



## **TRANSCRIPT OF BBC RADIO 4 BROADCAST ON 26 JANUARY 2004**

### **1231 YOU & YOURS – CAR INDUSTRY**

#### **REPORTER**

More than any other industry on earth the car industry contributes to climate change. In terms of the manufacturing process alone automobiles are the most consumptive industry on the face of the globe. And once on the road of course, cars are far and away the biggest single producers of CO2 emissions as well as being one of the biggest \*\*\*\*\* and that's without the huge environmental tally of building and maintaining those roads. The pride and joy on your front drive is nothing to be proud or joyful about if you want to save the planet. Which is why the race is on to find more eco friendly ways of powering our motorcars the new Toyota Prius a hybrid vehicle with both an electric motor and a petrol engine was recently named car of the year. But then natural gas, liquid petroleum gas (LPG) alcohol, wind power and solar power, cars have been invented to run on all of them, a saloon that operates on simple fresh air has just gone into production in France. All very ingenious but are any of them realistic in the long term? Well, we asked three enthusiasts to share their vision of a future in which our streets are filled with flower-powered cars, hydrogen powered buses and little electric run-arounds.

#### **JOE BYERS**

My name is Joe Byers I work for Going Green based in Leeds we are Britain's first environmentally friendly car retailer. We sell, rent and lease the Gee-Wizz automatic electric

vehicle, which is Britain's first electric car. The Gee-Wizz is a small car about the size of a Smart Car, its range is 40 miles, its top speed is 40 mph and it can fit two adults and two small children. Here on the wall we have a charging point, which is a standard 13 amp socket, all you need to do to charge the car is you plug the car in via its charge port in the car, pop it into the 13 amp socket and you're charging off you go. I think for a small car a lot of people think an electric car may not be very quick off the mark but it's surprisingly nippy, I think, great for nipping into small spaces. The slight noise that you'll hear as I'm braking is the regenerative brake as it's taking the energy from the motor and releasing it back into the battery. The car uses 9k/w hours of electricity to reach full charge. Your electricity supplier will charge you between three and six pence for a k/w hour of electricity so total cost will range between 30 and 50, so that's electricity at 1p per mile. Which is extremely cheap, ten times cheaper than a fuel car. The car is zero emissions, therefore there's no road tax on the car and when charged from fully sustainable energy source for example wind power or there's lots of power supplies that supply sustainable energy it becomes a totally sustainable form of transport. The disadvantage is that you can't drive from Edinburgh to London; it's quite simple you're limited in range. I play rugby every week and the first time I drove to my rugby club there was an away game, thirty big men standing at the entrance to the rugby club waiting for a bus and I rolled up in my tiny little Gee-Wizz, I've never seen thirty men collapse to the floor more quickly with laughter having said all of that, after explanation when they realised it only cost me 30p to drive to the rugby club they changed their attitude a bit I think.

## **MIKE WEST**

Mike West, I'm head of operations for London Buses the buses have just been recently introduced are hydrogen fuel cell buses and are part of the European wide project to demonstrate this new technology. In simple terms the fuel cell, which is mounted on the roof of the bus along with some hydrogen tanks works by combining the hydrogen with oxygen from the atmosphere, that produces energy which is electrical energy which is used then to power the vehicle. Now the only by-products from this process if people can remember their chemistry from school is water. The fuelling of the bus is a relative simple process and is very similar to filling a car with LPG the bus is taken to the fuelling site the nozzle, which is a sort of air type nozzle, is connected to the bus and the bus takes about five minutes to fuel. At the moment it is relatively expensive 'cos it's a trial. Each bus is costing about £750,000, which is about four times as much as a conventional vehicle. The operating costs are very similar to a conventional vehicle the only difference is at the moment again that hydrogen is a little more expensive than diesel, again because it's not widely available. Too early to say whether there's any major downsides, at the moment the technology requires a lot of attention, engineers need to be specially trained to look after the fuel cell but so far they are proving very reliable. The major obstacle to more of these vehicles in the future is probably down to commercial viability and unit costs.

