



THE UNIVERSITY
of ADELAIDE

Committee Secretary
Standing Committee on Industry,
Innovation, Science and Resources
PO Box 6021
Parliament House
CANBERRA ACT 2600

29 January 2021

Dear Committee Secretary

SUBMISSION – INQUIRY INTO DEVELOPING AUSTRALIA’S SPACE INDUSTRY

Thank you for the opportunity to make a submission to the Standing Committee on Industry, Innovation, Science and Resources’ (“**Committee**”) Inquiry into Developing Australia’s Space Industry (“**Inquiry**”).

The Adelaide Law School makes five primary submissions to the Inquiry:

1. the Committee should consider historic recommendations and reports in the course of this Inquiry in order to identify reoccurring themes;
2. there is a need for comprehensive regulatory reform to make Australia a jurisdiction of choice for space-related businesses;
3. the Australian Government must clarify the industry regulator’s role and bolster their capability;
4. the Australian Government should continue to participate in international law making in order to clarify how private activities are to be regulated in the future; and
5. there should be greater recognition of space-adjacent, non-STEM involvement in the Australian space industry.

These submissions are explored in more detail below.

About the Adelaide Law School

The Adelaide Law School has a substantial expertise in Australian and international space law, policy and governance matters. The Adelaide Law School was one of Australia’s first tertiary institutions to commence teaching space law at the undergraduate and post-graduate levels and was the first to partner with a commercial law firm in the delivery of a dedicated ‘Commercial Space Law’ subject focused on teaching both the academic and practical implementation of space law.

The Adelaide Law School is also host to several PhD students (studying locally and from overseas) researching space law in a variety of contexts.

Faculty at the Adelaide Law School participate in a variety of industry associations and events. This includes the Space Industry Association of Australia, the International Institution of Space Law, and the Space Law Council of Australia and New Zealand. The Adelaide Law School was

also a founding partner of the Woomera Manual on the International Law of Military Space Operations (along with the University of New South Wales Canberra, the University of Exeter and the University of Nebraska-Lincoln College of Law).

The Adelaide Law School has previously made submissions to the Review of the Space Activities Act, Review of Australia's Space Industry Capability, the Senate Standing Committee on Economics review of the Space Activities Amendment (Launches and Returns) Bill and the Australian Space Agency's consultations on the rules enacted under the *Space (Launches and Returns) Act 2018* (Cth).

We hope this submission is helpful in assisting the Committee in the course of the Inquiry and are happy to discuss its content in further detail if required.

Yours sincerely



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ABOUT THE AUTHORS OF THIS SUBMISSION

Professor Melissa de Zwart FAAL is the Dean of the Adelaide Law School, University of Adelaide. Professor de Zwart is Deputy Chairperson of the Space Industry Association of Australia, Co-Editor of the Woomera Manual on the International Law of Military Space Operations and a member of the Space Security Index Governance Board. Professor de Zwart is a qualified legal practitioner and a reserve Legal Officer in the Royal Australian Navy.

Professor de Zwart teaches space law to post-graduate and under-graduate students through the Adelaide Law School. Professor de Zwart has contributed to numerous scholarly works discussing the law applicable to activities in outer space, with a particular focus on commercial activities.

Mr Joel Lisk is a PhD Candidate at the Adelaide Law School, University of Adelaide. Mr Lisk's PhD research explores how nations legislate for commercial activities in outer space. Mr Lisk has presented at numerous domestic and international conferences on the topic of legislative compliance and regulatory burdens in the commercial space sector. Mr Lisk has also published technical and broad-audience commentaries on Australian and foreign domestic space law issues.

Mr Lisk is a practising solicitor, advising corporate clients on a range of matters within highly regulated industry sectors. Mr Lisk is also a Director of the Space Law Council of Australia and New Zealand Ltd – a not for profit, advancing education charity specialising in space law and policy.



