

# The environmental car and its opposites - a brief history of car emission debates and regulations in Sweden 1986-2007

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## *Introduction*

The last decades has seen several efforts to reach a more environmentally sustainable system of mobility both on national and international levels. Different actors have been involved in the debate as well as in the construction and implementation of measures, some of which are aimed at “improving” the car fleet. Among these, two main strategies are important. One is to increase the number of “good” cars, and the other is trying to remove the “bad” cars, relating to their environmental performance. In this paper we try to review some of the measures that have been used in order to make the Swedish car fleet less environmentally detrimental. With the public debate in Sweden during the last 20 years as our jumping point, we try to analyse the rhetorical construction of two car types that has been labelled as the “best” and “worst” in the Swedish debate, the environmentally classified vehicle (ECV, in Swedish: “miljöbil”) and the Sport Utility Vehicle, SUV, which in Swedish has received the popular name of “city jeep” (in Swedish: “stadsjeep”). How was the term ECV conceived and how has its content changed over the period? Which actors contributed to its definition and the attempts to create a market for these cars? Concerning the city jeep, how was it defined and why has this car type been stigmatised in the role of the villain by so many actors? We have chosen these two car types because they have been seen as opposite extremes regarding environmental performance, but we will also emphasize that no consensus exists about the content and relevance of these categorisations. When SUVs first gained a foothold in the Swedish market and Swedish auto makers jumped on the wagon, they were hailed as the saviours of the car industry as well as contributing to an impending environmental disaster. In much the same way, ECVs are presently, on the basis of greatly increasing market shares in a declining market, identified as a likely path to help the Swedish car makers position themselves in future markets, but also here there are critical voices questioning the choice of ethanol as the leading alternative fuel of choice among other options.

The two stories differ in many respects. In the Swedish case, the initiative behind the ECV came from (Swedish) political actors, while the SUV was created by the (American) car industry. The term “ECV” has a long history, but what belongs to the category has changed over the years from an early focus on “zero emission vehicles” or “ZEVs”, to a broader definition including various types of fuels and cars. The earlier focus on harmful emissions connected to human health has changed to the recent focus on global climate change. In the case of the ECV the term came first, promoting new forms of technology, but in the case of the “city jeep” the car came first and received its name in 2001 when it already had rolled the streets for some time. The terms also differ because there now exist formal definitions of ECVs while “city jeep” is an informal definition. It encompasses what the car industry has labelled “SUVs” as well as “Crossovers”. The stigmatisation of SUVs is not only a Swedish phenomenon. In Norway they have been called “stock exchange tractors” (in Norwegian: b rstraktor), in England “Chelsea tractors” and in Australia “Yank tanks”.

In this paper we present an historical overview of the two car types starting with the ECV and moving on to the city jeeps. The histories will differ because there are different actors driving them. We end with a critical discussion where we try to sum up this discourse in historical, environmental and social terms. We ask the question; Are there parallels to be drawn between the development of the SUV and the ECV? Is there anything to be learned from the history of the SUV that could help detecting inbuilt antagonisms within the ECV concept that points to future problem areas and declining sales also in this segment?

## *The history of environmentally classified vehicles in Sweden*

*The environmental agenda used to be driven by people wearing rags, but today the environmental agenda is driven by people like me wearing silk ties. Something has happened*

We start this journey with a remark from Lars Bäckström, the governor of Västra Götaland at the first “green car fair” in Gothenburg on the 25<sup>th</sup> of April 2008. This can act as an example of how green values seemingly has ventured towards the mainstream. Statistics show that the market share of environmentally classified vehicles had risen to 18% during 2007, and the share is still rising steeply (see table 1). If the current trend continues, the percentage of ECVs among new cars will approach the 50% mark by 2009.

Sweden is a country very much dependent on the automobile industry because it is one of the largest sources of export income as well as the largest contributor to Swedish work places totalling at 140 000 employees if we also count indirect workplaces.<sup>1</sup> In Sweden there is in other words a strong incitement to couple maintaining growth in the car industry with growing environmental demands.

### The catalyst converter discount and the environmental classification system (1986-1994)

The focus of this part of the paper is the ECV, but we will begin the history with another incentive given to affect the environmental impact of cars, the introduction of the catalyst converter in new cars in the late 1980s. The law on emission levels from private cars<sup>2</sup> which was in line with international measures to reduce harmful emissions from vehicles, not only linked this to environmental degradation but especially to public health issues. The government thus introduced a discount on catalyst converters in 1987 and 1988 and enforced the inclusion of catalyst converters in all new cars from 1989. The discount was set at 1000 SEK per car.<sup>3</sup> Already in 1987 new cars that were equipped with three way catalyst converters reached a sales percentage of 27 % and as high as 89 % in 1988.<sup>4</sup> The refitting strategy for older cars however was criticized for being ineffective.<sup>5</sup> Nonetheless, the enforcement led to a steep increase in catalyst cars in Sweden starting from near zero in 1986 to about 82% in 2002<sup>6</sup> and rising steadily due to the average vehicle age of 10 years, also considering an increase in the car fleet from about 3,15 million cars in 1985 to about 4,05 million cars in 2002.<sup>7</sup>

This incentive policy that was introduced in 1987 and continued in 1988 marks the beginning of a new strategy for reaching environmental goals in the transport sector by the Swedish government and it spent approximately 1200 million SEK on the catalyst discount during these years.<sup>8</sup> Many car manufacturers chose to implement the technology before it became obligatory, supported by the catalyst discount. This incentive was however not connected to especially defined categories of cars that were deemed less environmentally detrimental, but was administered across the entire car fleet using already existing technology (the three way catalytic converter).

