ECONOMIC DEVELOPMENT AND INFRASTRUCTURE COMMITTEE

Inquiry into Mandatory Ethanol and Biofuels Targets in Victoria

Melbourne — 31 July 2007

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Mr C. Midgley, General Manager, Supply and Marine, Shell Australia.

The CHAIR — I welcome you to the hearings of the Economic Development and Infrastructure Committee inquiry into mandatory ethanol and biofuels targets in Victoria. All evidence that is being taken at this hearing is being protected by parliamentary privilege. Anything that you say here is obviously protected; anything that you say outside may not be.

Could you please state your full name and address, whether you are attending in a private capacity or representing an organisation; if you are representing an organisation, please state what position you hold within the organisation?

Mr MIDGLEY — I am Chris Midgley from 807/107 Beach Street, Port Melbourne. I am the General Manager for Supply and Marine for Shell in Oceania, responsible for the management of all of our refining and manufacturing in the Oceania region and the distribution of oil products across the region.

The CHAIR — Thank you. I will now pass over to you. If you wish to make any comments, we would appreciate that. To assist Hansard after you have finished, it would be good if you would hand up your documentation.

Mr MIDGLEY — I think you all have a copy of the submissions.

The CHAIR — Thank you. Over to you.

Mr MIDGLEY — Thank you for this opportunity. I will try to talk a little bit nationally and regionally around Shell's position on biofuels.

Back in 2005 when we talked to the federal task force around biofuels we talked about three key enablers to introduce biofuels into the Australian environment. That was around consumer confidence; around having significant infrastructure to be able to handle the product effectively; and thirdly, around price and economics that would drive the deliverability of biofuels into the marketplace.

Since then I think we have worked hard on a couple of those key areas. In 2005 we launched a product called Optimax Extreme, which is now known as V-Power Racing. That was a 5 per cent blend of ethanol with a highly formulated Mogas product, gasoline product, in order to make a high 100-octane performance fuel. This was around trying to get consumer confidence to say, 'We are willing to put it in our top performance fuel, and therefore you can rely on ethanol'. Up to this stage ethanol was seen as a product that corroded engines and gave problems after the experience in New South Wales. We now have that available at 47 sites nationally, of which 20 sites have that available in Victoria.

From there we have worked on developing the infrastructure in order to be able to blend effectively ethanol into main fuels. The key around that is to make sure that we are blending it to exactly the right specification, right to the 10 per cent limit, not over that top, not having low blends. Low blends result in a product which is hydroscopic and attracts water. If you are below 4 per cent ethanol in your fuel, you end up attracting water into it, which gives you engine problems. So having the right infrastructure to blend it safety is absolutely critical. We have invested about $4½ million in infrastructure across the east coast in our three main terminals — in Brisbane, in Sydney and now in Newport.

That has been enabled us to start our process of rolling out E10 into the eastern seaboard marketplace. We now have 130 sites with it available in Queensland and New South Wales, and we begin our rollout of E10 in Victoria later on during September and October. By the end of the year we will have 120 Coles Express sites in Victoria supplying E10 into the marketplace. That has tackled the consumer area and the infrastructure area. As we go through the E10 rollout we will also do some significant media activity around it in order to promote the safe and reliable nature of E10 as a fuel to the consumer.

The market has done its job. Some will not like the high oil prices but the only way that E10 is really sustainable in this market at a discounted price, or even at a parity price, requires oil prices to remain high. Currently with the increasing price of feedstock, that bar that is being set for where oil prices need to be in order to make it economical to get it into the marketplace continues to be lifted. Some may say that as the oil price lifts, so does the feedstock price. So which is leading which is, I guess, a dilemma that you can look at.

Shell advocates that an efficient market is the best way to deliver low costs into the marketplace, and therefore mandated biofuel blends are more likely to raise and not lower the fuel price; it will drive the feedstock prices upwards. It will drive inefficient delivery of fuels into the marketplace by requiring us to invest in infrastructure in regional parts of Australia, in small depots where the cost of blending it is very high for the volume you are trying to put into the marketplace. So therefore, while we are very keen to see the continuation of the excise break, which of course starts to roll back in 2011 to 2015, currently that is the key enabler for getting biofuels into the marketplace.

