

Measure title: **Marketing of Clean Vehicles by Subsidised Parking**

City: **Malmö**

Project: **SMILE**

*Measure
number:*

7.1

A Introduction

The overall goal of this measure is to contribute to a change in the public's acceptance and perception of clean vehicles and that clean cars might be a possibility worth considering the next time a member of the public is looking to buy a car.

A1 Objectives

The measures objectives were as stated below, although the basis upon which they were defined is unclear:

- **Objective 1** - Decrease the emissions of NO_x by 7000 kg per year
- **Objective 2** - Decrease the emissions of particles by 400 kg particles per year
- **Objective 3** - Decrease the emissions of CO₂ by 2000 tonnes per year
- **Objective 4** - Raise public awareness and acceptance of the measure leading to a higher portion of clean vehicles among new sold cars from 50% in favour before this measure to 90% in favour at the end of the period (after 4 years)
- **Objective 5** - To stimulate the ownership and use of clean vehicles and support the mobilisation of critical mass in clean vehicle use, 4% of new cars sold should be clean vehicles and 2500 permits issued during the period

A2 Description

The end result of the measure is a subsidised parking regime for clean cars in the city of Malmö. Owners of clean vehicles can apply for permission to park their cars to a reduced cost. This applies to vehicles, no more than three years old, which comply with the clean vehicle definition of Malmö (i.e. gas, ethanol, hybrid or pure electric). The permission costs a fee of 300 SEK. In return the first hour parked in parking spaces administrated by the city of Malmö is free of charge. The following time is charged at normal rate. The subsidised parking does not yet apply in private parking spaces.

Included in this measure is the development maintenance and operation of the web site www.miljofordon.se, which is a web site focusing on relevant issues within the field of clean vehicles and alternative fuels. The web site is the result of cooperation between the three largest municipalities in Sweden – in addition to Malmö, Gothenburg and Stockholm are also involved in the operation of the site.

The general idea was to make it more attractive to own and use a clean vehicle. The measure was expected to have significant effect, since car owners tend to overrate parking costs relative to the total cost of owning and using a car.

B Measure implementation

B1 Innovative aspects

Innovative Aspects:

- New policy instrument

The innovative aspects of the measure are:

- **New policy instrument, regionally** – A combined set of activities for subsidised parking, information to car salesmen and car companies, procurement of clean vehicles and information to companies and organisations is rare on this large scale

B2 Situation before CIVITAS

Until October 2007 Malmö allowed free parking for electric vehicles only. The permission lasted for a period of three years, and thus allowed free parking except for the cost of the permission (50 SEK) which was payable every third year. In October 2007 these rules were replaced by the subsidised parking system for clean vehicles.

In the year 2005 less than 10 % of new cars sold were classified as clean vehicles. The exact figure was not available at that time, which was why the arbitrary objective of ‘4% of new cars sold should be clean vehicles’ was set prior to SMILE. Once SMILE was in operation and data became available it became clear that the objective would not be difficult to achieve because other initiatives had already led to this objective being met prior to the implementation of the subsidised parking system in October 2007 – see section C2.4 for more information.

B3 Actual implementation of the measure

The measure was implemented in the following stages:

- *Stage 1: Pre-study survey among the public (Aug 2005)*

A quantitative questionnaire among the citizens of Malmö within the age-span of 25-70 was sent out by regular post. 700 persons out of this group were selected and targeted. The questionnaire addressed public opinion regarding free or subsidised parking for clean vehicles and their willingness to buy a clean vehicle.
- *Stage 2: Development of proposal (Nov 2005 – Mars 2006)*

A study was undertaken that set out to make an inventory of existing free parking directions in other Swedish municipalities.
- *Stage 3: Issuing for political consideration (May 2006 – June 2007)*

This task involved presenting the proposal to the politicians. Following normal procedures this involved formal proceedings with the final aim of making the Municipal Council adopt the proposal.
- *Stage 4: Production of information material (Oct 2007 – Jan 2008)*

An integrated concept involving brochures, posters, advertisement, media exposure etc. was produced.

- *Stage 5: Implement the system (Oct 2007)*
The subsidised parking system, its direction and administrative routines, was formally implemented in cooperation with the municipal parking company, and in accordance with innovative technological solutions.
- *Stage 6: Conduct promotion campaigns (Oct 2007 – May 2008)*
Marketing of the subsidised parking system was conducted over a time period of about eight months.
- *Stage 7: Monitoring and evaluation (Oct 2007 – June 2008)*
This task has been a lengthy process, from the moment of the implementation of the system, until June 2008. It involved following up on the development of the market in response to the new direction.