The Swedish government had already in 1986 laid down the basis for an environmental classification system (ECS) starting from a minimum level of requirements that was in line with the

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<sup>1</sup> ACEA, [http://acea.thisconnect.com/index.php/country\\_profiles/detail/sweden#text](http://acea.thisconnect.com/index.php/country_profiles/detail/sweden#text) downloaded 21 june, 2008.

<sup>2</sup> Bilavgasförordning 1987:586, §6.

<sup>3</sup> Förordning 1989:422.

<sup>4</sup> Bauner, 2007.

<sup>5</sup> See for instance by Olle Östrand from the social democratic party in a government chamber protocol from 1990 ( Riksdagens snabbprotokoll 1990/91:15).

<sup>6</sup> [www.vv.se/filer/33762/ant\\_persbil\\_sverige\\_utän\\_kat.pdf](http://www.vv.se/filer/33762/ant_persbil_sverige_utän_kat.pdf).

<sup>7</sup> [http://www.scb.se/templates/tableOrChart\\_\\_\\_\\_34762.asp](http://www.scb.se/templates/tableOrChart____34762.asp).

<sup>8</sup> Motion 1991/92 Jo684.

European Union<sup>9</sup> and was set to be in effect from 1993. This environmental classification system has been adjusted twice since then, a revised version valid from 1996 and yet another in 2001 harmonising the Swedish system with the common European system.<sup>10</sup> The ECS is to be seen as a continual development towards gradually improved emission levels in the car fleet which again is based on technological innovation and development and the environmental policies of both domestic and international origin, hence the ECS has been subject to several revisions. Interesting is also that the emphasis has shifted from nitrogen oxide, hydrocarbons, carbon monoxide and particulate matter towards the more recent focus on CO<sub>2</sub> which is not part of the ECS per se, but appear in the definition of the ECV. All in all the emission standards system was a success judging from the emission standards of pollutants covered by the ECS. As the car industry will be the first to point out; newer cars are considerably cleaner than older cars, but while battling nitrogen oxide, hydrocarbons, carbon monoxide and particulate matter was found to be manageable from a purely technological point of view, solving the CO<sub>2</sub> problem proved more difficult because it was intimately connected to both fuel type and vehicle size. In other words it led to a focus on both alternative fuel technologies as well as the downsizing of regular ICE vehicles, issues both costly and complicated not least because other demands like for instance safety and performance worked in the opposite direction.<sup>11</sup> As an answer to the pressing question of global warming, the car industry in Europe (ACEA) in addition to Japanese (JAMA) and Korean manufacturers (KAMA) had together with the European Union agreed to future targets concerning the CO<sub>2</sub> emission of vehicles that are to be measured as an average of each car manufacturer's model range. Originally non-binding targets were set at an average of 140 g CO<sub>2</sub> pr km in 1998-99 to be met in 2008 and although the industry has yet to fulfil these targets, at present they are re-negotiated and plans exist for setting stronger binding targets, but there are large differences within ACEA. While southern European automakers seem on their way to meeting such targets, north European manufacturers are struggling, including Saab and Volvo.

### Broadening the definition of the "environmental car" (1994-2001)

Although cars that are labelled as environmentally classified by today's standard, like electric cars and ethanol cars, had been around for a long time, they were not part of governmental legislation and incentive policy in Sweden. In the early 1990s the electric vehicle was still an outsider, kept under the wings of enthusiasts that were willing to work upstream. It was not considered a "real car" and it was difficult to find a niche for it. One example was the Gothenburg "10 electric car project", where a dream of 10 000 electric cars was reduced to a dream of 10 cars and faced considerable problems in reaching even this modest target.<sup>12</sup> Simultaneously, from 1993 to 2000 the government funded a demonstration programme on electric and hybrid vehicles, but these cars never grew above minor numbers.<sup>13</sup> Also in the case of ethanol cars the road to success had still to be paved. As a result of the oil crisis in the 1970s and in order to relieve the dependence on fossil fuels the Swedish government started supporting research on alternative fuels in 1975. After 1985 this research focused mainly on ethanol, culminating in the Swedish ethanol development programme in 1993.<sup>14</sup> In 1994, Per Carstedt, a car salesman in Örnsköldsvik and member of an influential interest organisation called BioAlcohol Fuel Foundation (BAFF) imported the first three Ford Taurus ethanol cars from the USA with an additional 50 in 1995 and 300 in 1996, thus introducing the technology to Swedish roads.<sup>15</sup>

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<sup>9</sup> Sweden was not a member of the EU at this point but joined in 1995 after a referendum.

<sup>10</sup> The Swedish Road Administration. "Miljöklasser Fordon 2003"  
<http://www.vv.se/filer/1578/Fakta%20Miljoklasser%20fordon.pdf> downloaded 18<sup>th</sup> of June 08.

<sup>11</sup> Sprei et al 2007.

<sup>12</sup> Fogelberg, 2000.

<sup>13</sup> With a top record of 600 vehicles in year 2000 and down to ca 300 vehicles in 2006, see Wennberg, Cederberg & Ljungkrantz 2007.

<sup>14</sup> Silveira 2001 pp 377-385.

