



A Swedish Mobilisation Initiative on Electric Vehicles

A pre-study on market conditions for carrying out a procurement of
electric vehicles in Sweden.

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SAMMANFATTNING

Stockholms stad och Vattenfall vill se **Sverige som pionjärland på den växande marknaden för elbilar**. Fördelarna med elektriska fordon är många och sannolikt kan de bidra till att Sverige uppnår de svenska klimat-, energi- och transportmålen.

Sverige har redan nu **mycket bra förhållanden för elektriska fordon**; Elektriciteten i Sverige kostar mindre än i många andra europeiska länder och den ger låga koldioxidutsläpp. Produktions- och distributionssystemet klarar av att hantera en storskalig introduktion av elektriska fordon och genom den utbredda infrastrukturen för motorvärmare finns till stor del redan nu möjlighet för laddning av fordon i publik miljö. Sverige är även en god testmarknad, då svenskar ofta är öppna för nya teknologier i kombination med ett stort miljöintresse. Ekonomiska incitament som stimulerar till inköp av elbilar finns idag, men kommer i sin nuvarande utformning dock enbart gälla fram till slutet av 2011.

Den här studien har påvisat en **stor efterfrågan på elbilar i Sverige**: över 100 företag och organisationer har uttryckt intresse för att köpa sammanlagt nästan 14 000 elfordon under åren 2011-2014. Denna efterfrågan är av **stort intresse för billeverantörer** - både biltillverkare och generalagenter. Fordonstillverkarna planerar att massproducera elbilar och de första kommer att finnas på marknaden inom kort. Redan under år 2011 är det möjligt att nitton olika bilmodeller från olika biltillverkare kommer att introduceras på marknaden. På grund av den stora efterfrågan kommer utbudet av elbilar förmodligen inte att kunna möta efterfrågan de första två åren.

Det är tydligt att **incitament är avgörande för framgång** med att etablera Sverige som föregångsland för elbilar. Särskilt fordonsleverantörer har signalerat att ett attraktivt stödsystem är nödvändigt för att möjliggöra ett tidigt inträde på den svenska marknaden. Dagens situation - där de befintliga ekonomiska incitamenten går ut i slutet av 2011 och inga signaler har sänts om nya - hindrar Sverige från att uppnå målet att bli ett pionjärland för elbilar.

En tidig marknadsutveckling, stöttad av en upphandlingsprocess, skulle bidra till att göra Sverige till en ledande elbilsnation och därigenom säkra fördelar för vissa svenska industrier, ge ett ökande antal arbetstillfällen och vara bra för miljön.

EXECUTIVE SUMMARY

The City of Stockholm and Vattenfall wish to see **Sweden at the forefront of the emerging electric vehicles** market. Electric vehicles offer a range of potential benefits and can make a key contribution towards the achievement of Swedish climate, energy and transport targets.

Sweden has already **very favorable conditions for electric vehicles**; Electricity costs less than in many other European countries and has very low CO2 emissions. The production and transmission system can handle a large-scale introduction of electric vehicles and the existing pre-heating infrastructure can be used for public charging. Sweden is a good test market; Swedes are early adopters of new technologies and have high environmental awareness. Financial incentives encouraging electric vehicle purchases are currently in place, though only until end of 2011.

This study has identified a **high demand of electric vehicles in Sweden**: over 100 companies and municipalities are interested in buying nearly 14 000 vehicles in the years 2011-2014. This demand is of **high interest for suppliers**, both OEMs and general agents. OEMs plan to mass produce electric vehicles with the first vehicles placed on the market soon. Already in 2011 there is a possibility of nineteen different models of cars and vans from different vehicle manufacturers on the market. Due to the high demand, the supply of vehicles will probably not meet the demand in the first couple of years though.

It is clear that **incentives are decisive for success** to establish Sweden as an “early” E-mobility market. Especially suppliers have signaled that attractive incentives schemes are of essential importance to enable early entrance into a market. Today's situation, with existing financial incentives ending in 2011 and no signals for a new support system, prevents Sweden from being a prime target for early market introduction.

An early market development, supported by a procurement process, would help Sweden to achieve the ambition to be a leading E-mobility market and thereby secure benefits for certain Swedish industry clusters, job creation and the environment.

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1. Folder
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1 INTRODUCTION

1.1 Purpose

Vattenfall and the City of Stockholm have joined forces to speed up the market introduction of electric vehicles in Sweden. The initiative aims to gather companies, organisations and other actors that are interested in participating in an early procurement of electric vehicles to existing fleets. Electric vehicles are not yet commonly available and the number of vehicles on the market during the next couple of years will be limited. By joining forces in this way, there is a chance to increase volumes to a level that makes the Swedish market interesting to the vehicle industry. Further, a joint procurement process will reduce administrative burdens. Vattenfall and the City of Stockholm will act as the drivers in this process, both by establishing contacts with Swedish companies, municipalities and organisations and the auto industry and by carrying out the procurement process. The purpose of this pre-study is to clarify the levels of interest in electric vehicles and assess the possibility of a future procurement process.

1.2 Background

Private transport is currently highly dependent on oil. Vehicles emit both local and global emissions. Electricity offers new possibilities for long-term efficient and sustainable private vehicle transport.

Electric vehicles are not a new invention - in fact, they already existed a century ago - but earlier attempts to widely introduce them have failed. Today a number of factors exist, which are different compared to earlier times and there are high hopes for large-scale transformation of the transport sector towards electrification. Society is now generally aware of climate change and this issue motivates political decisions as well as individual behaviour. New and better battery technology (lithium ion batteries) has created improved conditions for electrification in the transport sector. Cost reductions and higher oil prices are good reasons for expecting greater success this time and the hybrid car development has raised the appetite for electric driving.

Vehicle manufacturers are currently investing significantly in the development of electric vehicles and battery technologies and a number of models and some new technical solutions are promised to be on the market in the near future. However, the market volumes of electric vehicles during the next couple of years will be limited, and initial purchase prices are expected to be rather high. It may well be the case that the demand for electric vehicles exceeds the number of vehicles on the market. The vehicle industry is likely to focus on introducing electric vehicles where they expect the best market opportunities.

Many countries have already presented financial incentives that make electric vehicles economically acceptable. However to increase the attractiveness of different markets, parallel initiatives exist in other EU nations i.e. in the Netherlands and in Great Britain. In Sweden the City of Gothenburg has investigated the interest of pure electric vehicles among the 49 municipalities in the Västra Götalands Region. Close contacts have been ongoing with the City of Gothenburg initiative.

1.3 Current tax incentives for electric vehicles in Sweden

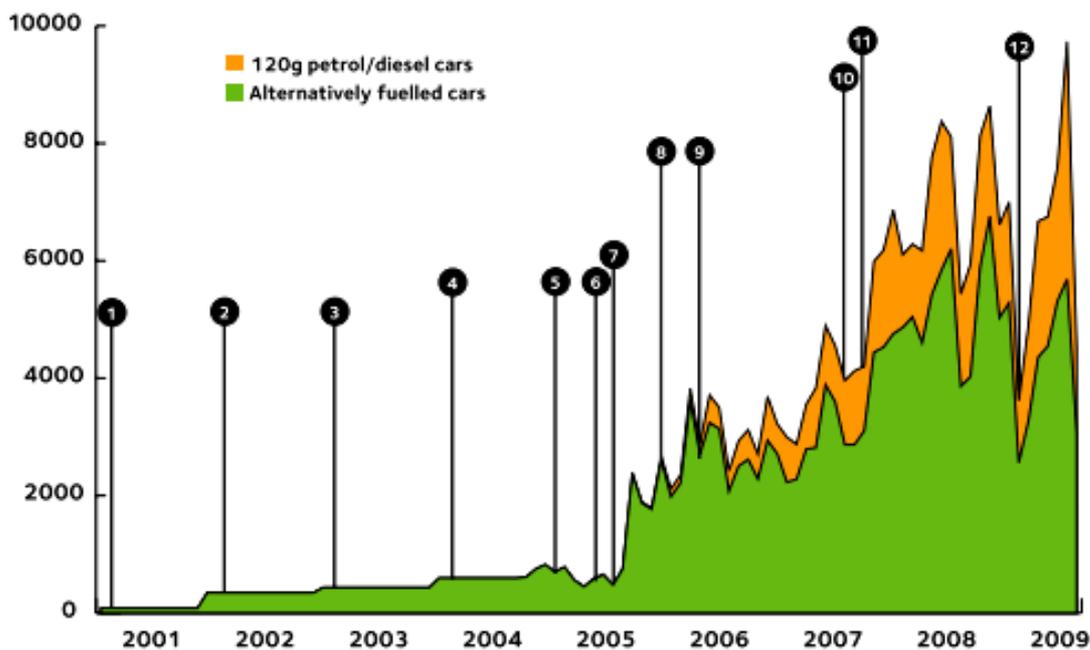
Electric vehicles are free from vehicle tax during the first five years of operation. The vehicle tax for conventional cars is determined according to the CO₂ emissions of the car. In practice, this incentive is worth between 1,000 to 3,000 SEK/year, which over a five-year period sums up to between 5,000 and 15,000 SEK.

