The Senate

Economics Legislation Committee

Space Activities Amendment (Launches and Returns) Bill 2018 [Provisions]

August 2018

ISBN 978-1-76010-814-4

Printed by the Senate Printing Unit, Parliament House, Canberra.

Senate Economics Legislation Committee

Committee members

Senator Jane Hume (*Chair*)	Victoria, LP
Senator Chris Ketter (*Deputy Chair*)	Queensland, ALP
Senator David Bushby	Tasmania, LP
Senator Jenny McAllister	New South Wales, ALP
Senator Amanda Stoker	Queensland, LP
Senator Peter Whish-Wilson	Tasmania, AG

Secretariat

Mr Mark Fitt, Secretary
Ms Penny Bear, Senior Research Officer
Ms Hannah Dunn, Administrative Officer

PO Box 6100
Parliament House
Canberra ACT 2600

Ph: 02 6277 3540
Fax: 02 6277 5719
E-mail: economics.sen@aph.gov.au

Table of Contents

Chapter 1

Introduction

1.1 On 21 June 2018, the Senate referred the provisions of the Space Activities Amendment (Launches and Returns) Bill 2018 (the bill) to the Economics Legislation Committee (the committee) for inquiry and report by 13 August 2018.[1]

1.2 The bill seeks to amend the *Space Activities Act 1998* (Space Activities Act) to:

- broaden the regulatory framework to include arrangements for launches from aircraft in flight and launches of high power rockets; and
- reduce barriers to participation in the space industry, by amending approval processes and insurance requirements for launches and returns.[2]

1.3 In his second reading speech, the Hon. Dan Tehan MP, Minister for Social Services, explained:

> The bill will support innovation and investment and provide additional flexibility to adjust to the changing operational environment of the space industry, while balancing safety and risk of potential damage with the national interest.
>
> The global space sector is worth over US$345 billion, and growing at 10 per cent annually.
>
> Australian businesses represent just 0.8 per cent of this industry internationally: a disproportionately small share considering our immense capability in space-related sectors, including our immense advanced manufacturing capability, and our world-leading work in fields such as automated mining and precision agriculture.
>
> Combined with our expertise, the extraordinary growth of this global industry makes it vital for Australian businesses to be able to participate with minimal regulatory burden, while maintaining Australia's international obligations.[3]

Conduct of the inquiry

1.4 The committee advertised the inquiry on its website and wrote to relevant stakeholders and interested parties inviting submissions. The committee received 22 submissions, which are listed at Appendix 1.

1.5 The committee thanks all those who have assisted with the inquiry.

---

1 *Journals of the Senate*, No. 7, 21 June 2018, p. 3242.

2 Explanatory Memorandum, p. 1.

3 The Hon. Dan Tehan MP, Minister for Social Services, *House of Representatives Hansard*, 30 May 2018, p. 8.

Background

Review of the Space Activities Act 1998

1.6 On 24 October 2015, the then Minister for Industry, Innovation and Science, the Hon. Christopher Pyne MP announced a Review of the Space Activities Act (review). The government would review legislation governing civil space activities in Australia to 'ensure it appropriately balances Australia's international obligations with encouraging industry innovation and entrepreneurship'.[4]

1.7 The terms of reference for the review included whether the Space Activities Act:

1. Supports innovation and the advancement of space technologies.
2. Promotes entrepreneurship and private investment in Australia, as well as opportunities for Australian firms to compete globally into the future.
3. Appropriately protects the Commonwealth against potential liability claims in relation to current and future civil space activities conducted in Australia or by Australians.
4. Adequately addresses emerging issues such as management of the space environment and technology advancement or convergence.
5. Appropriately aligns with other related Australian legislation and/or Australia's international obligations, and removes unnecessary regulatory burden.
6. Provides the necessary authority to support Commonwealth led civil space activities (government only).[5]

1.8 Consultations undertaken as part of the review included a stakeholder forum held on 24 February 2016 at Parliament House. Public consultations were held between February and April 2016 and are published on the government's website (www.space.gov.au).

1.9 The Department of Industry, Innovation and Science, (the Department) engaged Professor Steven Freeland[6] to undertake an analysis of the public submissions (the Analysis Report), which was released in August 2016. On 24 March 2017, the Department released a Legislative Proposals Paper, outlining a number of key proposals for change to the regulatory framework in response to issues

4 The Hon. Christopher Pyne MP, Minister for Industry, Innovation and Science, 'Atmosphere is right for a review of our space activities', *Media Release*, 24 October 2015, http://minister.industry.gov.au/node/811 (accessed 17 July 2017).

5 Department of Industry, Innovation and Science, *Reform of the Space Activities Act 1998 and associated framework: Legislative Proposals Paper*, 24 March 2017, p. 5.

6 Professor Steven Freeland is Dean of the School of Law and Professor of International Law at Western Sydney University. He specializes in International Criminal Law, Commercial Aspects of Space Law, Public International Law and Human Rights Law.

identified during the review process.[7] Public submissions for feedback on the Legislative Proposals Paper were open from 28 March to 17 April 2017.[8]

1.10 The bill was introduced in the House of Representative on 30 May 2018.[9]

Review of Australia's Space Industry Capability

1.11 On 13 July 2017, Senator the Hon. Arthur Sinodinos, then Minister for Industry, Innovation and Science, announced a review of Australia's space industry capability, to be led by an Expert Review Group, chaired by former CSIRO chief executive Dr Megan Clark AC. The purpose of the review was to build on the existing Australia's Satellite Utilisation Policy (2013), and the findings from the review of the Space Activities Act by 'developing a strategic framework for the Australian space sector that supports leadership, innovation, opportunity and entrepreneurship across the sector along with our broader national interests'.[10] The government received the report from the Expert Reference Group on 29 March 2018, and the Australian Government response to the report was announced on 14 May 2018.[11]

Australian Space Agency

1.12 On 25 September 2017, the Hon. Michaelia Cash, then Acting Minister for Industry, Innovation and Science, announced the government's commitment to establish a national space agency in order 'to ensure Australia has a long-term plan to grow its domestic space industry'. The Expert Reference Group was tasked with providing advice on a charter for the new space agency, which is included at Appendix 6 of its final report.[12]

1.13 The establishment of the Australian Space Agency was announced in the 2018–19 Budget, with the government committing to provide $41.0 million over four years to grow and establish a national space industry.[13]

---

7 Department of Industry, Innovation and Science, *Reform of the Space Activities Act 1998 and associated framework: Legislative Proposals Paper*, 24 March 2017, p. 6.

8 Department of Industry, Innovation and Science, 'Reform of the Space Activities Act 1998 and associated framework, Consultation Hub', https://consult.industry.gov.au/space-activities/reform-of-the-space-activities-act-1998-and-associ/ (accessed 30 July 2018).

9 House of Representatives, *Votes and Proceedings*, *No. 115*, Wednesday, 30 May 2018, p. 1573.

10 Senator the Hon. Arthur Sinodinos, Minister for Industry, Innovation and Science, 'Expert review of Australia's Space industry capabilities to participate in global market', *Media Release*, 13 July 2018, http://www.minister.industry.gov.au/ministers/sinodinos/media-releases/expert-review-australia's-space-industry-capabilities-participate (accessed 30 July 2018).

11 Australian Space Agency, 'Review of Australia's space industry capability', https://www.industry.gov.au/data-and-publications/review-of-australias-space-industry-capability (accessed 30 July 2018).

12 Review of Australia's Space Industry Capability, *Report from the Expert Reference Group for the Review*, March 2018, https://www.industry.gov.au/sites/g/files/net3906/f/June%202018/document/pdf/review_of_australias_space_industry_capability_-_report_from_the_expert_reference_group.pdf (accessed 30 July 2018).

