

**Prime Minister's Science, Engineering and Innovation Council
(PMSEIC) Foresight Update by the Chief Scientist**

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- Thank you, Prime Minister.

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- As you know, PMSEIC has recently adopted an interlinked strategic plan of broad, long-term foresight to assess possible transformational futures for Australia.
- These futures then guide the formation of detailed, nearer-term reports to identify and partially fill the gaps in our current knowledge that prevent us from planning most effectively for these futures.
- The ultimate strategic goal is to ensure resilience and readiness in the face of the uncertain and to inform policy aimed at addressing what are often called "wicked problems."

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- Today's presentation on *Learning and Knowledge* is the first expert report to be borne of this new approach.

- I trust that the report and the powerful potential embodied in the concept of *Science of Learning Centres* will guide government thinking about how science can inform educational practice and educational practice can shape new scientific questions - all with the aim of increasing the effectiveness of lifelong learning for all Australians.
- The presentation we have just heard from the Health, Wellbeing and Security foresight cluster is the sort of advance scouting work we need to focus our PMSEIC agenda in this area.
- We look forward to shaping a future detailed expert working group report around one of the three transformational issues outlined.
- As Chief Scientist and Executive Officer of PMSEIC, I'd like to just take a few minutes now to indicate how the warp and weft process of our foresight clusters is generating interest at international, national and local levels, and weaving a tapestry of interlocking reports for Australia.

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- Last year, I took steps to build a good collaborative relationship with the Chinese Academy of Science. CAS has actively been involved in foresight work for some time, and is in the enviable position of having created a 40-year strategic science plan.
- It is my hope that the relationship I am building with China will help to inform our PMSEIC Foresight Process.

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- Conversely, I was pleased that the Chinese-sponsored foresight session at the World Science Forum in Hungary invited me to present the Australian process as a key international model.

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- One of the features of our model is the convening of a focus group of talented, high-performing young people. I want to share with you, as I did in Hungary, some of the plausible desirable and plausible disastrous futures identified by our youth forum.

- The PMSEIC Standing Committee is adopting a continuous improvement approach to foresight, and will be reviewing our approach before the next full meeting of PMSEIC.

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- Late last year the Boston Consulting Group presented to the PMSEIC Standing Committee and a guest from the Department of the Prime Minister and Cabinet, articulating their foresight approach and methods for identifying and studying future challenges and opportunities.
- A number of you have indicated an interest in learning more about the detail of foresight methodology. We are working to produce a framework for foresight approaches that we can share with you.
- Boston Consulting Group has been tracking in excess of 100 global megatrends for over ten years. These data range from predicted changes in population and age distribution, through to urbanisation, global connectivity, the industrialisation of China, and the rise of Asian banks.

- Different trends have different “shapes” with time. Some are easier to extrapolate than others. A few reach out to 2050.
- World population is now close to 7 billion about half of which is characterised as urban, by 2050, those numbers are expected to shift to over 9 billion, 70% of which are urban.

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- Given the predicted rapid growth in urban population and, in some areas, growth in personal wealth, we anticipate an increasingly large demand for resources from the primary sectors. This could put pressure on already volatile commodity prices, and potentially lead to 1 billion people being homeless and hungry.
- Global trends also anticipate massive infrastructure demands; the increasing population requiring associated roads, education and communications.
- The growth in urban population will also lead to health challenges, some of which we heard about this morning.

- PMSEIC needs to ask itself “What role will Australia play in the face of future geopolitical and environmental realities?” “What will be the role of physical and social science in informing our choices and driving innovation?”
- We currently have two expert working groups asking these questions for specific challenges and expected megatrends. They are preparing reports which will be presented to the 22nd meeting of PMSEIC, anticipated to take place later this year.
- Together, these two reports relate to the need for considerable and considered adaptation, an area fast becoming crucial, as projections suggest we have already moved beyond a 2° C change in global temperature to one that is more likely to be 4° C warmer than modern humans have enjoyed.
- Coupled with other mega trends, urban adaptation and resilience, social connectedness, and international links, are all obvious areas for future foresight activity.

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- In sum, I believe we need to begin to think of Australia as an interconnected, holistic whole.
- We are now entering an era in which we will feel the biting edge of finite resources and no longer have the luxury of travelling ourselves or banishing others to some distant, unpopulated shore replete with new resources and the potential of a new market.
- In such an era, though we may be bound by the finite nature of Earth, we must not be bound in our thinking about science and innovation or in our definition of community.
- In such an era, cities and rural areas will be more critically dependent on one another, and Australia will be called upon more often to be a good global neighbour and a leader in scientific, industrial and social innovation.

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- And that is why foresight and scientific evidence will remain central to the work of the Prime Minister's Science, Engineering and Innovation Council to generate far-sighted, sound strategies for Australia's future.
- Thank you.