



## OFFICE OF THE PRIME MINISTER'S SCIENCE ADVISORY COMMITTEE

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### **Speech at the presentation of the report *Science and New Zealand's Future: Reflections from the Transit of Venus Forum* to the Prime Minister Rt Hon John Key**

#### **Auckland War Memorial Museum**

**23 August 2012**

Prime Minister, Hon Steven Joyce, distinguished colleagues, ladies and gentlemen.

In early June, some 250 New Zealanders including leaders from government agencies, local bodies, science organisations, academia, business, young people, iwi and NGOs, as well as successful locally and internationally based Kiwi entrepreneurs, gathered in Gisborne for a dialogue initially conceived of by the late Sir Paul Callaghan to discuss how New Zealand could use science better to advance its ambitions. Because of his terminal illness, Sir Paul had asked me to take over chairing this Forum.

The Transit of Venus Forum comprised many different voices; it was frank but very constructive, reflecting the passionate call of the participants for New Zealand to be more ambitious in its use of science and scholarship in advancing the country economically, in developing policy choices, in moving towards greater social cohesion, in protecting the environment and in promoting our place in the world. In calling for these aspirations, it was also recognised that they must be achieved within a broad range of constraints.

Today I released a report on the Forum that I presented to the Prime Minister earlier this week. The overwhelming sense of the Forum was that New Zealand is at last — but sadly well behind countries similar to us — starting to advance its use of science and scholarship; it was indeed a discussion that was perhaps not possible only a decade ago. But we now have to address the scientific deficit more strategically and with more urgency, maturity and understanding than ever before, so as to deal with the complexities we now face.

We are a small and remote nation that is paying a price for complacency. We now need to be more ambitious in order to thrive amongst inevitable challenges, including those of ongoing rearrangements of the global economy. It is not realistic to imagine that we can achieve the kind of growth we need by refining the status quo. We must grasp the opportunities that science offers.

Many of the most successful high-income countries over recent years have been small. But in contrast to New Zealand, those small advanced nations have had sustained and high public investments in R&D for some decades that, in turn, were mirrored and then exceeded by corresponding increased private sector investment.

At the Forum there was a strong feeling that New Zealand must embrace a strategy to join that club of small, rich and clever countries. To do so, science must have a much greater role to play than before in mapping our economic, social, and environmental agenda. Likewise, it must have a major role to play in informing policy making, foresighting and risk assessment.

While the science and innovation systems interact, they are distinct and have different challenges. Science has much broader purposes than solely driving innovation, although it certainly does that.

A number of systematic and organisational limitations were also identified at the Forum, and are detailed in my report. One of the negatives was concern over the fragmentation of the science system, driven by funding models in both science and academia, which limits interdisciplinary research — and it is such research which is where so many new and innovative ideas emerge, and which should be a competitive advantage for a small country to undertake. Another of the negatives identified is that we tend to look at ourselves introspectively; we need to deal with such parochialism and become cleverer at self-diagnosis. That is all very well, but intellectuals thinking in isolation will have little impact. There is a need for informed and inclusive public conversation. As one of the participants said: serious countries treat ideas seriously. Surely this is the time for us to do so as well.

Science provides the capacity to work objectively through some of the labyrinth of complex and inevitable trade-offs that all countries must face when navigating the demand for growth and social expectations on one hand and environmental protection and constraints on the other. It is no accident that richer countries can do more by way of environmental protection and social development; they have gained the resources to do so. But economic growth will also depend on how to balance the demands and indeed requirements for more resource utilisation. The challenge is getting a balance between wealth generation and that which we must protect. We are rightly proud of our environmental consciousness. But we must not confuse bottom-up efforts based on passion with the need to have a scientifically based approach to environmental protection. Rhetoric does not protect the environment.

Also how should we move from a rather limited understanding of new technologies? Often there is accidental or even intentional confusion between science on one hand, and politics, values and philosophies on the other. What is needed is a more constructive approach based on knowledge. Appropriate use of new technologies is essential, and in taking this up we need to distinguish between the technology itself and its application.

The Forum heard evidence of an increasingly innovative Māori engagement in using science and knowledge for their own and thus New Zealand's enhancement, and of steps towards a proper cross-cultural dialogue in evaluating new technologies.

In a technological age, productivity growth based on a number of strands can occur through knowledge absorption from elsewhere or by local cutting-edge innovation. Experience has shown that as countries get closer to global knowledge frontiers, it is the local cutting-edge science that matters more for growth. While knowledge absorption promotes growth in low GDP countries, in high-income countries to be competitive there must be a focus on frontier innovation. This is true even for a country like New Zealand, and we should prioritise accordingly.

Sir Paul said of his ambition for New Zealand was for it to become: *The place where talent wants to live*. There is fierce global competition for the innovator, scientist and entrepreneur. I would argue that it is the intellectual and entrepreneurial environment that we need to create that brings in the kind of talent we must capture. Indeed the Forum participants sensed that things are now really changing. Your government has significantly accelerated this rate of change. Real momentum is building; whatever happens, let us not lose it.

Thank you.

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