

Electric car pool

FROM IDEA TO REALITY

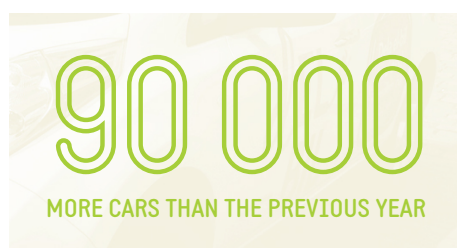
handbook on
establishing an open
electric car pool

– examples from Växjö municipality, step by step

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The need for new thinking



For more information about electric mobility, electric cars and their preconditions, see Energikontor Sydost (2014). *Forward with electricity – a handbook about electric mobility for municipalities*. Energikontor Sydost AB, Växjö

At the turn of the year between 2014/2015 there were 4,585,520 cars on the Swedish roads. In just one year, the average number of cars per thousand inhabitants has increased by 5, from 466 to 471. This is an increase of approximately 90,000 cars compared with the previous year.¹

For a residential area with a thousand inhabitants, last year's increase in the number of cars means that a further 62.5 square metres needs to be set aside for car parking. To this must be added the negative environmental effects that the increase in traffic brings with it, as 93 per cent of all new cars were petrol or diesel powered.²

With 15 years to go to achieve the goal of a fossil fuel free fleet of vehicles and thinking about the required surface area for car traffic, the question is whether or not the goal is attainable when the vehicle fleet is continually growing - not least when 30 per cent of climate emissions in Sweden come from road traffic.³

In the "Electric car pool – from idea to reality" handbook, Växjö is used as an example to show how a municipality can act to meet the challenges that an increased number of cars entails. By an active operation to introduce car pools, in particular electric car pools, more people can have access to environment friendly cars. This increased access also means that the need to own your own car can decrease, which in turn, creates the necessary preconditions to reduce the total number of cars. In the future the hope is that electric car pools shall be a part of an inter-modal transport system where inhabitants can combine public transport, walking, cycling and electric cars pools where accessible, when despite everything a car is needed.

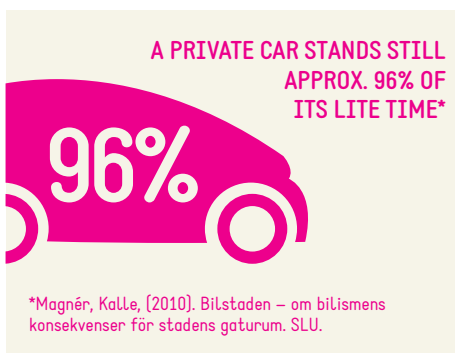
The handbook is thought to be a guide containing tips and lessons learned for those municipalities that together with other interested parties are thinking about starting an electric car pool.

¹ Trafik analys (2015). *Antalet personbilar i trafik fortsätter att öka*.

² Ibid.

³ Energikontor Sydost (2014). *Framåt med el – handbok om elmobilitet för kommuner*. Energikontor Sydost AB, Växjö

Car pools – a part of the solution



The Municipality of Växjö's electric car pool within Videum Science Park in collaboration with Move About AB.
Photo: The Municipality of Växjö

A car pool can be defined as “self-service car rental”. It is already quite common that certain companies organise their cars via a booking system through which employees can book cars. Such car pools are mainly closed systems as the vehicles can only be used for business travel. In contrast to such closed systems there are, primarily in larger cities and towns, car cooperatives or commercial car pool organisations who offer the possibility to be able to book cars from “open” car pools. These cars can be used at any time around the clock, both during and after working hours.

A combination of the above are the “half-open” car pools, where pool vehicles are used by municipalities, companies or other organisations during office hours and thereafter available to the general public.