Electric and other clean vehicles receive a 40% reduction on the “fringes benefit” tax of the car compared to its petrol equivalent. This is applicable when the car is owned by a private company but operated by an employee during both work and private time. This incentive gives the car operator a reduction on the taxed car value of 16,000 SEK/year. With a 50% tax (a tax level which is most likely applicable to employees that drive a “fringes benefit” car) the benefit is worth 8,000 SEK/year. This incentive is valid until the end of 2011.

The two incentives above add together up to a saving of maximum 11,000 SEK annually which over e.g. a four year period is in the range of some other national European incentives for electrical vehicles.

Monthly clean vehicles sales have increased dramatically in Sweden since 2001. A number of incentives have contributed towards the upward trend, though events such as the financial crisis of 2008 have also caused periodic declines in sales.

Figure 1: Monthly new registrations of clean cars in Sweden



- | | | |
|---|--|---|
| <p>1 Introduction of Ford Focus FFV. Reduced company car tax of SEK 16,000 for electric cars and SEK 8,000 for other alternatively fuelled vehicles, compared to conventional models.</p> <p>2 Testdriving: Demonstration fleet of loaner clean vehicles financed by the EU-project Trendsetter offered to companies in 2002–2005.</p> <p>3 General tax reduction on biofuels.</p> <p>4 Bonus system for clean vehicles used for special transport services (disabled transport).</p> | <p>5 Ordinance on purchase and leasing of clean vehicles by government authorities.</p> <p>6 Free residential parking (Stockholm inner city).</p> <p>7 Introduction of Saab BioPower.</p> <p>8 A separate taxi queue at Stockholm Arlanda airport for clean taxis. Congestion tax trial – clean cars exempted from congestion tax.</p> | <p>9 Obligation to supply renewable fuel at filling stations of certain size, requirements increase over time.</p> <p>10 Rebate of SEK 10,000 SEK on purchase of new clean vehicle.</p> <p>11 Congestion tax permanent – clean cars exempted.</p> <p>12 Exemption from congestion tax and rebate on residential parking discontinued.</p> |
|---|--|---|

Source: Environment and Health Administration, City of Stockholm, data from General Agents, Statistics Sweden and BilSweden.

1.4 Advantages of electric powered car transport compared to other fuels

Here we cover the advantages of electric powered car transport compared to alternative fuels powered car transport i.e. fossil fuels, bio fuels, natural gas etc. The first main advantage of electrical vehicles is of course that electricity is energy efficient compared to other energy vectors.

The second main advantage for electric powered car transport in Europe is the fact that EU has introduced a system that puts a ceiling - a maximum level - for greenhouse gas emissions in the EU. This is called the EU Emission Trading System (ETS). Each member country's economy is divided into a part which is below the ceiling - the so-called trading sector - and the non-trading sector which is not below the ceiling.

This classification of each member country of the EU in the two sectors is crucial for climate benefits of switching to electric cars. Current fossil fuel-powered cars are part of the non-trading sector. When a fossil fueled car is replaced with an electric car, the emissions are reduced from the fossil fueled car and from the non-trading sector. The electricity, however, is generated in the trading sector.

CO₂ emissions from this additional electricity production in the EU fall under the EU ETS cap, which will ensure, in principle that any increase in emissions is balanced out by reductions elsewhere¹.

Since there is a maximum limit on greenhouse gas emissions from electricity generation in Europe, but not for fossil-fueled transportation, it will always be a climate benefit to shift from fossil-fueled cars to electric cars, whether the electricity is produced by coal, nuclear, hydro or wind, etc.

The car driver's environmental profile is determined by the electricity suppliers guarantee of origin (hydroelectric power, wind power, nuclear power etc.). This varies within the EU, but does not matter to the total emissions of CO₂.

Sweden has an almost carbon-neutral power generation i.e. about 90% of Swedish electricity production is based on CO₂ neutral nuclear and hydroelectric power. The car driver can therefore choose the Swedish CO₂-neutral electricity products with guarantees of origin for its car charging, and thus improve her environmental profile.

1.5 Other drivers for early mobilisation in Sweden

In total, only 70 cities in Sweden charge for parking. Electric vehicles and other clean vehicles benefit from a large rebate/free parking in between 30 to 40 cities in Sweden. Usually the owner of the electric car and other clean vehicle has to pay a small fee (of few hundred SEK) in order to access free parking in city parking places during the next three to five years. The total value of this incentive depends on where you normally park and how often you park there.

The production and transmission system is ready to handle a large-scale introduction of electric vehicles and emits very low emissions. There is limited need for extensive construction of public charging posts since pre-heating of vehicles is commonly available. The people in Sweden are therefore already used to the habit of plugging in their vehicles when parking.

¹ Greenpeace: <http://www.greenpeace.org/raw/content/eu-unit/press-centre/reports/green-power-for-electric-cars-08-02-10.pdf>

There are many opportunities for Swedish industry to grow in the different areas connected to electric vehicles. The Swedish positions are already today much stronger in the fields surrounding electric cars than those surrounding the combustion engine cars. Swedish companies are strong internationally within several connecting business – especially within power distribution, control systems, automation and communication techniques. The industrial benefits for Sweden in this area are large and positive².

In addition to that electricity prices in Sweden are lower than in many other European countries. That price level is expected to stay on the current level (end customer price: ~1 SEK/KWh) for a longer time period.

Sweden has several advantages that mean the country has a good chance of becoming an early market for the electric vehicle industry. Sweden is known as being environmentally progressive. Sweden is in many ways appropriate for market tests, since the Swedes are 'early adopters' of technology innovation and the environmental awareness is high. Sweden is also perhaps the best country in the world of road safety. Sweden has what has been called a functioning national triple-helix; trusting cooperation between Government, Academia, Business and Industry.

In summary it can be stated that Sweden has already today very favorable conditions for electric vehicles which enable the owner of an electric car to account for great savings compared to driving a petrol equivalent car.

² Ladda för nya marknader – elbilens konsekvenser för elnät, elproduktionen och servicestrukturen. VINNOVA Analys VA 2010:01

2 WORK PROCESS

2.1 Project set-up

2.1.1 Organisation

A project group of staff from Vattenfall and the City of Stockholm carried out the pre-study, closely guided by a Steering committee and a Reference group. The Steering committee has met once a month to follow the progress and provide guidance on the direction of the work. The reference group, consisting of members from Swedish organisations, have met twice and influenced the work through their experience or current engagement in the field of electric vehicles.

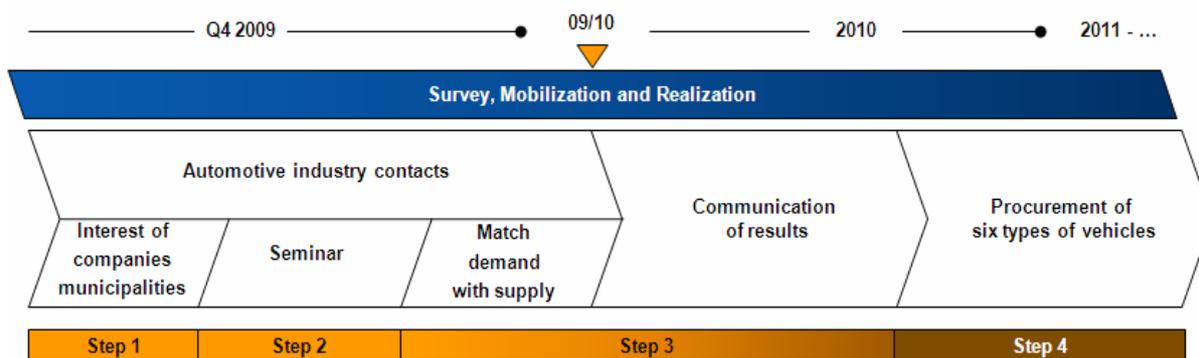
Figure 1: Project organisation

Reference Group	Steering Committee	Project Group	Legal Advisors
<ul style="list-style-type: none">• BIL Sweden• Energimyndigheten• Elforsk• Näringsdepartementet• Power Circle• Svenska Energi• SWEVA• Gröna bilister• SKL• Vägverket	<ul style="list-style-type: none">• Gustav Landahl Miljöförvaltningen, Stockholms stad• Göran Lundgren Vattenfall AB• Stefan Nordin Serviceförvaltningen, Stockholms stad	<ul style="list-style-type: none">• Eva Sunnerstedt Stockholms stad• Johan Seuffert Stockholms stad• Helene Carlsson Stockholms stad• Erik Wijnblad Vattenfall AB• Ulrich Frieser Vattenfall AB• Catharina Bratt Vattenfall AB• Susanna Hurtig Vattenfall AB• Ingrid Blanck Vattenfall AB	<ul style="list-style-type: none">• Agneta Lippman, Vattenfall AB• Stefan Nordin, Stockholm stad

2.1.2 Time and activity plan

The pre-study was carried out during October 2009-January 2010. During this time, the focus was on 1) investigating and raising interest in companies and organisations to procure electric vehicles and 2) investigating and raising interest of the auto industry to deliver electric vehicles to Sweden.