It is giving the incentive to put the capital investment in in order to make biofuels available. Of course, it is highly dependent on the commodity price and we watch that carefully. Now we are starting to have to look at where grain prices are going, or canola, or where tallow prices are going in order to see where biofuel economics may be driving, going forward into the future. Getting sustainable supply at a price which guarantees a margin is very difficult because, of course, the biofuels producers are also trying to look at their guaranteed margin.

On the consumer end we have gone through an education program. V-Power Racing was our bed stone for that. We are now moving into a process of going through the launch of E10. Once we have that available across the whole of the eastern seaboard we will have 250 to 300 sites across the eastern seaboard offering E10. That gives us the critical mass to make it worthwhile to start going into a more significant eastern seaboard media drive. You will start to see that coming out as we go in September and October with the product being available.

I have mentioned the cost of infrastructure. We have spent $4.5 million on the infrastructure — about $1.5 to $2 million here in Newport at our terminal to make it capable of blending E10. We have had a lot of support in Queensland with the ethanol conversion initiative which gives some support around the ability to get rebates around the investment that we have put into infrastructure, and additionally the federal government ethanol distribution program enables us to recoup the cost of converting sites. This is important because, done properly, the cost of converting a site is about $15 000. The concern that we have is that product quality could be compromised if it is not done well.

There are a couple of areas on product quality that I would like to raise. I talked about water. Not converting sites properly will get ingress into the product and then water into tanks. We have seen some sites having some significant problems. Likewise enabling blends to go below 4 per cent is likely to create problems. Ensuring that the blends are above 5 per cent enables us to ensure that the product is safe for car engines. Ensuring it is up to 10 per cent means that predominantly a high proportion of cars are able to use the product.

RVP — any blending of ethanol will mean that in summer the product will not meet the RVP specification. In Queensland and New South Wales there have been waivers. In Victoria we approached the EPA, and we have been granted a waiver for one year but of course when we have made such a significant investment it is a concern that if that waiver is not continued to be given we will end up having to reformulate the fuel which again will just drive the economics of making an E10 product uneconomical.

Our concern has been that in the past some suppliers have not had that waiver and therefore have been supplying fuel which does not conform to the fuel standards; again, looking to make sure of a level playing field is one thing but reputation is a more important thing. It only takes one or two individuals to operate to a poor standard for the reputation of ethanol to be beaten again. We have got ourselves to a place where it is acceptable to the consumer. Ensuring we have that compliance on RVP-percentage ethanol and ensuring there is no water ingression in the product is essential.

There is always a dilemma between metro and rural. Obviously the rural has a nice link to the production of the product. The metro is really where the airshed values are going to be gained. For us delivering into the metro area is the economic place. There you have large terminals; you can make the big capital investment and get the product into the metro area which effectively gets more sites. If I look at the statistics for Victoria our plan is about 125 sites that will have E10 available. That represents in the area we are delivering at, 79 per cent of total fuel supply to Victoria.

However, 164 sites will not have it available, representing 21 per cent of fuel sold. So you can see that is really the rural area where it is not really economic to turn over those sites. They do not have the volume turnover and you end up having to put significant capital investment into depots with low turnover. Focusing on where you can deliver the highest volume for us is worthwhile evaluating.

I think we want to be careful around some of the claims. Shell advocates that the environmental, economic and societal impact of an increase in renewable fuel mandate should be carefully evaluated including potential impact on the food chain, the fuel supply and distribution systems, the rural piece and the full life cycle of the environmental impact. If you read the Prime Minister's biofuels task force in November 2005, I think the environmental benefits were balanced. We had a reduction in CO_2 emissions as a consequence of introducing biofuels but an increase of NOx emissions. NOx emissions are caused because the engine runs at lower efficiency; draws more air in; therefore converts more of the nitrogen in the air into nitrous oxides.

Nitrous oxides are about 320 times more potent as a greenhouse gas than carbon monoxide. You have to be careful there and the key really is to try to get it into the efficient engines, which can actually reduce their air intake with the higher temperature the engine runs at. That was our key proposition around V-Power Racing. It is a fuel formulated not only for high performance — Motech has done the tests which have shown 34 per cent more torque, all those exciting things that motor heads like, but the reality is it is actually a fuel by which the engine will reduce its air intake and use the oxygen content of the ethanol in fact to create a more efficient fuel.