In the Way forward for Swedish Car Pools report, the Swedish Transport Administration points out the potential that exists to increase the number of car pools by working to encourage closed car pools to open up completely or in part, to the general public. If more closed car pools became half-open or open, a range of available cars could be created even in smaller towns and areas.⁴

The challenge to combine the advantages of the car pool

A car pool should not be seen as the only solution to the challenge of creating sustainable transport rather than it being a tool to confront it. For a municipality, a company or an organisation a car pool booking system can clearly show the cost of the car and its effect on the environment. As a complement to public transport, walking or cycling, a car pool can reduce the number of journeys if it is an integral part of a travel policy.⁵ & ⁶ For private individuals, close access to a car pool can entail getting rid of a car or making a decision not to acquire a second car.⁷

⁴ Trafikverket, (2013). *Vägen framåt för svenska bilpooler*. Trafikverket publikation, Borlänge.

⁵ Vägverket (2006). *Hållbara råd för bilpooler*. Trafikverket, Borlänge

⁶ Vägverket (2008). *Göteborgs Stads tjänstebilspool – en lönsam affär*. Trafikverket publikation, Borlänge

⁷ Energikontor Sydost (2015). *Testresenär elbilspool i NorrLiden, Kalmar – Slutrapport*. Energikontor Sydost, Växjö



VÄXJÖ MUNICIPALITY'S EFFORTS WITH ELECTRIC CAR POOLS

Between 2012 and 2014 the Municipality of Växjö has participated in the ELMOS EU project (Electric mobility in smaller cities). The aim has been to promote electrical mobility by introducing electric cycles and thereby contribute to more sustainable travel within the City of Växjö. During 2014 the municipality chose to extend the project by introducing an open car pool with two electric cars.

The introduction of an open electric car pool with an Internet based booking function in combination with a car pooling system was thought to be a next stage in the development to promote sustainable travel and electric mobility. Videum Science Park in the Teleborg area in Växjö was chosen as the test area.

The participants in the project and the users of the car pool, in addition to the municipal development company Videum AB and its tenants, also included Linnaeus University, several students and private individuals and certain municipal employees. The goal was that the car pool should be firmly established during the test period of six months. If this was positively received the period would thereafter be extended in order to test other possibilities or to move into a more permanent form.

If car pools start to be used to a greater degree then the requirement for cars can be reduced as each car pool vehicle can be used more efficiently. For a municipality this can be positive as it can then reduce the need for car parking⁸ and increase the use of public transport.⁹

The major advantage with car pools occurs, primarily, when municipalities, companies, organisations and/or private individuals benefit from each other's different travel needs and start to find synergy effects. A municipality's rented car pool or a commercial car pool should attain a capacity of some 60 per cent, corresponding to approximately 14 hours of every 24 hour cycle.¹⁰ Such a high capacity is hard to achieve with a closed car pool that is only used during office hours. On the other hand, if car pools are accessible to the general public and/or any other interested parties with a complementing travel requirement it is possible to increase their use. Furthermore, this also means that contracted customers and owners of car pools can reduce their costs when the cars are rented out.

In several places the high achieved capacity has made it possible for those responsible for the car pool to purchase electric or plug-in hybrid cars. A car pool made up of electric cars, if they are charged with electricity from renewable resources, generate very low or no emissions. Based on the goal of freedom from fossil fuel dependency by 2030, an electric car pool is to be preferred to petrol and diesel pools. Electric cars are particularly suitable for car pools as the majority of journeys with pool cars are short and are within the range of the batteries.^{11 & 12} In addition, electric car pools have shown to promote electric cars for the general public too, contributing to the fact that more and more people themselves choose to buy an electric car instead of a petrol or diesel powered car.¹³

Ideally, if the above advantages are combined in order to achieve the greatest possible benefit, car pools can become a tool to achieve a change in behaviour towards more sustainable travel. This benefits places of work, private individuals, society and the environment.



8 Trafikverket, (2012). *Utvärdering av effektsamband för bilpool*. Trafikverket publikation, Borlänge.

9 Trafikverket, (2011). *Bilpooler och kollektivtrafik – internationella exempel på samarbetsformer*. Trafikverket publikation, Borlänge.

