

Mornings 936 ABC Hobart, Dr Alan Finkel, 13 May 2016

Dr Alan Finkel was interviewed by Leon Compton, the Mornings presenter on 936 ABC Hobart, about his visit to Tasmania to chair the Forum of Australian Chief Scientists and to deliver a public lecture.

Leon Compton: When the Climate Science Centre for Hobart was announced two weeks ago, you welcomed that decision. How do you understand that decision in the context of the other cuts that have been much discussed in recent times after they were announced by the CSIRO boss in February? Where are we at?

Alan Finkel: Well, the CSIRO faces a complex challenge. You've got a limited funding envelope, and they are expected to be active in new areas, new areas that will make a lot of difference to our future prosperity. That doesn't mean the things they're currently doing don't contribute, but in order to involve themselves in new areas they have to cut back on others. So they announced some significant cutbacks in February, in order to give themselves future hiring opportunities. And in those cutbacks they cut really quite drastically into the climate science capabilities – the modelling and the projections. That is clearly not good, not good for Australia's climate science capability. We are the leading climate research country in the Southern Hemisphere. We contribute to global science and we have obligations to contribute not only to the normal flow of scientific exchange, but even more so post the Paris COP21 discussions. So it was necessary to come up with a better solution.

There were a lot of discussions behind the scenes, quiet discussions where I had a role in trying to bring people together and did, and as a result of that, the CSIRO reworked their numbers and looked at their priorities and came up with a long term solution that is much better than what they had foreshadowed in their February cuts. So they've formed a Climate Science Centre. It's perhaps not as big as some would look for, but it's got a significant cohort of 40 expert climate scientists. Most importantly it's got a commitment from the board to provide 10 years of funding and staffing resources. There will be a national advisory board formed on climate science – and that is also significant. The new centre will have a director, yet to be appointed, and that is also significant. With the guaranteed funding they will be able to create and build relationships with the leading universities around the country in climate science, with the Bureau of Meteorology, with the Australian Antarctic Division, and with international organisations such as the UK Met Office. So I do think it's a good outcome, especially in contrast to where things were back in February.

Leon Compton: What's it like being Chief Scientist, serving a government, where large numbers of the members of that government don't necessarily believe that climate change is caused by man.

Alan Finkel: Well, obviously in my role, my job is to advise the Prime Minister, and the Minister for Industry, Innovation and Science, and other Ministers where relevant. And all of my advice is based on my deep belief in climate change as a proven problem that we face, and the focus has to be on continuing to understand the unfolding climate science projections and use them to guide us in adaptation, mitigation, and driving policy to do things to prevent the ongoing contribution of carbon dioxide to the atmosphere. So rather than focus on naysayers, I tend to focus on just driving the message that we need to do things at large scale, and do them early.

Leon Compton: You talk about that need to deal with adaptation and mitigation. A lot of that in the future will involve co-investment, collaboration between publicly funded scientists and corporations, should we be worried about that?

Alan Finkel: No, I think we should see it as an opportunity. The fact is that since governments of both persuasions show limited appetite for increasing the competitive grants funding sources, universities, medical research institutes and publicly funded research agencies are increasingly turning to international funding sources and industry and other end-user funding sources. An appropriate mix is a good thing. It helps to give a vision to the scientists as to what their science might ultimately contribute. So getting an appropriate mix is a good thing. If it runs too far I would start to get concerned.

Leon Compton: Because of the risk that people might not be providing frank and fearless advice or indeed publicly owned advice for fear that co-funders of many of their projects might get upset?

Alan Finkel: No, my main concern would be that if there's too much co-funding across the sector, it will shift the balance too far from investigator driven research, from blue-sky research, into applied research. You do need to have a balance, because it's the blue sky research that ultimately leads and informs the applied research. I'm not too concerned about what you asked in terms of any requirements from a co-funder to suppress information. Most of the companies are totally aware of the fact that they're working with academics, there has to be a publication pathway for them – and that relationship is normally quite healthy.

Leon Compton: The Chief Scientist is talking tonight on Science and Innovation for the Third Millennium. It's open to the public you can get along and have a listen. What will you be talking about?

Alan Finkel: One of the main things I'm going to be talking about is the need to re-invent and re-cast our energy supply to a low emissions supply, and the fact that it's very difficult to do so. We have learnt a lot and we've got a lot to do, but whatever we do needs to be done at huge scale. I don't think people appreciate just how big the energy sector is, it's a decadal challenge. And I'm going to be speaking about that. And I will point out that Tasmania amongst the Australian states is the leader in generating low emissions electricity. The carbon dioxide emissions per kilowatt-hour in Tasmania are about a quarter of the Australian average, so Tasmania is leading the way which is fantastic. And then to get off that big issue I'm going to be talking about the brain because I've had a career as a neuroscientist, and there are some exciting things happening in that area at the moment. Breakthroughs in connecting to the brain, reading conscious signals from the brain, using them to help people who are paralysed to walk, and to help people who are blind to see. Enormous progress in what is generically called the brain-machine-interface.

Leon Compton: Before we leave you this morning you talk about energy into the future. Australia has enormous and still unused resources when it comes to coal for generating electricity cheaply. Do you believe that our energy future should and can involve coal?

Alan Finkel: It's critically important that we convert our electricity supply to become as near zero as possible, and the only way you can do that with coal is to use carbon-capture-and-storage. It's technically possible but it's quite expensive. In the meantime, across the world, the cost of

generating electricity from wind, and electricity from the sun, has just plummeted, to the point where the cost at wholesale markets per megawatt hour of solar and wind around the world is lower than what was previously achieved with electricity from ordinary coal that doesn't even have carbon capture. So there's a victory that's been won in terms of low cost of renewable generation.

The challenge is storage. Because as everybody knows, wind and solar are intermittent. You can have winter days with no wind, which means you've got nothing coming from your solar and wind sources for three or four days – so we need energy storage. And that's where the focus of technology development and financial investment should be in the coming decades.