<sup>15</sup> *Norrlands Tidsskrift* nr 3/2005, and <http://www.sekab.com/default.asp?id=1638&refid=1563&l3=1421> downloaded 30th June 2008.

The first definition of an ECV appeared in Stockholm in 1994 and was followed by Gothenburg (1998) and Malmö (2001).<sup>16</sup> Thus Stockholm was 7 years ahead of the Swedish government in both defining and administering incentives to ECVs. The first formal governmental definition of an ECV (as opposed to simply a car in the “best environmental class”), which entailed legal consequences or incentive measures came in 2001 when the government decided that the fringe value of company cars should be reduced for ECVs so that the somewhat larger purchase prices of such cars would be offset by lower taxation rates. In the proposition the ECV was defined as a “car [that] is equipped with technology that enables it to, in whole or in part, run on a fuel that is more environmentally friendly than gasoline and diesel, or alternatively with electricity.”<sup>17</sup> The definition thus included both ethanol cars and the Toyota Prius hybrid which had been introduced on the Swedish market the year before.<sup>18</sup> The year 2001 also saw the beginning of ECV sales in Sweden.

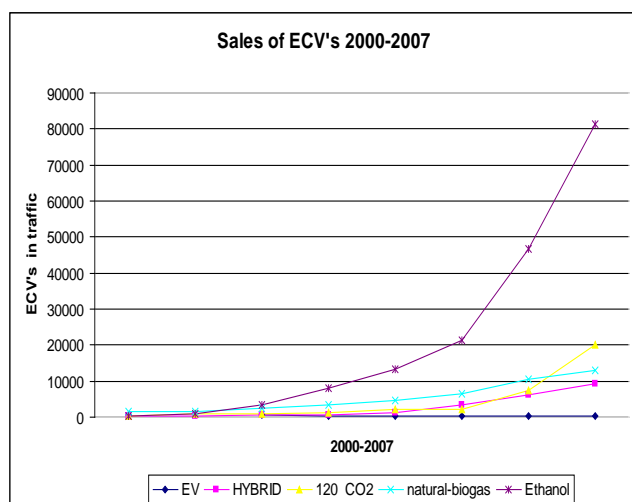


Diagram 1. ECVs in traffic in Sweden 2000-2007 (source: Miljöfordons web site).

### The break-through, and what the ECV became in practice

In 2004 a decree was passed that stated that 85% of the cars that any state authority buys or leases within a calendar year must be ECVs except for certain categories of vehicles used by the police, armoured vehicles etc. This demand was later reduced to 75%.<sup>19</sup> The next step came in April 2007 when the newly appointed government introduced a state financed 10 000 SEK discount for all new cars that fell into the ECV category. By then, the definition had been broadened again, and now also included cars with CO<sub>2</sub>-emissions lower than 120 g/km. Because of the success, the government needed to supply additional funding to the Road Administration about a year after the discount was established.<sup>20</sup> Also, from October 1<sup>st</sup> 2006, following similar measures in for instance Netherlands and the UK, the vehicle taxation system changed from a weight and fuel type centred system towards a

<sup>16</sup> Among the noted differences between the cities' definitions was an initial focus on technology above actual emission levels for the Stockholm definition, first targeting primarily mainly electric and alternative fuel vehicles, but later in effect including some cars that intuitively belong outside of the category, including a hybrid Lexus SUV and the Chevrolet Colorado running on ethanol. Personal communication with officials from the city council of Stockholm, Malmö and Gothenburg.

<sup>17</sup> Skatteutskottets betänkande 1999/2000 SkU7, SKV M 2007:30 and prop 1999:2000:6.

<sup>18</sup> The sales of the Prius were slow at first with 229 sold in 2001 and only 121 in 2002. Statistics from BilSweden.

<sup>19</sup> SFS 2004:1364. Förordning om myndigheters inköp och leasing av miljöbilar and SFS 2005:1228. Förordning om ändring i förordningen (2004:1364) om myndigheters inköp och leasing av miljöbilar.

<sup>20</sup> SFS 2007:380. "Om miljöbilspremie", and press notice from the Swedish government 1st of April [www.regeringen.se/sb/d/10476/a/101932](http://www.regeringen.se/sb/d/10476/a/101932). Downloaded 23 of June 2008.

CO<sub>2</sub> and fuel type based system, resulting in higher running expenses for cars with high fuel consumption.<sup>21</sup> Also, a diesel particulate filter (DPF) discount of 6000 SEK was introduced 1<sup>st</sup> of July 2006 and was removed 1<sup>st</sup> of January 2008.<sup>22</sup> Between 2006 and 2007 average emissions in new cars dropped with four percent in Sweden to 181 g CO<sub>2</sub> per km, although still maintaining the highest average emission level in Europe.

Car buyers were now faced with a handful of incentives which most likely contributed to the almost exploding sales figures of ECVs during 2007 and 2008. These included free parking in living areas for 28 out of the 73 municipalities that administer parking issues, but also tax exemption for alternative fuels contributed, as well as the reduced fringe value for company cars. In Sweden, about half of all new cars are sold in the company car market, and out of these company cars, half of them are cars also in private use ("förmånsbilar") which makes this market important in terms of spreading ECVs in the Swedish car fleet, not least because these cars tend to appear in the second hand market after a few years. From 2005, the sales of ECVs rose steeply, mainly due to the growth of ethanol cars. It thus appears that the closure on the ECV category, defined as the government driven categorisation of vehicles, came about parallel to the development of ethanol driven cars and especially after the Swedish auto makers made their most popular models available with this fuel option. This further implies that even though the category includes a number of different fuel types, a regular ECV is now basically an ethanol driven car, or more precisely a car that is able to run on ethanol if the driver chooses to do so. When the ECV eventually became popular, several premises were laid out that both paved the way for the ECV category as well as the predominance of ethanol as the chosen fuel among these vehicles.

