

CORRECTED VERSION

ENVIRONMENT AND NATURAL RESOURCES COMMITTEE

Inquiry into the production and/or use of biofuels in Victoria

Melbourne — 4 September 2006

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Mr K Seyer, director, technical and regulatory, Federal Chamber of Automotive Industries.

The CHAIR — I would like to welcome Keith Seyer who is representing the Federal Chamber of Automotive Industries. Thank you very much for your time today. I need to remind you that all evidence taken by the committee is taken under the provisions of the Parliamentary Committees Act and is protected from judicial review. However, any comments made outside the precincts of the hearing are not protected by parliamentary privilege. Hansard is recording all evidence taken today and you will receive a proof version of the transcript within a couple of weeks. We have allowed until 2.20 p.m. for your presentation and questions; we just need 10 to 15 minutes at the end for questions. I will hand over to you.

Mr SEYER — Firstly, apologies for not providing a written submission prior to today but the draft submission is currently with the various car manufacturers. A lot of them have been on holidays in Europe and Japan; they are just reviewing it and seeing if they need to provide any comments. With that introduction and apology I guess I should point out that the Federal Chamber of Automotive Industries is the peak body which represents the majority of Australia's manufacturers and importers of passenger cars, light vehicles and motorcycles. Basically we represent the light-vehicle industry, if you like.

Australia is one of the most competitive automotive markets in the world with more than 50 brands and 350 models from over 20 source countries. People here are provided with a wide choice of vehicles. New vehicle sales have been hovering at just under the 1 million unit mark for a couple of years now but to put this in context that still only represents less than 1 per cent of the global new vehicle market each year. Some 30 per cent of new vehicles are manufactured locally and about 70 per cent are imported. That is a very important point to bear in mind because a lot of the technology comes from overseas and indeed all diesel engine vehicles are imported from overseas.

From the vehicle industry's perspective biofuels that conform with the national fuel standards for diesel and petrol are acceptable for those models identified by the manufacturer as being compatible with such fuels. The FCAI strongly advocates the need for appropriate labelling so consumers can make an informed choice when they pull up to the service station bowser to see whether they wish to use ethanol-blended fuels, no. 1; and no. 2, whether the vehicle is suitably able to run on that fuel. For some time now we have had on our web site — www.fcai.com.au/ethanol — a list of vehicles that can or cannot use ethanol-blended fuel. Also on that web site is a list of contacts for the various manufacturers should owners have any questions regarding their particular vehicle model. I should also say the FCAI acknowledges the important role that properly refined biofuels can play in the transport fuels equation and certainly we support the federal government's 350 million litres biofuels target.

Another point of background I guess is in relation to where our emission requirements come from. Australia has for some time had a policy of harmonising the Australian Design Rules for emissions and safety with international standards as specified by the United Nations Economic Commission for Europe regulations. The current emission requirements are aligned with those UNECE regulations. New vehicles certified to these standards will increasingly use advanced emission control technologies and therefore will have more stringent fuel quality requirements. The ethanol content of the fuel used to certify these vehicles to these ADRs is currently capped at 5 per cent or E5, and that aligns with the European regulations. As a broad philosophy, steps to encourage the uptake of biofuels here in Australia should not undermine the environmental benefits foreshadowed to flow on from these new vehicle emission standards. In other words decisions on fuel quality should not compromise vehicle environmental performance or vehicle operability.

Perhaps I should just cut quickly to the chase and provide some summary points of the industry's position and then open it to questions — that might be the best way seeing that we are tight for time. As I said, biofuels — whether they are petrol or diesel — must meet mandatory specifications based on international fuel standards and implemented in Australia through the federal Fuel Quality Standards Act. Generally, where ethanol is blended into petrol most vehicles manufactured after 1986 can satisfactorily use petrol containing up to 10 per cent maximum of ethanol. This is consistent with the limit of the national fuel quality standards. There are, however, a limited number of models of the existing vehicle fleet for which certain manufacturers do not recommend the use of E10 or for that matter any petrol containing ethanol. The specific advice of these manufacturers must be recognised.

Obviously, 20 or odd years ago it was probably not foreshadowed that these vehicles would be required to run on ethanol-blended petrol. As some background information, most pre-1986 vehicles would have had carburettor engines so they would have had carburettors. You may have heard previous testimony in relation to the fact that ethanol is an oxygenate so you have a lean-out effect of the fuel which means the engine tends to run lean. Whilst fuel injection systems can to a limited extent cope with that change to the fuel by programming, earlier vehicles with carburettors can not necessarily do that with ethanol-blended fuel and you could get problems with operability.