B4 Deviations from the original plan

The deviations from the original plan comprised:

- **Delayed political adoption** – The political adoption of the proposal was delayed 14 months. During these months other initiatives had been taken at the national level to stimulate the use of clean vehicles - for example the government gives 10 000 SEK to those buying a new clean vehicle. This might have decreased the relative importance of and interest in the subsidised parking.
- **A less favourable offer** – The original proposal was more economically beneficial to those buying a clean vehicle than the proposal finally adopted. At the very start the parking was to be completely free of charge. Later the proposal was to allow free parking for one hour after at least one hour regularly paid parking. The final result was free parking for one hour and after that a regular fee has to be paid. These changes are likely to have decreased the amount of applications for the permission.

B5 Inter-relationships with other measures

The measure is related to other measures as follows:

- There is a potential cluster with eco-driving for municipal employees (measure 11.2) and “clean municipal fleet” (measure 5.1). This could be called “E” for eco-vehicles.
- Another potential cluster is “G” for the biogas provision to the net and the use of natural gas (measure 5.2 “Biogas on the net” and Measure 5.3 “Clean Heavy Vehicles with CO₂ Cooler”).

C Evaluation – methodology and results

C1 Measurement methodology

C1.1 Impacts and Indicators

Table of Indicators.

Nr.	Category	Relates to GUARD Nr.	INDICATOR Name	Possible DESCRIPTION	DATA /UNITS
8	Environment		CO ₂ emissions	CO ₂ per vkm	g/vkm, derived
10	Environment		NO _x emissions	NO _x per vkm	g/vkm, derived
11	Environment		Small particulate emissions	PM ₁₀ per vkm	g/vkm, derived
13	Society		Awareness level	Degree to which the general public awareness has changed	Survey
14	Society		Acceptance level	Degree to which the general public acceptance has changed	Survey
MSE9	Economy		Free Parking Permissions issued	Number of parking permissions issued under the period	Nr of permits

Detailed description of the indicator methodologies:

- **Indicator 8** (*CO₂ emissions*) – This is the estimated emissions of CO₂ from the vehicles. This corresponds to **objective 1**
- **Indicator 10** (*NO_x emissions*) – This is the estimated emissions of NO_x from the vehicles. This corresponds to **objective 3**
- **Indicator 11** (*Small particulate emissions*) – This is the estimated emissions of PM₁₀ from the vehicles. This corresponds to **objective 2**.
- **Indicator 13** (*Awareness level*) – Questions about the attitudes towards alternative fuel cars and the views of different parking offers were asked in different surveys conducted before SMILE. Questions about the actual offer and the use of clean cars were asked after implementation. This corresponds to **objective 4**
- **Indicator 14** (*Acceptance level*) – The same methodology as for indicator 13 will show the acceptance level and corresponds to **objective 4**.
- **Indicator MSE9** (*Free parking permissions issued*) – Based on the registrations for the permits at the City of Malmö. This indicator corresponds to **objective 5**.

C1.2 Establishing a baseline

During 2005 a pre study was conducted by the City of Malmö with the aim of finding out more about the residents attitudes towards and knowledge about “clean vehicles” and subsidised parking. Details about this study are shown in table C1.2.1.

The results from this study are a good baseline for indicator 13, awareness level and indicator 14, acceptance level. The questions posed and the answers that form the baselines for these two indicators are shown in table C1.2.2.

Time for the study	2005
Sample size	349 (response rate 50% out of 700)
Respondents	Residents in the City of Malmö between 25 and 70 years of age.
Method	Survey sent home by post
Aim	Baseline for indicator 13 and 14 for the general public
Comments:	The survey was a part of a Master Thesis “ <i>Knowledge and attitudes regarding clean vehicles - a study of Malmö City</i> ” Beijer, (2005) Lund University, Campus Helsingborg.

Table C1.2.1 Data about the pre study conducted for measure 7.1

The respondents were asked how they usually travelled to work and studies. 36% travelled to work or studies by bicycle (28%) or by foot (8%), 41% used a car and 15% used public transport. 13% said that they had experience of driving a clean vehicle of some sort. Table C1.2.2 shows how these 349 respondents agreed to some statements about clean cars.

