



Australian Government

OFFICE OF THE
CHIEF SCIENTIST

*National Science, Technology,
Engineering and Mathematics Strategy*
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DRAFT

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PREAMBLE

Australia invests in education and research for many reasons.

But top of the list is their critical role in ensuring the continued prosperity of Australia on all fronts – socially, culturally and economically – for all our citizens and for our place in the world.

This brief paper is released by the Office of the Chief Scientist to encourage discussion about a Strategy. The focus of the Strategy will be STEM. But it will be about Australia's STEM enterprise operating with a 'social licence' that is built on a 'compact' with society.

As we position to meet challenges ahead of us, a vital part of our investment must be in the whole Science, Technology, Engineering and Mathematics (STEM) enterprise – all levels of education and research.

Education in STEM will provide Australia with both expert practitioners and a knowledgeable and receptive community.

Research in STEM ensures a steady flow of new ideas and knowledge that can be turned into new and better ways of doing things – improved goods and services for the benefit of all Australians, and to humanity at large through the global connections that are intrinsic to quality STEM.

But the value of the investment will be diminished if STEM practitioners operate without due regard for society and its wants, needs and aspirations.

The investment in STEM education and research must therefore relate to valuable work in the social sciences and humanities, both of which are critical to our understanding and recording of our world, our cultures, our knowledge of society and relationships within society.

It is work that is vital to our deep understanding of the societal context. And it is that context that will influence the extent to which STEM can be effective.

A STRATEGY TO DELIVER A BETTER AUSTRALIA



This diagram depicts the Strategy. It highlights the primary purpose of STEM in our community – the reason for doing things – is A Better Australia.

It is a strategy with four essential interconnected elements - all means to the end.

The four elements are:

- ▶ formal and informal **education**;
- ▶ **knowledge** generation and use;
- ▶ **innovation** to produce high value goods and services; and,
- ▶ **influence**, both national and international, to ensure that Australia can take its place in the world.

All the elements are underpinned by the enabling sciences and mathematics; and by engineering and the technological sciences, which are at least in part based on the creative application of scientific principles leading to outcomes and inventions that do not exist in nature.

The strands running through the strategy are:

- ▶ **Alignment** to clearly articulated goals (the Societal Challenges).
- ▶ **Focus** on priority areas where we have competitive advantage or critical needs.
- ▶ Building **scale** so that we have the capacity to make real and enduring differences.

Programs and implementation plans will be developed to put the agreed actions arising from the Strategy into practice. They must accommodate action on multiple fronts and with multiple time frames. To maximise the return on the investment, there must be action aimed at the short, medium and long term.