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Submission – Inquiry into Developing Australia's Space Industry

1. Overview

- 1.1 The Australian space industry has undergone a period of substantial growth in the last decade. Despite the rapidly building excitement and enthusiasm on our shores, this increase in volume is not unique to Australia.
- 1.2 At the core of this submission, the Adelaide Law School asserts that regulation can play multiple roles. Clear and simple regulation can encourage investment and activity by removing barriers to entry and providing certainty to those who wish to attempt and invest in space-related ventures. Excessively complex laws or regulations pitched at the wrong level can stifle a nascent space industry before it reaches maturity.
- 1.3 The Australian Government should look to the events of the past. The mid to late 1990s saw substantial interest and movement towards the development of an Australian space industry, but this never eventuated. Government actions should be focused on making sure history is not repeated in the 21st century.

2. The Committee should consider historic recommendations and reports in the course of this Inquiry

- 2.1 There have been several reviews, inquiries and assessments of the Australian space industry over the past three decades. While the specific focus of each has varied, the submissions received, and recommendations reported are generally consistent – there is a need to provide support to the space industry to foster its development and remove barriers to entry for new businesses.
- 2.2 The Adelaide Law School would like to draw the Committee's attention to the substantial work previously undertaken. Specifically, we refer the Committee to the recommendations in the following reports:
 - 2.2.1 *Developing Satellite Launching Facilities in Australia and the Role of Government* as reported to the Senate in 1992 by the Senate Standing Committee on Transport, Communications and Infrastructure;
 - 2.2.2 *Lost in Space? Setting a new direction for Australia's space science and industry sector* as reported to the House of Representatives in November 2008 by the Standing Committee on Economics;
 - 2.2.3 *Analysis Report: Public Submissions into the Australian Government's Review of the Space Activities Act 1998* prepared by Professor Steven Freeland and delivered to the Department of Industry, Innovation and Science in August 2016;
 - 2.2.4 *Review of Australia's Space Industry Capability* completed in March 2018 by an expert reference group commissioned by the Minister for Industry, Innovation and Science (Hon Arthur Sinodinos MP); and

- 2.2.5 *Space Activities Amendment (Launches and Returns) Bill 2018 [Provisions]* inquiry completed by the Economics Legislation Committee in August 2018.
- 2.3 The Adelaide Law School also wishes to highlight the content of three reports prepared for the Department of Industry, Innovation and Science in connection with the Expert Reference Groups review of Australia:
- 2.3.1 *Global Space Strategies and Best Practices* prepared by Bryce Space and Technology, LLC;
- 2.3.2 *Global Space Industry Dynamics* prepared by Bryce Space and Technology, LLC; and
- 2.3.3 Australian Space Industry Capability prepared by ACIL Allen Consulting.
- 2.4 While some of these reports are now nearly 30 years old, they demonstrate that many of the needs of industry are consistent over time – that Australian space industry participants seek:
- 2.4.1 reductions in operating costs and unnecessary regulatory burdens;
- 2.4.2 support to overcome barriers to entering markets (both domestic and international); and
- 2.4.3 clarity and certainty with respect to operating conditions.
- 2.5 The Adelaide Law School submits that these are all matters the Australian Government should be pursuing into the future. This is particularly the case now with an increasingly congested international space start-up market place.
3. **There is a need for comprehensive regulatory reform to make Australia a jurisdiction of choice for space-related businesses**
- 3.1 While not commonly front of mind, regulation plays an essential role in the successful operation of the Australian (and international) space industry. The space industry commonly involves dealings with highly sensitive and potentially dangerous technologies giving rise to a need to regulate for public health and safety. Additionally, space is an inherently dual use domain that give rise to national security issues.
- 3.2 Australia is also a party to five United Nations administered treaties relevant to outer space, giving rise to an Australian sovereign obligation to regulate the activities of private actors in outer space.¹
- 3.3 Regulatory frameworks across the world applicable to space activities vary in complexity and scope. Legislative frameworks in European nations such as Austria and Denmark are concise and simple.² Comparatively, the legislative frameworks in the United Kingdom and Japan are comprehensive and extremely detailed.³ The United

¹ *Treaty on Principles Governing the Activities of the States in the Exploration and use of Outer Space, including the Moon and Other Celestial Bodies*, opened for signature 27 January 1967, 610 UNTS 205, (entered into force 10 October 1967) ('Outer Space Treaty'), art VI.