Tests that were done with Dick Johnson gave about 8 per cent higher fuel efficiency over fuel. So it can be done but again the general proposition of E10 will be a lower fuel-efficient fuel. You are bringing 30 per cent oxygen, which has no combustion value, into your fuel with the ethanol component.

I guess, finally, our drive moving forward is to encourage government policy which would support development of low-carbon and low-cost manufacturing techniques, not simply subsidise the cost of biofuels. That is really around creating a platform for second generation. Second generation is where we will see biofuels really have a position in the marketplace. Second generation effectively uses the waste product of food crops, the biomass — the stalks et cetera — which at the moment either get burnt as stubble, generating CO_2, or just get wasted. Therefore that is the way forward, where the second generation starts to use something that has already absorbed the water and already absorbed the CO_2 and you can convert. Shell is investing quite heavily in Iogen, which is a company in Canada of which we are joint owners, which converts wheat stalks into ethanol, and in a company called Choren, which is biomass to liquids, which converts biomass into biodiesel. Both of those are exciting propositions which will have a huge impact on CO_2 reduction but are probably still three to five years away from commercial realisation.

The current move for the volume targets which are currently being driven here I think creates a platform which will in the future enable second generation to come in, because there will be a demand for the product sitting there ready, which is part of the step forward to setting up a second-generation-type biofuels business. That was a quick journey through where we have got to. I hope that gave you a little bit of a feel for it.

The CHAIR — Thank you. Members will have a chance to ask one question. If you were to identify three keys to having a cost-effective and reliable supply of biofuels in Australia, what would be the three that you would say would be the top items we should include in our report?

Mr MIDGLEY — I think the top one has to be around the infrastructure. Without a good infrastructure investment you cannot blend or distribute biofuels into the marketplace. That is absolutely key. The ability to convert sites to be able to handle biofuels — a lot of sites in Australia are fairly old, actually unique in the world because a lot of them do not have manways on top of the tanks, so you cannot actually access the tanks. So the tanks are full of the rust of many years. Ethanol is a beautiful product for cleaning tanks, but unfortunately in the process of doing that the rust will end up in the engines et cetera, so the process of needing to clean those tanks and filter out the rust is a significant one, and again investment is needed to be able to do that.

I guess then the third point is really around having a free-market force in order to create a competitive environment for the biofuels producers. Subsidies can distort the market, therefore not creating a level playing field and ending in driving the prices of feedstocks up and driving the margins of those producers in the wrong direction. Their driver needs to be around competing with hydrocarbon. Anyone can have any view on where that price is going to go, but over time biofuels will inevitably compete fairly with hydrocarbon.

Mr DAVIS — Mandated target: what should it be; should there be one; should there not be one? Can you give us just a blunt answer.

Mr MIDGLEY — The blunt answer is I do not believe there should be one, but I think mandates can be implemented in a careful and pragmatic way. That would be to consider what are the behaviours it drives the

industry to have — for example, a percentage mandate which allows people just to drip-feed it into all of their product has a danger because of the product quality side. Trying to have a mandate, which means it has got to be made available across the whole of the state, is going to drive costs up into the business than trying to do rural. So a mandate that considers how you can do it perhaps from a primary terminal basis for supply out of that location can work. It will drive investment in the most cost-effective way and delivery to the most cost-effective sites.

Mr DAVIS — So on the cost that is generated, if it were mandated out there — and you might say as a preliminary part of this question you have already incurred significant costs — do you have any figure work that you can give us in terms of the likely cost of that mandating? Are there estimates?

Mr MIDGLEY — Rough estimates would be, you are looking at, for a primary terminal, around $1½ million to $3 million just to put in the ethanol tanks — the blending infrastructure at the terminal. That is for ethanol. Biodiesel is quite a different thing. The problem with biodiesel has been that the driver at the moment is towards tallow as a feedstock as opposed to canola or palm oil.