## **JOHN SEYMOUR**

My name is John Seymour, I'm a farmer from East Durham, the car I have here is a nine year old BMW diesel 318, it's been running on Biodiesel since I got it from new, until last year it's run on 100% Biodiesel, this last year it's been running on Bio-Plus that's a 95/5% blend, 95% mineral diesel, 5% Biodiesel. Biodiesel comes from oil seed rape that's a crop we grow it's the yellow crops you see in the Summer, those flowers drop off and a pod is formed and

within that pod there are black seeds. We harvest those black seeds, the seeds are then crushed resulting in crude virgin rape oil, the oil is then processed to take out the glycerol which makes the oil thinner same characteristics as diesel. It is available in several forecourts in Durham in over sixty around Humberside and also available in the South East in both forecourts and supermarkets. At the pumps its exactly the same prices as ultra low sulphur diesel there's no difference between using a Biodiesel blend than using standard other low sulphur diesel it handles in every way, there's no modifications to be done to the engine any engine that runs on diesel will run on Biodiesel. I can't see any disadvantages at all, I mean we're driving now past some rape seed of mine, were harnessing the power of the sun as the crop grows it's taking carbon dioxide out of the atmosphere so any carbon dioxide I'm pulling out through my exhaust at the moment has been took out so it's carbon dioxide neutral so if we want to get serious about greenhouse gases used it's the perfect fuel.

## **REPORTER**

John Seymour, Mike Weston and Joe Byers there extolling the virtues of their chosen green vehicles. Joining me now Professor Garrell Reese of Cardiff Business School, Julie Foley from the Institute for Public Policy Research and motoring journalist Quentin Wilson.

Quentin, we see you on TV of course behind the wheel of the latest gas-guzzler but in real life you possess a green car don't you?

## **QUENTIN WILSON**

I do and I think one should set an example, I've taken great pains to drive round in an LPG Jeep and I know it's not the perfect solution but at least it's emissions are 20% better than petrol but sadly that's really the only thing that's available although I am thinking very, very hard about Biodiesel but all car enthusiasts if they're honest, if they lay claim to a level head

are worried about this and we have to do something before a) the worlds renewable resources of petroleum disappear as they will or we just choke completely from this awful yellow pall of smog that hangs over every city so the race is on but I fear the road is a long and very hard one before we get to that beatific vision of the zero emission.

## **REPORTER**

Well Professor Reece, you've got LPG that Quentin drives, you've got electric, you've got Biodiesel, you've got so many of these cars but are they realistically the sorts of cars that we can all expect to be driving say, in the next decade?

## **GARRELL REESE**

Probably not because yes they are technically feasible but are they entirely commercially viable if you look at say Biodiesel it's only 5% of the total amount of diesel and it doesn't really address the CO2 problem, you're just tinkering with the problem and unfortunately the same thing with LPG that it's a 15% improvement but when you have full mass motoring in India and China and all those extra exhaust pipes, this again would not be the solution. The solution is some way ahead the trouble is there's so much energy in a given amount of petrol and diesel it's very difficult to come up with a commercial alternative possibly the alternative will one day be hydrogen but a true hydrogen society needs planning you can't simply turn towards it. You have to make the hydrogen in the right numbers, you have to be able to distribute it, you have to be able to store it and also making the hydrogen has to be done itself in a clean way because I'm advised by the people who know more about this, the chemists and the physicists that making hydrogen in a commercial way is a pretty filthy process. What you must have is renewable energy to make the hydrogen so we will be I think be some way ahead before we see changes in the total car park.

**REPORTER**

And the problem there, Julie Foley say with hydrogen is that there is no infrastructure is there for these kind of vehicles, if you arrive in town late at night and you don't know where the local garage is that has a socket to plug in your electric car, or an LPG pump or of course with hydrogen fuel there is nothing in place, how do we get round that?

**JULIE FOLEY**

Well I think this is where government really needs to come in, you're right there isn't any existing hydrogen infrastructure and I'd agreed hydrogen is probably decades away from being a commercial reality but when we're talking about issues such as climate change, we are talking about issues which aren't going to go away in the short term they really do require a long term strategy and other governments around the world have already woken up to this fact and are working very closely with fuel suppliers and vehicle manufacturers in developing hydrogen refuelling infrastructure and demonstration projects so the transport for London hydrogen buses mentioned earlier is a good example and I think buses are a good starting point for hydrogen because buses tend to refuel at depots they tend to have fixed routes so they are likely to be a much easier first mover market compared to cars for example.

**REPORTER**

So motorists might be able to share as it where the bus depot to fill up on hydrogen.

## **JULIE FOLEY**

They could do but buses also play an important role in raising awareness of cleaner fuels, I think we're talking about hydrogen here assuming that the average motorist knows what hydrogen is, most greener fuels aren't generally understood. I think there's an important point about money and investment here as well, in the UK we really neglected this market, procrastination has meant that we haven't invested in alternative fuels compared to other governments. Even the seemingly oil friendly President Bush announced a 1 billion spending programme for hydrogen fuel sale vehicle research last year, in the UK we haven't even thought about spending that much money.