The Swedish press treated the ECV phenomenon according to its news value, and in that way it helped bring about public awareness of new technologies, car models and incentive policies. In the early days this often meant the scorning of vehicles due to lack of driving range, storage space and insufficient performance. When the largest morning paper *Dagens Nyheter* took the small Toyota Aygo for a first test ride in 2005 they predicted it would not appeal to Swedish buyers,<sup>23</sup> and although it has been very successful they have not done another test ride. The cars in the class of low-emitting ECVs are still generally given rather low estimates in the tests. Their engines are either found "too weak" or "too raw".<sup>24</sup> Also, cars running on gas are considered as less useful, and when the Mercedes B170NGT was tested more than half of the report was concerned with how difficult it was to find a filling station for gas, and how inconvenient it was to stop there.<sup>25</sup> Even the looks of ECVs could get criticised, as for instance in these words overheard by a test driver of the first generation Toyota Prius: "What an incredibly ugly car. What is this?"<sup>26</sup> It was not until the Swedish producers Volvo and Saab decided to go for ethanol that the coverage was positive, in other words when there were ECVs that no longer carried any notable disadvantages compared to standard vehicles. Advertisements for ECVs tend to concentrate almost solely on economic factors. Especially after the 10 000 SEK discount was introduced, the advertisements have become billboards with the discount as more or less the main message, together with "free parking". One exception is the Saab BioPower which boasts of the "extra" horsepower one gets when running on ethanol.<sup>27</sup>

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<sup>21</sup> Index över nya bilars miljöpåverkan 2007. Joint report from the Swedish Consumer Agency, Swedish Road Administration and the Swedish Environmental Protection Agency.

<sup>22</sup> SFS 2006:227 Vägtrafikskattelag, The Tax administrations web site <http://www.skatteverket.se/skatter/fordon/fordonsskatt/omfordon.4.18e1b10334ebe8bc80003864.html>. Downloaded 24th of October 2008.

<sup>23</sup> *Dagens Nyheter Motor*, 25 April 2005.

<sup>24</sup> According to *Dagens Nyheter*, Fiat Bravo Eco, 15 September 2008, and Opel Corsa Ecoflex, 14 June 2008, are "too weak" while Skoda Fabia, 28 June 2008, and Kia Cee'd, 9 May 2008, are "too raw."

<sup>25</sup> *Dagens Nyheter*, 19 July 2008.

<sup>26</sup> *Dagens Nyheter. Allt om Motor*, 02/03/2002 by Lasse Swärd. Web edition.

<sup>27</sup> *Göteborgs-Posten* 5 May 2007.

When the first Swedish definition of an ECV (or “environmental car”, in Swedish: “miljöbil”) landed in terms of legislation, it had a pre-history of informal use most likely connected to a combination of a practical character and language factors. In Swedish, connecting the word “miljö” which roughly translates to “environment” with the word “bil” which directly translates to “car” does not sound strained the way it would sound in some other languages. But equally important for the agreement was the need to incorporate environmental concerns within an existing system of automobile dependency, both structurally and financially. The emerging rhetorical closure was coloured by demands set on the industry by national governments, the EU and ultimately global agreements on reaching CO<sub>2</sub> targets. It was also coloured by the automobile industry itself and how they chose to position themselves in facing future environmental challenges. The persistent work of environmental interest organisations like “Gröna Bilister”<sup>28</sup> was important, as was the Swedish Environmental Protection Agency and also the car purchasers themselves, gradually accepting the concept of an ECV and thus moving what earlier was a niche concept towards the norm. This was not only by choice but also by definition, as what constituted an ECV ventured from the ZEV framework towards covering most car categories. Important was also the interest organisations for specific alternative fuels like ethanol and biogas. The leading role of ethanol was helped by the agreement made between a consortium of companies, private individuals, Swedish municipalities and city councils including the City of Stockholm and the car company Ford about delivering 3000 ethanol cars in 2001. The initiative came from Stockholm city council in 1999 and Ford accepted as long as the order was for at least 3000 cars. Hence, Ford Focus flexifuel was produced solely for the Swedish market with Swedish energy company SEKAB as the provider of fuel.<sup>29</sup> The Swedish green party also played an important role in pushing through that all gas stations above a certain amount of fuel sales would be required to offer at least one alternative fuel by the 1<sup>st</sup> of April 2006 with stepwise later deadlines for gas stations with smaller sales and simultaneously providing them with financial support.<sup>30</sup> This would in effect lead to a large network of ethanol pumps across the country because ethanol pumps were the cheapest and most convenient solution for the gas stations. However, the decision to go for the de facto predominance of ethanol was contested by several people within environmental organisations for being both counterproductive and ill advised.<sup>31</sup>

As of June 08 the four top selling ECVs in Sweden were all made by Swedish automobile makers and all ran on ethanol. Ethanol was practical for many reasons. For the car buyers it meant they could get the same performance that they were used to, as well as the possibility to hold on to large and heavy cars, not to forget the fact that these cars could run purely on gasoline at any time. For the automakers it meant fairly small additional production costs because only minor changes were necessary when producing Otto engines that run on ethanol and gasoline as opposed to only gasoline. For the gas stations it meant the easiest, cheapest and most convenient way to comply with the alternative fuel pump requirement.