Statement number	Statement	% yes answers N=349
1	I would consider buying a clean car next time I buy a car	71% yes
2	I would consider paying a higher price for a clean car next time I buy a car	29% yes
3	I am in favour of proposals to increase the percentage of clean cars in the Malmo region	93% yes
4	Free parking would increase the possibility for me to consider buying a clean car next time I buy a car.	68% yes
5	Subsidised parking would increase the possibility for me to consider buying a clean car next time I buy a car.	56% yes
6	I am in favour of the City of Malmö offering free or subsidised parking for clean cars.	80% yes
7	I would like to know more about clean cars	70% yes

Table C1.2.2 Percentages of Malmö residents between 25-70 years of age that agrees with different statements regarding clean vehicles and subsidised parking

What is most important when you buy a new car? N=328

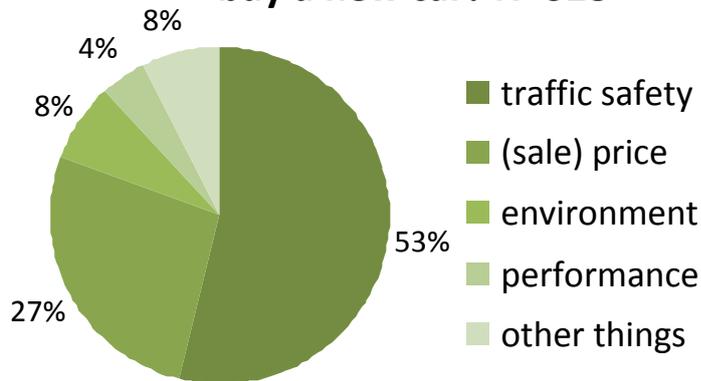


Figure C1.2.3

What is most important when you buy a new car?

The respondents were asked to choose the one most important among the five factors presented in the figure.

“Environment” was chosen for 7% of the respondents.(from Beijer, 2005)

The objective for the acceptance level is that the level should rise from 50% in favour before this measure to 90% in favour in the end of the period. The pre study shows that this objective is already met when it comes to statement no.3 and a lot higher than 50% for all statements except no.2. As a whole you could say that statements with no obligations are easy to agree with, but when it means that you have to offer something, like paying a higher price, the percentage that agrees is a lot lower.

You could argue that the sample size is fairly low and that the number of individuals that are really affected by this measure was even lower. Only those who are planning to buy a new car in the near future are the ones that maybe will choose differently because of the free parking in Malmö.

Another study was made in 2005/2006 which was directed towards customers and car dealers. Details about the study are shown in table C1.2.4. The aim of this study was to investigate the attitudes to clean cars among those who are planning to buy a new car and see if the planned offer would have any impact on the choice between a standard car or a clean car. Another aim was to listen to the car dealers’ experience of the market for alternative fuel cars and their view of the future as well as their view of the planned offer.

Time for the study	Winter 2005/2006	Winter 2005/2006
Sample size	115 (60 single men, 14 single women and 41 couples)	4 different companies
Respondents	Potential buyers of new cars, customers visiting car dealers in Malmö	Car dealers in Malmö who primarily sell cars to companies
Method	Survey handed out and collected again in the shop	Interviews
Aim	Baseline for indicator 13 and 14 for this group of people	Information about how the subsidised parking could affect the business
Comments:	The survey was a part of a Masters Thesis <i>“Purchase of clean vehicles- investigations of benefits for clean vehicles in Malmö”</i> Gunnarsson, Thesis152 (2006) Lund Institute of Technology, Department of Technology and Society.	

Table C1.2.4 Data about the study conducted for measure 7.1 targeted towards the car market,

When asked why they were visiting the car dealer, one third said it was to look around for new models and two thirds said that they were actually planning to buy a new car. 5% already owned a clean car and 11% were looking for a clean car as their new car.

The customers in this study were asked to rank 8 factors as to how important they were for the purchase of a car. The factors in the order they were chosen are: safety, price, maintenance cost, comfort, maintenance stability, performance, environment and resale value. Nearly 60% choose “safety” as the most important. Only 4% stated “resale value” as most important and “environment” was ranked as number one or two for around 8%.