## **REPORTER**

So we're lagging behind there, but for the ordinary car buyer Quentin the main problem is that these eco-friendly cars, which are ordinary cars that's the whole point of them, cost more, sometimes a great deal more don't they?

## **QUENTIN WILSON**

Well that's the problem, if you taken something like the very splendid Toyota Prius or the Honda Insight these hybrid electric petrol engine cars, they're great, they're refined, they're quiet they can do what most other cars can do but there's a £5 - £7,000 price premium. Yes you can get a grant from the government but it isn't very large and to go through it the bureaucratic hoops are just unimaginable. So you need, consumers need a fiscal incentive to do this, they are not naturally environmentally friendly and to get them to do this, to get them to think and change their behaviour to make a conscious decision to buy an environmentally friendly car, they must be given a financial incentive and that is sadly lacking from the government.

**JULIE FOLEY**

I would agree with that actually, the government provides a £1,000 grant which is from the Energy Saving Trust for a hybrid car and I bet there's many motorists who don't even know that that grant is available. As it's been pointed out, that's not enough to make up the price difference.

**REPORTER**

And Garrell, I mean, Quentin there, used to be able to get tax incentives on his LPG but the government has withdrawn them now, are we not getting mixed messages here from the Department of Transport?

**GARRELL REESE**

Yes and I remember two years ago I wrote the forward to the report from the organisation that put LPG out and I mention there that the government must not lead the motorist up the garden path so to speak, to mix the metaphor and then suddenly replace the subsidy because the PR effect of that would be disastrous 'cos if the government does it once, it is going to do it on another occasion. But to be fair to the government, I think what they realise was that possibly the LPG solution itself was a blind alley and in fact what you should be looking at is a solution that really is the long term one and a great deal of work is now being done about the source of the emissions yes you've said to start with, is the transport sector but 75% of emissions come from the non-transport sector where in fact it's easier to replace the fossil fuels. So a huge amount of work has been done say in Sweden which now is trying to persuade people and government to replace fossil fuel in power stations, in the house etc and that can be done much more quickly and much more viably than it can in the transport sector.

We then have the breathing space if you like, literally and figuratively to put together the hydrogen society and you only need one change, future generations won't thank people for being saddled with change after change after change, the waste of resources would be fantastic."

**REPORTER**

We mustn't leave out of this equation the industry, is the industry doing enough to clean up its act Julie?

**JULIE FOLEY**

Well the vehicle industry is investing more fuel efficient vehicles and they are making hybrid cars available but I do think it's a problem that we don't have clear price signals from government and what we've seen so far is the government trying to pick technology options which it's just frankly not very good at doing and what it needs to do is to develop tax incentives to reflect environmental outcomes so that the best fuel options that come along get the best tax breaks. I wouldn't agree though in saying that that road transport emissions should be let off the hook, road traffic is growing by up to 25% by the end of this decade and that's a government official forecast, and as a consequence road transport emissions are growing very rapidly, so the importance of cleaner fuels and clear price signals is really fundamental.

**REPORTER**

Would you agree Garrell that the industry itself has to do more?

## **GARRELL REESE**

Yes it does but what it wants is a lead from the decision makers, now what exactly do you want Mr Government they are saying. Do you want us to go down the route of LPG, hybrids etc? Hybrids are fine but as was indicated earlier, you are paying for two engines. You can have dual fuel Volvo will have an internal combustion engine, it can go on gas, it can go on diesel or on petrol but at the moment these are all marginal solutions because until government has an idea, all government of what they want, then you won't get the right price signals down into the consumer and the consumer is very, very conservative because the car, the house and the antique are a very special group of products. There's a well-established used vehicle market. People speaking perhaps on this programme buy used cars but for every one new car bought in Europe there are four used ones so what you are doing when you buy a new car, you look at your residual value what are you going to get for it, and if you're going to buy some very way out fuel source you are worried that perhaps I will like this but other people won't and therefore there will be a disaster when you come to sell the vehicle. So a whole series of economic calculations have to be put into place before the consumer will be certain as to what vehicle they should go for and the consumer can't be certain until the industry is certain and the government's are certain.

## **REPORTER**

Final word to you Quentin, just in ten seconds, will it ever become cool to drive such cars do you think?

## **QUENTIN WILSON**

I think it is already becoming cool but it's a communications thing, in America I mean lots and lots of people drive around in GMZZ1 which is this electric hybrid car and they have a

halo of sort of residual glamour as a result, we need to get that message across robustly in the UK and also remember what's going to happen in China when we start building cars big time over there.

## **REPORTER**

Quentin Wilson, Julie Foley Professor Garrell Reese, thank you all very much indeed.