## Controversy and future projections

Notwithstanding the success of ECVs with regards to sales, the focus on ethanol has not been entirely uncontroversial in the Swedish debate. Many actors have been critical both to the ECV incentives and to the dominance of ethanol. Some have emphasised the need to change travel mode as superior to simply changing fuel. Bicyclists have found it peculiar that buying a car would give tax cuts and money in the pocket while choosing a bicycle means getting nothing.<sup>32</sup> Others, like Per Kågeson, have

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<sup>28</sup> “The Swedish Association of Green Motorists”, founded in 1994.

<sup>29</sup> *Teknikens Värld* nr 26/ 2001.

<sup>30</sup> SFS 2005:1248, Om skyldighet att tillhandahålla förnybara drivmedel, and SFS 2006:1591, Om statligt stöd till åtgärder för främjande av distribution av förnybara drivmedel.

<sup>31</sup> *Miljörapporten online*: ”Miljöbränslekravet som hämtat från Sovjet” 14th of April 2005 and *Dagens Nyheter*, ”Medier låter sig luras av Gröna Bilisters kampanjer”, 20th of July 2008.

<sup>32</sup> Personal communication with Mickael Koucky, Gröna Bilister.

meant that fuel efficiency is more important than fuel type pointing to the high emission levels of some ethanol cars as well as the growing conflict over the use of biomass and have advocated a change in the definition of ECVs.<sup>33</sup> Some have meant that the production of ethanol for cars competes with food production in poor countries.<sup>34</sup>

Because of the tremendous success that the ECVs have seen, the economic and societal ramifications are beginning to show. In the last years many cities have found it necessary to cut down on free parking privileges,<sup>35</sup> and propositions for tightened demands concerning safety standards in state owned ECVs have appeared.<sup>36</sup> The 10 000 SEK discount originally meant to run until December 2009 is now scheduled to terminate six months in advance, mainly with the argument that the purpose of the discount was to increase the sales of ECVs and that this objective has been reached.<sup>37</sup> The present situation is in other words one of near exponential growth of the car segment coupled with rising uncertainty around the future economic and legislative framework surrounding these cars.

### *The history of "city jeeps" in Sweden*

As a parallel and contrast to the history of green cars we have chosen to look at what in popular debate is often regarded as their opposites, that is, what the car industry calls Sport Utility Vehicles or SUVs, which in Sweden are popularly called "city jeeps". At the beginning, selling SUVs proved to be a most effective way for the car industry to increase profits.<sup>38</sup> They were originally based on utility vehicle technology, using a frame chassis. As SUVs have been criticised for being unsafe and too fuel consuming, some producers have introduced so called Crossovers, which borrow some characteristics from SUVs but using standard car bodyshell technology. Some of the typical SUV characteristics are off-road capacity, pulling capacity, loading capacity, high road clearance, 4-wheel-drive, and tough (or even rough) design. Most of these were once associated with work, but starting in the 1980s they have become increasingly associated with leisure. They are also generally associated with masculinity.

The history of the "city jeeps" and how they became stigmatized as the "worst" cars in Sweden can be divided into three phases. After a slow start in the 1980s, when the "first" SUVs were introduced, sales started to rise in Sweden in the mid 1990s. From the early 2000s the market share has been rather constant, and SUVs have been under more or less constant attack from various actors.

### **Born in the USA**

According to the American journalist Keith Bradsher it was the 1984 Jeep Cherokee that started the SUV trend. It was an immediate success and it made the directors of other companies look at this kind of car as a possibility.<sup>39</sup> Both Ford and General Motors soon started to work on cars that could match the Cherokee, and in 1987 Chrysler bought the American Motors to get hold of the successful Jeep division. In the 1980s the market share for jeep-like family cars more than tripled, from 1,79 % in 1980, to 6,49 % in 1989. When Ford developed the Explorer, one of their aims was to make it a contrast to the minivans. By the late 1980s these had become stereotyped as "mom-mobiles" because they so explicitly expressed the "domestic responsibilities" of the family.<sup>40</sup> SUVs were designed to express power and masculinity. An anthropologist working for Chrysler said that they were "the most

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<sup>33</sup> *Ny Teknik*. 2007-03-12. "Sverige på fel spår med miljöbilar" by Sofie Pehrsson. Web edition.

<sup>34</sup> *Göteborgs-Posten*, 5 November 2007, and also 31 March 2008.

<sup>35</sup> *Göteborgs-Posten*, 11 June 2008.

<sup>36</sup> Proposition from the Swedish Road Administration: SA 80 A- 2007-16824. "Förslag till skärpta miljö och säkerhetskrav för statliga myndigheters inköp och leasing av bilar".

<sup>37</sup> *Dagens Nyheter*, 7 September 2008. Web edition.

<sup>38</sup> Bradsher 2002, see also Bragd 2002.

<sup>39</sup> Bradsher 2002:41.

<sup>40</sup> *Ibid*:51.

reptilian vehicles of all”, because they expressed the desires for “survival and reproduction”.<sup>41</sup> Market analyses had revealed that potential customers wanted off-road capacity for its symbol value and as an expression of their dreams. Even if they only used it one week of the year, that was “the most important week [and] it’s what they’re all about as a person”.<sup>42</sup> The Ford Explorer was introduced in 1990, the same year as the Chevrolet Blazer. Both were immediate successes. In 1996, the SUVs’ share of the US car market had doubled again into 14 %. During the whole 1990s the one bigger and more luxurious SUV was presented after the other.