Figure 2: Comprehensive project plan



2.1.3 Budget

The pre-study costs have mainly been related to travels and communication material. Travel expenses were incurred when travelling to meet representatives of the auto industry and to set-up local seminars to inform actors of the initiative. The initiative was communicated in public advertisements and also through folders. As of March 18th the total costs of the pre-study were 138 200 SEK.

The project group has put in a much higher effort into the investigation, communication and validation of the data than initially planned. The increased data quality and in-depth knowledge led to a budget overrun which was indicated to the Steering committee and approved in due time.

In addition to the external expenses Stockholms stad and Vattenfall have also used their own human resources and facilities. In the project period from September 2009 to February 2010, ~0,75 FTE (Stockholms stad) respectively ~1,0 FTE (Vattenfall) internal resources were involved in the pre-study.

Table 1: Budget

Occurrence	Budget	Planned	Forecast	Actual
Nov 2009	Questionnaire		3 000	3 000
Nov 2009	Folder (and ad in forecast)		34 000	34 000
Nov 2009	Seminar Sthlm & Malmö		12 200	12 200
Nov 2009	Translation		4 000	4 000
Nov 2009	Project place (and website in forecast)		15 000	12 500
Dec09-Mar10	Car manufacturer meetings		40 000	16 000
Feb 2010	Work Pre-Study report			22 000
Feb 2010	External "Pre-study folder"		40 000	0
Mar 2010	Letter to car manufacturers			5 000
Mar 2010	Folder about procurement			19 500
Mar 2010	Trips E-mobility seminar Malmö			10 000
Pre-study		65-85 000	148 200	138 200

2.2 Stakeholder contacts

2.2.1 Demand side /buying interest

Municipalities

The City of Stockholm has had overall responsibility for contacting and exploring the interests of municipalities. In some cases, however, Vattenfall has initiated and been the primary contact.

Contacts have been made with several municipalities in the Stockholm, Gothenburg and Malmö areas. In total, 140 municipalities were contacted by mail and thirty were followed up with telephone contact. The contact focused on getting them interested and completing the questionnaire.

Companies

Vattenfall has had overall responsibility for contacting and exploring the interests of companies. In some cases, however, the City of Stockholm has initiated and been the primary contact. Approximately thirty companies were contacted. Contacts with the various companies were made via telephone. These calls aimed to generate interest for electric vehicles and increase awareness of the survey.

2.2.2 Vehicle supply

The list of vehicle manufactures was divided between Vattenfall and the City of Stockholm with the focus on large OEMs. The contact focused on developing OEMs' interest by informing them about the large demand for EVs and PHEVs in Sweden and the existence of charging infrastructure in the form of engine block heater systems.

2.2.3 Survey methodology / Questionnaire

A questionnaire was produced and respondents answered via the internet. The questionnaire focused on getting information about what kind of vehicles are of the most interest, how many, and in what years between 2011 and 2014.

Respondents were given the information that the vehicles had the same equipment, handling, comfort and safety as conventional vehicles.

The EV was given the minimum range of 100km and the PHEV was given the minimum range in pure electric drive of 20km.

Three types of EVs and three types of PHEV cars were discussed in the questionnaire:

Table 2: Electric vehicles included in questionnaire

Electric vehicles (EV)		
Type	Weight (kg)	Example
Small passenger car	900 – 1100	Toyota Yaris, Citroen C1
Medium passenger car	1101 – 1500	Volvo V50, Renault Megane
Small van	max 3500 (Volume: 2.5 - 3.2 m ³)	VW Caddy, Opel Combo

Table 3: Plug in hybrid electric vehicles included in questionnaire

Plug In Hybrid Electric Vehicles (PHEV)		
Type	Weight (kg)	Example
Medium passenger car	1101 – 1500	Volvo V50, Renault Megane
Large passenger car	1501 – up	Saab 9-5, Volvo V70
Small van	max 3500 (Volume: 2.5 - 3.2 m ³)	VW Caddy, Opel Combo

2.3 Communication

A common communication strategy has been developed and target groups have been identified. Relevant messages have been developed jointly and communication channels have been established (see below).

The purpose of the communication within this initiative is to:

- Raise awareness of the initiative both internally and externally answering the question: *'What's in it for me?...*
- Communicate relevant messages through internal and external channels
- Create good relations between stakeholders and target groups
- Make sure to get as many answers as possible to the web-survey
- Maintain the interest for the initiative among those who have already chosen to participate (i.e. organisations who have answered the survey)
- Increase the knowledge about electric vehicles and the transition to electric mobility (what, where, when and why?).

2.3.1 Seminars

Two seminars were arranged, one in Malmö and one in Stockholm. The purpose was to spread information about the initiative and get more organisations interested to join. In total, 100 persons representing a large number of the companies and municipalities attended the two seminars.

2.3.2 Website

A section about the initiative has been included at www.stockholm.se/miljobilar and the domain www.elbilsupphandling.se. Also the domains www.elbilsupphandling.nu and www.elbilsupphandling.com have been directed to it.

2.3.3 News e-mail

Two e-mail groups were set up for news flashes from the project.

One 'narrow' group was set up and covered those who participated in the seminars and those who answered the questionnaire. These people received documentation from the seminars and reminders to fill in the questionnaire.

A 'broad' group with a selection of companies and municipalities that have shown interest in clean vehicles and/or climate issues received information about the initiative and were encouraged to complete the questionnaire.

2.3.4 Folder

A four page folder (pdf-file) was created initially to spread information about the initiative and inform about the two seminars in Stockholm and Malmö. See appendix 1.

2.3.5 Press release

A press release was sent out on January 18, 2010 with information about the initiative and the outcome of the web-survey. The main purpose was to spread information about the initiative and to increase interest among other organisations so that they also would answer the survey. The press release had quite a large impact and the news was published on web-sites such as Miljönytt and NyTeknik and other electronic news channels. Most of the news was published through reprints of the release but a few journalists actually called for more information (i.e. Radio Uppland). See appendix 2.

2.3.6 Advertisement in Veckans Affärer

An advertisement was published in the weekly business magazine Veckans Affärer (December 17, 2009), see appendix 3. The purpose of this advertisement was to generate interest in the initiative and to encourage more people to participate. The advertisement referred to the website www.elbilsupphandling.nu for further information.

3 RESULTS

3.1 Procurement interest

The data below shows the interest for electrical vehicles and plug in hybrids among Swedish companies and municipalities. This data has been collected via the web survey and was taken from the survey at the end of February 2010.

3.1.1 Vehicle volumes and timing

The expressed interest for EVs and PHEVs for the years 2011 to 2014 is 13,579 in total. The majority of this interest is for the EV, and the highest interest is for the pure electric van. The second largest interest is for the PHEV medium sized passenger car. When looking at the total interest for both EVs and PHEVs, the interest for the different categories of passenger cars is dominating. The need for all vehicle categories increases throughout the years, especially for large and medium sized PHEV passenger cars, where it more than doubles from 2011 to 2014. See detailed information in table 4 and figure 4 below.