The customers were asked about their interest in buying a clean car and to assess the interest on a scale in five steps from step 1, “not at all interested”, to step 5, “will buy/ already have a clean car”. The interest in buying a clean car is evenly distributed around a “somewhat interested”, with 9% saying they will buy or already has a clean car and 11% saying they are not at all interested. (figure C1.2.5)

Describe your interest in buying a clean car. N=115

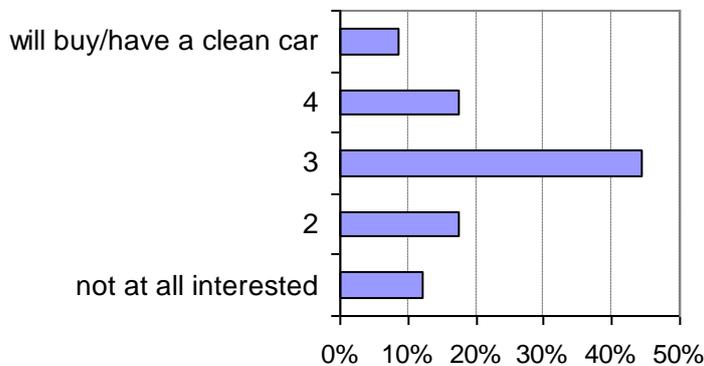
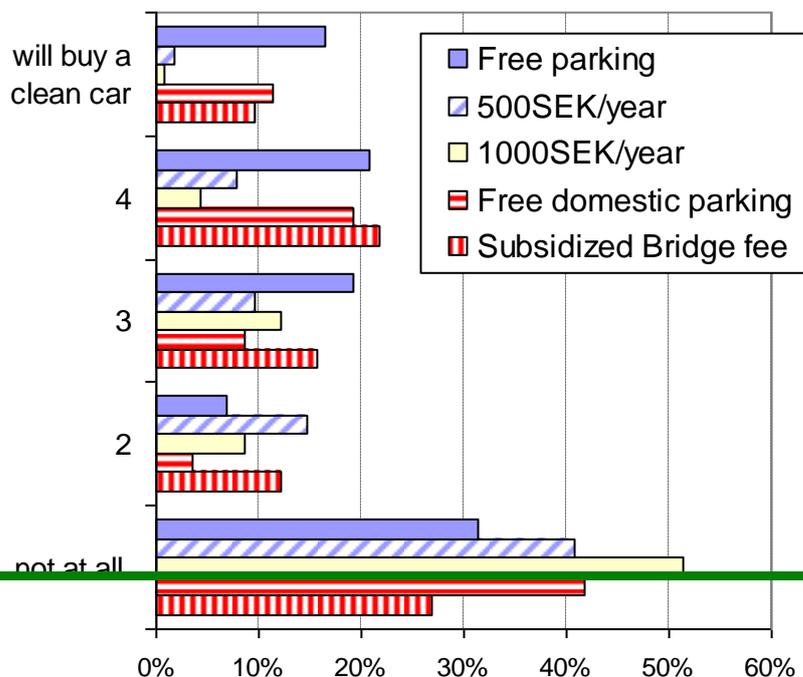


Figure C1.2.5 The customers were asked to state their interest in buying a clean car (Gunnarsson, 2006)

After this general question they were presented with various offers of subsidised parking and asked to assess if the offers had any effect on their interest of buying a clean car. They were asked to assess the offers on a scale in five steps from step 1, “no effect at all”, to step 5, “would buy a clean car”. When this study was conducted, at the end of 2005, the offer under discussion was “free parking”.

How would the following offers affect your interest in buying a clean car?



The offer presented to the residents in Malmö 2007 was “free parking for one hour”. This was not something that was on the agenda during 2005/2006 and because of that this offer is not included in the survey.

Figure C1.2.6 The customers were asked to state how their interest in buying a clean car would change when offers about subsidised parking (and fees for Oresund bridge)

were introduced. (115 surveys)
(Gunnarsson, 2006)

For each alternative there are some customers who would buy a clean car because of the offer (or at least says so). 17% said they would buy a clean car if it meant free parking. The percentages that would buy a clean car when presented with the offers based on a yearly fee were much lower, 2% for 500 SEK and 1% for 1000 SEK a year for free parking.

Those 17% that said they would buy a clean car if free parking was offered consists of mainly two groups: those that stated they were going to buy a clean car regardless of the offer or already had a clean car (37%), and those who were “interested” in buying a clean car regardless of the offer but now “will buy” a clean car (58%). This is an assessment of the impact of the offer of free parking, the percentage that will buy a clean car increases by 58%.