10 Trafikverket, (2012). *Utvärdering av effektsamband för bilpool*. Trafikverket publikation, Borlänge.

11 Ibid.

12 WSP (2013). *Resvaneundersökning i bostadsområdet NorrLiden, Kalmar*. Rapport 2013. Energikontor Sydost, Växjö

13 Nordisk energiforskning (2014). *Nordic Electric Avenue – End of Project Report – Activities and outcomes of the NEA project*. Norden Energy & Transport, Oslo

Step by step:

1. Requirement



VÄXJÖ MUNICIPALITY'S REQUIREMENTS

The Municipality of Växjö chose to invest in an electric car pool to be a good example and encourage a change in behaviour for sustainable travel habits. To support electrical mobility and use car pools as a tool to achieve more sustainable travel is completely in line with the municipality's environmental goals and transport plan as well as brand operations as the Greenest City in Europe. In a wider perspective car pools, car pooling and public transport are seen as a part of a smart overall solution to achieve an inter-modal transport system. The hope is that in the long-term this will lead to fewer cars in the town and a reduced need for parking areas.



It's always easier to keep doing what we've always done, do the same things as before and not change. An increasing number of municipalities, companies and organisations, however, have realised that it is no longer sustainable to use cars in the same way as we always have.

In several places this insight is reflected in different forms of environmental strategies, sustainability strategies (CSR) and in business travel policies. For public bodies there are, in addition, different societal goals and measures to follow. Examples of such goals are to achieve a fossil fuel free and low-volume traffic society. As an answer to the need for transport that generates zero emissions and to reduce the volume of road transport, the car pool is an excellent tool.

An important point!

Establish an electric car pool in strategies, but don't see it as an end in itself. An electric car pool is a tool to help achieve the established goal, not a goal in itself.

Step by step:

2. Preparations



VÄXJÖ'S PREPARATIONS

The decision to establish an electric car pool within the Videum Science Park in Växjö was preceded by an analysis where interest for a possible establishing was investigated and different supplier offers were scrutinised.

A decisive factor for establishing an electric car pool was access to an attractive location with a charging infrastructure. This was available in Videum AB's car park where three charging stations had been installed by the company. Videum AB was also an important collaborative partner in establishing the car pool as the company has communication channels to tenants and companies within Videum Science Park. Another important party in the area was Linnaeus University that has channels of communication with its employees and the university students. Contact was established via the university's sustainability coordinator who subsequently was also part of the project group. Contact was also made with the student's union to use its communication platform for spreading information about the car pool.

Before the car pool is negotiated and acquired it is important to be clear about the preconditions. It is essential to be well aware of the operation's travel requirements in order to be able to make the relevant demands during this negotiation. It is also important to know what costs and environmental effects existing vehicles generate, to be able to, at a later stage, follow up work with the car pool.

For the municipality, company or other party thinking about creating an open car pool, it is important to try and map out the conditions that exist in order to meet travel needs outside its own operations. This can be, for example, private individual's or other company's travel requirements that perhaps complement one's own operations. In general, the chance to find travel needs that complement one's own operation's car requirements during office hours is greater in areas of both commercial and domestic occupancy. An additional advantage can be that it is experienced as expensive or difficult to park a car and if public transport is sufficiently well structured, more people can access the car pool if it is located close to the public transport network.¹⁴

¹⁴ Trafikverket, (2011). *Bilpooler och kollektivtrafik – internationella exempel på samarbetsformer*. Trafikverket publikation, Borlänge. & Bilkollektivet, (2015). *Våre oppstillingsplasser*.



VÄXJÖ MUNICIPALITY'S CHOICE OF ELECTRIC CAR POOL SUPPLIER

In order to obtain an overall picture of the market for electric car pool suppliers market research was carried out. Contact was also made with municipalities that have experience in establishing an electric car pool and with suppliers Move About AB and Sunfleet.