13 Commonwealth of Australia, *Budget Measure: Budget Paper No. 2, 2018–19*, p. 153.

1.14 The Australian Government response to the Expert Reference Group's report on the Review provides further information on the establishment of a new Australian Space Agency:

> On 1 July 2018, the Australian Government will establish the Australian Space Agency on an ongoing basis. It will perform its functions as set out in the Agency's Charter, which will be finalised within three months of commencing operations.
>
> The Australian Space Agency will be located within the Department of Industry, Innovation and Science. In addition, the Australian Space Agency will develop close linkages with federal departments and agencies as well as state and territory governments and international agencies to ensure a whole of government approach is taken in respect of civil space activities.
>
> The establishment of a statutory basis for the Australian Space Agency will be considered after a review of its operations that will commence within four years of the establishment of the Australian Space Agency.[14]

1.15 The Australian Space Agency's responsibilities will include authorising Australian space activities under the Space Activities Act and the associated legislative framework, and engaging in international discussions affecting space regulation, such as treaty negotiations.[15]

1.16 Dr Megan Clark AC, Head of the Australian Space Agency, observed:

> Every day space provides essential data for banking, TV, internet access, and GPS to simply know where you are. Space underpins almost every part of the broader economy helping farmers seed a crop between the rows of last year's crop, marine vessels navigate, and emergency crews get up to date information. Growing how we use space will change how we live and work including providing new opportunities for communication in regional and remote areas. Space will be a defining domain for human endeavour and will change what we do on Earth.
>
> [The] Agency's purpose is to transform and grow a globally respected Australian space industry that lifts the broader economy and inspires and improves the lives of Australians. This will be underpinned by strong international and national engagement.[16]

---

14 *Australian Government Response to the Review of Australia's Space Industry Capability*, 14 May 2018, p. 5, https://www.industry.gov.au/sites/g/files/net3906/f/June%202018/document/extra/australian_government_response_to_the_review_of_australias_space_industry_capability.pdf (accessed 30 July 2018).

15 Australian Space Agency, 'Space regulation', last updated 25 July 2018, https://www.industry.gov.au/regulation-and-standards/space-regulation (accessed 30 July 2018).

16 Australian Space Agency, 'Australian Space Agency launches operations: A message from Head, Dr Megan Clark AC', 29 June 2018, https://www.industry.gov.au/news/news-from-the-department/australian-space-agency-launches-operations-a-message-from-head-dr (accessed 30 July 2018).

Overview of the bill

1.17 According to the Explanatory Memorandum (EM), the bill seeks to amend the Space Activities Act to address the changing landscape of the space industry. This changing landscape includes the new space industry participants, such as smaller emerging businesses and additional involvement by universities. In addition, the types of activities being undertaken are changing.[17] In his second reading speech, the Minister noted:

> The global space sector is a major source of technological advancement that provides broader applications and benefits across industry and society—not just in space exploration, but in sectors spanning communications, defence, mining, transportation and agriculture, to name but a few.[18]

1.18 The bill seeks to:

- include licensing arrangements for launches from aircraft in flight;
- streamline the approvals process for launches and returns;
- balance safety and risk of potential damage with the national interest in a changing environment;
- adjust insurance requirements to appropriate risk levels and international norms;
- reduce barriers to participation for small Australian space industry companies;
- increase non-compliance penalties to reflect the seriousness of damage to people and property; and
- introduce safeguards for high power rocket activities.[19]

Name of the Act

1.19 The bill seeks to amend the short title of the Space Activities Act to better reflect its scope. The Legislative Proposals Paper noted the current title does not reflect the limited function of the legislation, which is to regulate the launch and return of space objects.[20] The proposed new short title is *Space (Launches and Returns) Act 2018*.[21] The bill also seeks to amend the long title of the Space Activities Act to include high power rockets as follows: An Act about space activities and high power rockets, and for related purposes.[22]

---

17 Explanatory Memorandum, p. 3.

18 The Hon. Dan Tehan MP, Minister for Social Services, *House of Representatives Hansard*, 30 May 2018, p. 8.

19 Australian Space Agency, 'Space regulation', last updated 25 July 2018, https://www.industry.gov.au/regulation-and-standards/space-regulation (accessed 30 July 2018).

20 Department of Industry, Innovation and Science, *Reform of the Space Activities Act 1998 and associated framework: Legislative Proposals Paper*, 24 March 2017, p. 10.

21 Space Activities Amendment (Launches and Returns) Bill 2018, Item 3: Section 1.

22 Explanatory Memorandum, p. 5.

Commencement

1.20 The proposed commencement date of the bill is either the day of proclamation, or 12 months from the date of Royal Assent. The EM explains that the delayed commencement date is intended to provide sufficient time for the subordinate legislation to be drafted, so the full regulatory package can commence at the same time.[23]

Rules instead of regulations

1.21 Proposed section 110 to the bill seeks to amend the legislation to refer to the making of rules instead of regulations. According to the EM, this change will provide increased flexibility, subject to the limitations set out in the section, as the rules can be updated when necessary to maintain currency with changing government policy. The EM states:

- New subsection 110(1) makes it clear that the Minister may, by legislative instrument, make rules for matters required or permitted by the Act and necessary or convenient for carrying out or giving effect to the provisions of the Act.
- New subsection 110(2) provides that the rules must not: create an offence or civil penalty; provide powers of arrest or detention, or entry, search or seizure; impose a tax; set an amount to be appropriated from the Consolidated Revenue Fund under an appropriation in the Act; or directly amend the text of the Act.
- New subsection 110(3) makes it clear that despite subsection 14(2) of the *Legislation Act 2003* the rules can apply, adopt or incorporate, with or without modification, any matter contained in any other instrument or writing as in force or existing at the time when the provisions of a legislative instrument commence.[24]

Insurance requirements

1.22 The EM notes the measures in the bill seek to balance the risk of damage to persons and property, with the benefits of increased participation in the Australian space industry. Consistent with international practice and standards, the bill seeks to reduce the level of financial responsibility, and therefore insurance, required by participants, and adjust the proportion of risk carried by the Commonwealth.

1.23 As such, the bill seeks to significantly reduce the current insurance requirement of the Space Activities Act of an amount not less than $750 million (or maximum probable loss). The proposed measure provides that the insurance required for each authorised launch or return will be specified in subordinate legislation ('rules'), noting that the amount will not exceed $100 million. The EM notes that the reduced insurance requirement is consistent with comparable requirements in other

23 Explanatory Memorandum, p. 5.

24 Explanatory Memorandum, p. 32.

nations. The details of the insurance requirements will be moved from the Act to the rules to allow for greater flexibility to update requirements as the space industry evolves.[25]

Regulation of space activities and high power rockets

1.24 Part 3 of the bill relates to regulation of space activities and high power rockets. The bill provides a simplified outline of this Part:

- The operation of a launch facility in Australia requires a launch facility licence.
- A launch of a space object from a launch facility in Australia, from an Australian aircraft that is in flight or from a foreign aircraft that is in the airspace over Australian territory requires an Australian launch permit or an authorisation certificate.
- A launch of a high power rocket from a facility or place in Australia requires an Australian high power rocket permit or an authorisation certificate.
- A launch of a space object from a facility or place outside Australia by an Australian national requires an overseas payload permit or an authorisation certificate.
- A return of a space object to a place or area in Australia requires an Australian launch permit, a return authorisation or an authorisation certificate.
- A return of a space object to a place or area outside Australia by an Australian national requires a return authorisation or an authorisation certificate.
- The Minister may take into account the security, defence or international relations of Australia in deciding whether to grant a licence, permit or authorisation under this Part.[26]

1.25 The bill seeks to repeal Divisions 2 to 6 in Part 3 of the Space Activities Act which deal with licences, permits and authorisations and replace them with new Divisions 2 to 6A that provide the terms and conditions for launch facility licences, Australian launch permits, Australian high power rocket permits, overseas payload permits, and return authorisations.[27]

