



Senate Inquiry into the Higher Education Support Amendment (Job-Ready Graduates and Supporting Regional and Remote Students) Bill 2020

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 Science &
Technology
AUSTRALIA

To the Senate Education and Employment Legislation Committee,

Thank you for the opportunity to make a submission to this inquiry.

In June, the Australian Government announced a plan called [Job-Ready Graduates](#). It proposes to make major changes to how university education is funded for Australian students.

The Government has said it wants to see more graduates in science, technology, engineering and maths (STEM) courses because these are areas where Australia expects strong future jobs growth.

Science & Technology Australia supports this goal - however, this legislation as drafted would **cut the level of funding for universities to teach students in STEM courses by \$690 million in 2021 alone**.

The cuts would range from a 17% drop in resourcing to teach maths courses, a 16% drop in resourcing for science and engineering degrees, and a 29% drop in resourcing to teach environmental sciences - which trains scientists to work on bushfire prevention and mitigation, water management in our arid continent, and help to manage Australia's farms, national parks and unique habitats.

Early assessment by our members suggests the practical effect of the proposed cut would be to limit the number of STEM degree places universities can afford to offer. The cuts would lower base funding which has traditionally also supported staff to undertake teaching, research and to supervise training of our next generation researchers in crucial STEM fields such as mining, engineering, agricultural science and advanced manufacturing - vital fields for Australia to build greater sovereign capability.

These cuts to income to STEM faculties are proposed at a time when universities are reeling from the loss of income from international students.

We urge the Senate to ask the Government to reverse the proposed cuts in the legislation to STEM degree resourcing as a condition of your support to pass the Bill. In this submission, we propose constructive ways in which amendments could be crafted to achieve this.

If the Senate is unable to secure amendments by the Government or from a Senate majority to keep the current level of resourcing for STEM degrees, it would be better if the legislation did not proceed.

Australia desperately needs more STEM graduates, and more STEM research, to rebuild our economy out of the COVID-19 pandemic. This capability is a powerful strategic asset to secure Australia's economic revival. The proposed legislation would not deliver on the stated intent.

It would be the wrong move to weaken this strategic asset at the time our nation needs it most.

We would welcome an opportunity to assist the committee with further information and appear at a public hearing if requested by the committee

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Introduction

Amid the COVID-19 pandemic, Australia's university system faces the loss of billions of dollars from international student fees. This income cliff is tipped to lead to 21,000 job losses this year alone, including an estimated 7,000 jobs in research.¹

This is the broader operating environment into which the Government is proposing this complex set of legislative changes to university funding before the Senate.

Science & Technology Australia supports the Government's goal of generating more science, technology, engineering and maths (STEM) graduates for the nation - yet this legislation would **cut** \$690 million from funding into science and engineering faculties in 2021 alone.

We therefore ask the Senate to seek amendments to the legislation to "stem the cuts to STEM".

We appreciate this is a complex legislative task. STEM degrees feature across the proposed new funding clusters in a way that makes it hard to adjust the references to cluster funding rates in the legislation cleanly and simply.

We therefore propose a simpler way to avert the proposed cuts to STEM education.

STA recommends the Senate seek to add a "science loading" clause to the legislation to ensure funding for STEM education does not fall. Without this amendment, STA does not recommend the legislation should go forward.

The Government has proposed that some of the funding to be cut from cluster funding rates in STEM would be diverted into the new National Priorities and Industry Linkages Fund (NPILF). This fund would ultimately come with its own 'strings attached' - potentially adding a regulatory cost burden to universities (drawing further resources from teaching and research) with additional workload to meet reporting requirements. More red tape would not drive more collaborations.

We think a simpler way to achieve the goal of even deeper industry engagement is to leave the base funding for STEM courses as it is - and instead add a reference about industry engagement to the existing funding agreements the Government signs with each university each year.