Figure 4: Vehicle volumes requested per category in percentage

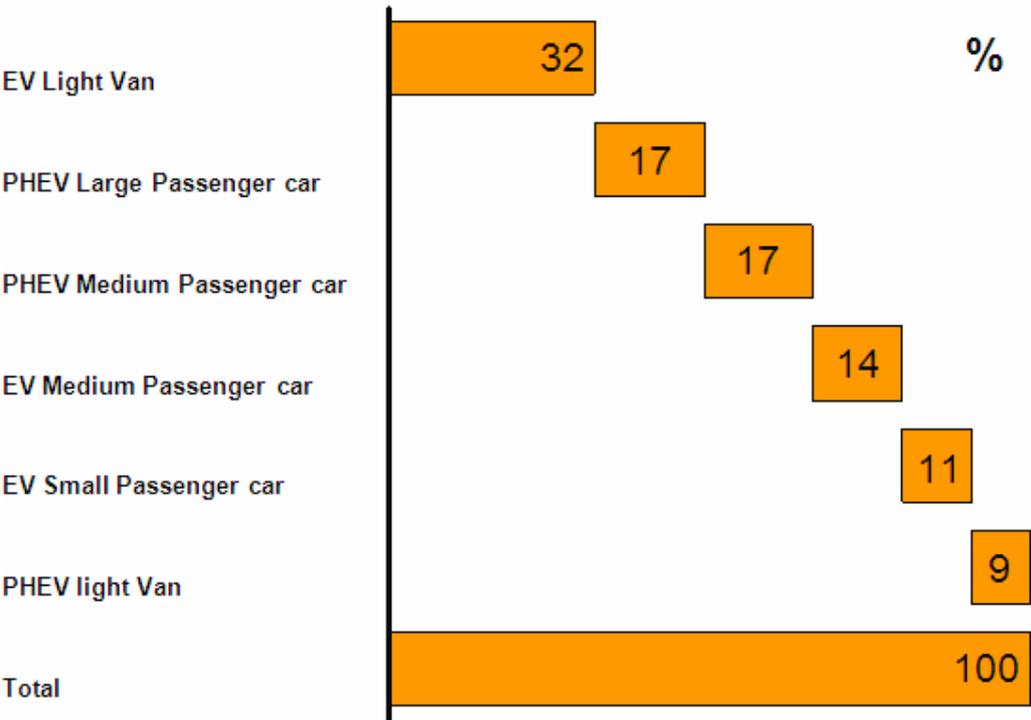
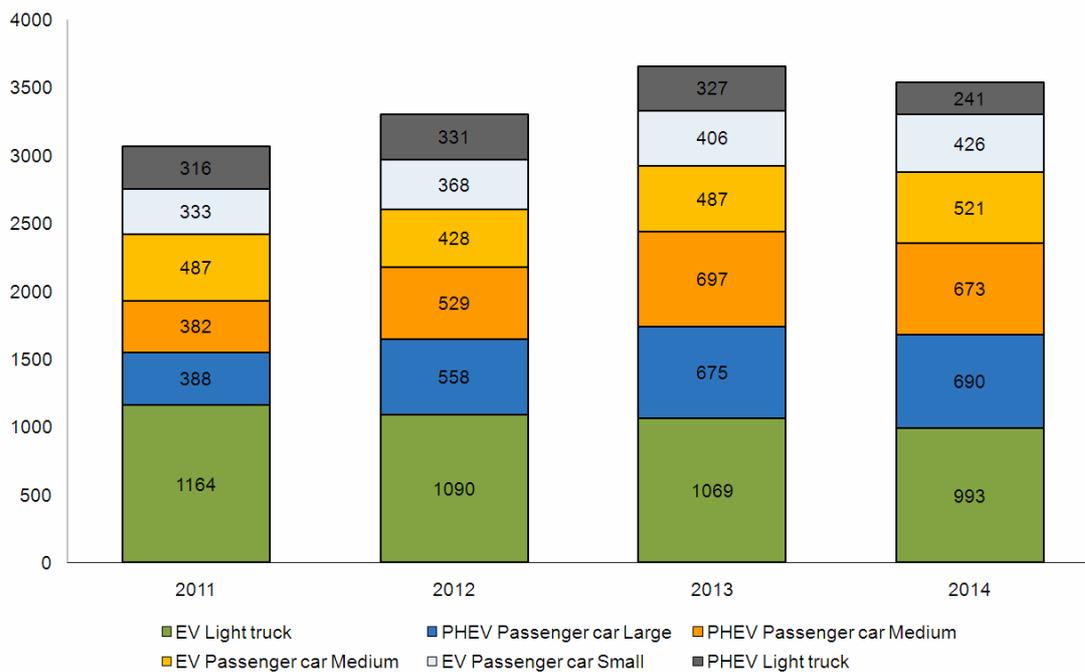


Table 4: Vehicle volumes requested per category and year

	2011	2012	2013	2014	Row total	Percentage
EV Light Van	1164	1090	1069	993	4316	32%
PHEV Passenger car Large	388	558	675	690	2311	17%
PHEV Passenger car Medium	382	529	697	673	2281	17%
EV Passenger car Medium	487	428	487	521	1923	14%
EV Passenger car Small	333	368	406	426	1533	11%
PHEV Light Van	316	331	327	241	1215	9%
Column total	3070	3304	3661	3544	13579	100%
Percentage	23%	24%	27%	26%	100%	
Whereof						
<i>EV</i>	1984	1886	1962	1940	7772	57%
<i>PHEV</i>	1086	1418	1699	1604	5807	43%
<i>Passenger cars</i>	1590	1883	2265	2310	8048	59%
<i>Vans</i>	1480	1421	1396	1234	5531	41%

Figure 5: Vehicle volumes requested per category and year



3.1.2 Partner categories

The majority of the interest to purchase EVs and PHEVs is from the companies.

Table 5: Partner categories

Total demand	Number of org	Number of vehicles	% of total demand
Municipalities and authorities	41	3617	27%
Companies	82	9962	73%
Total	123	13579	100%

3.1.3 Additional remarks on vehicle interest

The ten organisations with the largest purchase interest account for 81 percent of the total interest. The top three organisations - Riksbyggen, Uppsala Kommun och Hertz – have together a demand for 55 percent of the total demand from all 123 organisations.

Around 25 of the 123 organisations have not stated a firm figure but have declared their interest in electric vehicles and want to participate in the initiative. They find it is currently hard to give an exact number of the electric vehicle request since the price information is so unclear. Among these companies there are several large fleet operators i.e. taxi companies.

In addition there are 20 respondents that have filled in that they are interested in some other type of electric vehicle, then the six categories listed above. In total this interest sums up to 700 vehicles. 13 out of these 20 respondents asked specifically for a 9 m3 van/minivan.

These comments from the survey show the high interest in electric vehicles.

- "The goal is set! We run a project, comprising 10 municipalities. The target is 30,000 cars 2020. Here, the municipalities will make a significant partnership with the industry."
- "We are interested but can not provide any figures today, but if the study turns out to be positive, we may come with a big contract. We switch about 400-500 cars per year. "
- "Approximately 300 cars are planned for 2011-2014. The cars are replaced every third year. We think the interest for PHEVs is great. Many have Prius today."
- We are very interested in this (Electrical Vehicles), but we are sceptical of how quickly we can find a 100% functional electric car in the stores."
- "We will conduct a procurement of vehicles in 2010. Number and type is not known today. We have a strong interest in both Electric vehicles and Plug In Hybrid Electric Vehicles."

3.1.4 Prerequisites

Below is a selection of comments about prerequisites submitted in the survey.

Key message: environment and safety is important.

- "Would have a minimum of 4 stars in EuroNCAP and traction control. If possible, please also four-wheel drive."
- "We need vehicles that have some cargo capacity. We will buy the cars that are for sale, work economically and work in our business. Hard to say how many we will buy."
- "The cars must be suitable for taxi."
- "We have been in ELCIDIS project which ran in 2001, our experience is that it is very important to the functioning of the after market/secondary market."
- "We use only combi models."

- “We have great interest in the vehicle with the lowest possible environmental impact.”
- “Our company offers leasing cars with high safety and environmental performance to our staff.”

Key message: price and service is important.

- “The price is obviously controlling (our decisions) up to 100% “
- “Number of purchases will be influenced by the total cost i.e. purchase price and operating cost.”
- “I would like to see not only the price presented, but also cost-based 10000/15000/20000/25000 km per year, servicing and fuel. An option to connect a service deal to the vehicle should be provided, because there are so many service purchasing options for electric cars. Suggested service price should be included in the evaluation of the tender and be an option for the purchaser.”

3.2 Vehicle supply

3.2.1 Suppliers contacted

The eighteen suppliers contacted were: BMW, Citroen, EV Adapt, Fiat, Ford, Heuliez, Iveco, Mercedes-Benz/Daimler, Mitsubishi, Nissan, Opel, Peugeot, Renault, SAAB, Think, Toyota, Volvo and VW.

Our contacts have mostly been on European level/international head office and with the Swedish importers.

3.2.2 Supplier interest

Interest from suppliers is great, especially from the Swedish general agents. The problem is that the availability of EVs and PHEVs in the coming years will be very limited. The general agents need help to make more convincing arguments than other European offices and factories and to justify why EVs and PHEVs should be placed in Sweden.

Listed below are the responses we received from the suppliers including the different EVs and PHEVs that might be available on the Swedish market and possible timing for delivery.