## Rising SUV sales in Sweden

The break-through in Sweden came about ten or fifteen years later than in the US, the market share is still much smaller, and the largest SUVs have never been very successful on the Swedish market. In 1990 there were still just a handful of jeep-like models on the Swedish market. Now the number of models started to increase, but until 1994 they sold only about 500-800 cars per year. The first turning point came in 1995. That year SUV sales doubled to 1400 units. However, this was still not more than about 0,8 % of the total car market. In 1997, total sales of 4-wheel-drive cars were a bit over 6000, or 2,7 % of the market, but almost half of these were ordinary cars, like Audi and Volvo.<sup>43</sup> The share of 4-wheel-drive cars now started to rise steadily. In 2002, it had tripled to 8,2 %. That year the SUVs made their definite break-through. The top selling model was the Hyundai Santa Fe, which sold more than 2500 units and which alone had almost one per cent of the total car market. It was followed by the Toyota RAV4, the Honda CR-V, and the new Volvo XC90, which sold more than 1000 units and had 0,40 % of the market. These four models were the top selling city jeeps until 2007. Together they held about half of the Swedish SUV market. In 2003 the number of jeep-like models offered on the Swedish market had increased to about 30-35, and since then their total market share has been about 6-8 %.

	2001	2002	2003	2004	2005	2006	2007
Honda CR-V	618	1199	1195	1463	1772	1490	3243
Hyundai Santa Fe	1669	2511	2639	2309	1848	2268	1934
Toyota RAV4	1668	2056	2497	1675	1469	2190	1895
Volvo XC90	-	1019	2782	2445	2137	1883	2224

Table 1: Top selling “city jeeps” in Sweden, 2001-2007, in total numbers. (Bilindustriföreningen – AB Bilstatistik)

## SUVs become “city jeeps”

Until 2001 journalists used a number of different names for the SUVs, such as “urban terrain cars”, “luxury terrain cars”, “lifestyle cars”, “terrain gliders”, “disco-jeeps” and “pop-jeeps”. Since then they are commonly called “stadsjeepar” (literally translated: “city jeeps”, which is close to the English “urban 4x4s”). The first indication of the new word “stadsjeep” being used was in a parliamentary debate in January 2000, by the Social Democratic Minister of Environment, Mats Larsson.<sup>44</sup> In the newspapers it took about one more year before it came into common use, but in January 2001, when Volvo presented the concept car ACC (“Adventure Concept Car”) at the Detroit motor show, almost every article in every Swedish newspaper used the word “stadsjeep”. It was clear that the concept had

<sup>41</sup> Ibid:95.

<sup>42</sup> Ibid:52.

<sup>43</sup> Bilindustriföreningen – AB Bilstatistik, meddelande 1998-01-12.

<sup>44</sup> Interpellation 2000/01:143 §16, Anf. 154.



been established. It was also clear that it had a dual connotation. It meant both survival of the car industry and fuel consuming cars. One headline illustrating this is from the weekly magazine *Ny Teknik*: "The adventure car a bold venture for Volvo. The USA market forces even Swedish car makers to build thirsty city jeeps".<sup>45</sup> The morning newspaper *Göteborgs-Posten* wrote about the new car on their economy pages. The headline read: "Too late or just in time? Competition increases but Volvo's city jeep may be the right product".<sup>46</sup> The negative image of SUVs as heavy and thirsty was well established in Sweden already before the concept "stadsjeep" came into popular use. In 1999 *Ny Teknik* reported from the Detroit motor show about the trend in the USA saying that "a typical SUV is high, heavy, 4-wheel-driven and fuel thirsty".<sup>47</sup>

The Swedish motor journalists were sceptic at first when the SUVs entered the market. In the booklet *Alla bilar 95* (published in December 1994) the journalists from *Teknikens Värld* referred to a campaign for the Jeep Cherokee which said that "in no other terrain car you can ride as comfortable to the Opera". They asked why anybody should need a terrain car to do that.<sup>48</sup> About the Mitsubishi Pajero they wrote that the combination of luxury and a terrain car is "not very much to the purpose" and that "the cars in the luxury terrain class sell more on looks than on qualities".<sup>49</sup> About the Opel Frontera, which was marketed as a "leisure car", they asked, "What leisure? For a round of golf, a day on the beach or for picking mushrooms any ordinary car will do just as well".<sup>50</sup> Three years later they wrote that the Honda CR-V had been a success in both Japan and the USA, but "it is not very clear who will buy it in Europe. The beautiful people or families with children, even active seniors are mentioned as potential customers".<sup>51</sup> After another three years they wrote that the Mercedes ML was "more suited for American housewives than for European foresters",<sup>52</sup> and presenting the Mitsubishi Pajero Pinin they asked a bit sarcastic "is not the time of the disco-jeeps over yet?"<sup>53</sup> Even in 2003, when the SUVs had got a sure grip on the Swedish market, the journalists were sometimes still ironic. Presenting the BMW X5 they wrote that with the strongest engine this car accelerates from 0 to 100 km/h in 6,5 seconds and has a top speed of 240 km/h. "One has to ask: why?" Their own answer was short and laconic: "Because it can be done".<sup>54</sup> Presenting the new XC90 they wrote that an SUV from Volvo was a contradiction, because "the company wants to grow an image founded on traffic safety, environmental concern, Scandinavian smartness and even some sportiness". SUVs, they said, are intrinsically "dangerous [...], thirsty and heavy".<sup>55</sup>

In spite of this last quote it seems that it was the Volvo XC90 that made the Swedish motor journalists change their opinion about the whole SUV segment. The new Volvo was generally quite positively received by most journalists, even those working for the motor press. This was probably because it was a Swedish car, as they are usually loyal to the Swedish car makers Volvo and Saab. Just when the motor journalists changed side, however, the city jeeps got a number of new enemies.