The experience from other municipalities showed that a successful establishment of electric car pools was mainly based on collaboration between different parties where

half-open electric pools are used as a complement to existing company/official cars.

When it came to suppliers, the supply demands from the municipality were very strict as two electric cars should be delivered within a limited time frame. After checking with the suppliers it became clear that only Move About AB were able to supply two electric cars within the required time frame.

Växjö Municipality's agreement with Move About AB covers a period of six months where the municipality paid a monthly basic fee for the car booking system as well as the rental of two electric cars (Nissan Leaf). A discount was given in relationship to the number of bookings during the month by both private and company customers respectively. The municipality therefore never made any money from the car pool rather than just reduced the monthly fees.



500
TOWNS IN THE WORLD
HAVE CAR POOLS

In Sweden today there are car pools in some 50 locations. Throughout the world there are more than 500 towns and with hundreds of thousands of people connected. An increasing number of people are realising the benefits of this flexible use of cars. Take a look at bilpool.nu and you will see where the cars are located, both in Sweden and elsewhere in the world.

Source: Bilpooler, Trafikverket

As a rule the car pool must be marketed to those people who could be interested in renting a car, outside one's own operations. It is therefore an advantage if the car pool is exposed in such a way that it creates attention. Parking should be located so that it feels like an advantage to use the car pool rather than another car. It should also have clear information on it that the car belongs to a car pool and have clear information as to how it can be booked and used. Finally, the electric car and the booking system should be simple and user friendly.

You don't make or save large amounts of money having an electric car pool, but the environmental benefits are great. It is therefore important that the goals of the car pool are determined and established during the preparation stage. (See step four, page 13.)

Suppliers of electric car pools on the Swedish Market

At the present time there are two major commercial suppliers of electric car pools on the Swedish market - Move About AB and Sunfleet.

Sunfleet started as a development collaboration between Volvo and Hertz during the 1990s and today offers all alternatives of car pools, from closed and half-open to open car pools where Sunfleet owns the cars.¹⁵ Move About AB was founded in 2007 and like Sunfleet offers all alternatives of car pools, particularly specialising in electric cars and electric cycles. To establish a car pool Move About require a contracted customer (company or organisation) that preferably has its own or leased cars for the pool and pays a basic fee for the booking system and any extra services.¹⁶

¹⁵ See www.sunfleet.se

¹⁶ See www.moveabout.se



VÄXJÖ AS CONSIGNOR

The styling of pool cars was an important question both from a marketing perspective and to make the consignor clear. As the concentration on an electric car pool was in line with the brand operations for The Greenest City In Europe, this profile was chosen with its related logotype as principal consignor. The municipality is one of the main parties within this concentration and the work for The Greenest City in Europe is a question of a long-term ambition that all society's parties, including its citizens are a part of.



TIPS FOR THE ACQUISITION OF CAR POOLS ON TRAFIKVERKET'S WEBPAGE



trafikverket.se

In addition to Sunfleet and Move About AB there are several local or regional initiatives such as Car2go and bilpoolen.nu, two Stockholm based companies who offer car pools to private persons and companies (partly also with electric or hybrid cars).

What a municipality needs to think about before procuring an open car pool!

Certain municipalities have refrained from opening their electric car pools to the general public as they do not make money from the car hire. The law applies to those cases where the municipality own the cars and the car hire system. If, instead, the car pool is rented in from one or more external suppliers, they are the ones that make money from the car hire and not the municipality. On the other hand, the municipality is compensated for rentals after office hours with a reduced monthly fee.

Another question is whether cars that will also be driven by the general public should display the municipality's logotype. This could be solved by collecting all car pool cars under a separate brand backed by the municipality and several other parties.¹⁷ This would make it clear that a car pool car is different from a normal municipal car.

Worth thinking about!