Also interesting is the other end of the scale, the percentages that state that the different offers would not affect their interest in buying a clean car at all. The offers based on a yearly fee and the offer concerning free domestic parking has no effect at all for over 40% of the respondents.

As figure C1.2.6 shows, free parking and free residential (domestic) parking are the two offers that have most effect on the interest of buying a clean car. The offers based on a yearly fee were not so interesting. The offer of subsidised fee for travels over the Oresund Bridge was interesting, even though it had nothing to do with parking.

When the sales persons working at the car dealers were interviewed, they showed the same view on the different offers as the customers. Free parking was the most interesting. They didn't believe that offers like this meant that a private person would change a decision and buy a clean car, but that the offers could serve as a bonus for those who did buy a clean car.

References:

Gunnarsson, Malin. *Purchase of clean vehicles- investigations of benefits for clean vehicles in Malmö*. Lund, Lund Institute of Technology, Department of Technology and Society. Thesis152 (2006)

Beijer, Frida. *Knowledge and attitudes regarding clean vehicles - a study of Malmö City*. Lund, Lund University, Campus Helsingborg. (2005)

C1.3 Building the business-as-usual scenario

The number of cars driven by fuels other than petrol is increasing in Sweden. Compared with the rest of Sweden, Skåne has a slower growth of alternative fuel than other parts. But still, the percentage of so called “clean cars” among the new cars purchased is rising.

The percentages of so called “clean cars” in Skåne already totalled 8.9 % in 2006; i.e. already greater than the arbitrary objective (4%) that had been set in the absence of such data prior to the start of SMILE. The percentage for Malmö in 2007 was 16.9 %.

New registered clean cars (the statistics are less detailed for earlier years)

	Sweden	Percentage of all new cars in Sweden	Skåne	Percentage of all new cars in Skåne	Malmö	Percentage of all new cars in Malmö	Malmö, business as usual	Percentage of all new cars in Malmö, if business as usual
2005	14297	5.1 %						
2006	36597	12.9 %	3399	8.9 %				
2007	53856	17.6 %	5913	14.1 %	2230	16.9 %	1860	14.1 %
2008	84396	33.2 %	9234	27.3 %	3416	28.8 %	3238	27.3 %

Table C1.3.1 shows the overall trend in Sweden, Skåne and Malmö for clean cars

The business as usual column in table C1.3.1 is defined by Malmö having a rate of registration of clean cars at the same rate as the whole Skåne region.

The free parking started in October 2007. Between 2007 and 2008 there was a significant rise of number of clean cars registered. The rise of “clean cars” in Table C1.3.1 is probably a result of higher oil prices and other subsidy measures nationwide, like the 10 000 SEK bonus for buying a car driven by alternative fuels. The global warming debate is also important. This measure with free parking for an hour has probably an effect as well, the percentages of clean cars in Malmö is higher than in Skåne as a whole. One assessment of the offer is that the difference between Malmö and Skåne is an effect of this measure. The percentage of clean cars in Malmö is 11% higher over the last two years than in Skåne as a whole.

The survey conducted 2005/2006 described in table C1.2.4 showed that 9 % of the customers were going to buy or already had a clean car. This corresponds well with the figures in table C1.3.1. The same survey showed that the offer of free parking increased the percentage that will buy a clean car by 58%. This is not an assessment of the impact of free parking for an hour, (for 300 SEK) since this is a less favourable offer and since saying and doing is not the same thing. It shows that an offer like this can make a difference and get some people, that are already interested, to finally take the step to buy a clean car.

References: BilSweden Bilindustriföreningen. Statistics for 2006, 07 and 08

C2 Measure results

The results are presented under sub headings corresponding to the areas used for indicators – economy, energy, environment, society and transport.

C2.1 Economy

The objective for this category was set at 2500 parking permits to be issued. When this objective was set, the measure was planned to be implemented during 2006 but was delayed 14 month. By 10 October 2008 the number of permits issued was 1031 since 15 October 2007,

showing that the rate of issue per day is on target, but that the total has not been reached because of the implementation delay.

C2.2 Energy

No indicators of relevance exist to the stated objectives of the measures in this category.

C2.3 Environment

The objective set was that emissions should decrease annually by 2000 tonnes CO₂, 7000 kg NO_x and 400 kg particles.