## The "jeep tax" debate

Starting in 2003, several influential actors began to point out the SUVs as the "worst" of cars. One of the first to do this was the Swedish Consumer Agency. In December 2003 one representative said that the gain from more effective engines in the last years had been taken away by the SUV trend. "We are

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<sup>45</sup> *Ny Teknik* No 1-2/2001, p12.

<sup>46</sup> *Göteborgs-Posten*, 9 January 2001, p28.

<sup>47</sup> *Ny Teknik* nr 1-2/1999, p21.

<sup>48</sup> *Alla bilar 95*: p60.

<sup>49</sup> *Ibid*: p84.

<sup>50</sup> *Ibid*: p98.

<sup>51</sup> *Alla bilar 98*: p58.

<sup>52</sup> *Alla bilar 2001*: p108.

<sup>53</sup> *Ibid*: p116.

<sup>54</sup> *Alla bilar 2003*: p37.

<sup>55</sup> *Ibid*: p233.

going in the wrong direction. We are almost the worst country in Europe when it comes to choice of cars".<sup>56</sup> In January 2004 the Swedish Road Administration published a report titled "Why is Sweden worst in the class?" The aim was to discuss why Sweden had the largest and most fuel consuming cars in Europe, and what could be done about it. According to this report the answer was that Sweden lacked economic instruments of control, and the suggestion was to introduce a CO<sub>2</sub>-related registration tax. The report particularly pointed out the city jeep trend as detrimental, also to traffic safety.<sup>57</sup> It was written by Per Kågeson, a well-known member of the Swedish association of green motorists. This organisation also singled out the city jeeps. In a press release in February 2004 they said that the city jeeps, with 7-8 % of new sales, were "undermining all environmental goals, local, national and international".<sup>58</sup> They also said that they wanted a special registration tax on city jeeps, because they thought it would be more effective than a road tax, especially if the tax on the most thirsty jeeps could run up to 30 or 40 % of the price.<sup>59</sup>

Another actor that pointed out the city jeeps was the Green Party. After having tried to raise the question in their internal discussion with the Social Democratic Party, they formally introduced a bill in October 2004, suggesting a CO<sub>2</sub>-related registration tax.<sup>60</sup> In the mass media it had now become popularly known as the "jeep tax", or the "penalty tax on city jeeps". It did not pass, so they tried again the next year.<sup>61</sup> A similar suggestion was also presented in a Governmental Investigation.<sup>62</sup> During 2004 and 2005 there were also numerous readers letters in the newspapers debating the city jeeps. In 2006 the "jeep tax" debate was finally closed, when a CO<sub>2</sub>-related road tax was introduced. The debate about city jeeps, however, continued.

## The Asphalt Indians

In the summer of 2007 several city jeep owners in Stockholm and in some other Swedish cities found their cars with flat tyres. This was the work of a new action group which called themselves "the Indians of the Asphalt Jungle". Their actions were directed only against "city jeeps". Because they wanted to make it inconvenient to own these cars they went out at nights and let out the air of the tyres of all the jeeps that were parked in the streets. They said they were related to other similar groups around the world, and on their homepage one can find links to the British "Alliance Against Urban 4x4s" and to the American "Anti SUV Portal".<sup>63</sup> The first action was made in July 2007, when 60 SUVs were deflated in an area commonly associated with well off people. They put flyers on the windshields, explaining why they had done this. They also gave interviews and wrote debate articles. In one of them the headline read: "We are not going to just watch when the earth is destroyed – that is why we are deflating the jeeps". They had picked out the city jeeps because they were "some of the most unnecessary emitters." The only function of these "monstrous luxury cars" is "to give status to their owners". The Indians wanted the politicians and environmental organisations to ban them. Waiting for them to do so they had to act themselves, by "making it hard to have a jeep, and with more Indians in the streets, in the end it will be unbearable".<sup>64</sup>

The actions produced very strong feelings among jeep owners. These were expressed in comments in the newspapers, in debates in the radio and on TV, and in numerous letters to the action group. In December, five months after the first action and after a total of 1500 city jeeps had been deflated, the Indians announced that they had decided to discontinue their actions. They said that one reason was

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<sup>56</sup> *Göteborgs-Posten* 14 December 2003, p37.

<sup>57</sup> Vägverket, Publ.nr 2004:14, p15.

<sup>58</sup> *Göteborgs-Posten* 26 February 2004, p10.

<sup>59</sup> *Ibid.*

<sup>60</sup> Motion 2004/05:N307.

<sup>61</sup> Motion 2005/06:N338.

<sup>62</sup> SOU 2005:51, Stefan Edman, Bilen, Biffen och Bostaden.

<sup>63</sup> <http://asfaltsdjungelnsindianer.wordpress.com>, downloaded 5 June 2008.

