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One Activity and One Item in this Special Digest.

Activity: Transcription of Oral Presentation to the Local Government and Environment Select Committee on the RMA Amendment Bill.

As I explained in earlier Digest on these submissions, some comments by Dr Hutchison encouraged me to put aside my written speech notes and extemporise my oral presentation to the Select Committee. I believe this succeeded in that when one looks at your audience you are more likely to engage them, and encourage them to enter into a lively and productive series of questions and answers.

The only problem is that after the event one wonders whether one actually spoke gibberish or prose.

This morning I received an email from Alyson Groves of the Committee Secretariat, with the transcription of this oral submission attached, and which asked me to make any changes to ensure that what went into the final record was an accurate record of what I said.

I replied as follows:

I have tracked the changes which I believe better reflect what I actually said.

I must say, that given the difficult acoustics in the room, the transcribers have done an excellent job in turning an oral presentation into written script.

Please explain to Ms Mackey that I misheard her reference to GNS and thought she said GES. Again the acoustics are not the best and I am used to referring to GNS as the Institute for Geological and Nuclear Sciences. Hence I spent most of my answer trying to remember what the GES actually did, rather than focus on the actual allocation of resources.

I am a great enthusiast for the GNS because they focus on measurement and should be funded to extend their GeoNet programme to include dealing with hazards due to climate change – warming or cooling.

Anyhow, thank you for giving me the opportunity to make these few corrections. As I say, given the poor room acoustics, the transcribers did a splendid job.

Owen McShane

Item.

Transcription of Extemporised Oral Submission and Q. & A.

Centre for Resource Management Studies (Submission 95)

Owen McShane

Dunne (UF) Welcome to the table, Mr McShane. You know the rules of engagement, so I invite you to make some brief opening comments. We have some supplementary submissions 95A and 95B, which are the two papers from Viscount Monckton. The floor is yours, and then we will take questions.

McShane I was going to just work briefly through the recommendations but, as is often the case, the questions or comments from Dr Hutchison have made me immediately rewrite my

intended speech, because I think he raised a point that I would like to focus on.

In general, if you do read those recommendations, you will see there is a common theme. The theme is that New Zealand should do science by New Zealanders where appropriate; but for New Zealand, and for our particular situation. There has been much said that we want to be leaders, but when I look at what we are leading, we are leading all the followers. In other words, as Freeman Dyson says, and I quote on page 18:

"I have studied the climate models and I know what they can do. The models solve the equations of fluid dynamics, and they do a very good job of describing the fluid motions of the atmosphere and the ocean. But they do a very poor job of describing the clouds, the dust, the chemistry, and the biology of fields and farms and forests."

New Zealand is a land of fields and farms and forests, and our economy depends on them.

The point that Dyson makes in many of his essays is that the theory of anthropogenic global warming was developed by atmospheric scientists who study the chemistry and physics of the gases of the atmosphere. And, hence, they really have no interest or knowledge of all the other systems that contribute to the climate. This is the point that Dyson has always made — that they totally ignore everything that goes on below the ground, even though there is more biomass below the ground than above it.

I think we backed the wrong horse when we decided to adopt the position re Kyoto. We made NIWA our key advisors, which meant, immediately, that we were just following the IPCC approach, which is all about the atmospheric gases. I believe that we should change direction and give all of that funding to, and seek our advice from, AgResearch, because that is where our interest lies. What is more, that is where we are world leaders. If we were to do this science, we would truly be able to tell the world, and give the world, new information. Interestingly, we have chosen to include agriculture, but only the belching ruminants. Again, that is because of the interest in the gas that comes out of their mouths, rather than the whole cycle of atmosphere, grass, and so on.

Just to make this point—and this is to answer your question, Dr Hutchison — when I was in the Development Finance Corporation, managing their fine technology programme, I helped Dr Baker at Massey University commercialise his *Zero-till* technology and, indeed, helped fund that programme. It never occurred to me in my wildest dreams, that that technology would end up benefiting American grass farmers, because of the carbon credits that they are now being given, yet not being available to New Zealand grass farmers because we are focusing on the belching ruminants. US grass farmers are now selling carbon credits generated by carbon sequestration achieved by appropriate management of their soils and pastures. This is recorded in the *Scientific American* and I give the link. A key tool, you see, is Dr Baker's *Zero-till* technology developed here in Massey University. So we are going to end up, if we do not watch it, with a situation where we are trying to sell our lamb to Americans, who are being subsidised, as it were, because of their carbon sequestration using New Zealand technology, and at the same time, we will be penalising grass farmers in New Zealand because we only focus on the atmospheric gasses.

