



2007-05-08
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Clean Vehicle Strategy in the City of Stockholm

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City of Stockholm



Clean vehicle !!??

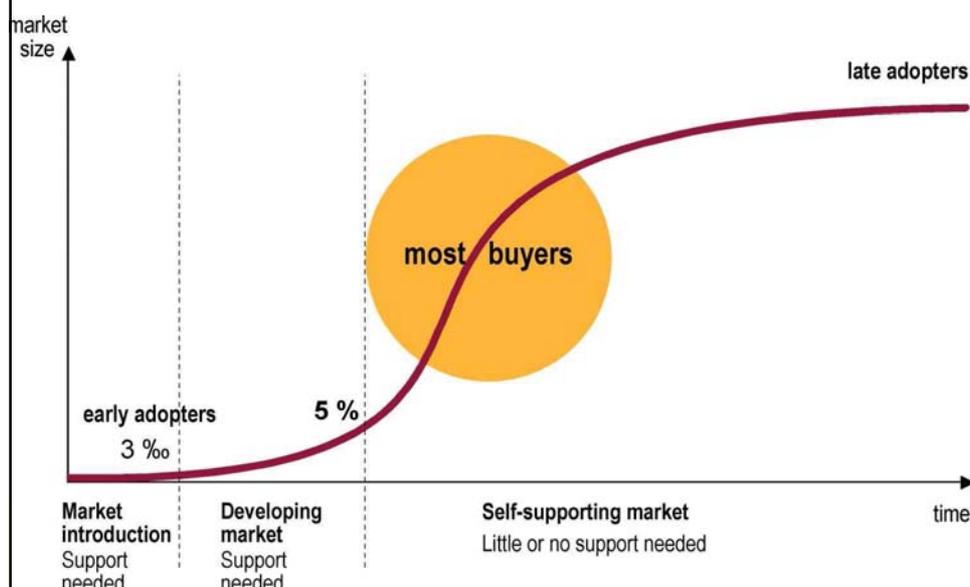


- Global effects - CO₂
- Local emissions - NO_x, HC, PM
- Energy efficient
- Silent



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Introduction of new technologies





How and Why?

- Transport important
- Vehicles are the largest polluters
- Clean Vehicles are not controversial
- Cheap and suitable way to reduce negative impact
- Biogas-waste problem to solve and money to make
- Local and national production of fuel possible
 - creates jobs
- Clean vehicles are just like other conventional vehicles

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Clean Vehicle Strategy

- Local authorities are key players to start a market development
- Use your procurement power
- Introduce step-by-step
- A long term perspective is necessary
- Incentives are very helpful
- Subsidies and tax relieves may be needed initially

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1) Start with heavy vehicle fleets

- limit number of fuelling stations
- large environmental impact
- possible to exchange a whole fleet in only a few years



2) Demand clean vehicles in the city fleet

- The Stockholm City council has decided:
 - All new vehicles that are bought to the city fleet in Stockholm should be clean
 - 100 % clean vehicles in the city fleet by 2010



3) Work to overcome market obstacles

- vehicles
- fuelling stations
- service & maintenance
- national and local regulations
- incentives
 - free parking
 - no congestion charging
- information
 - web-site
 - newsletter
 - test fleet
 - sales promotion



4) Demand clean transport in PROCUREMENTS of ALL transport services

- i.e taxi, goods distribution



Political support important



- Political Steering Group
 - Established in 1994
 - Help and support the introduction of clean vehicles
 - Short cut for fast decisions required in EC projects
 - One from each political party
 - Gives media attention
 - Pushes National politicians



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Economical benefits !

- No tax on renewable fuels - 2013
- Lower tax on company cars if they are clean - 2011
- Lower vehicle tax for clean cars
- Free parking
- (No congestion charging)
- Clean taxi cars "cut the line" at Arlanda Airport
- Clean cars are demanded in various procurements
- Marketing values
- Spread your risks!
- State funding programs and EC funding for fuel production and investments in vehicles
- 85 % of all vehicles bought by state administrations should be "clean"
- 10 000 Skr for private users buying a new clean car.



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Ethanol cars in Sweden



- | Car | Price |
|--------------------------------------|------------|
| • Ford Focus 1.8 FFV sedan | 169 900 kr |
| • Ford Focus 1.8 FFV kombi | 173 900 kr |
| • Ford Focus C-max FFV | 174 900 kr |
| • Ford S-max and Mondeo – on its way | |



- | | |
|---------------------------|------------|
| • Saab 9 3 Biopower | 237 000 kr |
| • Saab 9 5 Biopower Sedan | 249 000 kr |
| • Saab 9 5 BioPower Combi | 259 000 kr |



- | | |
|------------------------------|------------|
| • Volvo S40 1.8F | 203 900 kr |
| • Volvo V50 1.8F | 213 900 kr |
| • Volvo C30 1.8F | |
| • Volvo V70 2.0 – on its way | |