Certain car pool companies offer help in the preparations by charting the requirements, the market and the location. You can also do this yourselves. Use an Internet-based questionnaire tool about how they travel, or take out a log from the existing booking system to chart your own travel needs.

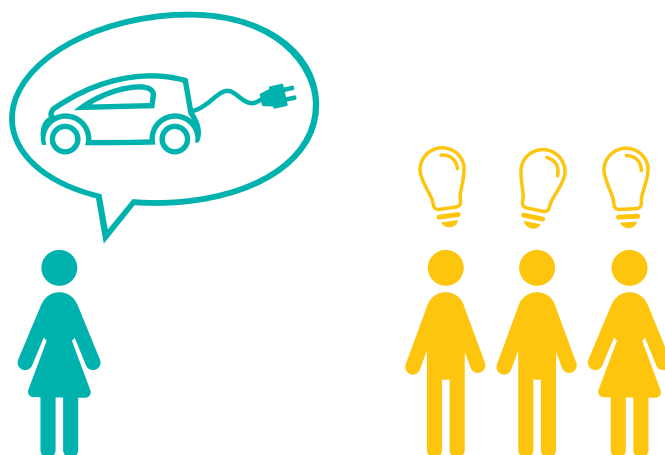
Questions that are interesting to have answered are:

- What is the overall travel picture (public transport, walking, cycle, car, taxi...)?
- How are the car and taxi journeys used?
- How long are they and what purpose do they have?
- When do car journeys take place?
- How many cars are there?
- What do the cars and fuel cost per month?
- On average, how much greenhouse gas do the cars emit per month?
- Who else operates or lives in the area?
- Could they be interested?
- What channels are available to reach them?
- Where should the car be located in order to be as accessible as possible?

¹⁷ dELbIL, [2015]. Om dELbIL

Step by step:

3. Implementation



The implementation of a half-open or open electric car pools means that the carpool must not only be marketed within your own organisation but also to the general public. That users, to a greater degree, must plan and book journeys in advance entails both possibilities and challenges. The positive aspect is that it makes people give some thought to the way they travel and thereby helps to reduce the use of cars, reduce travel and clearly show the cost of a car.



It is said that with processes of change 3-5 % of the population are "pioneers". This means that it can be anticipated that up to 5% of the population will join a car pool even with minor support measures. With good marketing and otherwise favourable conditions, up to 20% of households could be part of the car pool system.

Source:: Trafikverket, Hållbara råd för bilpool

The challenge lies in attracting new car pool users if it is experienced as being too complicated or unfamiliar to need to book a car. To meet this challenge resources must be available to support a change of behaviour. It may be necessary to repeatedly allow people to test the electric car pool, demonstrate the system, offer test drives and be seen in other ways. Once the car pool has reached a sufficient level of use, it is important not to completely stop these efforts to market the electric car pool. Within a company or municipal operation it is also essential to complement the car pool with a travel policy that functionally steers travelling towards public transport, cycles, walking and car pools.



THE MUNICIPALITY OF VÄXJÖ IN THE IMPLEMENTATION PHASE



For the Municipality of Växjö, the implementation phase and ensuring local support were the determining factors to starting up an active use of the car pool during a limited period of time. This was particularly important when the selected location and aims of the car pool meant that it was not principally the municipality's own personnel that were the main target group, rather than parties and individuals operating within the Videum Science Park.

Before the actual launch of the pool, a project group was formed made up of representatives from Linnaeus University, the student's union, Videum AB, Energikontor Sydost and the Municipality of Växjö. This group met a number of times for the planning of various activities and to spread information about the pool. When marketing the car pool it should clearly be seen that the project was based on collaboration between a

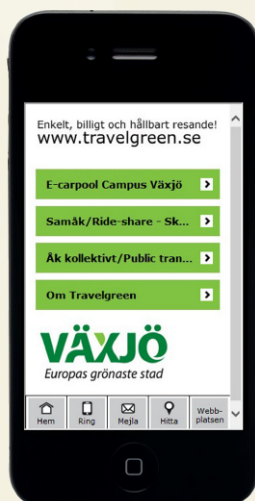
number of different parties. Signs for the car pool and the information brochures therefore contained logotypes of Videum AB, Linnaeus University and Länstrafiken Kronoberg together with the municipality and the project logotype.