If that is not the ultimate irony of public policy, I do not know what is.

There are some figures here: soils and carbon sequestered—annual crops: 0-450, perennial crops 320-1100. The *Scientific American* says that the best pasture is perennial grass pasture. Unfortunately, American's use annual grasses. The one famous country where the pastures are perennial, is New Zealand.

If we did this science, if we developed this work, we would have a 'no-regrets' policy,

because if we do go into a period of cooling, feeding the world will be a problem. We will be able to take that knowledge we have gained—on how to build up your soils and increase the microbiological activity—to all those developing countries who desperately need to feed their people. We would then become heroes.

Of course, it is also the ultimate answer to the ‘food-mile’ campaigns. We need to develop this science so that we can answer the Europeans, who are determined to find a way to block our produce. We have walked right into it. They say that it is our belching cows. We need to say “No, no—we’ve got perennial grasses.”

It is a tragedy that if you ask anybody, any scientist, to give you the equation that describes the change in biological exchanges when you turn a forest into pasture, nobody can give it to you—nobody, except the Americans, who are telling us that it is a gain. Our dairy farms, our farms, our pastures, are of benefit if you are concerned about carbon sequestration.

Again, in the same vein, at the end of Viscount Monckton’s second essay on policy, he suggested that if we feel we must do something to reduce our dependence on fossil fuel — because you can make that argument independently — he recommends a tax that is connected to global temperature. Then, of course, we would become the world’s experts on measuring temperature, and be able to sell that skill, as well.

So that is my theme. We need to stop being followers and start to fund the science that makes us experts—more expert—in those areas where we already are.

Mackey (L) Thank you very much for your submission. I certainly appreciate that a huge amount of work went into this. Thank you for taking the time to do that. I one hundred percent agree with you about New Zealand scientists doing research here in New Zealand, especially on issues that impact us greatly. My question for you would be: why do you think that they are not doing that, because I know of a number of eminent scientists in New Zealand who are doing a lot of research in this area, and many of them have actually submitted to this committee on this issue? The second part of that would be that I take on board your point about needing the below-the-ground as well as the above-the-ground science. Why would you not then support GNS doing a lot of that work as they already are?

McShane I am not trying to pick favourites here. That needs to come from the proper process of developing science policy. But I am just trying to put a historical viewpoint, if you like, that the theory of an anthropogenic global warming was developed by atmospheric scientists, so we decided to make NIWA the Government’s adviser. Of course there has been a huge transfer of funds from the CRIs that focused on agriculture and soil and crops, into NIWA. NIWA used to be, I think, one of our smaller CRIs; it is now one of our biggest. Yet agriculture has lost funding. I think that was a strategic error, because the rest of the world is working on the atmosphere. We should be working on our key resource; our scientists are scarce.

Mackey I appreciate that. A paper came out this week showing that, in fact, agriculture was the single biggest recipient of New Zealand science funding, and that a full 90 percent of all science funding went to agriculture. I know that AgResearch are doing a lot of work in this area, as are Plant and Food. I guess I just hate this idea to get out there that somehow there is not quality geological research going on—even just something like the fact that we had a professor of geology submitting to us on work going back many years.

McShane My point was: who is the key adviser to Government? I do think that because NIWA has been made the key adviser, following from the United Nations position, then other agricultural scientists have not been getting that sort of funding. So it is true. I see that

Massey is advertising for its first PhD scholarship to study these questions of soil exchange biology. So whether we like it or not, there has been a shift in emphasis. But I think that's leaving us terribly exposed, because we don't know the equations. People just assume that if you turn the forest into pasture, it's a carbon dioxide sin. The American work is saying: "No, you've got it wrong." How extraordinary that the Americans should be doing our work, and actually telling us that "You're even better than us because you're perennial."—and, of course, using the work out of Massey University.

