



COVERSHEET

Minister	Hon Phil Twyford	Portfolio	Economic Development
Title of Cabinet paper	Approach to payload assessments under the Outer Space and High-altitude Activities Act	Date to be published	17 December 2019

List of documents that have been proactively released

Date	Title	Author
25 November 2019	Approach to payload assessments under the Outer Space and High-altitude Activities Act	Office of the Minister for Economic Development
25 November 2019	CBC-19-MIN-0048 Minute	Cabinet Office

Information redacted

YES

Any information redacted in this document is redacted in accordance with MBIE's policy on Proactive Release and is labelled with the reason for redaction. This may include information that would be redacted if this information was requested under Official Information Act 1982. Where this is the case, the reasons for withholding information are listed below. Where information has been withheld, no public interest has been identified that would outweigh the reasons for withholding it.

Some information has been withheld for the following reasons

- International relations
- Confidential information entrusted to the Government
- Free and Frank opinions
- Legal professional privilege

Office of the Minister for Economic Development
Chair, Cabinet Business Committee

Approach to payload assessments under the Outer Space and High-altitude Activities Act

Proposal

1. This paper seeks Cabinet's agreement to an approach to payload permit assessments under the Outer Space and High-altitude Activities Act 2017 (OSHAA). It also proposes that this approach be incorporated into specific messaging regarding upcoming launches [REDACTED]
International Relations [REDACTED]
2. Agreement on an approach will enable consistent payload permitting decisions, particularly with regard to government applicants.

Executive Summary

3. This paper proposes an approach to assessing national interest under the OSHAA in order to clarify the Government's policy on launching defence, security and intelligence payloads of other countries, International Relations [REDACTED]
4. New Zealand has moved quickly to take advantage of the immense opportunities provided by our participation in the global space sector. Our growing domestic industry is well connected internationally and we have established ourselves as an attractive destination for innovation across the space value chain, including in launch services.
5. Rocket Lab's ability to conduct frequent and responsive launches is attractive to a range of commercial and government organisations that seek to test, develop and deploy novel satellite technologies and applications, including for defence, security and intelligence purposes.
6. Under the OSHAA, the Minister for Economic Development is responsible for authorising all payloads launched from New Zealand. In order to be approved the payload must meet the mandatory tests in the OSHAA, including its safe operation and its consistency with New Zealand's international obligations, national security and orbital debris mitigation requirements. Despite being satisfied that the mandatory tests have been met I may decline to grant a payload permit if the proposed operations are not in the national interest.
7. The proposed approach to considering national interest for payloads includes three elements:
 - a. a set of principles which will guide my assessment of national interest
 - b. a set of activities which I consider are not in New Zealand's national interests
 - c. International Relations [REDACTED]
[REDACTED]
[REDACTED]
8. I seek Cabinet agreement to this approach to ensure that my decisions under the OSHAA reflect broader government policy and the wide variety of New Zealand interests at play, while managing the potential risks.

Principles

9. I propose that my assessment of national interest for space activities be guided by a number of principles:
- Responsibility – space activities from New Zealand should promote an orbital environment where users avoid causing harm or interference with the activities of others.
 - Sustainability – space activities from New Zealand should preserve the benefits of space for future generations through adherence to sustainable practices.
 - Safety – space activities from New Zealand should not jeopardise the safety of people on the ground or in space.
 - Space activities authorised by the Government should reflect New Zealand's values and interests, and align with broader policy settings.
10. I ask that Cabinet agree that these principles guide my assessment of national interest for space activities.

Activities not in the national interest

11. In undertaking my assessment of national interest for payload permits, I consider that there are some payload end uses that will not be in New Zealand's national interest, and that I will therefore not authorise. I propose that these include:
- payloads that contribute to nuclear weapons programmes or capabilities
 - payloads with the intended end use of harming, interfering with, or destroying other spacecraft, or systems on Earth
 - payloads with the intended end use of supporting or enabling specific defence, security or intelligence operations that are contrary to government policy
 - payloads where the intended end use is likely to cause serious or irreversible harm to the environment.
12. I ask that Cabinet agree that these activities are not in the national interest.