1.26 The EM notes that the inclusion of Australian high power rocket permits 'recognises the evolving nature of space technologies and provides a regulatory framework for the safe launching and return of these rockets.'[28]

25 Explanatory Memorandum, p. 1.

26 Space Activities Amendment (Launches and Returns) Bill 2018, Part 3, Division 1A.

27 Explanatory Memorandum, p. 11.

28 Explanatory Memorandum, p. 11.

1.27 The new Divisions also apply penalty provisions in respect of any breaches, and are intended to ensure safe industry participation, as well as encourage investment and innovation through legislative simplification.[29]

Legislative scrutiny

1.28 The EM states that the bill is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.[30]

1.29 The Parliamentary Joint Committee on Human Rights considered the bill in its *Report 5 of 2018* and made no comment.[31]

1.30 In its *Scrutiny Digest 6 of 2018*, the Senate Standing Committee for the Scrutiny of Bills raised concerns in relation to proposed subsection 110(3) in schedule 1, item 187 to the bill. Proposed subsection 110 provides a general rule making power. The Scrutiny of Bills committee was concerned that proposed subsection 110(3) provides that those rules may incorporate external material into the law. In particular, it noted:

> The explanatory memorandum provides no explanation as to what type of instruments or documents may need to be applied, adopted or incorporated, nor does it explain why it would be necessary or appropriate to incorporate matters in instruments or writings as in force from time to time. It merely restates the operation and effect of the relevant provisions. Nor does it explain whether such incorporated instruments or documents will be made freely available.[32]

1.31 The Scrutiny of Bills committee sought advice from the minister with regards to its concerns.[33]

Financial Impact

1.32 The EM states that the bill will provide for a person making an application for a licence, permit or authorisation under the Act to pay the Commonwealth the relevant fee prescribed by the rules. The prescribed fees will operate on a cost recovery model. Setting out the prescribed fees in the rules is intended to provide greater flexibility, allowing the cost recovery model to be updated as required, subject to periodic review.[34]

---

29 Explanatory Memorandum, p. 11.

30 Explanatory Memorandum, p. 3.

31 Parliamentary Joint Committee on Human Rights, *Report 5 of 2018*, 19 June 2018, p. 53.

32 Senate Standing Committee for the Scrutiny of Bills, *Scrutiny Digest 6 of 2018*, 20 June 2018, p. 46.

33 Senate Standing Committee for the Scrutiny of Bills, *Scrutiny Digest 6 of 2018*, 20 June 2018, p. 47.

34 Explanatory Memorandum, pp. 1–2.

Chapter 2

Views on the bill

2.1 Overall, submitters to the inquiry expressed support for the Space Activities Amendment (Launches and Returns) Bill 2018 (the bill), which seeks to support innovation and investment and provide additional flexibility to adjust to the changing operational environment of the space industry, while balancing safety and risk of potential damage with the national interest.

2.2 This chapter examines the evidence received in relation to the bill. It considers the issues raised in relation to the subordinate legislation—the rules, particularly in relation to the inclusion of high power rockets in the regulatory framework and the new debris mitigation strategy requirements. It also considers changes to the insurance requirements and fee structures.

Support for the bill

2.3 Dr Elias Aboutanios, Deputy Director of the Australian Centre for Space Engineering Research at the University of New South Wales, described the bill as 'a welcome improvement over the existing legislation'. Dr Aboutanios considered that moving the detail of the regulatory framework to the legislative instruments will allow the government to adapt the implementation of the legislation as the context changes noting the rapidly changing technological environment. At the same time, Dr Aboutanios commented that while the bill contains clear improvements, 'the job is only half-done' as the details will be included in the rules. Dr Aboutanios believed it 'essential that these rules and regulations are appropriately constructed to bring about the full promise of the new bill'.[1]

2.4 The Adelaide Law School highlighted the importance of getting the legislative framework right, stating:

> …the Australian space industry is capable of generating significant benefits to the Australian economy, however it is currently poised at a crucial moment and any changes to the legislative environment at this time will either promote the industry to a world leading position or supress and stifle it like the developing space industry in the late 1990s and early 2000s.[2]

2.5 Asia Pacific Aerospace Consultants (APAC), a consulting firm providing services to the space and communications industries, considered that the current *Space Activities Act 1998* (Space Activities Act) had created some difficulties with regard to the workability of the regulatory regime, which have largely been addressed in the new legislation. APAC highlighted:

> In particular the new legislation updates the terminology to more accurately reflect the nature of the particular activities. This includes replacing the

1 Dr Elias Aboutanios, *Submission 14*, pp.1–2.

2 Adelaide Law School, University of Adelaide, *Submission 3*, p. 1.

> term 'space licence' with 'facility licence' and also separates the launch facility from the launch vehicle in the regulatory process. This is a welcome change for a number of current Australian companies which plan to provide launch facility and range services as a managed service for a wide range of overseas built launch vehicles. This is just one example of how the nature of the space industry is changing and how the new legislation has adapted to handle this. Another example is the inclusion of mobile platforms including aircraft as possible launch vehicles which reflects current technological trends in the space industry.[3]

2.6 The Australian National University (ANU) was very supportive of the direction and aim of the bill. In particular, the ANU noted that the bill 'recognises that technology is changing rapidly and the legislative framework needs to keep pace with those changes so Australia does not miss opportunities as they arise'.[4] The ANU noted that plasma propulsion is an example of an evolving technology, commenting:

> Over time, plasma propulsion should see an increase in miniaturised launch and flight technologies, which will allow for cheaper and more efficient launch and spacecraft manoeuvrability. Having this Bill, which allows for these emerging technologies to be used and tested, is critical.[5]

2.7 Sitael Australia, a company involved in the design and manufacture satellites and payloads of up to 300kg, was supportive of the bill overall and considered that 'it holistically updates the legislative framework in Australia to be broadly in line with other nation's space law, with many parts remaining unchanged'.[6]

2.8 While the Adelaide Law School was of the view that the bill addresses a number of concerns that were raised in the Expert Reference Group's (ERG) review of the Space Activities Act, it expressed disappointment that the majority of the Space Activities Act will remain unaltered by the proposed amendments in the bill.

2.9 However, the Australia New Zealand Space Law Interest Group (ANZSLIG), believed that the Space Activities Act should not be subject to wholesale change until the newly established Australian Space Agency has had the opportunity to establish its regulatory role; develop a strategy; develop relationships with other national space agencies, and with other federal government departments and state governments and delimit responsibilities; engage with community; collaborate with industry; and determine its appropriate statutory basis.[7]

2.10 Communications Alliance Satellite Service Working Group (SSWG), which includes companies in the space and satellite sector, supported the government's decision to amend rather than re-write the Space Activities Act, which it viewed as 'a prudent step'. SSWG observed:

---

3 Asia Pacific Aerospace Consultants, *Submission 13,* p. 4.

4 The Australian National University, *Submission 16*, p. 1.

5 The Australian National University, *Submission 16*, p. 1.

6 Sitael Australia, *Submission 2*, p. 1.

7 Australia New Zealand Space Law Interest Group (ANZSLIG), *Submission 19*, p. 5.

> The Bill appears to have been drafted to retain flexibility, with provisions to be covered under subordinate legislation via disallowable instruments. This is a good starting point and our members look forward to seeing how the implementation of the Bill turns out in practice.[8]

Inclusion of a preamble or statement of purpose

2.11 A number of submissions proposed the inclusion of a preamble or statement of purpose in the bill. The bill includes proposed amendments to the Objects of the Act with the inclusion of paragraph 3(b) which states:

> (b) to ensure that a reasonable balance is achieved between:
>
> (i) the removal of barriers to participation in space activities and the encouragement of innovation and entrepreneurship in the space industry; and
>
> (ii) the safety of space activities, and the risk of damage to persons or property as a result of space activities, regulated by this Act; and