To further improve the legislation, STA also recommends the Senate:

- **Seek an amendment to enshrine the Government's commitment to indexation of Maximum Basic Grant Amount in the legislation;**
- **Seek an amendment to enshrine the Government's commitment to the amount of funding in the Indigenous, Regional and Low-SES Attainment Fund (IRLSAF) to ensure the Parliament maintains total funding into universities;**
- **Seek an amendment to extend the proposed clause to enable "demand driven" funding for regional Indigenous students to apply to all Indigenous students, noting the Government's own Close the Gap commitments.**

Ensuring support for STEM education

In STA's [submission to Government on the draft legislation](#), we highlighted potential unintended consequences of the legislation.

After further careful consultation with our sector, STA has identified that the fall in support for STEM education is a major roadblock for this legislation. Using predicted 2021 enrolments, STA estimates a loss of \$690 million for STEM education in one year alone.²

The Deloitte report which modelled the cost of education only considered the broad cost of teaching and scholarship hours by staff.³ Our members have noted it did not adequately take account of the costs of expensive equipment in sciences and engineering. They also note it did

not include the time of academic staff spent on research, industry engagement, or service to the university. As a result, the funding fall does not cover the extensive research staff time and research infrastructure that science faculties rely on to provide STEM graduates with edge know-how and skills, which can account for 16–20 positions at some universities, our members at the Australian Council of Deans of Science advise.

Consultation with the Australian Council of Engineering Deans has also helped STA to understand the proposed reduction of funding could risk the teaching of engineering especially at smaller or regional universities. The impact of the funding changes would also be particularly acute in the ‘heavy engineering’ disciplines – the teaching of which often involves expensive large-scale facilities and infrastructure. This affects fields such as mining engineering, petro-chemical engineering, electrical engineering, heavy mechanical engineering and advanced manufacturing.

The Australian Council of Environmental Deans and Directors (who are also STA members) note the impact of this proposed cut to STEM education will be even more acute in the environmental sciences – with a 29% cut to resourcing. They fear it is likely to affect the number of offers in degrees that will lead students into careers in bushfire prevention, recovery and resilience, water management, and managing habitat on farms and in State and National Parks. They also fear it will harm Australia’s baseline research capability in these areas.

The National Priorities and Linkage Innovation Fund is meant to return some of the funding lost in this drop in support for STEM education. However, this fund is expected to return an average of \$6 million per university a year compared to the \$13 million a year in losses expected at typical large research-intensive universities from the science faculties alone.

As a result, we think that the funding proposed to be diverted into a National Priorities and Linkage Innovation Fund would be better used to provide a science loading to universities to support the enrolment of science and engineering students.

STA’s Solution

STA proposes a “science loading” amendment be made to the legislation. This would deliver a strong incentive for universities to enrol STEM students by establishing a loading bonus for these students. By providing a loading bonus to universities that enrol STEM students, the concerns outlined above can be mitigated.

A science loading would:

- avert the incentive universities will have under the existing legislative proposal to enrol more non-STEM students and fewer STEM students;
- ensure STEM education is supported to provide a world-class education;
- take into account that students taught by world-class researchers in STEM have access to a real-time cutting edge research insights in STEM;
- protect the teaching of engineering, chemistry, maths and physics and specialist sciences including agricultural science in smaller and regional universities; and
- remove the need for a National Priorities and Linkages Innovation Fund.

STA makes the following suggestion for the Senate to seek an amendment from the Government to avert the cuts to funding for STEM education.

In Part 2 of Schedule 3 of the Bill, after Item 5, insert:

5A Subparagraph 33-1(1)(b)

Insert:

(vi) the amount of any science loading worked out in accordance with subsection (1A).