FCAI reiterates the need for labelling ethanol blends to ensure that operators of vehicles not suited for their use are provided with adequate advice regarding choice of fuel. FCAI does not support ethanol levels in petrol above 10 per cent. FCAI does not support mandating any level of ethanol.

I might move now to the other side of the biofuels equation and that relates to diesel. FCAI members do not support diesohol where this is produced from blending of ethanol with diesel and will not warrant damage caused by their use. In addition there is a recognised safety risk in the handling of such blended diesel because when you combine ethanol with diesel you lower its flashpoint and it becomes a highly flammable liquid. The so-called fatty acid methyl esters (FAME) including vegetable-derived esters are generally acceptable when blended with conventional diesel fuel up to 5 per cent. The FAME on which this biodiesel is based must comply with either the European standard, EN14 214 or the US standard ASTM D6751. In addition to that the resultant biodiesel B5 blend must conform to the national diesel standard which is based on the European standard EN 590. This is consistent with the world wide fuel charter.

The FCAI does not support the use of 100 per cent biodiesel fuel, B100. FCAI members will not warrant damage caused by using biodiesel blends greater than B5 unless such use is sanctioned by a particular manufacturer. Adoption of the worldwide fuel charter recommendations is particularly relevant in Australia. As I mentioned earlier, all the diesel technology comes entirely from overseas. FCAI recommends that national standards for FAMES and biodiesel blends based on either the European and/or the US standards be developed concurrently with a study on the impact of biodiesel on vehicles. This must include the issue of oxidation stability regardless of the level of biodiesel in the blend.

There needs to be a transparent process to allow consumers to make an informed choice on whether their vehicles can run on biodiesel or indeed ethanol-blended petrol. The FCAI recommends that any cost-benefit assessment taking into account the range of economic, social and environmental aspects is calculated on a total life-cycle basis, in other words to take into account all the various aspects of growing the crop to make the ethanol to issues such as balance of payments, being self-sufficient in the ethanol that is required in Australia. Currently, as I understand it, if we pooled all the ethanol that is being generated and added it to petrol I think you would get a blend of about E1.5. That brings me to the end of my summary.

Mr HILTON — Is it feasible to go from petrol to gas? I think we have quite a lot of gas in Victoria — we are self-sufficient — rather than trying to augment our petrol imports?

Mr SEYER — By gas you are referring to liquefied petroleum gas?

Mr HILTON — Yes.

Mr SEYER — As you probably know, a few of the manufacturers — indeed, all of the local manufacturers — make some form of LPG vehicle. Ford makes a purely LPG vehicle, while I think the other three make vehicles which can run on either petrol or LPG. That is probably a marketing question that I am not really able to answer. Technically it is feasible; whether there are incentives for owners or the public out there to buy those vehicles, I guess only time will tell. With the current incentives in place, in the next 12 months I am sure there will be some marketing research done to see how those incentives come into play.

Ms LOVELL — You list a long list of things that your association is opposed to, including the mandating of an ethanol blend. I think you referred to a blend of above 5 per cent or 10 per cent, I cannot remember exactly.

Mr SEYER — Above 10.

Ms LOVELL — Can you give us some rationale behind why your association is so opposed to these?

Mr SEYER — I guess there are a number of reasons. As I said earlier in my introduction, the vehicle emission requirements in Australia, as specified in the Australian design rules, are aligned with the international standards and in the test fuel specification in those ADRs the ethanol level is capped at 5 per cent. Basically if you are certifying a vehicle for sale in Australia it will be able to run on anything up to E5. For anything above that there may be some question marks, both in relation to the operability of and also the emission performance of the vehicle. The vehicle has been certified to meet the emission requirements on a maximum of E5. If you ran it on E10 the emission performance will probably not meet the same level the vehicle was initially certified to. That is one point.

Another point is that currently if you put ethanol in petrol, my understanding is that you would get a blend of about E1.5. If you mandated E10, or even E5, where is the rest of that ethanol going to come from? The previous speaker spoke about importation and the effects on balance of payments and the shift of reliance on importing crude oil to maybe a reliance on importing ethanol. I guess there are a number of factors. There is the ability to grow enough crops to generate the ethanol. Obviously in the current drought-stricken times the issue of growing enough crops and water usage — all those things, and parameters, I guess, have to enter the equation when you are doing the analysis to ask, ‘What is the policy direction?’. One of my later points was about the whole cycle analysis to examine which direction one should go, in a policy sense, regarding ethanol.

Ms LOVELL — Do you think the automotive industry has any role to play in or any responsibility for helping to address what might be a future world crisis with oil — in other words, reducing the reliability on oil for petroleum?