2.12 Inovor Technologies, a satellite and defence technologies company, deemed the bill to be 'singularly underwhelming' compared to recent space legislation passed in the United Kingdom and Luxembourg. It put forward the inclusion of a preamble to highlight Australia's openness to the space industry, as currently, the bill placed 'a heavy emphasis on compliance without the counter balance of holding ourselves out to offering a competitive regulatory regime that encourages innovation and investment in the industry.'[9]

2.13 The Space Industry Association of Australia (SIAA), the peak space industry body in Australia, also believed the bill should include a stronger pro-industry statement of purpose, in order to demonstrate the importance the Australian government attaches to economic growth and entrepreneurial activity in space. Such a statement should make clear that one of the objectives of the legislation is to 'create a supportive regulatory environment for the growth and encouragement of Australian space activities'.[10]

Subordinate legislation—the rules

2.14 As noted in the previous chapter, the bill seeks to amend the legislation to refer to the making of rules instead of regulations. This amendment is intended to provide greater flexibility, as the rules can be updated when necessary to maintain currency with changing government policy. The proposed commencement date of the bill allows for a 12-month delay to provide sufficient time for the subordinate

---

8 Communications Alliance Satellite Service Working Group (SSWG), *Submission 21*, p. 1.

9 Inovor Technologies, *Submission 5*, pp. 5–6.

10 Space Industry Association of Australia, *Submission 12*, pp. 4–5; see also Asia Pacific Aerospace Consultants, *Submission 13*, p. 2; Australia New Zealand Space Law Interest Group (ANZSLIG), *Submission 19*, p. 7.

legislation to be drafted, so the full regulatory package can commence at the same time.

2.15 APAC noted that the real test of whether the new legislative regime will be workable will be in the development of the rules. It strongly recommended that 'the Rules be written in a way that facilitates the widest scope of Australian space activity and take a realistic and practical approach to the level of risk involved'.[11]

2.16 Southern Launch, a space launch operator, was supportive of the introduction of rules as they have the potential to allow for more regular updates as required. However, it noted that without having seen the rules, the specifics of the proposed changes are difficult to quantify.[12]

2.17 ANZSLIG also noted it was difficult to assess the bill without the rules, which have not been provided with the bill. It notes that the rules are extensively referred to in the bill. ANZSLIG notes the rules will provide further detail on a range of matters, including:

- key definitions including 'gross negligence', 'high power rocket', 'launch party', 'liability period[s]', and 'responsible party';
- criteria for authorisations and permits;
- the definition of 'related party';
- the conditions that will be applicable to such authorisations and permits;
- application, variation or transfer of a launch facility licence;
- the period that a permit will be effective for;
- the debris mitigation strategy that parties are required to include with certain permits;
- the minimum amount of insurance that is required (which must not exceed $100 million);
- the method for working out an amount of insurance;
- setting of fees and the time for payment of fees;
- keeping of a Register of Space Objects;
- definition of 'accident'; and
- certain details in respect of investigations.[13]

2.18 The Adelaide Law School supported the urgent development of the rules 'as they represent the essential detail of the new regime and delay in their implementation

11 Asia Pacific Aerospace Consultants, *Submission 13*, p. 4.

12 Southern Launch, *Submission 11*, p. 1.

13 Australia New Zealand Space Law Interest Group (ANZSLIG), *Submission 19*, pp. 7–8.

represents yet another delay for the Australian space industry which has been awaiting reform for several years'.[14]

2.19 The Northern Territory (NT) Government informed the committee that it is ready to work with 'industry, investors and other jurisdictions to realise the vision of Australia securing a greater share of the global space economy', and is actively working with Equatorial Launch Australia (ELA) to support the development of the proposed spaceport. As such, it argued that is critical that the bill is passed and the rules are developed as soon as possible 'to provide Australian launch proponents with a clear operating environment upon which to make business decisions'.[15] It stated further:

> The NT Government recognises that the new rules associated with the regulations have not yet been drafted and that these rules cover areas of critical importance to the feasibility of Australia launch facilities, including licensing fees; insurance and financial requirements and the application process. It is essential that these rules be developed in a timely manner and in consultation with industry.[16]

2.20 SIAA also expressed concerns about the 12-month delay of the commencement of the bill in order to allow for the development and approval of the subordinate legislation—the new rules. It argued that the rule making process should be given high priority in order to bring the new legislation into force as soon as practicable.

2.21 SIAA noted that during the period before the legislation commences there will likely be a number of launch and satellite projects requiring permits or certificates under the existing legislation. Some of SIAA's members had expressed concern that this may lead to duplicated regulatory processes or a possible 12-month delay in the licensing process if they elect to wait for the new rules to come into effect.[17]

2.22 The committee notes that the bill does provide transitional arrangements for existing and pending approvals. The EM notes the transitional arrangements and acknowledges that it would be unreasonable for a person who has been granted a permit/authorisation under the current Act to take any action or reapply as a result of the amendments to the Act or to require a person who has made an application under the current Act to make a new application as a result of the amendments to the Act.[18]

High power rockets

2.23 The bill seeks to introduce safeguards for high power rocket activities. The bill introduces a new requirement for an Australian high power rocket permit or an authorisation certificate for the launch of a high power rocket from a facility or place

---

14 Adelaide Law School, University of Adelaide, *Submission 3*, pp. 4–5.

15 NT Department of Trade, Business and Innovation, *Submission 7*, p. 1.

16 NT Department of Trade, Business and Innovation, *Submission 7*, p. 1.

17 Space Industry Association of Australia, *Submission 12*, p. 5.

18 Explanatory Memorandum, p. 32.

in Australia. The definition of 'high power rocket' will be included in the rules to provide greater flexibility so the definition can be readily updated when necessary to maintain currency with changing technology. [19][20] The bill defines a launch to 'include the launch of high power rockets into an area that is not beyond 100km above mean sea level'.[21]

2.24 SIAA noted inclusion of high power rockets in the regulatory regime and understood the reasoning behind the inclusion—that high power rockets, particularly rockets designed for high altitude, should be regulated in the same way as is the case for rocket launches to an altitude of at least 100km or launches to orbit. However, it argued that:

> …regulation of high powered rockets under this legislation should not detract from Australia's attractiveness as a location for rocket development. [SIAA] would recommend a scaled or graduated approach in the Rules in relation to safety standards, perhaps based on intended altitude or total energy of the particular type of rocket. [SIAA] also argue that the Rules should allow for experimentation and development of new rocket systems in Australia by a light handed regulatory approach, particularly in remote areas where the risk of damage to persons and valuable property is low.[22]

2.25 Black Sky Aerospace (BSA), a launch services provider, believed operations should be considered launch services regardless of whether they operated above or below 100km where the launch vehicle and/or space object is ultimately destined for space, including testing for such launches. However, it raised concerns about the use of the term 'high power rockets', noting the potential to negatively impact operations of organisations launching vehicles that are below 100km that are not intended for flights into space.[23]

2.26 APAC highlighted the need to ensure the rules around high power rockets are carefully crafted so as not to diminish Australia's attractiveness as a location for rocket development. APAC submitted:

> Ideally it should be designed to encourage experimentation and development of new rocket systems. APAC also notes that it is critical to get the definition of high power rockets correct to ensure that amateur rocket activities, that are such a valuable student activity for promoting interest in STEM subjects, are not inadvertently driven out of existence by the high power rocket rules.[24]

---

19 Space Activities Amendment (Launches and Returns) Bill 2018, Section 8, item 20—'**high power rocket** means an object of a kind prescribed by the rules for the purposes of this definition'.