5B After subparagraph 33-1(1)

Insert:

(1A) For the purposes of 33-1(1)(b)(vi), the amount of science loading is the amount worked out using the following method statement:

Method statement			
For each *science funding cluster part in which the provider has provided places in respect of *non-grandfathered students, multiply:			
(a) the *number of Commonwealth supported places provided by the provider in that science funding cluster part in respect of those students; by			
(b) the amount specified for a place in that science funding cluster part in the following table.			
Item	Science funding cluster part	Field of education codes of units of study in science funding cluster part	The amount is
1	Mathematical sciences	0101	\$3,500
2	Engineering, environmental studies and science	0301, 0303, 0305, 0307, 0309, 0311, 0313, 0315, 0317, 0399, 0599, 0103, 0105, 0107, 0109, 0199	\$4,800
3	Forestry studies, fisheries studies	0505, 0507	\$3,400

In Part 2 of Schedule 3 of the Bill, after Item 7 insert

8 Subclause 1(1) of Schedule 1

Insert:

science funding cluster part has the meaning given by subsection 33-1(1A)

Legislative protection for total funding

Indexing Inflation

One of the measures highlighted in the Job-Ready Graduate package was to introduce indexation of the Maximum Basic Grant Amounts (MBGA) by the Consumer Price Index (CPI). This commitment has not been included in the legislation.

Such indexation exists in similar legislation like the Social Security Act 1991. STA recommends the Senate ask the Government to enshrine its commitment to annual CPI indexation of the MBGA in the legislation.

The Indigenous, Regional and Low-SES Attainment Fund

The legislation would establish an Indigenous, Regional and Low-SES Attainment Fund (IRLSAF). It does not, however, guarantee the base funding to be placed into this fund.

While the operating guidelines for the IRLSAF are still being designed, ensuring the funding remains protected by the legislation should be a priority for the Senate. Legislating the base funding for this fund would enable universities to plan for and start accepting more Indigenous, Regional, and Low-SES students from 2021.

As with the Commonwealth Supported Places, STA also recommends legislation to index the IRLSAF funding amount by CPI be included with an amendment.

STA recommends the Senate ask the Government to amend the legislation to enshrine the base funding of the IRLSAF grant and annual CPI indexation of this amount.

Demand driven funding for all Indigenous students

Science & Technology Australia supports the introduction of demand driven funding for Indigenous Students from remote and regional locations.

We would, however, encourage the Senate to ask the Government to amend the legislation to expand this demand driven funding to **all** Indigenous students.

Indigenous participation in higher education is still well below that of non-Indigenous students. Indigenous people comprise 1.8% of university enrolments - yet are 3.1% of Australia's working age population.⁴

The latest STEM workforce report from the Office of the Chief Scientist indicated only one in 200 Aboriginal and Torres Strait Islander people of working age had a STEM degree (compared to one in 20 for non-Indigenous people of working age).⁵

Opening demand driven funding to all Indigenous students would also help to close the employment gap. As the latest Closing the Gap report notes: "For Indigenous Australians with higher levels of education, there is virtually no gap in employment rates."⁶

This straight-forward amendment has the dual benefit of helping to close both the employment and the educational gaps between Indigenous and non-Indigenous Australians.

STA recommends the Senate ask the Government to amend the legislation as follows:

In Part 1 of Schedule 1 of the Bill, Item 33, definition of 'demand driven higher education course' - omit "eligible".

In Part 1 of Schedule 1 of the Bill, Item 35, definition of 'eligible Indigenous person' - omit the definition.

References

1. Larkins, F. *Impact of the pandemic on Australia's research workforce*.
<https://www.science.org.au/sites/default/files/rrif-covid19-research-workforce.pdf> (2020).
2. Warburton, M. *Unravelling the Teahan vision for higher education*. (2020).
3. *Transparency in Higher Education Expenditure Transparency in Higher Education Expenditure Australian Government Department of Education*. www.deloitte.com/au/about (2019).
4. Universities Australia. *Universities Australia Indigenous Strategy First Annual Report*.
5. Office of the Chief Scientist. *Australia's STEM Workforce*.
https://www.chiefscientist.gov.au/sites/default/files/2020-07/australias_stem_workforce_-_final.pdf (2020).
6. Australian Government. *Closing the gap*.
<https://ctgreport.niaa.gov.au/sites/default/files/pdf/closing-the-gap-report-2020.pdf> (2020).