Palm oil we see as a difficult product because of the issues around sustainability. Although we are a member of the Round Table of Sustainability, and founding members, we have serious concerns that all it is doing is driving the surplus product to the less credible buyers. The driver in Australia is to tallow. Tallow has poor qualities as a biodiesel because of its cold filterability properties, which means that it has to be handled in heated tanks, heated lines to the gantry, blended extremely carefully, so therefore for biodiesel, you are probably looking at investments of $3 million upwards for a large terminal to put biodiesel in.

Biodiesel is better implemented back at the refinery level, if possible, albeit that there are issues that you cannot put biodiesel up a multi-product pipeline which contains jet. The two are not compatible. Clearly jet is our highest focus on product quality. The impact of getting jet quality wrong is obviously quite significant.

Mr DAVIS — Let me understand this: are you saying the cost of introducing these systems out more broadly is maybe $3 million a location in round figures, and unless there is a direct government subsidy for that, those costs are borne by your company?

Mr MIDGLEY — Correct.

Mr DAVIS — And then ultimately all fuel users generally?

Mr MIDGLEY — It then comes down to what the marketplace is doing. Clearly at the moment a mandate will tend to drive the price up because it enables those costs to be passed through, whereas in the current environment it is a view of where feedstock prices are going to be and where the oil market price is going to be, and also a reputational issue which has driven the current round of investment.

Mr THORNLEY — I guess as anything new is coming in, there is a risk of vertical market failure where people will not produce ethanol unless they have distribution for it and people will not distribute it unless they have security of supply. I am keen to understand a little bit more about how that market works between you as distribution and the suppliers. This may be commercial in confidence and obviously you cannot answer if it is, but how are the pricing mechanisms set given what you have said about the oil price umbrella defining the price envelope, and what changes would you see coming with the second generation, which I presume are what I have read about as being cellulostic technologies and/or is there any likelihood of significant scale sugar cane-based ethanol that might be cheaper? I am interested in the supply end.

Mr MIDGLEY — Addressing the first question, in general the oil industry is going to be interested in a pricing mechanism which is related to the international oil price. That is basically what it is competing with, and we would believe that if they want to compete in the oil business, it has to be economic against the international market — your alternative of importing fuel versus using locally blended biofuels as an alternative component. Australia is short of fuel, so that is a good thing for the biofuels industry. It is competing against import parity prices rather than export parity prices.

Mr THORNLEY — You would expect fuel stock suppliers to bear the oil price risk?

Mr MIDGLEY — The ethanol or the biodiesel suppliers are going to be bearing that risk versus the cost of their feedstocks in general. That is the dilemma. In any negotiations, of course, they are interested in having something more linked to their feedstocks. We are of course interested in having it linked to our oil price.

Therein lies the problem. There are many predictions of where oil prices are going to be, and it would be very difficult to gamble on whether it is going to come back down to $45 a barrel, which Woodside are currently saying is their investment basis for projects, versus some of the predictions from the banks that are saying it may go up to $100 a barrel. So, clearly for the biofuel producers, they are trying to make a gamble as to whether the price of oil is going to fall down to that floor or whether it is going to move up to the ceiling where they will make huge amounts of wealth. That is the investment decision they have got and the opportunity they have.

I think as far as second generation is concerned, it is really the technology which is the main cost. Finding the right locations for the feedstocks: most of the cost is transporting the feedstocks to the location. That is what is going to cause the costs in that feedstock. If you get a good foundation with the higher prices, once it gets established it will create the longevity in the future of biofuels because your capital investment is laid down. The feedstock price — it does not have an alternative, so it is not going to escalate, whereas of course at the moment grain is relatively short, even for a feedstock, and cane is a very cyclic business around harvests around the world.

Will cane increase? If you look at Brazil, clearly they invested a long time ago. Did they invest ethically? I think you can look at the news headlines and say possibly not. But what they have is a process where the borgas, the gas that comes off, is also generating electricity, so they have a highly efficient process — high, large scale, which means that their cost of production of ethanol is probably half the cost that you will get in Queensland, where they do not have that scale of the borgas relationship.

Grain is more interesting, because the by-product is a feedlot, which has an environmental benefit because it has the cellulose broken down, which means you have less ruminant emissions from the cattle, so you get a secondary greenhouse benefit from it. Choosing your location — again around the cost of getting the waste product to the feedlots versus getting the ethanol into the marketplace — will be key to being the most economic and efficient producer. That is going to determine which suppliers are going to be effective. Clearly the starch is a waste product, which is sitting in the best position at the moment.