20 Explanatory Memorandum, p. 32.

21 Space Activities Amendment (Launches and Returns) Bill 2018, Section 8, item 24.

22 Space Industry Association of Australia, *Submission 12*, pp. 5–6.

23 Black Sky Aerospace Pty Ltd, *Submission 9*, p. 1.

24 Asia Pacific Aerospace Consultants, *Submission 13*, pp. 4–5.

2.27 Dr Maria Pozza, a participant in ANZSLIG, noted the inclusion of high power rockets had the potential to create conflict with the scope of compliance between the Australian Space Agency and the Civil Aviation Safety Authority (CASA).[25] International Aerospace Law & Policy Group (IALPG), a specialist aviation and space legal practice, pointed out that currently rockets are primarily regulated by CASA under Part 101 of the Civil Aviation Safety Regulations 1998 (CASR). IALPG expressed concern that:

> It is not clear what aspects of the regulation of high power rockets will be within the scope of the amended Act, and what will remain under CASA Part 101 (noting that there are no apparent plans to amend Part 101). This immediately introduces a level of disconnect as between aviation and space agencies that might exacerbate existing safety issues with the launch of high power rockets in Australian airspace – an activity that is likely to grow in frequency and number from commercial operators.[26]

2.28 The Australian Airline Pilots Association (AusALPA) highlighted the lack of transparency surrounding the rules and expressed concerned about the way the new legislative framework would work with the existing aviation safety regime, particularly with the inclusion of high power rockets and launches from aircraft in Australian airspace.[27]

2.29 Australian Model Rocket Society Inc. (AMRS), the national body for hobby rocketry activities in Australia, expressed concerns there is no clear definition of high power rockets contained in the bill. AMRS submitted that the reference to high power rockets is a 'poor choice of terminology', noting that:

> Irrelevant of the altitude, power, mass etc., strictly commercial operations should be defined as a launch vehicle. With 100km being the upper limit for all non-commercial activities, [high power rockets] hobby users are already bound by existing CASA regulations.[28]

2.30 AMRS raised concerns that the responsibilities of the Australian Space Agency and CASA under the new legislative framework were not clearly defined.[29]

2.31 Australian Rocketry, a rocketry products provider, noted that it was unclear from the bill what the impact of the inclusion of high power rockets in the legislation would have on its non-commercial customers, specifically in the amateur/hobby and educational sectors. It noted that the proposed bill appears to be have been drafted for commercial activities, however, it sought further clarity on the definition of high power rockets and permit requirements. Australian Rocketry was particularly

---

25 Dr Maria Pozza, *Submission 20*, p. 3.

26 International Aerospace Law & Policy Group, *Submission 17*, p. 5.

27 AusALPA, *Submission 18*, p. 2.

28 Australian Model Rocket Society Inc. (AMRS), *Submission 8*, p. 2.

29 Australian Model Rocket Society Inc. (AMRS), *Submission 8*, p. 1.

concerned about the impact of the changes as it is hosting Thunda Down Under, an international rocketry event, in April 2019, as well as for future events.[30]

Launch facility licences

2.32 Proposed Division 3 to the bill introduces a launch facility licence, which replaces the space licence in the current legislation. The Adelaide Law School supported the shift from space licences to launch facility licences as it clarifies the position of a domestic launch facility operator. It observed that this is a clear adoption of international best practice as this change will align the Australian legislation with that of New Zealand and the United Kingdom where a distinct 'facility licence' is used.[31]

2.33 Gilmour Space Technologies, a small launch development company, noted the lack of clarity in the bill on the requirement for the launch company to also require a permit for the payload to be launched. In other countries, the process is the payload owner (satellite owner) gets a separate approval to launch, and provides that to the launch company before they launch the payload. It was also unclear whether 'a mobile launch platform that is used at a permitted launch site is covered by the launch site permit. A mobile launch platform allows easier transportation to the launch site and is used instead of a fixed launch tower at the site'.[32]

Australian launch permits

2.34 The bill seeks to broaden the regulatory framework to include arrangements for launches from aircraft in flight. Proposed Division 3 to the bills relates to Australian launch permits, which will be required for a launch of a space object from a launch facility in Australia, from an Australian aircraft that is in flight, or from a foreign aircraft that is in the airspace over Australian territory.[33]

2.35 Fleet Space Technologies, a satellite telecommunications company, welcomed the inclusion of air-launch, either overseas or from Australian territory, in the bills as it considered these to be a commercially attractive future option.[34]

2.36 Equatorial Launch Australia (ELA), which is establishing Australia's first commercial spaceport, in East Arnhem Land, Northern Territory, was concerned that the proposed amendments relating to space launch vehicles had the potential to reduce Australia's competitiveness and limit development of innovative industry. ELA found 'the legislative inclusion of vehicles not ultimately intended for the transit to space problematic'.[35]

---

30 Australian Rocketry, *Submission 10*, p. 1.

31 Adelaide Law School, University of Adelaide, *Submission 3*, pp. 2–3.

32 Gilmour Space Technologies, *Submission 1*, p. 1.

33 Space Activities Amendment (Launches and Returns) Bill 2018, Part 3, Division 3.

34 Fleet Space Technologies, *Submission 6*, p. 1.

35 Equatorial Launch Australia Pty Ltd, *Submission 4*, p. 1.

Debris mitigation strategy

2.37 The bill includes a new requirement for the inclusion of a debris mitigation strategy when applying for an Australian launch permit or an overseas payload permit. It is understood that the matters which must be addressed in a debris mitigation strategy will be prescribed in the rules.[36]

2.38 Sitael Australia supported the inclusion of appropriate debris mitigation processes in order to ensure the sustainable use of the space environment for all nations and organisations.[37] The Adelaide Law School noted that the inclusion of references to debris mitigation is becoming standard practice in modern legislative regimes. It believed the inclusion of a reference to debris mitigation 'brings the legislation into the 21st century, where consideration of the space environment is essential.'[38] At the same time, the Adelaide Law School raised concerns about the 'lingering uncertainty' regarding the details of the new requirements that are to be dealt with in the rules, which are not yet available for review. It noted that:

> Whilst we acknowledge the significant importance of debris mitigation to the future of a viable uses of space, it certainly would need to be nothing more onerous than accepted in international industry standard.[39]

2.39 The NT Government advised the committee that it was aware that industry participants had expressed concern about the practical implications of the debris mitigation strategy requirements. It noted that the current wording in the bill indicates that an Australian applicant for a launch permit may be required to prepare a debris mitigation strategy for a payload upon which it has no control. As such, the NT Government considered that it would be 'appropriate for the Australian Government to restrict the space debris mitigation requirements to those parts of the space object under the control of the Australian applicant, when designing 'the rules'.[40]

2.40 SIAA also raised this concern regarding debris mitigation strategy requirements, as drafted in the bill, and recommended particular care be taken in drafting the rules to avoid any unintended consequences. It observed:

> It is unlikely that it was intended to impose an obligation on an Australian permit applicant in relation to a matter over which it has no influence or control. We are of the view that the rule making power in clauses 34(3) and 46G(3) grants power under the Rules to provide that the debris mitigation strategy is only required in relation to the part of the relevant space object

36 Space Activities Amendment (Launches and Returns) Bill 2018, Division 3, subsection 34 and Division 5, subsection 46G.

37 Sitael Australia, *Submission 2*, p. 1.

38 Adelaide Law School, University of Adelaide, *Submission 3*, p. 3.

39 Adelaide Law School, University of Adelaide, *Submission 3*, p. 4.

40 NT Department of Trade, Business and Innovation, *Submission 7*, p. 1.

> that is the responsibility of the Australian applicant i.e. either the launch vehicle or the payload.[41]

2.41 Sitael Australia considered that specific requirements for a debris mitigation strategy contained in the rules should:

> a. Only address the payload portion, and not the launcher vehicle, adapter, fairing or any other element outside of the control of the payload provider
>
> b. Any strategy imposed by the rules should be at the same level of those required by other major space fairing nations, to avoid discouraging Australian industry and Australian payloads from transferring to a more favourable jurisdiction.[42]

Insurance requirements

2.42 As noted in chapter 1, the bill seeks to significantly reduce the insurance requirement from the current figure of not less than $750 million (or maximum probable loss), to not more than $100 million. The proposed measure provides that the insurance required for each authorised launch or return will be specified in the rules.