To build up a sense of participation and thereby increase acceptance and awareness of the electric car pool a number of measures were carried out, including getting a group of students involved to help form the styling of the car.

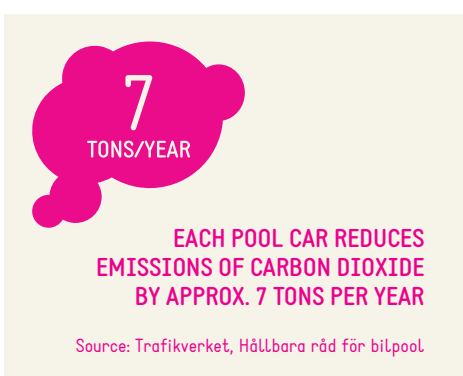
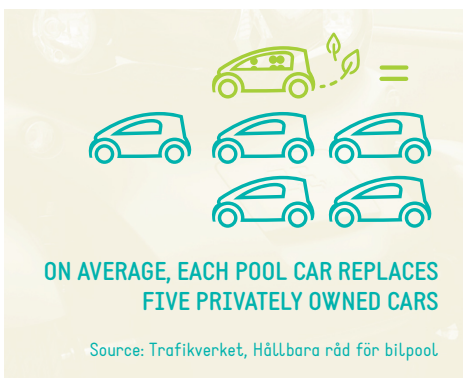
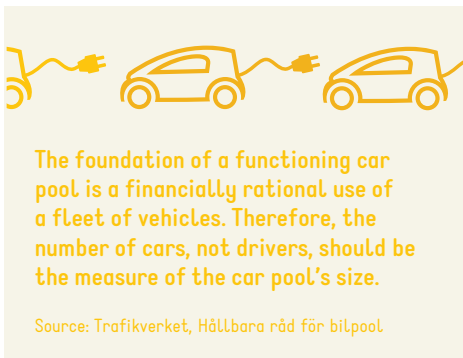
Furthermore, all representatives within the project group were given the opportunity to use the car pool, free of charge, for a limited period. Those given a free test often became ambassadors for the car pool and contributed with internal spreading of information about the car pool within their own networks.

The web site was marketed via information (including the car styling) and also by the events and activities where the car pool was marketed. What was important for the marketing was the connection to other on-going activities within the Videum Science Park. The launch of the car pool was jointly arranged, for example, with Videum AB's opening of the charging station. Other occasions when the electric car pool was marketed were at Linnaeus University's welcoming exhibition for students and at the municipality's information meetings for exchange students. Over and above these, workshops were arranged for students and open lectures at Videum during coffee breaks.

At all of these activities people were offered the opportunity to test drive the pool cars which was greatly appreciated by the participants. By collaborating with the parties there, the existing information channels could be used to spread the word, channels such as Videum's information screens and newsletters to tenants, the university's intranet as well as the student groups and networks within social media.



The marketing of the electric car pool started before the launch. In addition to the styling and signage and the production of information brochures, a web site was created, that in a simple and clear way would collect information about sustainable travel both to and from Växjö. A new domain address was chosen for the web site (www.travelgreen.se) profiling Växjö, The Greenest City in Europe. A page adapted for cell phones was also created under the same domain to make it easy to find information for those interested in the car pool and wish to know more about it.



To think about!