Table 6. Electric vehicles being developed by vehicle manufacturers

Manufacturer	Passenger Car	Van
BMW	1 series coupe EV, 2011 (can not be bought in dealerships, small volumes)	
Citroen	C-Zero EV, 2012	
EV Adapt	Fiat 500 EV, 2010-2011	
Fiat	No official plans yet	
Ford	Focus EV, 2011	Transit Connect EV, 2011 and Transit (by Smith Electric UK), 2010
Heuliez	Friendly, end of 2010	Simplicity, end of 2010
Iveco		Daily EV, 2010-2011

Mercedes-Benz/ Daimler	Smart EV 2012-2013 and A-class EV, 2013	
Mitsubishi	iMiEV EV, 2011 and PHEV, 2013	
Nissan	Leaf EV, 2011	
Opel	Ampera PHEV, 2011-2012	
Peugeot	Ion EV, 2011 and 3008, 2012	Partner EV, 2010-2011
Renault	Fluence ZE, 2011 and Renault Zoe ZE, 2012	Kangoo ZE 2011
SAAB	ZE Saab 9 3, test fleet of 100 cars in 2010 (likely not part of procurement)	
Think	Think City EV, 2010	Maybe 2012
Toyota	Prius PHEV, 2011	
Volvo	C30 EV, Q2 2011 (pilot-series) and a large passenger car PHEV end 2012	
VW	Our discussion with them is ongoing	

In total this means that by the end of 2012 there is possibility of seven different models of EV vans, eleven different models of EV small passenger cars, three different models of EV medium sized passenger car and five different models of PHEV passenger cars (see table 7). For the years 2013 and onwards it is currently hard to get a good overview of the supply of EVs and PHEVs; however the number of models is likely to increase with the years.

Table 7: Introduction years for different vehicle models to be available for purchase

Vehicle models	2011	2012	Total End 2012
EV, Van	4 + 3 (small + large)		7
EV, Passenger car Small	7	4	11
EV, Passenger car Medium	3		3
PHEV, Van			
PHEV, Passenger car Medium	2	2	4
PHEV, Passenger car Large		1	1
Total	19	7	26

3.2.3 Key messages from suppliers

All electrical vehicles, both Battery electric and Plug-in hybrid electric vehicles will have higher manufacturing cost compared to comparable conventional vehicles. Due to that most of the vehicle manufacturers judge the attractiveness of a market by the incentive schemes and the general support of national governments to minimise the economic gap between both technologies.

The Swedish scheme for environmental cars is partly known by the manufacturers and is also acknowledged as quite attractive and as a very successful set up in the introduction of conventional environmental cars to Sweden. Since this scheme is not focussed on electrical vehicles it is not as widely known as other national schemes (e.g. like French purchase incentives of 5,000 €). Also since the Swedish “fringes benefit” reduction for clean cars is

running out in 2011 there are questions regarding its effect on the introduction of EVs which is expected to take off in the year 2012 and after.

The quality and safety standards of the electric vehicles will be at least on the same level as what customers are used to from conventional cars today.

The sales and services of vehicles will be starting in urban areas and stepwise expanded to all regions/areas within a market. Stockholm, Malmö and Gothenburg will be the most likely starting points but the roll out is expected to take place rather quickly.

3.2.4 Car financing models

Compared to conventional vehicles, EVs / PHEVs will have significantly higher purchase prices but lower fuel and maintenance costs.

Due to their high purchase price the general expectation is that most EVs will be leased. The general view of OEMs and financing institutions is that the EV customer will have the same leasing /financing/purchasing options available as for conventional vehicles. To utilise the low running cost of EVs in a financial package new financial packages will be developed. They could contain e.g. separate battery leasing offer or complete service packages with maintenance, electricity and a guaranteed residual battery value.

No manufacturer has yet stated a price for the Swedish market. Some OEMs state that the total cost of ownership will be the same or almost the same as a petrol-driven equivalent car, while others state that an increase in the total cost of ownership of 10 to 20 percent is expected.

As for leasing of EVs and PHEVs, one supplier stated that the leasing price per month will most likely increase with about 1,000 – 1,500 SEK/month, while a majority said that leasing will be offered but that the prices for this are not yet decided. Most suppliers prefer to lease (sell) the cars and the batteries together while only a few, mostly those linked to 'Better Place', say that separate battery leasing will be an option.

A few suppliers stated that it will be financially wise to operate the vehicles for a longer period than the usual three or five years. This is mainly due to the fact that the operator then can benefit from the lower operation cost and service for a longer time and the total cost of ownership will be more beneficial.

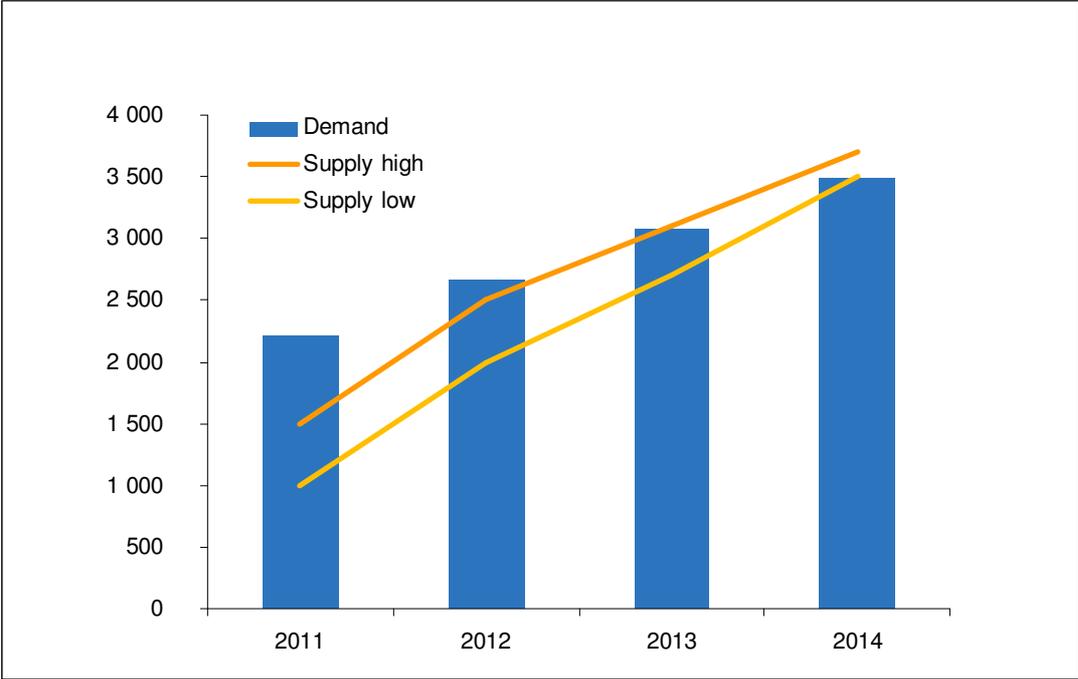
3.3 Demand and supply match

Based on the information collected from both manufacturers and potential buyers, the project group has developed good knowledge about the extent of vehicle demand. For example, the survey results show high demand for small electric vans and PHEV passenger cars.

The graph below illustrates the supply and demand development in the period 2011-2014. The demand is based on the enquiry with the 123 Swedish organisations and the supply is estimated for the whole of Sweden.

When comparing on that basis it can be expected that the demand in the years 2011 and 2012 most likely will not be met. Earliest in the year 2013 but most likely starting in the year 2014 we will see a demand and supply match. This development will vary between the different vehicle segments.

Figure 6: Illustrative course of developing demand and supply



Looking into the details of supply (Table 7) and demand (Table 4) on specific vehicle segments, only the 'PHEV Van' is not expected to be supplied in the next years and is also the least demanded vehicle segment. As a result the following five segments appear to have a sufficient match between supply and demand:

1. EV Van [1900(Demand 2011&2012) / 6 (#of models on market)]
2. PHEV PC medium size [750 / 2]
3. PHEV PC large size [700 / 1]
4. EV PC medium size [600 / 4]
5. EV PC small size [500 / 10]

The segment 'EV passenger car small size' is expected to be available in the highest product variety (10 already in 2012). Due to the rather low demand in this segment the earliest and best supply/demand match is expected here.

3.4 Measurement error in survey data

In a survey type situation like the one we had for this pre-study, every operation is a potential source of measurement error. These errors can be mistakes in the collection of data, including both the incorrect recording of a response and the correct recording of a respondent's inaccurate response due to how the respondent interpreted the measurement instrument (in our case the web based questionnaire).

3.5 Interviews with potential buyers

To verify the result of the questionnaire additional interviews with selected organisations were carried out. The ambition of the interviews was to investigate the organisations' motivation for their EV interest, their price/range sensitivity and their preferences regarding vehicle selection and procurement model.

The people interviewed at top companies did verify their input data and that their interest in electric vehicles is very high, but they also stressed the importance of all the necessary conditions being in place. Some also explained that they need clearer assessment, in terms of price, safety, performance, etc. The organization that has shown the greatest interest for these kinds of vehicles emphasized especially the importance of establishment of service points around the whole country of Sweden since their activities are not restricted to the metropolitan regions.

4 CONCLUSIONS AND RECOMMENDATIONS

Sweden has excellent conditions for a rapid introduction of electric vehicles, including an existing network for engine heaters and drivers used to plugging-in their vehicles to the main power supply; ample supply of renewable electricity; a culture of “early adopters”; and a well functioning cooperation between government, academia and business and industry.