Mr SEYER — I think there has been a lot of work done over the past decade, in the short term, in relation to looking at alternative fuels, if you like — hydrogen fuel cells, compressed natural gas and hybrid vehicles. There are some hybrid vehicles running around today. So a lot of money has been poured into research looking at alternative fuel sources.

Mr DRUM — The ability for Victoria or Australia to produce ethanol is one issue we have, but I do not think we should mix that up with what is good for our cars. Are you saying that your members, the manufacturers and importers of our cars here, will not cover guarantees or warranties on vehicles that consistently use E10? Is that what you are saying?

Mr SEYER — We have a list — it has recently been updated; it first appeared on our web site last year — of vehicles that can or cannot run on E10, or E5 in fact. There is a parallel list of vehicles. But you have to remember that there are probably about 12 million vehicles in the car park and the average age is around 10 years old. The concern I would have for the consumer is that the average age of vehicles out there is 10 years; some vehicles will be aged 20 years or more, and those are the ones that predominantly cannot use ethanol-blended fuel. That is one point.

Another point is that they have had 20 years of use already, with wear and tear; some may be better maintained than others, but still there are a lot of components in them that were never designed for fuel with any amount of ethanol in it. The concern I would certainly have is: how will these vehicles behave when someone — inadvertently, even — uses ethanol-blended petrol in them, even though the manufacturers recommended, ‘No, you should not do that.’? There is a lot of concern out there about what happens to the poor consumer. That was really our point in saying that there really needs to be a transparent process to inform the owners of vehicles and give them all the facts so they can make an informed choice.

Mr DRUM — You have also raised the issue of emissions. I was always under the impression, and I think the average Australian would be under the impression, that ethanol blends burn cleaner. But you are saying that is not necessarily the case?

Mr SEYER — That is not necessarily the case. How can I put this? When fuel combusts, adding ethanol raises the combustion temperature. There are three major products, if you look at petrol: hydrocarbons, carbon monoxide and nitrous oxides. The thing is that if the combustion temperature goes up, the carbon monoxide and hydrocarbons usually go down, but the nitrous oxides go up. It is a sort of two-edged sword, if you like. You cannot necessarily make all three of them go down. So you really need to understand what the ethanol-blended petrol is doing to the noxious emissions coming out of the vehicle. In fact coming out of the biofuels task force report from last year the federal Department of the Environment and Heritage currently has a couple of studies going. One is looking at the operability side of vehicles, both pre-1986 and post-1986, and their operating on E5 and E10 to try to get a gauge of how many of these cars are currently in the fleet — for which you cannot really do anything in relation to modifications — and how they will perform, both operability-wise and emission-wise.

The second project of DEH, coming out of the biofuels task force report, is looking at the health impacts of using ethanol-blended petrol. In the formation of photochemical smog, hydrocarbons and nitrous oxides are the major precursors to the formation of smog. Obviously on the one hand the hydrocarbons are slightly going down and the nitrous oxides are slightly going up, but you really need to know the overall effect on smog and its impact on people’s health.

Mr DRUM — But carbon monoxide goes down in all cases?

Mr SEYER — Carbon monoxide appears to go down slightly.

Mrs COOTE — Does the FCAI have an opinion on the use of other forms of biofuels, which you have touched on, and also hydrogen, into the next decade? And is it formulating strategies to cope and deal with this into the next decade?

Mr SEYER — We do not have a strategy to deal with that, as you say, but as I said earlier there is a lot of research going on into hydrogen fuel cells and CNG or compressed natural gas. Currently the short-term solution appears to be the hybrid electric, petrol-electric hybrid vehicles. Quite a number of them are now on sale around the world, and I think manufacturers in the near future appear to be focusing on that sort of solution, if you like, in relation to an alternative to purely petrol-powered vehicles.

Ms DUNCAN — You would be aware that in Brazil cars run on, I think, E10 and in America cars are produced that can run on E85. Do you know anything of the performance of those cars, and is there any capacity for Australia to manufacture those sorts of vehicles?

Mr SEYER — The E85 vehicles you are referring to are the so-called flex-fuel vehicles. In Brazil I believe they run on either an E24 blend or an E85 blend. Technically it is obviously possible to make vehicles to be able to run on a variety of blends of ethanol-blended petrol. The things you need to look at are special componentry for the fuel system, essentially, and the engine — fuel tanks, fuel pipes, injector systems — because ethanol is a solvent and attacks rubber-based components, so seals of any description.