To be able to calculate the difference, some assumptions must be made:

- 1031 permits have been issued to clean cars in one year. The initial hypothesis tested will be that the offer of one hour free parking is the reason why these clean cars were purchased.
- The proportions of fuels are based on the average for clean cars 2007 in Sweden. They are compared with a null hypothesis of 1031 cars comprising 60% powered by petrol and 40% powered by diesel. All cars are assumed to cover 20 000 km a year.

The results are shown in table C2.3.1

1031 cars	60% petrol 40% diesel	87% E85 5% gas 8% hybrid	Impact	Objective
CO₂ a year kg	3 761 340	1 853 059	1 908 281 kg	2 000 000 kg
NO_x a year g	2 057 800	550 872	1 506 928 g	7 000 000 g
PM₁₀ a year g	181 120	77 847	103 273 g	400 000 g

Table C2.3.1. Calculation of the emissions impact of the full impact hypothesis.

The objectives are nearly met only for CO₂, using this test hypothesis.

However, since this test hypothesis is over optimistic in terms of the influence that the 1 hour free parking has on the purchase decision, in reality it is possible to say that the emission objectives are not close to being met. The survey described in C1.2.4 presented an assessment of the offer with free parking: the percentages that would buy a clean car increased by 58% due to the free parking offer. Only 2% said they would buy a clean car as a result of the offer with free parking for a yearly fee of 500 SEK.

The offer presented to the public is one hour free parking for 300 SEK and this is a less favourable offer than free parking.

During 2007, 2230 new registered clean cars were bought in Malmö, for 2008 the figure was 3416. When compared to Skåne as a whole, these figures means 20% more registered clean cars for 2007 and 5% more for 2008. In numbers, 370 more clean cars in 2007 and 178 in 2008 were registered in Malmö due to the higher percentages of clean cars than in Skåne as a whole (table C1.3.1). This is 11% more than in Skåne over these two years. The total increment over the business as usual scenario (548 cars) represents 10% of the total registrations in Malmö.

As a result of the discussion above, it is fair to estimate that the offer may have increased the percentages of clean cars with around 10%. 90% of the permits is issued to clean cars that would have been bought anyway and 10% is issued to cars that is bought as a result of the offer, meaning that a true impact would be no more than 10% of the impact figures shown in table C2.3.1, i.e.:

CO₂ 190 828 kg, max
 NOx 151kg, max
 PM10 10.3 kg, max

The period during when the measure has worked is only seven month, from October 2007 to April 2008. During this period, approximately 1700 new clean cars were registered in Malmö and 1031 permits were issued. The offer of free parking for one hour is open for clean vehicles not older than three years. Among the 1031 permits issued are cars registered 2006 and 2005.

C2.4 Transport

The objective for clean cars sold is set to 4% of the new cars. The measures started in October 2007 and the effect on new cars sold for 2008 are not yet available. It is clear that the target objective has been met, but this is not due to the measure but to a baseline level for clean car purchase which already exceeds the objective. (The percentage of so called “clean cars” sold was already 2006 (7.1%) over the objective set in A1 (4%) in Skåne. The percentage for 2007 was 8.3% for Skåne. The percentage for Malmö was 2007 12.5%. (Table C1.3.1).)

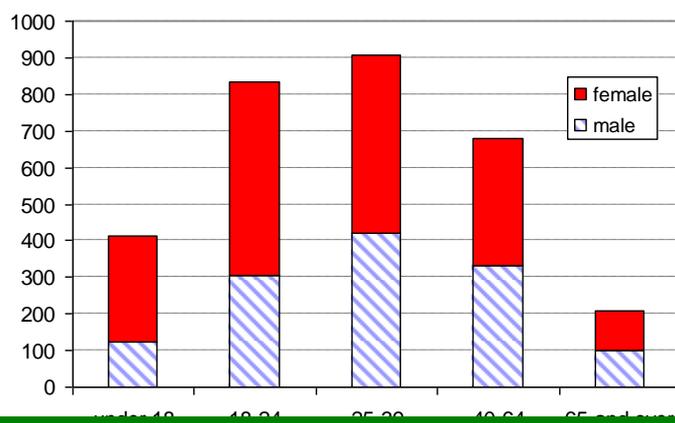
C2.5 Society

Time for the study	April and May 2008
Sample size	3123
Respondents	Visitors in the City of Malmö
Method	Survey handed out and collected again at different locations in the City of Malmö
Aim	To estimate indicator 13, 14 and 19
Comments:	Students (mostly young men) managed this survey. Maybe they attracted more young people than with a more representative way of choosing respondents. The survey was made in two versions. Some questions has smaller sample sizes due to that.