<sup>64</sup> *Aftonbladet* 13 August, 2007.

that the sales of city jeeps had decreased, and another was that owners of city jeeps had driven off with flat tyres, which could get them into dangerous situations on icy roads.<sup>65</sup> They also referred to the threats they had received from angry owners. However, they pointed out that the cease-fire was conditional. If sales of city jeeps did not continue to fall, they would take up their actions again.<sup>66</sup>

### *Discussion*

When the first Swedish produced SUVs appeared they were received with positive expectations, and were seen as saviours of the domestic car industry. Later they became increasingly criticised for their environmental impact. The stigmatization of the SUV and the glorification of the ECV can both be related to one common source of explanation: the change in focus of the environmental debate towards global warming and CO<sub>2</sub> emissions. However, it is fully possible – and maybe even likely – that all city jeeps do not deserve the stigmatization they have received as worst cars. The category is too wide and the definition is too vague. Some of them are in fact less fuel consuming than many ordinary cars. The Honda CR-V which was the top selling city jeep in Sweden in 2007 emits less CO<sub>2</sub> than the Volvo V70, which has been the top selling ordinary car in Sweden for many years. With 173 g/km it even emits less than the average for all cars in Sweden, which in 2007 was 181 g/km, compared to more than 200 g/km for the Volvo. It could be argued that it is a more serious problem that so many large cars are sold in large numbers in Sweden, even if a lot of them now drive on ethanol (E85).

Also, when the first Swedish produced ECVs appeared on the market they were received in positive terms, as necessary for the survival of the Swedish car industry. However, just as was the case with the SUVs, the success also triggered criticism. And just as with the SUVs, all actors do not agree that all ECVs deserve the label of good cars. The environmental classified vehicle and its success are outcomes of a rhetorical closure which is just as much a consequence of a change in focus of the debate as of technological development. It could be compared to the success of the diesel automobile. In Sweden the diesel car was previously regarded as "bad" because of its emissions of particles and of toxic NO<sub>x</sub>. In recent years it has gained recognition – and during 2007 purchases of diesel cars were even subsidised – partly because of the development of particle filters and catalyst converters, but partly also because the environmental debate has turned away from local and regional spread of pollutants to global warming, and this turn has happened fairly recently.<sup>67</sup>

This turn of the debate also lies behind the success of the ethanol vehicle, which is by far the most successful ECV on the Swedish market. The CO<sub>2</sub> emissions of ethanol cars are not technically eliminated, but they can be defined away as coming from a non-fossil origin, and therefore not contributing to climate change. The large media coverage and advertisement pressure surrounding ECVs during the later years point to both the tremendous success that these vehicles has seen, but especially the public debate also point to what kind of closure this really was. It is likely that even though a governmental induced rhetorical closure has taken place within the legislative systems, the discourse continues to be a field of contesting values and attitudes towards what at any time should constitute an ECV.

In the Swedish case, the aversion against disincentives or "whips" concerning the "bad" cars is seen together with a somewhat unstable system of incentives or "carrots" concerning the "good" cars that is liable to rapid revision according to scientific discoveries, political agenda and public opinion. To use an allegory, words in dictionaries appear when meaning is stable in society, but in this case the word first appeared in dictionaries and was then brought into society. As the percentage of ECVs approaches that of "ordinary" cars, new problems may surface that did not belong to the discourse all the while the ECV development was in its infancy.

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<sup>65</sup> *Dagens Nyheter* 11 December, 2007.

<sup>66</sup> *Aftonbladet* 10 December, 2007.

<sup>67</sup> See for example Black & Nijkamp 2002.

The Swedish ECV success is mainly an ethanol success. Judging by the sales of ECVs it was the same cars that made Sweden look bad in terms of CO<sub>2</sub> emissions that have been redefined as the leading ECVs running on ethanol and hence make Sweden look good. Defining the ECV was in many ways a method of identifying “best practice” among existing car models in order to create incentives towards less environmentally detrimental vehicles, but when ECVs venture from niche to norm it raises the question of re-defining the category. A category which up until now has focused solely and with great success on CO<sub>2</sub> may be forced to include variables like energy efficiency regardless of fuel origin, a stronger focus on hazardous pollutants beside carbon dioxide, human rights and equality with regards to the production of biofuels in developing countries, and the safety of both passengers and pedestrians. If the inbuilt controversies within the present ECV definition fails to adapt to future demands from the informed public as well as governmental and financial restraints, it may find itself in the same position as the SUV, losing market shares partly because of a fading image. Concerning the ECV definition in the future, will the centre hold?

During the last economic crisis in 2000-2001 the SUV was seen as the savior of the car industry, but in the long run it proved to be an unsustainable solution. The increased focus on CO<sub>2</sub> emissions together with the image of these cars as particularly fuel consuming turned them into a problem. The broad definition of ECVs was introduced as a solution to the CO<sub>2</sub> problem, and has also by some commentators been seen as a solution to the present economic crisis of the Swedish car industry. What we can learn from the SUV history, though, is that new solutions often bring new problems with them, which may make them unsustainable in the long run.

Another inbuilt future problem is that the Swedish ECV success has come into being mainly through subsidises. The greater the success, the higher the costs for the issuing authority. This is not sustainable in the long run, and the parking subsidises have already been reduced or cancelled in many cities. There is also a risk that the ECV market might lose its momentum when the governmental discount is cancelled in July 2009.

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