The City of Stockholm and Vattenfall seek to ensure that electric vehicles enter the Swedish market as soon as possible and that, in the short-medium term, gaps between demand and supply are minimised and prices stay attractive for buyers and sellers.

To achieve this, vehicle manufacturers must be convinced that there is sufficient demand for electric vehicles and that a stable long-term market will develop in Sweden. This pre-study has provided initial results supporting this position and proposes several next steps that may increase confidence and encourage vehicle manufacturers to supply the Swedish market.

4.1 Demand and supply match

The results of this pre-study confirm a substantial and immediate demand for electric vehicles in Sweden that also will increase over time. In the short-term, securing supply of a sufficient number of electric vehicles to speed-up early market development is thus a priority.

The pre-study indicates that demand for electric vehicles will exceed supply in 2011 and 2012. In this period, EVs are likely to be more available than PHEVs – 21 different EVs compared to three PHEVs are said to be launched in Europe by 2012. However, as production of both vehicle types is scaled-up, supply of electric vehicles is expected to meet demand in or around 2013.

Thus, an important strategic objective of the initiative is to reduce the short-term gap between demand and supply. However, the results of the pre-study highlight a major challenge. Interviews with vehicle manufacturers suggest it is unclear to what extent supply will meet demand in the short-medium term.

The supply figures indicated in the pre-study represent the total number of vehicles that *could* be supplied *if* vehicle manufacturers *choose* to supply the Swedish market. However, vehicle manufacturers appear uncertain or unconvinced that the Swedish market is sufficiently attractive compared to other countries – in terms of potential sales volumes and government support – to justify large-scale deployment of electric vehicles at this stage.

There is a strong risk that Sweden will miss the opportunity to play a leading role in a prestigious emerging industry. Delays in the implementation of electric vehicles would pose major threats to the achievement of national and local targets for electro-mobility in transport and related issues, such as greenhouse gas emissions. Thus, to ensure vehicle supply and convince manufacturers that they *must* supply Sweden, a range of measures must be taken to increase their confidence that Sweden is essential to their plans.

In addition, there is a need to acquire more robust data on demand, which can be used to convince manufacturers to *increase* the supply totals indicated in this pre-study. Necessary measures may include incentives or other soft measures, and further study to specify and match demand with those models available during 2011-2012.

4.2 Incentives/legislation

The current regulatory framework is conducive towards large-scale demonstration of electric vehicles in Sweden and the Government of Sweden has frequently stated its ambition to be at the forefront of the electric vehicle industry.

Sweden offers a range of different incentives which, when taken together and applied over a vehicle's operating life, present real savings to consumers. However - in contrast to several neighbouring countries - these incentives maintain a relatively low profile. Moreover, the provision of future incentives to support market development in Sweden is unclear. For example, there is uncertainty over the future of the "fringes benefit" tax that accounts for a large proportion on the incentives currently on offer.

Thus, despite studies such as KAMEL³, national policy has not been developed in a way that generates confidence and inspires vehicle manufacturers to invest in the Swedish market. The Government of Sweden must play an active role to promote electric vehicles and enable their introduction. Evidence from other countries suggests vehicle manufacturers will act decisively and guarantee sufficient supply of electric vehicles to the Swedish market if there are clear signals from the national government concerning the long-term stability of the market; and sufficient relevant incentives to ensure that demand remains constant.

Other stakeholders can proactively contribute towards increasing confidence in the Swedish market. For example, municipalities can plan and communicate incentives that may be applied to electric vehicles, and energy suppliers can develop business models and products for electric vehicles. Other groups, such as vehicle retailers, fuel distributors, large purchasers of vehicles and commercial districts (e.g. shopping centres) may also be able to develop business plans and incentive structures supporting electric vehicles. Some of these actions are taking place; others may be accelerated and scaled-up. Individually and collectively, such actions will help to boost the confidence of vehicle manufacturers.

A deeper and extended study, building on the results of this pre-study, would serve as an important reference for both the Swedish Government and the vehicle industry by clarifying the specifics of demand. This will provide focus to the market and enable introduction of incentives that are tailored to each market phase, as well as specific target groups.

For example, the results of the survey show that whilst comprising a smaller share of the total vehicle fleet than private vehicles, company vehicles account for over 50% of new vehicle sales and companies are willing to purchase large numbers of electric vehicles. The majority of these vehicles are then sold to private owners via the second-hand market, meaning companies have a major influence on the composition of the national vehicle fleet. Thus, incentives, services and vehicle models must be focused on meeting the needs of this target group in the short-medium term.

4.3 Next step: Procurement

The aim of the pre-study was to determine if there is sufficient demand for electric vehicles in Sweden to carry out a joint procurement process. The purpose was also to investigate if there will likely be enough electric vehicles on the European market which could be attracted to the Swedish market in an early phase of the market development. These aims have been achieved. It is now essential to identify and select a pathway that will enable this

³ *Kunskapsunderlag Angående Marknaden för Elfordon och Laddhybrider (KAMEL)*, issued by the Swedish Energy Agency on request of the Swedish Government to provide a report about the market development for Electric Vehicles and Plug-in Hybrid vehicles

demand to be met with supply. The ambition is to attract as many vehicles as early as possible to Sweden and to minimise the gap between demand and supply.

To reach this the following issues need to be developed:

Issue 1: Buyers dialogue

- Present narrowed down vehicle segments:
 - a. EV: small and medium sized car, small van
 - b. PHEV: medium and large sized car
- Present and assure acceptance of customised procurement process

Issue 2: Carry out joint supplying process

Implementing these actions will consolidate the results of the pre-study and contribute towards the development of an electric vehicle market in Sweden. These actions must commence with immediate effect and will take place during spring 2010.

4.3.1 One potential procurement process

The proposed model for a procurement of EVs and PHEVs is a technology procurement with frame work agreements with several car suppliers.

The purpose of this procurement is mainly to bring the new EVs and PHEV to the Swedish market. It is important to show the car manufacturers how large the market is in Sweden so that they supply Sweden with these cars. Here Sweden is in great competition with other countries in Europe. Since the demand for EVs and PHEVs in Europe is much larger than the supply, for the coming years, it seems hard to actually be able to press prices down very far with procurement activity like this. Also this pre-study has shown that the Swedish interest to purchase EVs and PHEVs is much larger than the estimated supply, at least for years 2011 and 2012. This calls for framework agreements with several suppliers, since no single supplier is able to alone meet this Swedish demand.

The procurement has to comply with the Swedish Public Procurement Act (LOU) because the buyer group includes public sector organizations.

A frequently used model for car procurements, within Swedish public procurement, is frame work agreements with several car suppliers. This means that every supplier meeting all the demands in the procurement will be accepted as a supplier. Frame work agreements are then awarded to several suppliers. This can be done in two different ways:

- 1) Accepted vehicle suppliers are ranked in order. The supplier with the best bid (in accordance to pre decided requisites) will get the highest ranking. Orders have to be placed with this supplier first and only when this first ranked supplier has nothing to offer number two on the ranking list shall be asked to deliver. It is possible, if desired, to state in the procurement how many orders will go to the highest ranked supplier, how many will go to the second ranked supplier and so on.
- 2) All qualified suppliers are accepted and each buyer will have to do "a second procurement within the procurement" and ask all accepted suppliers for an offer each time they want to buy vehicles. The winning supplier is then chosen individually by each buyer.

Option 1

STEPS

1

Vehicle specification

Car manufacturers are selected according to "must-have" criteria.

Must list

2

Ranking criteria

The selected car manufacturers are then ranked usually mainly according to price but "nice-to-have" criteria can be included.

- Functional and performance specification
 - specification of technical data
 - cold starts
 - energy consumption
 - range
 - charging possibilities (slow/fast)
 - safety aspects
- Warrantees
- Service
- Spare part costs
- Possible financing options
- Third party options?

3

Car purchase

The buyers purchase cars according to ranking (2 options):

- 1) The buyers purchase cars from #1 until they can no longer deliver, then they purchase from # 2, etc.
- 2) Amount of cars per supplier is fixed. Buyers buy from #1 until max amount is reached, then go to #2.

In both options, suppliers have the right say no to supplying a certain buyer due to location etc.

Ranking 1	1	Max level	Ranking 2	1	Fixed (100)
	2	Max level		2	Fixed (50)
	3	Max level		3	Fixed (30)

Option 1) Less administration for both buyer and seller

Option 2

STEPS

1

Vehicle specification same as in Option 1.

2

Ranking criteria

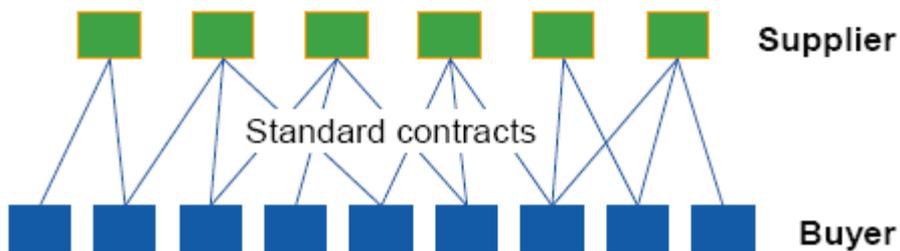
Buyers set up their own ranking criteria with weightings according to what they find important. They speak individually to each seller.