2.43 Submissions broadly supported the reduction of the insurance requirement to a maximum of $100 million. For example, SIAA welcomed the change as it:

> …reflects the practical reality that in most jurisdictions the potential cost of damage caused by a launch failure is usually less than this amount. In the 50 year history of the space treaties, claims for loss or damage under international law that this type of indemnity protects the government against, have been very rare and the chance that the Australian government will ever need to invoke the indemnity is therefore very small.[43]

2.44 SIAA noted that insurance costs for many satellite operators remain high relative to the overall cost of their satellite and launch circumstances of the permit applicant and the nature of the mission. It supported the approach in the current regulations under the Space Activities Act which allows for maximum probable loss calculations to be used as a means of reducing the indemnity level, while arguing that the methodology for such calculations could be simplified.[44]

2.45 SIAA also recommended that when developing the rules, consideration should be given to mechanisms to minimise the level of insurance required for Australian satellite operators to a minimum. It noted that some of its members had proposed a simple sliding scale based on parameters such as satellite size and intended orbit. [45]

---

41 Space Industry Association of Australia, *Submission 12*, p. 6.

42 Sitael Australia, *Submission 2*, p. 1.

43 Space Industry Association of Australia, *Submission 12*, p. 7.

44 Space Industry Association of Australia, *Submission 12*, p. 7.

45 Space Industry Association of Australia, *Submission 12*, p. 7.

2.46 Fleet Space Technologies, a satellite telecommunications company, welcomed the reduction of the insurance requirement, however also suggested that the insurance requirement could be further reduced by taking a risk-based approach, that is, by taking into account the specific launch, orbit and operational plans of the satellite mission.[46]

2.47 Hypersonix, an Australian company which is currently developing a small satellite launch system, pointed out that the small satellite launch market is predicted to significantly expand. Hypersonix raised concerns about the lack of specific information regarding the risk based approach to calculating launch liability, stating:

> As a company intending to launch small satellites from Australia, the level of insurance premiums for launch can have a significant effect on commercial viability. For example, the current international price for launch of a 100 kg satellite is in the neighbourhood of US$5M. A blanket requirement for $100M of insurance could result in an insurance premium that is a significant percentage of the launch cost. This must be passed onto customers, and could make launch from Australia uncompetitive.[47]

2.48 APAC also noted that the rapid growth of the space industry has been driven by the reduction in size and cost of small satellites and very small satellites known as cubesats:

> This reduction in cost now makes it possible for small businesses and universities to own and operate satellites. Australia has shown its capability in this area with the launch of four Australian built cubesats in 2017 and this is an area of significant opportunity for Australian space. However, this promising aspect of the Australian space industry is at risk of being stifled by the financial and insurance requirements of the rules.[48]

2.49 Fleet Space Technologies noted the current industry trend for 'piggyback' or 'rideshare' launches (where small satellites utilise excess launch capability on larger missions) will continue to expand. It highlighted the need to separate the insurance requirements for Australian satellite operators and launch operators as the insurance risks associated to a rocket launch for example, is separate to the risks of collision during deployment and on-orbit operations of a satellite.[49] SIAA suggested consideration be given to adjusting insurance requirements downwards to reflect the fact that a small satellite is a secondary or tertiary payload on a launch contracted by a major satellite operator.[50]

2.50 Dr Elias Aboutanios also raised the fact that ride-sharing of small spacecraft is only set to increase, arguing that 'it is important to provide the facility for multiple

---

46 Fleet Space Technologies, *Submission 6*, p. 1.

47 Hypersonix Pty Ltd, *Submission 15*, pp. 1–2.

48 Asia Pacific Aerospace Consultants, *Submission 13*, p. 5.

49 Fleet Space Technologies, *Submission 6*, p. 1.

50 Space Industry Association of Australia, *Submission 12*, p. 7.

payloads to be considered jointly in order to reduce the procedural burden both on the applicant and the Australia Space Agency'.[51]

2.51 Southern Launch cautioned against introducing a flat insurance regime, particularly in relation to high power rockets as this could 'potentially increase insurance requirements for high power rocket flight fivefold'. It explained that imposing a $100 million insurance requirement on high power rockets would 'stifle Australian research, development and manufacture of rocket technology, and ultimately result in the relocation of such activities to other countries with more reasoned insurance requirements'.[52]

2.52 SIAA noted that proposed section 46B(2)(ii) provides that the Minister will not insist that the insurance/financial requirements of an overseas launch certificate be satisfied 'having regard to the nature and purpose of the space object or space objects concerned'. SIAA explained that this provision may have particular significance to the university and research sector. In particular, those SIAA members involved in small satellite research had concerns the bill does not contain guidance or criteria for the Minister in relation to what is relevant when assessing the nature and purpose of the space object or objects. SIAA suggested the following considerations would be relevant:

1. What indemnities have been given by the launch provider and/or the government of the launching state?
2. Is the Australian government properly covered in relation to its treaty liabilities by these indemnities?
3. Is the space object part of a commercial venture or a not-for-profit exercise?
4. What is the size and what are the proposed orbital parameters of the space object?
5. Is the space object to be launched for scientific or educational purposes?
6. What will be the public benefit in terms of the knowledge gained or the techniques tested or demonstrated?
7. Is there an advantage to the Australian Government or the Australian people from the launch sufficient to justify the additional financial risk (if any) to which the Australian Government would be exposed?[53]

Reciprocal arrangements with other countries

2.53 Some submissions suggested establishing reciprocal arrangements with other countries to share risk and avoid duplication of licencing requirements.

---

51 Dr Elias Aboutanios, *Submission 14*, p. 2.

52 Southern Launch, *Submission 11*, p. 1.

53 Space Industry Association of Australia, *Submission 12*, p. 8.

2.54 In situations where overseas launch providers are being used by Australian satellite operators, Fleet Space Technologies suggested that the Australian Space Agency consider:

> …intergovernmental agreements with the nations hosting the major commercial launch providers (USA, India, New Zealand, Russia, Europe) in order to divide up the international liabilities and corresponding insurance requirements between the launch and post deployment phases, thereby avoiding any double-insurance for launch related risks.[54]

2.55 SIAA also proposed establishing reciprocal arrangements with other countries in relation to the licensing of launches from Australia noting:

> Reciprocal arrangements could circumvent or obviate some of the regulatory burden on a launch operator in Australia, where the licensing agency is satisfied that similar standards have already been applied by the licensing agency in another jurisdiction.[55]

Fee structures

2.56 The bill provides for a person making an application for a licence, permit or authorisation under the Act to pay the Commonwealth the relevant fee prescribed by the rules. Setting out the prescribed fees in the rules is intended to provide greater flexibility, allowing the cost recovery model to be updated as required, subject to periodic review. The prescribed fees will operate on a cost recovery model.