International Relations



Engagement and communications

15. International Relations [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
16. I also propose that this approach be incorporated into the Government's public messaging on space activities, International Relations [REDACTED]
[REDACTED]

Background*New Zealand is capitalising on the growth of the global space sector*

17. Space is a fast growing, research and development intensive, global sector. Ongoing commercialisation and miniaturisation of space technology has resulted in a diverse array of space activities being undertaken by companies, research and educational institutions, governments and other entities. Space-based data is also being applied in new ways to change how we communicate, navigate, manage our resources and understand our environment.
18. New Zealand has strong connections to the international space economy and has in recent years moved quickly to take advantage of the immense opportunities that space affords; not only as a leader in launch services but as a hub for innovation across the space value chain; from manufacturing and ground services through to commercial applications of space data.

Rocket Lab's proven launch capability is attractive to a range of customers

19. Rocket Lab's demonstration of reliable launch capability has generated interest in New Zealand as an attractive location for space activities.
20. Access to commercial launch has given satellite operators more opportunity to launch payloads at low cost, quickly and at smaller sizes. New Zealand is seen as a prime location for testing new technology and deploying payloads into space on project timelines previously thought impossible.
21. All payloads launched from New Zealand must be authorised by the New Zealand Government. Since Rocket Lab began commercial launches in 2018, the Government has approved 45 payload permits with applicants ranging from commercial entities (23 permits), government agencies (13 permits) and educational or non-profit organisations (9 permits). Payload uses have included:
- demonstrating a student-built robotic space arm
 - providing internet-of-things communications
 - artificial meteor shower displays
 - commercial ship tracking and marine domain awareness services
 - deploying replacement satellites for Earth imaging constellations
22. Future applications might also include emerging technology and novel activities such as:
- on-orbit manufacturing and servicing of satellites
 - active removal of space debris

International Relations

23. Rocket Lab's ability to conduct frequent and responsive launch is of particular interest [redacted] International Relations [redacted] The ability to launch on short timeframes is a novel, "in-demand" service that allows for rapid testing, deployment and replacement of space systems.
24. Government demand for launch services is typical of the launch industry in the US and internationally, and is attractive to Rocket Lab International Relations [redacted] [redacted] This revenue stream is material to Rocket Lab's business and helps to fuel its continued growth, the growth of its value chain and, in turn, the broader New Zealand space industry.
25. International Relations [redacted] New Zealand has authorised a number of payloads from US government customers including: NASA, the Defence Advanced Research Projects Agency (DARPA), the US Air Force, and the US Special Operations Command (SOCOM). [redacted] International Relations and Confidential Information Entrusted to the Government [redacted]
26. International Relations [redacted] payloads have been for research and development or technology demonstration purposes. Rocket Lab will also soon complete construction of a second, US based launch site which will predominantly serve US government customers (launches from the US will not be regulated by New Zealand). [redacted] International Relations and Confidential Information Entrusted to the Government [redacted]
27. Previous advice to Ministers from the Ministry of Business, Innovation and Employment (MBIE) regarding this interest has noted that:
International Relations and Free and Frank [redacted]
28. International Relations [redacted] the New Zealand Space Agency, a part of MBIE, has publically communicated the opportunities the space sector brings as well as the robustness of our regulatory regime for approving payloads. I have also directed officials to implement initiatives such as the recent proactive release of permitting decision information on MBIE's website in order to increase transparency around the types of payloads that have been approved for launch from New Zealand. Initial reactions to proactive release and other engagements have been positive and demonstrate the public's growing familiarity with space activities.
29. That said, this will be an ongoing conversation, and I consider it now appropriate to provide even more transparency on the principles for space activity and the limits to what I intend to authorise. In order to do so, it is important that these principles and limits reflect broader government policy and the wide variety of New Zealand interests at play, while managing the potential risks.