3

Car purchase

Buyers are obliged to buy cars from the supplier that scores the highest ranking according to the buyer's criteria. Suppliers can arrange different financial terms to each buyer. Suppliers have the right say no to supplying a certain buyer due to location etc.



Option 2) More freedom of choice for the buyers

Vehicles can through the frame work agreements be bought under the contract from different car dealers spread out in Sweden (or, in this case, at least in Stockholm/Mälardalen, Gothenburg and Malmö).

In technology procurement as proposed, potential buyers define, as a group, their requirements for the vehicle they want to buy, while estimating the level of interest expressed as a number of vehicles. This demonstrates the potential market for the new vehicle to the manufacturers.

This means that the issued request for tender for framework agreements covers a total future potential orders. The tender documents shall specify that the stated volume is estimated based on the purchasing units' assessments and should be considered a guideline. The request for tender shall also specify that suppliers are given no volume guarantees.

The proposed time frame for the procurement is two years with a possibility to prolong the frame work agreements first one year and then one last additional year. Another option is to make it four years with no possible prolongation. The aim is to carry out this procurement during 2010 so that vehicles can be delivered under the framework agreements with a start early 2011. This means that the contract period will be for 2011 and 2012 with possible prolongations for 2013 and 2014, or possibly 2011-2014.

4.3.1.1 Important considerations before joining this technical procurement activity

Public entities and private companies taking part in the procurement will have to express the estimated number of vehicles desired and issue a power of attorney (Sv = fullmakt) to the actual body carrying out the procurement (a consortium, consultant or other – see below). The procurement will then be carried out by the procurement body on behalf of all organisations that have given their authorization.

Public entities and private companies that already have existing agreements for purchasing of cars, which is valid also for electric vehicles for year 2011 and onwards, can not participate in this procurement for this specific vehicle type. If a valid contract already exists, they can not join for another contract covering the same time period and the same category of vehicles.

Public entities and private companies that participate in this procurement are bound to buy vehicles from the signed frame work agreements only. No other EVs or PHEVs of the categories included in the agreements may be bought from other suppliers than those with an agreement. However, the frame work agreements will include no volume guarantees, only estimations, and it is possible for a public entity/private company not to buy any EVs or PHEVs at all.

Procedure

The project group has identified a few different upcoming steps in an actual procurement activity to be carried out:

- Partnership with procurement expert (Gatubolaget, Gothenburg or procurement consultant)
- Establish a buyers consortium
- Writing of vehicle specification
- Vehicle specification for review among interested buyers
- Meetings with manufacturers – ongoing information to them
- Information to buyer group
- Carry out the actual procurement:
 - Attract interest among buyers and collection of authorisations (target group: all public entities in Stockholm/Mälardalen, Gothenburg and Malmö plus all private companies that had sent in a letter of interest to participate)
 - Call for tender
 - Tender evaluation
 - Decision on which vehicle manufacturers to sign contract with
 - Contracts signed
 - Finalising the procurement
- Evaluation of the procurement process (what was good and bad) and of the vehicles procured (did we actually get the vehicles we was supposed to get, how well did they operate, service and so on)

Partnership with procurement expert

Currently it is not possible for the City of Stockholm or Vattenfall to independently carry out the procurement on behalf of a large number other municipalities and companies. The first option to consider is a partnership with Gatubolaget, Gothenburg. Gatubolaget is doing a

large number of the procurements for the City of Gothenburg and very often include other public organizations (i.e. neighboring municipalities) when doing this. They have, however, not been included private companies in joint procurements very often.

There are several procurement consultants with a frame work agreement with the City of Stockholm that could be contacted for a partnership in this matter.

Establish a buyers consortium

A buyers consortium will have to be established with Vattenfall, The City of Stockholm and a few other key buying organizations. Representation for any financing organization will also be included (i.e Energimyndigheten). The procurement expert will do most of the day to day work but has the consortium as its main contact for input.

Vehicle specifications

A draft specification for each of the vehicles that are to be procured needs to be defined. The draft should then be distributed to the buyer group for comments. After that the specifications should be modified according to the suggested amendments. One very important requirement for technology procurements is that there must be a service organization for the vehicle. Preferably in all Sweden but at least in the larger cities that are targeted: Stockholm/Mälardalen, Gothenburg and Malmö. It is not possible or convenient to go very far to obtain service for pure electric cars.

Examples of what needs to be included in a vehicle specification:

- Definition of the car
- General conditions for vehicle operation
- Functional and performance specification
 - specification of technical data
 - cold starts
 - energy consumption
 - range
 - charging possibilities (slow/fast)
 - safety aspects
- Warrantees
- Service
- Spare part costs
- Possible financing options (i.e. leasing of car and/or batteries)
- Third party options?

Information to vehicle manufacturers

Information about the planned procurement activity and the interest among Swedish organizations to purchase EV and PHEV has been communicated to all automobile manufacturers from the very beginning of the project. Many manufacturers plan to put EV and PHEV on the European market soon and in order for these cars to come to Sweden and not only to other big metropolitans in Europe the manufacturers need to know about the Swedish activities and interest and plan for this.

Activities that should be included in the procurement stage

- 1) A separate letter to manufacturers European and Swedish head offices.
- 2) Separate meetings with manufacturers European and Swedish head offices. Preferably through a delegation with participation also from the Swedish government
- 3) Ongoing information about the progress of the project (updated buyers interests, vehicle specifications) specifications.

Information to the buyer group

Interested buyers who have answered the initial web survey will be provided with ongoing information about the project by e-mail. Information will also be posted on the project web-site www.elbilsupphandling.nu. Press releases will be issued on a few occasions. Information will also be sent out to the longer contact list established by the project group. Conferences and seminars arranged by others will also provide an opportunity to market and inform about the procurement process.

The actual procurement

The buyers consortium through the procurement expert will have to issue a query to all procuring units under public management as well as to private companies. The request should be for a tender for a general agreement and each organisation needs to state a volume for a few years ahead. The stated volumes will be estimations based on the purchasing units' assessments and should be used as a guideline for the suppliers. The request for tender will also specify that suppliers will be given no volume guarantees.

The purpose of the procurement is to bring electric vehicles to Sweden; thus, the higher the number of approved tenders, the better the project results would be. Accordingly, the procuring unit should state in the tender that they reserve the right to accept tenders in whole or in part and to award contracts to one or more suppliers.

Suppliers will be allowed to submit tenders for purchase as well as financial and operational (full-service) leasing options with guaranteed residual value.

Received tenders will be evaluated and contracts signed with one or more suppliers of EVs and PHEVs. Vehicles can then be bought under the contract from different car dealers spread out in Sweden (or at least in Stockholm/Mälardalen, Gothenburg and Malmö). Service shall be provided in connection or close to the sales organization.

Evaluation of the procurement and the purchased vehicles

The procurement should be evaluated in two ways:

- 1) How did the procurement process work? What was good and not? What can be improved and how for future activities?
- 2) Did we get the vehicles we actually asked for? How did service and warranties etc work?

The project could also supply information to the national authorities about the procurement results. The project should finally inform buying entities that national authorities are interested in electric vehicle data operations and give contact information so that those interested can help provide real life data.

Reference group

A reference group will be attached to the technical procurement process with representation from important organisations with relevant knowledge in this field i.e. BIL Sweden, Elforsk, Energimyndigheten, Gröna Bilister, Svensk Energi, Sveriges Kommuner och Landsting, Näringsdepartementet, Vägverket, SWEVA (Swedish Electric and hybrid electric Vehicle Association) etc.

Time plan

Activity	When
Agreement with procurement expert	April 2010
Buyers consortium	March – August 2010
Vehicle specification <ul style="list-style-type: none">▪ First draft▪ Round for comments▪ Completed	April 2010 May – June 2010 August 2010
Information to manufacturers <ul style="list-style-type: none">▪ Letter▪ Meetings	April 2010 April – June 2010
Information to buyers/participating org	Ongoing from March 2010 and throughout the whole project
Technical procurement <ul style="list-style-type: none">▪ Call for tender▪ Tender monitoring/evaluation▪ Signing of contract	September 2010 52 days after call (Nov/Dec 2010) January 2011
Evaluation <ul style="list-style-type: none">▪ Procurement process▪ Acquired vehicles▪ Final reporting	January 2011 Yearly reporting, end 2011-2014 End 2014

Risks

Low risk: Not enough interest from buyers to join the consortium. The interest in the organisations joining is too small or the number of vehicles they want to buy jointly is too small or both. The pre-study based on the web-survey shows a very large interest: 123 org interested in nearly 14 000 vehicles together.

