

8.9.09 Green Streets Event

Welcome....

Green Machines: Cars in the Sustainable City

First of all let me attempt my definition of a sustainable city so as to set the context of my remarks. A sustainable city has to be one that people choose to live in where they will enjoy a good quality of life. It must have architecture that is aesthetically pleasing, lasting, and user friendly. And nowadays, sustainable is taken to mean being sensitive to the needs of the environment with particular emphasis on being low carbon and energy efficient.

So where does the car fit into this scheme of things? After all, most cities were built long before the age of the automobile. The sheer volume of car ownership presses against the absolute constraint of urban road and pace. Sustainable cities by their very nature will strive to increase the use of public transport and pedestrian zones at the same time as reducing congestion. Some cities, such as Cambridge in the UK, even design roads to make driving difficult so that travelling by foot, on a bike, or on public transport becomes a much more desirable option.

As cars have not been seen as a sustainable form of transport, cities have rarely contemplated working them into their sustainability plans. For an extreme example, we can look to Masdar City, a new planned city in Abu Dhabi. This new city will rely entirely on solar energy and other renewable energy sources. All buildings will of course be energy efficient, water will be recycled, there will be dew catchers, rainwater harvesting, and pipes will be alarmed to alert people to leaking pipes.

Perhaps most importantly for us here is that all cars will be banned within the city. People will instead have to walk, or take “personal rapid transit”— small pods that will zoom around the city on tracks, akin to metro cars for individuals and on top of this all goods will be moved in the same way.

This ecotopia, should we call it, is obviously an extreme and futuristic example of a sustainable city but perhaps it highlights the challenges that the car industry needs to meet if it is to survive.

The question which needs to be addressed is how do we go about getting more sustainable cars into our cities while reducing the overall numbers? And what type of cars should these be? It is probably fair to say that in recent years the profitability of high performance cars and fashionable 4x4's has contributed to make it more difficult to persuade car manufacturers to build smaller and more efficient vehicles. Tax treatment which encouraged the use of RUVs, or recreational utility vehicles, in the USA was a disincentive to shift to less gas guzzling cars.

The EU has now started to promote the production of smaller cars with a series of binding and non binding measures. For instance the European Green cars initiative included within the Commissions economic recovery package should provide a 5billion euro boost to the automotive industry. This financing will support research and development of new, sustainable forms of road transport. Research is vital to develop the sustainable cars we need. Initiatives such as this should serve to provide a cleaner environment and at the same time offer a competitive advantage to those attempting to create new innovation-driven markets. Incentives and fines on the CO2

from cars directive should serve to further encourage manufacturers to put more sustainable vehicles on the market.

While all this legislation, binding or non binding, goes some way to encouraging sustainability - the main driving force will be the market. The long term inevitability of a rise in oil prices and the fact that demand for larger vehicles is already falling will accelerate the push by car manufacturers into developing more efficient vehicles and alternative fuels.

We can't always predict long term technological changes but plug in electric vehicles and hybrid cars are already proving popular and we should expect to see more and more on our roads in the next 10 to 20 years. Hybrid cars are certainly one area where significant progress has been made towards getting low carbon vehicles on the market.

The development and introduction of electric cars as a new norm in urban transport offers the potential to transform our dependence on hydrocarbons as fuel and reduce our CO₂ emissions. In the UK, for instance, it is estimated that moving to an all electric fleet would reduce carbon emissions by an estimated 22% and provide a massive environmental boost, particularly in urban areas. Electric and hybrid cars aren't the only alternative fuelled vehicle available either. The zero emission Honda CFX hydrogen car currently costing over 100,000 euros, is another example of a future sustainable car and with a bit of investment, and volume production, the price could come down. Other options could be compressed natural gas, liquid petroleum gas, methanol, ethanol and sustainable bio-fuels.

With greener cars becoming increasingly available there needs to be incentives for consumers to take advantage of them. To start with, if you look at road taxes or charges and fuel costs combined, electric cars are at least eight times cheaper than conventional petrol or diesel cars.

Policy interventions will mostly be carried out at the international, European and national level. But cities can take the lead and make real progress in convincing people to buy sustainable cars. More facilities such as plug in points need to be developed to make recharging easier and make electric cars a more practical and viable option.

The Mayor of London, Boris Johnson, has set up an electric vehicle partnership for London to support electric car drivers in the capital and install more public points where cars batteries can be topped up. The number of locations where a car battery can be topped up will treble and all London boroughs will be encouraged to reduce parking prices for electric cars - some such as the City of Westminster have been doing this for some time now. Measures such as this will help to prompt more people to look at electric and hybrid cars as genuine alternatives to petrol cars.

But we can't expect people to take up green cars straight away - particularly people in middle to low income earning households. The process of getting more efficient vehicles on our streets will take decades. Cities will look to build more efficient transport systems and the car industry must look to develop more efficient cars and invest in alternative fuel research. I strongly believe that there should be a big push

towards using lighter materials in car manufacture because it seems crazy that say 90% of the energy is used to push the vehicle and only 10% the occupant.

With the take up of petrol cars still completely outstripping the sale of greener cars, manufacturers need to improve the efficiency of their current range of cars in the short term on top of research into long term solutions. Air conditioning for instance needs to be refined as it increases fuel consumption by around 5% and the added weight contributes even more to this inefficiency. In the inner cities where traffic congestion and air pollution is at its worst, satellite navigation systems and onboard information technology can play a significant role in improving traffic management by diverting drivers into less congested areas and thereby keeping emission and noise pollution down. I can envisage a time when you will board a transport pod, tell it your destination, and it will drive you there by the optimum route.

There is huge scope for efficiency gain. Another area where technological advances must be achieved is the electric battery so it can hold a charge longer, be much lighter, and re-charge faster. I should also mention fuel cell technology as one which many people think has great potential. However at present the weight and cost factors seem to rule it out for cars and small vehicles.

In conclusion, there are plenty of challenges, plenty of options, but do we have the time or the finance to explore them. I hope so.