Mackey Thank you for that. That's a very interesting perspective, because most of the criticism I get is that we focus far too much on the biosciences and agriculture at the expense of the other ones. So that's interesting. My second thing is just on your — you had some very interesting comments about public transport, I thought, which is something that hasn't been raised by anyone else. I'd like, if it's possible, just to give you a few minutes to expand on that, and in particular, do you know of any work that's being done here in New Zealand on that issue? Because you've given us papers from the States—

McShane Well, that actually is my field of expertise. When I talk about the impact of global warming policy it is in terms of urban economics and urban transport, and there is this sort of worldwide assumption that if we get people out of cars and into public transport it is more energy efficient and has a smaller carbon footprint. Those assumptions are wrong. There are places where it is true, and there are certain economies where it is true, but for a country like New Zealand you cannot make that assumption. And the private vehicle fleet is getting more efficient by the day, and indeed in Seattle, where I've just returned from, I saw films of driverless buses. Now, that helps to make the bus more efficient, but I also saw films of convoys of driverless cars, and once you have driverless cars — the driver is in the car but doesn't have to drive — on a motorway it means you increase the lane capacity of the motorway three to four times. So a two-lane highway becomes a six-lane highway. And that hugely increases the energy efficiency of the vehicle suite. So this wave of technology is coming, and we shouldn't be over-investing in inefficient public transport when the private car fleet is so much more efficient overall.

Mackey If you can send us any more information about that, I think that would be useful.

McShane Yes, certainly, I will do that.

Foss (N) Another new piece, thanks, Mr McShane. This bit about the Resource Management Act — you're well known to have strong opinions on it. Could you just talk us through that a wee bit, because I'm quite intrigued. It follows on from your 'pencil' example to people potentially using this to promote a consent, and, of course, others therefore using it to oppose a consent.

McShane Yes, well, there are several places in the submission where I make the point that, drawing on the pencil analogy, this is a classic 'wicked problem'. Nobody actually knows how to make a pencil, and because no one person knows how to make a pencil— because it's made all over the world, you see, by thousands of different people certainly nobody knows how to calculate its carbon footprint. So if you go to the Environment Court and say: "I have got a carbon footprint of so-and-so and I'm going to make it smaller", by simply changing the system boundary, I can argue that you're wrong. So, for example, the vineyard that had its carbon footprint calculated, and used that as an argument, in England, had to have the certificate withdrawn because they forgot to include the carbon to make the bottles. More importantly, I saw the slide show, and he had actually built several wetlands on his farm, which, of course, is a good thing to do, except that wetlands generate huge amounts of methane. So I could come in there and say: "Ah, but you've got all these wetlands—you've got to fill those in." No matter what calculation you make, I can challenge it. And there is no way to resolve this, because the system boundary can be moved in or out, or you can find a new technology and

change it. And it's just going to clog up the courts.

Hutchison (N) Your comments on our research efforts — do you think that we could be better integrated in terms of the various disciplines in New Zealand? It has occurred to me for some time that we haven't had a good integrated effort in New Zealand, though the potential for leadership is enormous.

McShane Yes. You touch on an area certainly dear to my heart. After that work I did in the DFC I helped advise Simon Upton on the restructuring of science in New Zealand, to try to get the DSIR — the Government laboratories—to perform as effectively as the ones in universities, because that was true all around the world: the Government labs are supposed to be helping industry while the universities do basic research, but it was the universities generating all the innovation. We got it half right; unfortunately, we didn't get a chance to finish it off. The major mistake was to make the funding so contestable at the laboratory bench level for such short terms. The key to the universities is that a head of department gets a budget, and he decides who's the smart PhD and who's the dumb one. It doesn't have to go through a bureaucratic process, which always gets it wrong.

Dunne Thank you for your submission. Thank you also for your offer of the supplementary information, which we'll look forward to receiving.

Funding.

The Centre needs funding to support the preparation of the reports requested by the ETS Select Committee and, of course, to support its ongoing operations beyond and outside these specific projects. All donations are greatly appreciated – and every dollar helps.



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