



ENGINEERS
AUSTRALIA

Engineering Our Future

South Australian Election 2022

About Engineers Australia & Context

Engineers Australia is the peak body for the engineering profession in Australia. With over 100,000 members across Australia, we represent individuals from a wide range of disciplines and branches of engineering. Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

A chronic deficit in the supply of skilled engineers is at risk of becoming a structural reality in the Australian economy and innovation landscape. In addition to meeting the projected future demand, one of the ways Australia needs to respond to issues surrounding our supply chain is ensuring a healthy pool of experienced and qualified engineers to develop our advanced manufacturing capability. With many of the challenges facing Australia requiring an engineering solution, we need a re-think of our workforce to support engineers delivering on the big ideas and creating a more secure and resilient nation.

1.0 Registration of engineers

The community trusts engineering without realising it. The buildings we live in. The cars we drive. The devices we use every day. We trust that they are safe and will work as they are designed to. Rarely do we realise that much of the world we inhabit was created by engineers. However, use of the title 'engineer' is largely unrestricted and has become a generic term. In the absence of regulation for engineering, anyone can claim to provide engineering services without the appropriate competencies, and with total disregard for standards.

In 2020, the South Australian Government indicated that it is liaising with the Australian Building Codes Board in its work to develop a coordinated approach to registration of engineers in the building sector. That is part of national efforts to reform the building sector that are driven by the Building Ministers Forum. Whilst this is an encouraging first step, mandating registration for engineers is the only to ensure the safety of the public and that minimum standards are met.

1.1 Recommendation:

- **In the interest of public safety, Engineers Australia calls on the South Australian Government to follow best practice in Victoria and Queensland by requiring engineers engaged in a professional engineering service to be registered.**

2.0 Graduate employment

There is a gap between university graduates and the needs of industry. Investing in the domestic supply of engineers is critical to the long-term sustainability of engineering skills. To ensure adequacy of engineering skills supply over the long term, efforts should be made to increase utilisation of recent graduates to retain them in the profession. There are many more qualified undergraduate engineers in Australia than there are people reporting that they work in a professional engineering role. This suggests a fundamental structural feature of the Australian employment market where many engineering undergraduates will have to find employment outside of the profession. Investing in

engineering graduate employment outcomes will lessen future skills shortages of engineers with 5-10 years' experience.

2.1 Recommendation:

- **Engineers Australia calls on the South Australian Government to incentivise contractors to provide graduate programs and internships through its procurement processes.**

3.0 Migrant engineers

With the Australian Government predicting an increase in engineering jobs being created over the next five years, the requirement for skilled engineering migrants will exist for some time. Currently overseas-born engineers make up 58.5 percent of the engineering labour force in Australia. However, overseas-born engineers are significantly more likely than their Australian-born counterparts to be unemployed. As Government borders open we need to ensure we are bringing in skills in demand, not just qualifications, so that we don't continue to contribute to the high unemployment rate of overseas engineers. In addition, some migrants face a visa condition of remaining in a particular region for two to four years. This requirement can further hinder the ability to find employment, as if their experience or skills are not needed in the region, they are unable to work in the profession for the period they are required to remain there.

3.1 Recommendations:

- **Refine Australia's migration program objectives to be more targeted, to attract migrants with the specific experience and skills required, increasing their employability.**
- **Review the regional sponsorship with a focus on freeing migrants with specific skills of their obligation to remain in a regional area if employment in their field is not possible.**

4.0 STEM Education

Engineers have the skills to translate new ideas into products and services that are commercially attractive and useful. Engineering and its continuous development over recent decades effectively uses knowledge of mathematics and science to solve real world problems. The expected future growth in engineering occupations within the economy over the next five years is set to exceed population growth by a factor of 1.63. Australia's capability to produce engineers begins at school. For Australia to develop its own engineering workforce we need a sufficient flow of high school students who are interested in engineering and have studied the subjects that engineering relies upon, a firm grounding in science and mathematics.

4.1 Recommendations:

- **Engineers Australia asks for the South Australian Government to increase teacher capability in science, technology, engineering and maths subjects and providing a better understanding of all STEM careers and learning, not just 'discovery' science.**

The time is now: the existing skills shortage will only become more severe and has wide reaching implications for industry across Australia. Engineers Australia calls for significant investment in STEM skills alongside a wholistic vision to avoid chronic labor shortages in areas that will hamper our national resilience and future growth opportunities.

Please reach out to Luran Huefner, General Manager for South Australia for more information.

Email: LHuefner@engineersaustralia.org.au

Ph: +08 8202-7101 or 0410-422-040



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