- Peugeot 307, Citroën C4, VW Golf, Renault Megané – on its way in 2007

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Biogas vehicles in Sweden



- | Car | Price incl VAT | Range |
|---------------------|----------------|--------------|
| • Volvo V70 Bi-fuel | 289 000 kr | 270 + 320 km |
| • Volvo S60 Bi-fuel | 264 900 kr | 290 + 340 |



- | | | |
|----------------------|------------|-----------|
| • VW Caddy Ecofuel | 169 900 kr | 400 + 150 |
| • VW Touran Ecofuel | 234 000 kr | 300 + 190 |
| • VW Transporter bus | 360 000 kr | 150 + 370 |



- | | | |
|-------------------|------------|-----------|
| • Opel Combo CNG | 163 900 kr | 330 + 170 |
| • Opel Zafira CNG | 210 000 kr | 350 + 160 |



- | | | |
|-----------------------|------------|-----------|
| • Mercedes E200 NGT | 400 000 kr | 300 + 720 |
| • Fiat Punto Bi-Power | 166 000 kr | 260 + 740 |
| • IVECO Daily CNG | ? | 330 + 0 |



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Electric hybrids in Sweden



Bilmodell

- Toyota Prius HSD

Pris

260 000 kr



- Honda Civic Hybrid

237 900 kr



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City cars in Sweden

- maximum 120 g CO₂/km



Bilmodell

- Citroen C1
- Citroen C3 HDi

Pris

86 900 kr

159 900 kr



- Kia Picanto Eco

105 000 kr

- Peugeot 107

95 900 kr



- Toyota Aygo

110 000 kr



- Smart Fortwo

97 000 kr



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Growing number of fuelling stations !

Sweden

Gas **80**
Etanol **792**

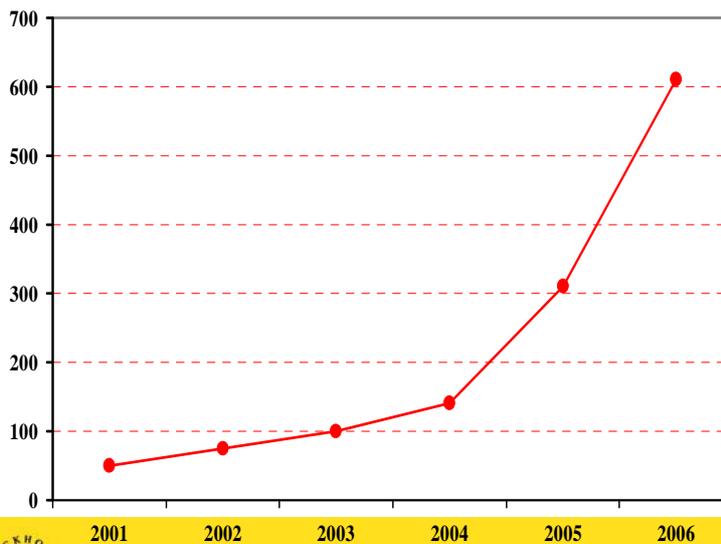
Stockholm

Biogas **10**
Etanol **110**

From April 2006 all large fuelling stations need to provide one renewable fuel
 - 2 400 (out of 4 000) stations in 2009



Filling stations for E85 in Sweden 2001-2006



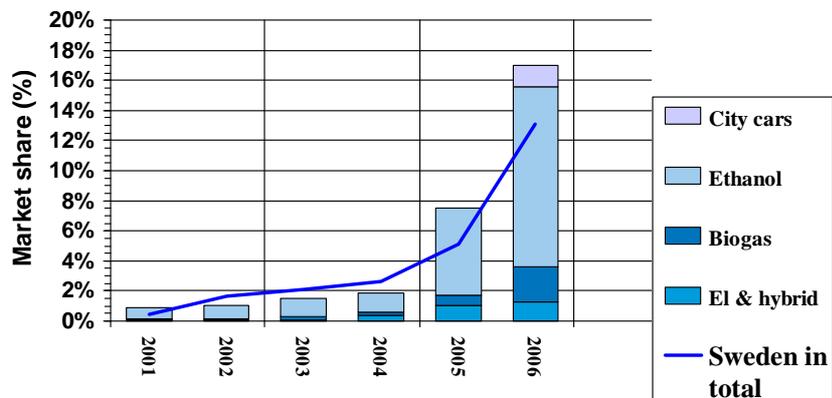


Happy drivers

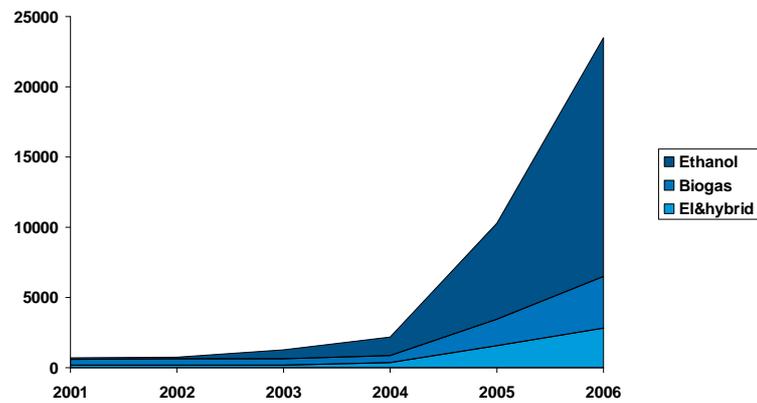
- 94 % recommend others to drive clean
- Few of no technical problems
- Same need for service as conventional vehicles
- Environmental policy in a company important for the purchase



New clean vehicles sold in Sweden and Stockholm



Clean Cars registered in Stockholm



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What is next?