2.57 SIAA advised that some of its members had raised concerns regarding the fee structure for the various licencing steps. It warned that consideration should be given to the potential risk that heavy-handed fees and regulatory structures could have in causing promising Australian businesses to relocate overseas.[56]

2.58 In addition, SIAA argued that the rules should address circumstances in which the Minister should consider waiving or reducing fees for scientific and education organisations. It noted that the level of fees is an important financial consideration in determining the feasibility of experimental satellite projects, particularly for university departments and not-for-profit research organisations.[57]

2.59 Inovor Technologies noted that currently under the Space Activities Act, there is a flat fee structure for the space licence, the outcome of which is that 'the fee applies equally to a nanosatellite start-up as to an established player such as Optus'. It argued that when setting out the prescribed fees in the rules, consideration should be given to scaling licence fees according to categories of space operations.[58]

---

54 Fleet Space Technologies, *Submission 6*, p. 2

55 Space Industry Association of Australia, *Submission 12*, p. 9.

56 Space Industry Association of Australia, *Submission 12*, pp. 9–10.

57 Space Industry Association of Australia, *Submission 12*, p. 10.

58 Inovor Technologies, *Submission 5*, p. 5.

2.60 APAC noted that the current fee structure was established under the principle of full cost recovery by government for the regulatory services it provides. APAC noted that:

> …one of the surest ways to stifle a nascent industry is to include the costs of the bureaucrats regulating the industry into the overheads of the fledgling businesses. This is not an effective mechanism for building a successful industry in a promising new market. APAC strongly recommends that the fee structures be set in a way that encourages the Australian space industry and establishes Australia as a practical and attractive place to conduct space business.[59]

2.61 SSWG suggested that with regard to fee-setting, the rules should provide the option for a phased application approach to facilitate new entrants, such as those representing the CubeSat industry. This would have the benefit of providing guidance during their application process. In addition, the SSWG suggested the fee charging model should:

- Be clear and up-front.
- Be reasonable, fair and non-discriminatory (in particular for scientific, educational and other entities that may qualify for reduced fees).
- Be based on an incentivised approach.
- Not discourage start-ups or introduce obstacles for innovators.
- Discourage those who are looking to gain a 'free ride'.[60]

2.62 SSWG noted that it was not clear from the bill which agency would have responsibility for setting fees.[61]

Consultation mechanisms

2.63 A number of submissions recommended the establishment of consultation mechanisms. International Aerospace Law & Policy Group (IALPG) noted that the aviation industry has an interest in the bill as launches and returns will indirectly impact the aviation community as rockets and de-orbiting objects 'will traverse airspace that may be in active use by air traffic, or that would normally be available for use of the aviation community, in accordance with relevant airspace rules'.[62]

> Our primary concern is about the process for the creation of space Rules in respect of high power rockets under the amended Act, noting that there is little practical information available publicly about a consultation process. This includes the process for ensuring CASA/aviation legal and aviation safety requirements are met in future by space industry participants (both commercial and recreational) for both launches and returns.

---

59 Asia Pacific Aerospace Consultants, *Submission 13*, p. 6.

60 Communications Alliance Satellite Service Working Group (SSWG), *Submission 21*, p. 2.

61 Communications Alliance Satellite Service Working Group (SSWG), *Submission 21*, p. 2.

62 International Aerospace Law & Policy Group, *Submission 17*, p. 5.

2.64 IALPG drew attention to the lack of detail on the rule-making process in the bill and EM. In its view, making the consultation process more transparent would ensure cohesion between the space and aviation communities, especially in respect of safety.[63]

2.65 AusALPA noted that neither the current nor proposed framework contain any specific reference to consultative arrangements with other agencies or key stakeholders in normal non-emergency circumstances. It considered 'the lack of formally prescribed consultation and coordination arrangements to be a major deficiency. This is a particular concern for operational risk management'.[64]

2.66 BSA warned that the bill contains 'a number of ambiguities that do not appropriately define the many variations of possible launches'. BSA suggested that a working group should be selected from a panel of industry professionals and key stakeholders.[65]

2.67 ANZSLIG noted the bill does not include any consultation mechanism or mechanism for regular review. It stated:

> Considering that the previous version of the Act was not subject to many amendments since 1998, yet the space industry was found in various government reports to be rapidly changing, there is merit in including a regular review by a statutory committee comprising representatives from industry, academic institutions and other affected parties, together with technical and legal experts, so that the Department is provided regular feedback on how the Bill is working in practice. Such a committee could also review proposed amendments to Rules and could propose amendments to the Rules.[66]

Other matters raised

2.68 Some submitters highlighted areas which were not currently covered in the bill or should be considered in the rules.

2.69 Sitael Australia highlighted the likelihood that suborbital tourism would occur in the near future, noting that the bill does not address human space flight. It suggested that human spaceflight from Australia, as well as the possibility of an Australian tourist launching on an overseas launch provider, should be addressed in the rules.[67]

2.70 Fleet Space Technologies noted that the bill does not address the continuing regulation of satellites once they are in orbit. It suggested that this area should be further considered by the Australian Space Agency:

---

63 International Aerospace Law & Policy Group, *Submission 17*, p. 6.

64 AusALPA, *Submission 18*, p. 5.

65 Black Sky Aerospace Pty Ltd, *Submission 9*, p. 1.

66 Australia New Zealand Space Law Interest Group (ANZSLIG), *Submission 19*, p. 7.

67 Sitael Australia, *Submission 2*, p. 2.

> …to implement balanced legislation that protects the space environment for use by future generations whilst also providing Australian satellite operators with commercial usage rights and obligations that are comparable to those of other leading spacefaring nations.[68]

2.71 Dr Elias Aboutanios also highlighted the need to address on-orbit liability in the rules.[69]

2.72 The ANU noted that the bill does not address high-altitude balloons. It noted:

> While high-altitude balloons do not reach the altitudes of sub-orbital planes and rockets, the ways in which they are used are similar. In future, it would be prudent to have similar means and methods of approvals and launch facilities for high-altitude balloons as for rockets. As of now, high-altitude balloons use a different approval process through the Civil Aviation Safety Authority (CASA). Australia has a great history of high-altitude balloon launches and at ANU, with our overseas industrial partners, we are seeking to expand this sector.[70]

Australian Space Agency

2.73 As noted in chapter 1, the Australian Government response to the ERG report on the Review of Australia's Space Industry Capability indicated the establishment of a statutory basis for the Australian Space Agency will be considered after a review of its operations, which would commence within four years of the establishment of the Australian Space Agency.

2.74 SIAA supported the establishment of the Australian Space Agency as a statutory body in the future, noting its importance in both the regulation and facilitation of the regulatory approval processes for launches from Australia and launches of Australian satellites overseas.[71] The Adelaide Law School suggested it would be reassuring to include the establishment and role of the Australian Space Agency in legislation.[72]

Committee view

2.75 The committee welcomes the Australian Government's commitment to establish an Australian Space Agency and its response to the Expert Reference Group's report on Australia's space industry.

2.76 As such, the committee supports the intention of the bill to encourage innovation and investment and to provide flexibility to adjust to the rapidly changing environment of the international space industry. This also recognises that the bill enables both a balance between safety and risk of potential damage to the national

---

68 Fleet Space Technologies, *Submission 6*, p. 2.

69 Dr Elias Aboutanios, *Submission 14*, p. 2.

70 The Australian National University, *Submission 16*, p. 1.

71 Space Industry Association of Australia, *Submission 12*, p. 9.

72 Adelaide Law School, University of Adelaide, *Submission 3*, p. 5.

interest. The committee notes that a number of submitters voiced their support for the flexibility the bill affords by moving the details of the regulatory framework for the legislative instruments into the 'rules' that support the bill, allowing the government the ability to fine-tune the implementation of the legislation in such a rapidly evolving industry.

2.77 The committee also noted the concerns regarding the rules as they are still being developed; a number of submitters drew attention to the lack of detail that this process of introducing the bill first and rules second, has created. Specifically, the committee notes that many have commented on the sense of ambiguity about the bill due to the lack of specifics and the potential for an undermining of confidence due to this lack of detail. Areas that the committee notes have caused some of the most angst are definitions that are not included in the framing legislation. Also, the intersection between space regulation and domestic aviation regulation was mentioned by some submitters. The committee further notes comments to the bill not having a strong enough 'pro-industry statement of purpose' in its framing.

2.78 In order to address these issues, and any feeling of uncertainty, the committee encourages the Australian Government to give high priority to finalising the draft rules as soon as possible and releasing them for consultation.