Table C2.5.1 Data about the study made in 2008.

The age and gender for the respondents are shown in figureC2.5.2. 42% are men and 58% are women. The most uneven distribution between men and women are for those under 24 years of age.

Figure C2.5.2
 number of surveys
Age and sex for the respondents, N=3040



The distribution over age groups and gender for the respondents in the survey 2008.

The respondents for this survey are younger than the respondents in the travel survey made in 2003. The reason for this is probably the method, see table C2.5.1

The percentage of “clean cars” overall in the fleet for this survey sample was 7.4%. That is a lot lower than the percentages in table C1.3.1 that shows the percentages of new cars entering the fleet, although this difference is not surprising because it will take some time for the percentage in the overall fleet to catch up with the rate at which clean cars enter the fleet from new.

Two questions in the survey were particularly relevant for this measure and they are shown in table C2.5.3 and C2.5.4. The self assessed knowledge about clean cars is high, only 3% of respondents do not know what a clean car is. The knowledge (or awareness) of the offer for this measure (free parking for an hour for clean cars) is not as high, 39% knew about it and 5.5% were using it.

Do you know what a "clean car" is?	N=1705
yes, definitely	65,4%
yes, but I am not completely sure	31,3%
no, not at all	3,3%

Table C2.5.3 *The self assessed knowledge about clean cars.*

Do you know that "clean cars" can park one hour for free in Malmö?	N=1693
yes, and I am using the offer	5,5%
yes, but I am not using the offer	33,1%
no	60,7%

Table C2.5.4 *The awareness level for the free parking offer.*

The objective is: to raise public awareness and acceptance of the measure leading to a higher portion of clean vehicles among newly sold cars. Table C2.5.4 shows a good assessment of the awareness level. The offer of free parking has only been “on the market” seven months and nearly 40% of the public knows about it.

The portion of clean cars is rising, for new cars to as much as 16.9% in Malmö 2007 and 28.8% in 2008. The survey shows that the portion of clean cars is 7.4% for the whole fleet in Malmö.

On this basis we would expect that the acceptance level should rise from 50% in favour before this measure to 90% in favour if the measure were still in place after four years as was originally planned.

Table C2.5.5 shows the awareness and acceptance levels for this measure. The acceptance level was a lot higher than 50% before the measure. In fact it was over 90% in favour of proposals to increase the percentage of clean cars in the Malmö region and 80% in favour of the City of Malmö offering free or subsidised parking for clean cars before the measure. Considering the short period (seven month instead of four years) of the measure and the high starting point of the acceptance level, the objective of 90% must be met after four years.

Source	Statement	Awareness 2008	Acceptance 2005
Table	Do you know that "clean cars" can park one hour for	39.3% yes	

C2.5.4	free in Malmö?		
Table C1.2.1	I am in favour of proposals to increase the percentage of clean cars in the Malmö region		93% yes
Table C1.2.1	Free parking would increase the possibility for me to consider buying a clean car next time I buy a car.		68% yes
Table C1.2.1	I am in favour of the City of Malmö offering free or subsidised parking for clean cars.		80% yes

Table C2.5.5 Awareness and acceptance levels before and after the measure

C3 Achievement of quantifiable targets

No.	Target	Rating
1	The acceptance level should rise from 50% in favour before this measure to 90% in favour in the end of the period (after four years)	*#
2	2500 permits should be issued during the period	*#
3	4% of new cars sold should be clean vehicles	(***^)
4	The emissions should decrease yearly by 2000 tonnes CO ₂ ,	0
5	The emissions should decrease yearly by 7000 kg NO _x .	0
6	The emissions should decrease yearly by 400 kg particles.	0
NA = Not Assessed 0 = Not achieved * = Substantially achieved (> 50%) ** = Achieved in full *** = Exceeded		

based on the shortened implementation period

^ this objective was exceeded, but it is likely that it would have been exceeded even without the measure being in place due to a number of other factors, not least that the objective itself was set in an arbitrary manner

C4 Up-scaling of results

The overall relevant objective for this measure must be to stimulate the transition from petrol and diesel to cleaner alternative fuels for new cars. This transition is shown to be faster and driven by forces on another level than subsidised parking offers. Those forces are working on an up-scaled front already, with petrol prices and global warming as two examples. Maybe measures like this had more effects some years ago, when clean cars needed more support.