- European co-operation necessary to get a large market
- More production capacity of clean fuels in Europe
- National and European definition of clean vehicles
- Biofuel directive should be compulsory
- Hybrid vehicles running on biofuels
- Heavy Vehicles



Seeing is believing !

**Welcome to Stockholm for Clean Vehicles
and Fuels 2007 !**



- **European Symposium**
- **Exhibition**
- **Study tours**

- **8-9 november 2007**



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Thank You !

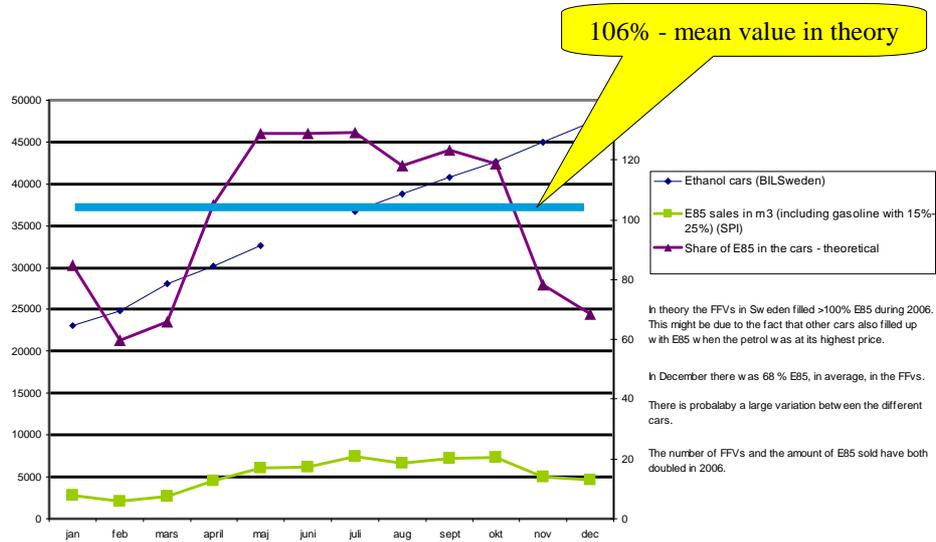
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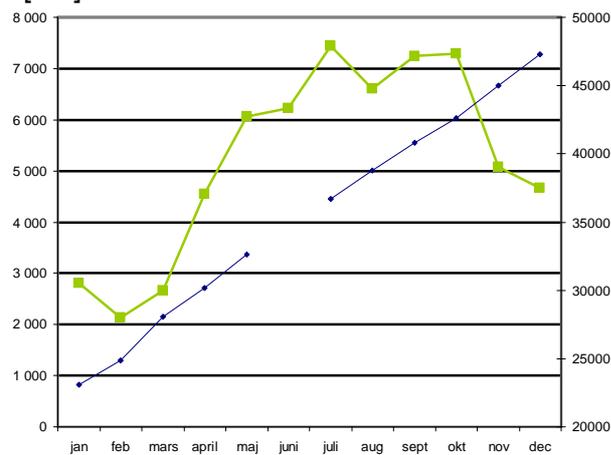
E85 in 2006



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E85 sales
[km³]

Number of FFVs in
Sweden



E85 in 2006 Cars and fuel

The number of E85 cars on the road and the amount of E85-fuel sold has doubled during 2006.

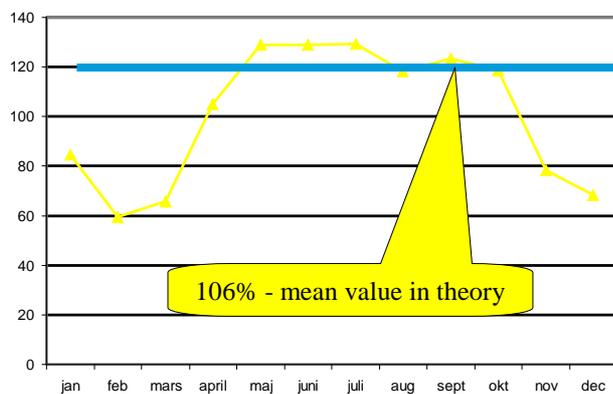


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Så här stor andel E85 tankade FFV bilarna

(teoretiskt, volym-%)

[%]



In theory the FFVs in Sweden filled >100% E85 during 2006. This might be due to the fact that other cars also filled up with E85 when the petrol was at its highest price.

In December there was 68 % E85, in average, in the FFVs.

There is probably a large variation between the different cars.