- Negotiate the car pool in such a way that it will benefit both the supplier and owner to market the car pool to the general public – both parties benefit from having as high a degree of car rental as possible.
- Try to see the synergy effects that can be achieved together with public transport companies, local associations, companies and others who could benefit from a car pool.
- Find and support ambassadors that market and display the car locally.
- Get as many people as possible to test the electric car pool.
- Involve key people in the process at an early stage
- Use digital channels for marketing through, for example, profiled web sites, cell phone applications, social media and so on.
- Adapt communication to the target groups. For example, send newsletters to companies and use social media, posters or student newspapers to reach students.
- It shall be easy and quick to register yourself as a user and book a car.
- Sound marketing during the start phase and then continuous efforts.
- Commend active users by, for example, offering free membership for a month.
- Attend events organised by other involved parties, such as student exhibitions, open lectures, meetings within company networks, etc.

Be prepared to work continuously and in the long-term. It takes time to change daily routines and patterns of behaviour.

Step by step:

4. Continue to follow-up



During the preparation phase it is important to define the goals to be achieved with the car pool, so at a later stage, to be able to judge whether or not the efforts have been successful. It is difficult to save money when establishing a car pool. It is frequently the environment/marketing aspects that are the principal reason for the efforts. It is therefore important to be able to show how the car pool contributes to this to be able to financially motivate such efforts. It is also important to be patient and remember that it takes time to establish an electric car pool and change people's behaviour.



EVALUATION OF VÄXJÖ MUNICIPALITY'S ELECTRIC CAR POOL

Växjö municipality's efforts for the electric car pool were part of the EU project ELMOS. Indicators were coupled to the use of the car pool (number of pool members) and to the marketing activities (number of distributed brochures, number of press articles, number of marketing events).

Over and above the project indicators there was also interesting data material about the use of the car pool.

To the right you can follow some concrete results after the six month test period.

Number of users, total.....	40
of which:	
Private members.....	6
Company members.....	15
Linnaeus University.....	15
Växjö municipality.....	4
Number of bookings.....	120
Number of km driven.....	3500
Longest journey.....	455 km
by a private member (one booking of three days)	

delbil.se

WHEN YOU DRIVE LESS THAN
11 000
KM PER YEAR A CAN BE A SOUND
INVESTMENT FROM A PRIVATE
ECONOMIC PERSPECTIVE

Source: Trafikverket, Hållbara råd för bilpool

1/3

EACH PRIVATE CAR POOL CUSTOMER
REDUCES ON AVERAGE THEIR
DRIVING BY A THIRD

Source: Trafikverket, Hållbara råd för bilpool

10 %

FOR COMPANY AND AUTHORITIES
BUSINESS TRAVEL IS REDUCED
BY AN ESTIMATED 10%

Source: Trafikverket, Hållbara råd för bilpool



CONCLUSIONS AFTER EVALUATION

The statistics show a good apportionment of pool members with both private and company/organisation customers. It would have been desirable to have an even higher proportion of private customers to maximise the use of the car pool in the evenings and at weekends. With a longer test period target group adapted communication could have been a suitable measure, for example, via direct distribution to residents within the area.

Reservations for the car pool were around 65 per cent (120 bookings in 180 days) which is a positive result and at certain times, reservations were between 70–90 per cent. This shows that it is important to have at least two cars in the pool to balance out peaks in usage.

The apportionment of pool members is also a sign that collaboration with other parties gives results. It is easier to reach people within an organisation via the internal communication channels than to reach private individuals (this also includes students).

The principal conclusion is that long-term efforts are a determining factor for a car pool, particularly an electric car pool, to be cost effective. To change daily routines and patterns of behaviour takes time and particularly during the start-up phase sufficient resources must be set aside for marketing and communication. A clear division of responsibility with a good organisational structure facilitates implementation.

Växjö municipality has therefore decided to continue to work for a long-term establishment of an electric car pool. Through the test period of six months important experience has been gained which will benefit the municipality's future work with electric mobility.

In conclusion, it can be seen that if thorough preparation has been carried out, interest analysed and long-term financing established, an open (and half-open) electric car pool is a powerful tool towards sustainable travel and an important component of inter-modal solutions.

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