The previous gentleman mentioned ethanol's love of water. You have to be careful, and I think you really need to go away from steel fuel tanks to plastic ones because you will have corrosion and rust problems. Once you have rust in your fuel tank, it can break up and enter the fuel system, clogging it and all that sort of stuff. Yes, it is possible to make those vehicles. I have no information on the additional cost of those vehicles. I recall an article in the *Age*, in I think either last week or the previous week, comparing the energy content of petrol versus that of ethanol. Obviously the ethanol has a much lower energy content. I am not an expert in chemical engineering or chemistry so I will not go into that, but that is one thing to bear in mind, that pure ethanol has a much lower energy content than petrol. Of course once you start blending it you will get a ratio of energy content which is less than that of the pure petrol.

Ms DUNCAN — So we would have the capacity but we do not have the intention? Or there are no plans within your industry to produce those flex-fuel cars?

Mr SEYER — Not to my knowledge. But again, if you go back to the whole big-picture equation, if you made E85 cars, where would you get the ethanol from — because it would not come from Australia.

Ms DUNCAN — But from a manufacturer's point of view, we are importing the oil, and I would not have thought that was an issue from your industry perspective necessarily. I guess my question is really about whether there is the capacity or an interest?

Mr SEYER — I guess the motor industry, like every other industry, is there to make money. You hear the stories where in the US these flex-fuel vehicles are just sitting on fields and having lots of grass growing through them because they are not sold. In the US it is purely a political equation to placate the central crop growers. We have to be very careful not to continue what I describe as the triumph of politics over science. There really need to be all the facts laid on the table and put into the analysis to come up with a 'sane' solution, shall I say, for want of a better word.

Mr SEITZ — The oil industry and the automotive industry are really married together, each one depending on the other. The growth of both historically was as a partnership and therefore we are struck constantly with our combustion engine. What are both partners in this field actually doing in researching and developing a different source of energy to put into a vehicle to make it move? I have not heard anybody say. We all know oil is a finite product and we need an alternative engine to be designed and research to be done. Can you shed any light on that?

Mr SEYER — I am not too sure that the motor industry and the oil industry are necessarily married together. Sometimes we have very big fights — just as an aside!

Mr SEITZ — I was around at a time when the pressure was on to get X amount of plastic into a car, when the cars were made from steel. It was the oil industry again that was pushing to be able to use more of its oil products into the plastics.

Mr SEYER — There is not necessarily a connection between the oil industry and the motor industry, but the motor industry off its own bat has been spending billions of dollars over at least the past decade, or the past two decades in fact, looking at possible alternative fuels — as I said, looking at hydrogen fuel cells, electric-petrol, and also electric-diesel now, hybrid vehicles. Diesel technology itself has made vast improvements in the past 10 years. Diesel now has tremendous economy, and there are tremendously clean emissions coming out of diesel vehicles. Compressed natural gas is another possibility and also various fuel cells. A lot of work is being done and a lot of money is being spent, but the short-term gains appear to be in petrol-electric or diesel-electric hybrid vehicles.

Mr SEITZ — Still relying on a combustion engine?

Mr SEYER — Still relying partially on a combustion engine, yes.

Mr SEITZ — Somehow or other we have to get out of that square box and get some research on some other methods.

Mr SEYER — Technically you may look at fuel cells of some description, but really getting the fuel energy into a package that could be used in a vehicle the size of which allows you to physically drive around in it may well be one of the hurdles.

The CHAIR — I might just follow up on George's question and little bit. Is the driver of the research the need for better environmental outcomes or is the driver of this research the diminishing oil supplies or the lack of security with oil supplies?

Mr SEYER — I think it is really an environmental concern because, believe it or not, the motor industry does have a conscience. If you look at vehicle safety over the past 40 years, you see it is the auto industry that has developed things like the crash test dummies, which are used to design vehicles with. It was not the government, it was the auto industry that did all that. So the research is driven from a social conscience viewpoint.

The CHAIR — In the short term, I suppose — can you give me an answer, in a 5-year or maybe a 5 to 10-year time frame, on the most effective way of reducing the environmental impact of the Australian fleet?

Mr SEYER — That is a difficult crystal ball question. It would only be my personal view. In the short term, the 5 to 10-year time frame, it is probably going to be very difficult. If you look at the issue we are talking about, biofuels — how do we grow enough crop to enable the bio part of the fuel to be made? Is it overall an environmental plus? You really need to look at the pros and cons. You have to look at the water consumption, likely CO₂ impacts — the whole cycle of producing any sort of biofuel needs to be examined. I have to admit that I do not have all the answers to the equation.

Mr SEITZ — We could go back to the Stanley Steamer.

Mr SEYER — The Stanley Steamer, yes, there has been some work done on steam vehicles.

The CHAIR — I think we will call it a day. Thanks very much for your time today.

Witness withdrew.