² See, e.g. *Outer Space Act (No 409 of 11 May 2016)* (Denmark) and *Austrian Federal Law on the Authorisation of Space Activities and the Establishment of a National Space Registry* (6 December 2011) (Austria)

³ See, e.g. *Outer Space Act 1986* (UK) and *Space Industry Act 2018* (UK); *Act on Launching of Spacecraft, etc. and Control of Spacecraft* (Act No. 76 of 2016) (Japan)

States' framework is complex and extremely detailed, spanning multiple regulatory agencies and legislative instruments.⁴

- 3.4 The Australian framework is contained in the *Space (Launches and Returns) Act 2018* (Cth) for launch and return activities and *Radiocommunications Act 1992* (Cth) for telecommunications-related aspects of space operations.
- 3.5 Despite the 2018 amendments to the *Space Activities Act 1998* – which resulted in the Act being renamed to the *Space (Launches and Returns) Act 2018* – there appears to have been a substantial lack of appetite for the creation of legal regimes with a future looking space focus. The 2018 amendments to the *Space Activities Act 1998* were narrow and focused on selected issues, primarily the reduction in insurance obligations for operators, changes to titles, and minor variations responding to specific concerns during the review process.⁵
- 3.6 The *Space (Launches and Returns) Act 2018* (Cth) regime only regulates the operation of launching facilities, launch (in Australia and overseas) and returns of space objects. At present, this legislative framework fails to capture the full life of a space operation, especially the 'operational' phase of a space asset.⁶
- 3.7 New Zealand, the United Kingdom and the United States have recently undertaken substantial reform processes with respect to space activities of private entities. New Zealand and the United Kingdom introduced new laws: the *Outer Space and High-altitude Activities Act 2017* (NZ) and *Space Industry Act 2018* (UK) respectively. The Federal Aviation Administration ('FAA'), Federal Communications Commission ('FCC') and National Oceanic and Atmospheric Administration ('NOAA') in the United States have all undertaken reviews of their regulation in response to a presidential executive order to streamline authorisation processes under the relevant law.⁷
- 3.8 While Australia amended its pre-existing legislation, the substantial reform processes undertaken by other western economies have left the Australian legal framework wanting. This is not unexpected. Professor Freeland's 2016 Analysis Report, the corresponding Department of Industry, Innovation and Science legislative proposals paper, and numerous submissions to reviews over the last five years have called on the Federal Government to draft new laws and look to the future to clarify the types of activities Australian-based entities can undertake in orbit, expand on the licence conditions applicable to space asset operators, and confirm Australia's position on space resource exploitation and human spaceflight.
- 3.9 A clear, certain and comprehensive legal regime carries substantial benefits. A purpose built and future looking legal regime would provide certainty to investors and operators, reduce legal expenditure by short-resourced start-up ventures, and place Australia as a nation of choice for international operators looking for jurisdictions to base operations

⁴ In the United States, launch and return, use of radiocommunications and earth observation activities are separately regulated by the Federal Aviation Administration, Federal Communications Commission and National Oceanic and Atmospheric Administration respectively. In some cases, this requires operators to acquire three separate licences from three different regulators.

⁵ See, Melissa de Zwart, 'No launch from Australia: something missing from our plans for the new space race' *The Conversation* (online) (12 June 2018) <https://theconversation.com/no-launch-from-australia-something-missing-from-our-plans-for-the-new-space-race-97924>.

