed in table 1.

Table 1: Vehicle specifications

	Passenger car		Transport vehicle	
Type	**BEV**	**PHEV**	**BEV**	**PHEV**
All-electric range (km)	**>100**	**>20**	**>100**	**>20**
Energy/CO2	**<0.37 kWh/km**	**<50 gCO2/km**		
Charging	**Schuko socket, one phase, 230 V & 10 A**			
Top speed km/h	**>100**		**>90**	
Max cost (SEK)	**400,000 – 650,000**		**600,000 - 800,000**	
Extra credits given to fulfilment of safety the requirements:				
Euro NCAP or similar	**> 32.5/28 p (total) > 9.5 p (pedestrians) >2 p (whiplash protection)**			
Stability	**ESC**		**ESC**	
Alcohol lock	**Possible to install**		**Possible to install**	

7 Results

The invitation to participate in the procurement attracted 296 organisations, whereof 260 public and 36 private bodies. Together they stated intent to buy 1,250 vehicles per year. Over the possible four year contract period this corresponds to 5,000 vehicles in total. The City of Stockholm and Vattenfall both plan for 20 vehicles per year. A large effort was invested in obtaining realistic figures from the participants in the procurement. Concern for possibly high prices and not good enough safety for the electric vehicles to be procured was expressed by many partners. This led to several partners stating zero vehicles as the most probable number of vehicles to purchase within the procurement.

<u>Phase 1: Qualification of bidders</u>
In December 2010, the qualification of bidders started. All bidders had to apply for participation in the procurement. In parallel, the project team contacted all known potential bidders and informed them about the procurement and the advantages of participating. These contacts were predominantly made directly with the European representatives of each auto maker but always with full transparency towards the representative in Sweden. The qualification led to 14 applications, whereof 12 passed the evaluation. Tesla was disqualified due to an incomplete application and Think due to lack of financial stability.

Unfortunately four auto makers that had showed great interest for the procurement did not apply; Toyota, Volvo Cars, EV Adapt (Swedish company converting Fiat 500 to EVs) and Hybricon (Swedish company converting Toyota Prius to PHEVs).

Phase 2: Tender phase

In April 2011, ten out of the twelve, prequalified potential suppliers submitted their tenders. In the evaluation of the tenders, six passed. Iveco and Mercedes were disqualified as the top speed (for transport vehicles) was not met and Peugeot and Opel because they did not provide information about the cost of service. Nissan and Ford did not submit any tender. In table 2
the result of the procurement is presented.

Table 2: Selected vehicles

	Make	Type	Price (SEK excl VAT)
Passenger cars	**Chevrolet Volt**	**PHEV**	**327,920**
	Citroën C Zero	**BEV**	**289,600**
	Mitsubishi iMiEV	**BEV**	**281,688**
	Renault Fluence	**BEV**	**210,400 + battery leasing 790/month**
	Saab 9-3 ePower*	**BEV**	**649,500**
	Vantage SUV*	**BEV**	**332,000**
Transport vehicles	**Renault Kangoo Express ZE**	**BEV**	**194,000 + battery leasing 790/month**
	Vantage Minivan **	**BEV**	**323,000**
	Vantage Pick-up **	**BEV**	**294,000**

***Saab is no longer a possible supplier after the bankruptcy**

**** Vantage are conversions of Nissan vehicles made by the firm Avancee HB**

Contracts started October 1, 2011 and the qualified suppliers have to accept orders by October 1, 2012, at the latest. They may add further models throughout the whole contract period. For public organisations, the framework approach implies that a renewed competition has to be carried out before orders are placed.

In order to obtain the subsidy, the organisations have to own or lease the vehicle for at least three years, and they have to participate in the evaluations led by the project partner Test Site Sweden and KTH (Royal Institute of Technology). Funding is available for the first 1,000 vehicles purchased within the framework agreement.

8 Reflections

In the beginning of 2012, only a handful of vehicles have been delivered but over 70 deliveries are scheduled for the coming months. The delivery time is about three month after placing the order. Some of the vehicles are, however, not yet possible to order. The main objective with the procurement has already been met; potential suppliers of electric vehicles are now a lot better informed about Sweden's interest and advantages such as charging outlets at home, in the offices and at many parking lots (used for preheating of the engine during the cold season), relatively clean and cheap electricity and a pronounced demand for cleaner vehicles. Also the quantitative aims have been met and Sweden is now among one of the first countries where Mitsubishi and GM/Chevrolet have introduced or will introduce their BEVs/PHEVs.

One important observation is that the retailers of vehicles have had difficulties in following the tendering process, despite the information from the project and the well prepared easy to follow procurement documents. The result show several disqualified potential bidders. A bit disappointing was that Volvo Cars showed very limited interest and that Nissan and Ford, even though prequalified, did not submit any tenders. Compared to previous procurement projects, the addition of a prequalification for the bidders was a fortunate move, as it allowed for a lot more attention and information about the project to vehicle retailers on national and international level.

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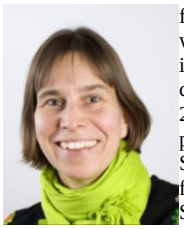

Eva Sunnerstedt from the Environment and Health Administration within the City of Stockholm is appointed as project manager for the clean vehicles and fuels program within the city. Eva Sunnerstedt has been involved in several public procurements of clean vehicles and fuels and during 2010-2011 she managed the nationwide procurement of electric cars and vans in Sweden. Eva Sunnerstedt is a civil engineer from the Royal Institute of Technology, in Stockholm and she graduated in 1991.