Mr CRISP — I would like to talk a little more about biodiesel because it is thought that biodiesel will be the main part of the Federal Government's $350 million target. We have talked a lot about ethanol today, so I would like to look a little more at biodiesel beyond just the tallow industry, because can tallow supply what is going to be needed?

Mr MIDGELY — I think in general the biodiesel has lost its momentum on the agenda, because it simply is not economic even with the excise breaks. You are right: tallow is not sustainable as the only source, but what we have seen is all the biodiesel producers converting to almost 100 per cent tallow. It gives us the quality issues I talked about earlier. They are doing that because the canola prices have gone from I think $400 a tonne to $1600 a tonne over this period. It is just not sustainable. It is not an economic feedstock for them to use. Palm oil has done exactly the same thing. It has escalated in price, and I think there is less tolerance around the sustainability aspects of palm oil and there is a lot of uncertainty around that.

So tallow has become the key focus. The tallow prices have gone through the roof as well, as have the product quality issues. Therefore over a relatively short period of time biodiesel has become less and less attractive. Investment capital required for tallow-made biodiesel in the terminals is just too significant a hurdle to get over. Therefore the focus has certainly moved towards ethanol. Where I think biodiesel has some opportunity is around whether it can be used within refineries where you can blend it in without putting up the infrastructure costs and then distribute it from there.

That creates a more efficient way of getting biodiesel into the main diesel product. We know that is the direction that BP has taken up in Queensland, but, as you say, it is relying on tallow, which is becoming aggressively expensive to utilise.

Mr TEE — I just want to return to the discussion you had in terms of the mandate. I take on board the concerns about the way in which it is done so that it does not adversely impact on the market in terms of quality and so on, but on the issue of cost, if there is some sort of mandate recommended, would a lot of those costs have already been absorbed by yourselves in setting up the E10 facilities?

Mr MIDGLEY — Clearly we have made a decision to make some investment to broaden the reach of biofuels — or more importantly, E10 across the eastern seaboard. That was an economic decision, first driven by the Queensland Government, which gave the infrastructure investment grants, with 50 per cent return on our capital from the government. That helped to get the momentum going. But clearly we recognise that with the government target you have to target your lowest cost areas to be able to invest in. That investment is a sunk cost. Of course we are hoping that in the early years we will be able to make some margin to recuperate some of that cost, but the consumer also expects there to be a discount on the price of E10 at the moment.

The interesting thing that we are finding at the moment is that even with the 3-cents-per-litre discount and a lot of on-site advertising — a lot of the wrap on the poles, the decal on the pumps et cetera — consumers are still not choosing to put it in their cars. Our assumptions were for up to about 20 to 25 per cent trade across onto E10. We are seeing far lower numbers. In Queensland it was down to 12 per cent, even where they had lots of advertising. It is slowly creeping up. At the moment, even with the discount, the consumer is not choosing to take it. The discount is not a given. It is not sustainable if oil prices go down, and in fact of course as oil prices go down you start ending up with E10 being at a premium, which clearly no consumer is going to accept.

With a mandate you have to look and ask, 'What is it going to drive?'. Our assumptions for forward oil prices were that it would be very difficult to see the ability to justify our capital investment. On a normal basis we would not have invested; the return on investment would not be great enough. However, I think with the fuels target and also looking at setting up a foundation for second generation in the future, we recognise that we cannot ignore any more that biofuel is going to be a fuel going forward into the future. That is our premise for what we have done so far to date.

The CHAIR — Can I put a final double question? Would you like to see the E10 limit increased, and how will Shell advise customers of issues associated with using E10 in older vehicles — for example, the Coles Express rollout?

Mr MIDGLEY — As far as seeing higher than E10, no, I would not like to see it going above that. And that is not around protection, which I think some people would claim, and also we hear about these E85 cars. There is enough confusion around the product, and what I believe is the driver here is moving this towards a commoditised fuel — fuel that seems acceptable and is for everyday use. If you start having a variation of propositions, you create confusion in the marketplace — 'Which one is okay for my car and which one is not?'. There is still some of that already, which I will come to in the second part of the question.