2.79 The committee notes too that the explanatory memorandum indicates that the Agency's Charter will be finalised within three months of commencing operations. The committee understands that introducing this bill before the Agency has had the opportunity to finalise its Charter has created some concern among stakeholders, as the Agency's role and responsibilities remain unclear.

2.80 Nevertheless, the committee believes that the provision of a flexible regulatory environment will enable Australia's emerging space industry to keep pace with international and technological developments, while updating and streamlining regulation to encourage private investment. The committee is therefore comfortable that this bill will provide the necessary framework to support the future development of Australia's space industry.

Recommendation 1

2.81 The committee recommends that the bill be passed.

Senator Jane Hume

Chair

Additional Comments from Labor Senators

Key Issues

1.1 Labor Senators broadly support the Space Activities (Launches and Returns) Bill 2018 (the Bill).

1.2 The Bill responds to long standing concerns about the effectiveness of Australian regulation of satellite launches and returns. As Professor Melissa De Zwart of the Adelaide Law School submits:

> The current *Space Activities Act* can be classified as a general failure. No company has launched from Australia since its implementation, with the only example of local activity being the 2010 return of the Japanese Hayabusa spacecraft and the occasional overseas satellite launch. The tenor of that Act reflects a very narrow and specific view of Australia's role in a space industry, as a launch provider and little more.[1]

1.3 This Bill has been three years in the making. The Government launched a review of the Space Activities Act in 2015, receiving a report by Professor Steven Freeland in August 2016. The Department of Industry, Innovation and Science (DIIS) produced a legislative proposals paper in March 2017. The Bill that is subject to this inquiry was only introduced into the House of Representatives on 30 May 2018.

1.4 There is without doubt a pressing need for reform. The current legislative and regulatory settings have been identified as a key factor inhibiting the development of a viable commercial and scientific space industry in Australia.

1.5 This Bill is not the wholesale reform many have been calling for. It tinkers around the edges. Clearly Parliament will be asked to revisit space regulation in the near future.

Scope of the Bill

1.6 The Bill makes attempts to modernise and update Australian space regulation. Some advances have been achieved but other opportunities have been lost.

1.7 Labor Senators understand that regulation must change as circumstances change. The global space industry of 2018 is vastly different to 1998. As the Review of Australia's Space Industry Capability notes:

> Not since humans first walked on the Moon have we seen the global space industry undergo such rapid reinvention.
>
> No longer restricted to government agencies and budgets, space has become a fast-growing and fiercely competitive commercial sector, as falling launch

1 Adelaide Law School, University of Adelaide, *Submission 3*, p. 2.

> costs and high levels of private funding continue to push the price of entry lower than it has ever been.[2]

1.8 The review further notes that the global space economy, worth $345 billion in 2016, is expected to grow to $1.1 trillion by 2040.

1.9 Given the scale of the opportunity for Australia, it is surprising that the Bill fails to provide for a more expansive statement of purpose. These statements exist in the United Kingdom's Space Industry Act, the United States' Commercial Space Launch Activities Act, and New Zealand's Outer Space and High-altitude Activities Act. As the Space Industry Association of Australia submits:

> We would encourage the Australian Parliament to consider a stronger pro-industry statement of purpose in any space-related legislation.[3]

1.10 As a number of submitters have noted, a lot of the proposed detail of the operation of the regulatory regime will be contained in regulation, rather than legislation. While leaving much of the operational detail in subordinate legislation has its advantages, it risks impeding the ability of Senators to understand what they are being asked to vote on.

Role of the Australian Space Agency

1.11 The Bill is silent on which government agency will be responsible for the administration of the Act. While the assumption is that it will fall under the purview of the Australian Space Agency, there is no certainty that this will be the case.

1.12 The only guarantee of a continuing Australian Space Agency is legislation, yet it appears that this is not intended to be pursued. As evident in evidence before the Economics Legislation Committee Budget Estimates hearing on the 5th of June:

> Senator KETTER: Will the agency be established through legislation?
>
> Mr Power: The government's response said it would consider legislative establishment after the operation and review of the space agency. It's not intended for the agency to be set up by legislation in its initial set-up.
>
> Senator KETTER: So 12 months down the track that will be reviewed?
>
> Mr Power: The government's response said it would be reviewed within four years of operation.[4]

---

2 Review of Australia's Space Industry Capability, *Report from the Expert Reference Group for the Review*, March 2018, p. 15, https://www.industry.gov.au/sites/g/files/net3906/f/June%202018/document/pdf/review_of_australias_space_industry_capability_-_report_from_the_expert_reference_group.pdf (accessed 13 August 2018).

3 Space Industry Association of Australia, *Submission 12*, p. 5.

4 Senate Economics Legislation Committee, Budget estimates 2018–19, *Committee Hansard*, 5 June 2018, p. 56.

1.13 The failure of the government to legislate a role for the Australian Space Agency is concerning. History is against the agency. In the past, attempts to boost support and co-ordination for Australia in space—often by Labor governments—has been met with a hostile reaction from Treasury and Finance, and has been undone by subsequent Liberal governments.

Impact on aviation safety and regulation

1.14 The explanatory memorandum to the Bill explains that one of the objectives of the Bill is to:

> [broaden] the regulatory framework to include arrangements for launches from aircraft in flight and launches of high power rockets.[5]

1.15 The provisions on high power rockets have raised some concerns from amateur scientists, educationalists and hobbyists. The Bill proposes to require all high power rocket launches to obtain a permit.

1.16 Australian Rocketry submits that:

> High powered hobby rocketry already has a working model which is governed by strict regulations under Civil Aviation Safety Regulations 1998, Part 101.A, B, C and H. Launch sites are issued area approvals which dictate operational requirements including lateral and vertical limitations. Rocketry organisations such as the Australian Model Rocket Society Inc. (AMRS) operate under internationally recognised safety codes and risk assessments which assesses competency of individuals and permits access to varying classes of rockets and rocket motors capable of reaching altitudes approaching 100km.[6]

1.17 In a similar vein, submissions from the Internal Aerospace Law Policy Group, Australian Airline Pilots Association and Australia New Zealand Space Law Interest Group have all raised issues around the intersection of the space regulatory regime and civil aviation requirements, the role of the Australian Transport Safety Bureau (ATSB) in accident investigations and the absence of aviation safety from a list of factors the Minister must consider when deliberating on a permit.

1.18 Labor Senators consider that it is incumbent on the government to clarify its intentions on these matters, and if necessary, offer reasoned amendments to the Bill.

---

5 Explanatory Memorandum, p. 1.

6 Australian Rocketry, *Submission 10*, p. 1.

Recommendation 1

1.19 Labor Senators recommend that the Senate support the Bill, noting its deficiencies and lack of clarification from the government in a number of areas.

Senator Chris Ketter
Deputy Chair

Senator Jenny McAllister
Senator for New South Wales

Senator the Hon. Kim Carr
Senator for Victoria

Appendix 1
Submissions

Submissions

1. Gilmour Space Technologies
2. Sitael Australia
3. Adelaide Law School, University of Adelaide
4. Equatorial Launch Australia Pty Ltd
5. Inovor Technologies
6. Fleet Space Technologies Pty Ltd
7. NT Department of Trade, Business and Innovation
8. Australian Model Rocket Society Inc.
9. Black Sky Aerospace Pty Ltd
10. Australian Rocketry Pty Ltd
11. Southern Launch
12. Space Industry Association of Australia
13. Asia Pacific Aerospace Consultants
14. Dr Elias Aboutanios
15. Hypersonix Pty Ltd
16. The Australian National University
17. International Aerospace Law & Policy Group
18. AusALPA
19. Australia New Zealand Space Law Interest Group (ANZSLIG)
20. Dr Maria Pozza
21. Communications Alliance Satellite Service Working Group (SSWG)
22. Confidential