⁶ The *Space (Launches and Returns) Act 2018* (Cth) ceases to apply 30 days after a launch has occurred, this is the expiry of the 'liability period'.

⁷ *Space Policy Directive-2 of 24 May 2018: Streamlining Regulations on Commercial Use of Space* (Executive Order of President Donald J Trump) (2018) 83 (104) Fed Reg 24901.

out of. Further, a strong full-service domestic space industry is vital to the sustainability of the an Australian sovereign capability and ongoing national security.

- 3.10 Failure to take an ambitious, comprehensive and forward looking approach to law and reform in this area will see Australia excised from large sections of the international space economy and lead to a repeat of the late-1990s.

4. **The Australian Government must clarify the industry regulator's role and bolster their capability**

- 4.1 A regulator plays a central and essential role to activity within a regulated industry. The Adelaide Law School has two primary submissions related to the operation and structure of the Australian Space Agency.

4.2 **Structure**

- 4.2.1 The Australian Space Agency holds a dual role in the Australian space industry – as a promoter of industry and as a regulator under the *Space (Launches and Returns) Act 2018* (Cth).
- 4.2.2 The Australian Space Agency is housed entirely within the Department of Industry, Science, Energy and Resources as a non-statutory entity operating under a charter. The Head of Agency reports to the relevant Minister and day-to-day operations are managed by a Deputy Head who supervises both industry promotion and regulatory functions of the agency.
- 4.2.3 The dual role of the Australian Space Agency puts it in a unique position. Dual role regulators are rare in western nations with the main examples being the New Zealand Space Agency ('NZSA') and the United Kingdom Space Agency ('UKSA').
- 4.2.4 Recently, the UK have indicated that following the commencement of the *Space Industry Act 2018* (UK), many of the regulatory functions of the UKSA will be removed from that agency and placed with the Civil Aviation Authority in alignment with 'a policy of separating safety regulation from sector promotion to ensure regulation is impartial.'⁸
- 4.2.5 The Adelaide Law School submits that the Federal Government should consider:
- a. formally separating industry promotion and regulatory functions of the agency into separate entities to reduce any potential conflicts of interest, or in the alternative introduce a reporting and management structure that separates oversight of agency functions up until the Head of Agency level (i.e. divide the existing deputy head of agency role into Deputy Head of Agency (Industry) and Deputy Head of Agency (Regulatory)).
 - b. providing the Australian Space Agency with a statutory basis and remove it from the Department of Industry, Science, Energy and Resources to provide it with a stand along existence with an independent mandate.

⁸ Department for Transport, *Unlocking Commercial Spaceflight for the UK: Consultation on draft regulations to implement the Space Industry Act 2018* (July 2020) 18.

4.3 Activities and Capacity

- 4.3.1 There have been reports in the media and anecdotal comments from within the industry of substantial delays in regulatory approvals under the *Space (Launches and Returns) Act 2018*.⁹ Unnecessary regulatory delays impact on industry and investor confidence which may in turn act as a disincentive to selecting Australia as a jurisdiction for operations.
- 4.3.2 The Adelaide Law School encourages the Australian Government to continue to fund in a way that allows the Australian Space Agency to efficiently and effectively regulate the industry in a timely manner. The need for the regulatory to move quickly was highlighted in the 2018 *Review of Australia's Space Industry Capability* at Recommendation 7.¹⁰
- 4.3.3 Regulator guidance plays a significant role in putting applicants under a legislative framework on notice as to the expectations of a regulator and insight into how they will exercise their discretion. The Adelaide Law School notes that, unlike in the US, UK, NZ, Japan and other jurisdictions, there is no publicly available guidance on how the Australian Space Agency intends on assessing applications it receives for licences under the *Space (Launches and Returns) Act 2018*.
- 4.3.4 Producing guidance would be a simple, yet effective method of placating industry and reducing barriers to entry for small to medium enterprises. Further, regulatory guidance reduces legal spend by allowing industry participants to act within immediate and continuous input from legal specialists.
- 4.3.5 Anecdotally, space industry participants have commented that the regulatory section of the Australian Space Agency are unwilling or unable to publicly engage with industry to the same extent as the Agency's industry focused division. The Australian Government should take steps to resource the Australian Space Agency in a way to allow the regulatory division of the Agency to engage with the public and industry on regulation of the space sector in Australia.