I believe that having a fuel that is consistently somewhere between 5 per cent and 10 per cent is okay if you look at the CSIRO report. It would say that it is acceptable for only 60 per cent of cars; I think there are certain areas in that report which are flawed around the testing. If you look at cars on the manufacture list, 5 per cent means that you would probably get about 90 to 95 per cent of cars that are acceptable to use it. With 10 per cent you are probably down to around 80 to 85 per cent of cars that are acceptable to use it. Sticking within that range reduces confusion, ensures good product quality deliverable to the customer and ensures that we are not going to have the problem of cars failing.

E85 as a fuel is really a little bit of a con. The energy content of the fuel is low. If you back-calculate the price to energy content, you would have to be significantly discounted in the price of the fuel for it to really be economic. So, again, eventually people will wake up and say, 'Hold on a minute. My car used to get me from Sydney to Canberra and back. Now I have to fill up twice to do that'. Eventually this will get great negative publicity, unless up-front the price is discounted to the fuel energy content.

What was the second part of the question?

The CHAIR — How will Shell advise customers on issues associated with E10 in older vehicles?

Mr MIDGLEY — As far as E10 in vehicles and what we are advising in each of the Coles sites: clearly Coles sells our fuels, so how they market is a little bit up to them. What we are doing is that at each of the sites the retailers have a list of the cars which are compatible. They have all the knowledge of which cars it is compatible with. In our advertising we will be putting a proposition out there that advises that ethanol is safe for cars. The pumps will still have the advice that owners of pre-1986 cars should consult their mechanics. We will continue to ensure that there is always a non-ethanol fuel available, whether that is a 95 octane or a V-Power. Two non-ethanol

products will be available to consumers to choose. They will not be forced to only have a choice of ethanol. There will continue to be cars that will not be able to run, but that will diminish.

Finally, we will be also addressing some of the fuel economy areas by ensuring that we are putting our fuel economy additive formula, which currently is in our standard fuel, into our E10 fuel. Therefore our E10 fuel will also have some of the benefits, or the counter-measure, of having the fuel economy additive formula in there in order to address some of the concerns around fuel economy.

The CHAIR — Is there anything else you thought of whilst we were asking questions that you wish you had said?

Mr MIDGLEY — I think it has been very thorough.

Mr TEE — My question has two parts. In your submission you mentioned, in essence, the commonwealth subsidy coming down. I wonder what impact that is going to have on where you are going. Also in your submission you talk about wanting a national approach or a regional approach rather than a state approach. I suppose the question is: does that apply? If you cannot have the national approach, in the sense that ideally you would want to have a country and/or regional approach, are you suggesting that we do not have a Victorian approach?

Mr MIDGLEY — We do believe a consistent approach is good. It really depends on how each state chooses to approach it. The same issues around cost and the impact on the consumer exist, whichever argument you have for mandating. Therefore when looking at any mandate that needs to be taken into consideration.

Are we adverse to having state by state? Yes, but it has already started, so we have to react to that. I think ensuring that each state recognises the cost of getting into it — making sure that it creates a level playing field so anybody who wants to get into the business does not create a distortion for new market entries to come in because they have suddenly a lower cost price — for us is essential. The level playing field needs to be maintained, whether it is a state or a federal mandate.

Mr TEE — What about the commonwealth's subsidy reduction that has come into effect?

Mr MIDGLEY — I think certainly at the moment it is enabling us to make those investments. It is that subsidy which is creating the economics for it. As that subsidy disappears — probably again it all depends where the oil market ends up, but in the current environment it would become uneconomical to blend biodiesel. Biodiesel is already uneconomical, but it would become uneconomical for ethanol as well. That then becomes a question around the sustainability or the long-term future of biofuels. Again it will all depend on where the oil price ends up and where feedstock prices end up.

The CHAIR — Mr Midgley, thank you very much. In about a fortnight you will be provided with a copy of the transcript. You will be able to correct typographical errors but not substance.

Mr MIDGLEY — That is fine. You are welcome.

The CHAIR — Many thanks, and we appreciate your time and your submission.

Witness withdrew.