High risk: The car manufacturers do not give us any tenders. Sweden is not attractive due to the fact that there are no incentives and other countries in Europe are more attractive to launch the first EVs and PHEVs in. This lack of incentives is something that really is a concern to the car industry and the suppliers have told us that this is a problem and other nations are much more interesting to launch vehicles in. The procurement process may not be attractive to privately held companies. Risk mitigation might include tailor made processes or solutions for these companies.

Medium risk: The cars that are offered are at a very high price compared to a petrol equivalent (even when considering the total cost of ownership) and very few buyers actually buy the vehicles we have procured.

Delta i en kraftsamling för att få eldrivna bilar till Sverige!

Mer än 20 miljoner ton koldioxid årligen enbart från transporter.
Vi vill ha klimatsmarta transporter!



Vattenfall och Stockholms stad tar initiativ till eldrivna transporter

En tredjedel av Sveriges koldioxidutsläpp kommer årligen från transporter och utsläppen ökar stadigt. Klimatförändringen är akut och vi måste göra mer nu.

Eldrivna fordon kan radikalt minska transportsektorns utsläpp av växthusgaser. Sverige har en unik position för att visa vägen och dra nytta av elfordon. Det finns verkliga hinder att övervinna och vi är fast beslutna att stödja övergången till transportlösningar med låga utsläpp. Vi inbjuder härmed andra att dela denna ambition och anmäla sitt intresse för eldrivna fordon.

Genom en kraftsamling kan vi lyckas.

Eldrivna bilar är idag inte allmänt tillgängliga. Ett sätt att råda bot på detta är att samla ihop det nyväckta intresset hos företag och organisationer. Tillsammans kan vi efterfråga volymer som är intressanta för bilindustrin och därmed påskynda marknadsutvecklingen och pressa priserna.

Vattenfall och Stockholms stad är starka partners som har nära kontakter med bilindustrin och erfarenheter av nationella upphandlingar av bilar. Genom vårt initiativ hoppas vi göra Sverige till ett föregångsland för elbilar och laddhybrider.

Anmäl ditt intresse nu!

Så här går vi tillväga

Steg 1.

Kontakta företag och kommuner för att undersöka deras intresse för att köpa eldrivna bilar.

Steg 2.

Seminarier hålls i november för att ge mer information till företag och kommuner som är intresserade av att delta, se inbjudan på sista sidan.

Steg 3.

Utvärdera intresset för eldrivna bilar och kommunicera initiativet och partners publikt.

Steg 4.

Initiera en upphandlingsprocess

I slutet av januari 2010 avser vi att ha en uppfattning om intresset för att kraftsamla kring eldrivna bilar.

Vi kommer under hela perioden att ha löpande kontakt med fordonsindustrin och specificera kraven på bilarna.

Inbjudan till seminarium

En kraftsamling för att göra Sverige till föregångsland för elbilar och laddhybrider

**Seminariet vänder sig till företag och offentliga organisationer i Stockholm/
Mälardalen, Göteborgsområdet och Malmöregionen. Seminariet är kostnadsfritt.**

Tider och platser:

Stockholm: 23 november 2009 klockan 10–12, Vattenfalls huvudkontor, Sturegatan 10

Malmö: 24 november 2009, klockan 13–15, Stadshuset, August Palms plats 1.

Malmö Stad är samarrangör.

*I Göteborg äger ett liknande seminarium rum. För mer information kontakta
Fredrik Högberg, fredrik.hogberg@tk.goteborg.se*

Program

- En kraftsamling för att göra Sverige till ett föregångsland för elbilar och laddhybrider - en beskrivning av initiativet
Erik Wijnbladh, Vattenfall och Eva Sunnerstedt, Miljöförvaltningen i Stockholm
- Tidigare erfarenheter av miljöbilsupphandlingar
Eva Sunnerstedt, Miljöförvaltningen i Stockholm
- Elfordon på gång till Sverige
Företrädare från bilindustrin (Volvo/Mitsubishi)
- Resultat av enkät till intresserade företag och organisationer i storstadsregionerna
Johan Seuffert, Miljöförvaltningen i Stockholm
- Fikapaus
- Så arbetar vi med elbilar och laddhybrider i Stockholm respektive Malmö
Eva Sunnerstedt/Anna Lindblad
- Frågor och diskussion

Anmälan

sker till joan.seuffert@miljo.stockholm.se senast 18 november 2009.

Ange namn, företag, adress, telefonnummer samt vilket seminarium/stad som avses.

Välkommen!

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Stort intresse för elbilar

Svenska företag och organisationer har hög beredskap för att skaffa eldrivna bilar. I alla fall om man ska tro på de första preliminära resultaten från den behovsmätning som just nu genomförs av Vattenfall och Stockholms Stad. Under två månader har drygt 100 kommuner och företag tillsammans uttryckt ett behov av drygt 12 000 eldrivna fordon för den närmast följande fyraårsperiod. Fler intressenter välkomnas till initiativet.

De som deltagit i mätningen har besvarat frågor om vilka typer av elbilar och laddhybrider de behöver samt uppskattat hur många elfordon de skulle kunna skaffa under perioden 2011- 2014. Svaren är icke bindande. Bland dem som tidigt visat intresse finns Riksbyggen, ISS, Folksam, Hertz, Posten, Uppsala och Malmö.

Mätningen ingår i en förstudie inför en gemensam upphandling av såväl helt elektriska fordon som laddhybrider, som Vattenfall och Stockholms Stad nyligen satt igång. Parallellt förs intensiva diskussioner med fordonsindustrin om hur de kan möta denna efterfrågan. Utifrån de krav som deltagande kommuner och företag ställer är initiativet helt öppet för olika leverantörer.

Bilindustrin är på gång och efterfrågan på nyutvecklade elbilar är stor runt om i världen. Ju fler som visar intresse för elbilar desto större skäl för en billeverantör att välja Sverige för lansering av kommande elbilar. För det är just bristen på eldrivna bilar i Sverige som är problemet och också skälet till att Vattenfall och Stockholms stad tagit detta initiativ.

– Vattenfall vill underlätta för elbilar i Sverige. Eldrift är energieffektivt, ger inga lokala utsläpp och driftskostnaderna är låga. Genom att agera tillsammans med kommuner och andra företag vill vi uppmärksamma fordonsindustrin på att Sverige är en intressant marknad, så att vi får tillgång till moderna elbilar så tidigt som möjligt. Infrastrukturen finns redan på plats och många har redan idag möjlighet att ladda elbilarna via eluttag hemma eller vid arbetsplatsen. En övergång till eldrivna fordon är avgörande för att minska transportsektorns utsläpp av växthusgaser, säger Erik Wijnblad, projektledare på Vattenfall.

– För Stockholms Stads del är detta en del i vårt arbete med att underlätta för elbilen i Stockholm. Det är också ett sätt att förvalta och vidareutveckla vårt framgångsrika koncept med gemensamma upphandlingar av miljöfordon. Kanske är det inte realistiskt att tro att vi ska få tusentals elbilar till Sverige inom kort, men säkerligen ökar vårt gemensamma initiativ oddsen att få hit dem snabbare och till bättre villkor och pris, säger Eva Sunnerstedt, projektledare Miljöbilar i Stockholm.

Förstudien pågår fortfarande, organisationer uppmanas gå in på www.elbilsupphandling.nu och beskriva sitt elbilsbehov.

Vattenfall har sedan många år omfattande erfarenheter av elfordon och arbetar även idag aktivt inom området. Vattenfall har nära samarbeten med bilindustrin, medverkar internationellt till att ta fram standarder för laddning, utvecklar teknik för laddning och utvärderar kunders behov i demonstrationsprojekt med rena elbilar i Tyskland och med laddhybrider i Sverige.

Stockholms Stad har omfattande erfarenheter av gemensamma upphandlingar av elfordon, etanolbilar, miljöbilar och etanoltransportbilar. Förra elbilsupphandlingen resulterade i 25-50 procent rabatt på inköpspriset. Dessutom påskyndades utbyggnaden av laddplatser m.m.

Stockholm Stad och Vattenfall är likvärdiga partners i elbilsupphandlingen.

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Se även www.elbilsupphandling.nu

VI HAR BESTÄMT OSS FÖR EN FRAMTID MED ELBILAR, HAR DU?



Vattenfall och Stockholms stad samarbetar för att få el- och laddhybridbilar till Sverige. Eldrivna bilar har mycket låga klimatutsläpp och är billiga att "tanka" men är än så länge svåra att hitta på svenska marknaden.

Vi behöver därför hjälp av klimatsmarta företag och organisationer. Vårt upphandlingsinitiativ gör det enklare, snabbare och ger bättre villkor. Tillsammans kan vi göra skillnad!

Läs mer och anmäl intresse på www.elbilsupphandling.nu