5. The Australian Government should continue to participate in international law making in order to clarify how private activities are to be regulated in the future

- 5.1 As noted earlier in this Submission, Australia is a party to the five United Nations administered space treaties. These treaties require Australia to undertake activities in accordance with a broad framework.
- 5.2 The Adelaide Law School would encourage the Australian Government to remain and indeed enhance its active participation in the international community and to work in a way that creates norms of law and behaviour compatible with the increasing prevalence of private space activities.

⁹ Amos Aikman, 'Countdown on but space industry dragged back to Earth by bureaucratic delays' *The Australian* (1 September 2020) <https://www.theaustralian.com.au/science/countdown-on-but-space-industry-dragged-back-to-earth-by-bureaucratic-delays/news-story/302a9ce4f3da89433ee82c3aad78a0d1>; Matt Garrick, 'Arnhem Space Centre, luxury hotel in doubt as major NT projects face significant delays' *Australian Broadcasting Corporation* (3 September 2020) <https://www.abc.net.au/news/2020-09-03/east-arnhem-space-agency-landbridge--westin-hotel-uncertain/12621914>.

¹⁰ Expert Reference Group, *Review of Australia's Space Industry Capability* (Department of Industry, Innovation and Science, March 2018) 13.

- 5.3 The Adelaide Law School would encourage the Federal Government to clarify its interpretation and application of the non-appropriation provisions of the *Outer Space Treaty* and *Moon Agreement* and their interaction with space resource exploitation in order to provide clarity to an emerging and potentially lucrative space resources industry. This remains important following Australia's commitment to the United States' *Artemis Accords* and their consideration of in-situ resource exploitation.¹¹
- 5.4 The Australian Government should consider the measures to implement the United Nations Committee on the Peaceful Uses of Outer Space's Long-term Sustainability of Outer Space Activities. This document, formulated by consensus, is focused on practical steps to ensure activities in outer space – irrespective of whether they are commercial, civil or military – are conducted in a way that assures the long term continuing access to outer space.
- 5.5 Continuing to work at the international level will provide the Australian space industry with a stable legal and political environment to invest and grow into.
6. **There should be greater recognition of space-adjacent, non-STEM involvement in the Australian space industry**
- 6.1 The Adelaide Law School submits that there is a need to further consider the contribution of non-science, technology, engineering and mathematics ('STEM') businesses to the overall Australian space industry.
- 6.2 Non-STEM industry sectors such as business, commerce, economics, accounting, insurance, financial and legal professionals play an essential role in the continuing development and maintenance of the Australian space industry. The role these sectors play in the Australian space industry are commonly overlooked.
- 6.3 Without detracting from the significance of STEM-based industry sectors, the non-STEM industry sectors play an essential role in enabling space-related operations through fundraising, legal and intellectual property advice, and facilitating day-to-day operations.
- 6.4 Greater recognition of non-STEM sectors can also assist the Australian space industry in addressing issues before they arise to avoid small to medium enterprises only engaging with professional advisers when issues presents.
- 6.5 The Adelaide Law School submits that there should be a greater focus on the space-related non-STEM industry in Australian Government initiatives and strategies to encourage the efficient development of niche specialist advisory capabilities that are capable of becoming internationally renowned. A strong space-adjacent business sector can also play a substantial role in attracting overseas businesses to Australia.

¹¹ *The Artemis Accords: Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes* (signed and entered into force 13 October 2020), s 10.