C5 Appraisal of evaluation approach

This is a small measure and a lot of studies were made. In fact, a lot of information and quantifiable assessments were made that did not have any objective to meet.

Some of the objectives were already met before the measure started. This was mainly a result of the delays, but also a result of not using the information available. The objective that 4% of the new cars should be clean cars was already met in 2005 on a national level. This is mentioned under section B2 as well.

It appears that more focused preparatory work should have been done to establish the relevance of the one hour free parking in city council owned car parks to the purchase decision. In particular, it is not clear what proportion of car journeys would result in a car parking in such a car park and without that knowledge it is difficult to understand the basis on which the political decisions that drove the measure were made.

C6 Summary of evaluation results

The key results are as follows:

- **Key result 1** – The offer of free parking for an hour after paying 300 SEK for a permit is used by quite a lot of the owners of a clean car. Based on the results of an on-street public survey, 5.5% of the respondents were using it seven months after the implementation (1031 permits issued) and that is a high proportion considering that (based on results of the same survey) 7.4% of the fleet in Malmö is clean. However, this does not differentiate between newly purchased and older clean cars and the motivation for the purchase.
- **Key result 2** – The offer itself is probably working mostly as a bonus for those who have already decided to buy a clean car anyway. But an offer like this can make a difference and get some people, that are already interested, to finally take the step to buy a clean car. Based on the different results in this study, this impact is assessed to be 10%, which means that 90% of the clean cars are bought anyway, but 10% are a result of this measure.
- **Key result 3** – the most important thing when you buy a new car is safety and price. To save the environment is important, but not as important as those factors. The reason why the portion of clean cars among new cars is rising is probably a mix of environmental and economic consideration. The 10 000SEK bonus if you buy a clean car is one example, and the high petrol prices compared to prices for alternative fuels is another example of stronger economic driving forces behind the decision to buy a clean car. The offer with free parking for an hour is an example of a small economic bonus.

D Lessons learned

D1 Barriers and drivers

D1.1 Barriers

- **Barrier 1** – Risk of loss of essential revenue due to no parking fee charged on clean vehicles leading to lack of political support
- **Barrier 2** – Requirement for administrative procedures to register for the scheme
- **Barrier 3** – Clear definition of what a clean vehicle is required, preferably with wider agreement than just at city level
- **Barrier 4** – Degree to which environment is a key influencing factor on the purchase decision for a car
- **Barrier 5** – Lack of adequate prior research into the likely influence of parking charges at city council car parks on purchase decisions

D1.2 Drivers

- **Driver 1** – Strong support from the general public
- **Driver 2** – Implementation of stronger support measures for clean vehicles at national level which outweighed the impact of the subsidised parking

D2 Participation of stakeholders

- **Stakeholder 1** – Politicians, who needed to make the decision to set the level of incentive and then sanction the scheme
- **Stakeholder 2** – General public, who needed to participate through vehicle purchase and registration
- **Stakeholder 3** – Local businesses, who needed to participate through vehicle purchase and registration, and are actually a more common participant than the general public

- **Stakeholder 4** – Car dealerships who would be expected to use this measure as a way to publicise the benefits of clean vehicles to potential purchasers
- **Stakeholder 5** – Other major cities in Sweden who co-operated in developing common definitions and schemes

D3 Recommendations

- **Recommendation 1** – Conduct a full prior research study into the likely influence of parking charges at city council car parks on purchase decisions and compare with other options (e.g. differential residential parking charges, reduced tolls, preferential access to certain areas of the city etc). Relate to the wider influencing factors on vehicle purchase. Also consider and adapt to changes in circumstances at the national level, such as the national purchase subsidy that was implemented in this case.
- **Recommendation 2** – Use the prior research study to set realistic and quantified objectives and conduct ongoing or interim monitoring rather than after an extended period.
- **Recommendation 3** – Develop a strong relationship with vehicle manufacturers and their local agents (car dealerships) and develop a clear marketing strategy to promote the measure.

D4 Future activities relating to the measure

Like many of the measures in SMILE, it may take months or years to judge the full impact of the subsidised parking scheme. The scheme is now guaranteed to continue until the end of 2009, i.e. one year after the formal end of SMILE. At that point its effectiveness will be reviewed against other local priorities to assess if it should continue or be modified in some way.