The Outer Space and High-altitude Activities Act (OSHAA) provides an enabling regulatory framework for approving payloads

30. The fast-paced technological development and introduction of novel space activities, by both commercial and government actors, mean that some payloads will undertake activities for which a clear set of international norms, guidelines or standards have yet to develop or be widely accepted. The permitting of such payloads may also raise complex legal and national interest issues including around public acceptance of space activities from New Zealand, which is critical for continued launch activity.
31. These issues are addressed by the OSHAA which provides the regulatory framework to facilitate the development of the New Zealand space industry and provide for its safe and secure operation. Under the OSHAA, the Minister for Economic Development is responsible for authorising payloads launched from New Zealand.
32. The mandatory tests in OSHAA require:
 - the safe operation of the payload
 - provision of an orbital debris mitigation plan that meets our requirements
 - the consistency of the activity with New Zealand's international obligations and national security.
33. Notwithstanding the mandatory tests being met, under section 17 of OSHAA, I may decline to grant a payload permit if I am not satisfied that the proposed operation of the payload under the permit is in New Zealand's national interest. In considering the national interest I may have regard to:
 - economic or other benefits to New Zealand of the proposed operation
 - any risks to:
 - national security
 - public safety
 - international relations
 - other national interests
 - the extent to which the risks can be mitigated by licence or permit conditions
 - any other matters that I consider relevant.
34. The identification and consideration of risks to national security are addressed through my consultation with the Minister responsible for the New Zealand Security Intelligence Service (NZSIS) and Government Communications Security Bureau (GCSB) on each application as required by the OSHAA.
35. Each application for a payload permit is assessed against the requirements of the OSHAA on a case-by-case basis and agencies from across Government are consulted to ensure appropriate expertise and competencies are applied. Assessment includes consideration not just of the technology of the payload, but of its intended end use once in orbit. Some payload end uses may raise complex legal and policy issues, particularly with regard to consistency with New Zealand's international obligations. Applicants are required to disclose sufficient information about both payload capability and intended end use to enable officials to assess consistency with the requirements of the OSHAA. I will not permit a payload where there is not full and complete information.

Residual risks are mitigated through permit conditions and other means

36. Payloads that otherwise meet the mandatory tests in the OSHAA may present residual risks. Due to the multi-purpose nature of space technology this includes the risk that a permit

holder may breach the requirements of their permit by carrying out an end use that is different to the one assessed in their application.

37. For most applicants this risk will be mitigated by the due diligence undertaken in assessing the owner and/or operator of the payload. Applicants, particularly government applicants with an ongoing relationship to New Zealand, also have an incentive to remain compliant with their permits to ensure continued ability to launch from New Zealand. Officials' full and early engagement with applicants to ensure that end use is fully understood will ensure that no applications are progressed where end use is unclear or there is an unacceptable risk it may change from that which is described in the application.
38. Other risks, such as the risk of incurring liability under the *UN Convention on International Liability for Damage Caused by Space Objects* are mitigated through technical controls or my ability to impose additional permit conditions as appropriate, e.g. conditions requiring operators to take out insurance. Officials provide advice on risk mitigations on a case-by-case basis.

Ministers have agreed guidelines for reviewing payloads

39. International Relations [redacted] on April 9 2018, Hon David Parker met with the Minister of Foreign Affairs, the Minister of Defence and the Minister responsible for the intelligence agencies to discuss the "Draft Guidelines on New Zealand's approach to reviewing space payloads" attached in **Annex One**.

40. International Relations [redacted]

41. International Relations [redacted] These discussions and the permitting of a significant number of diverse commercial and government payloads has matured our understanding of space activities and how the requirements of the OSHAA, in particular the consideration of national interest, might apply to novel, complex or sensitive end uses.

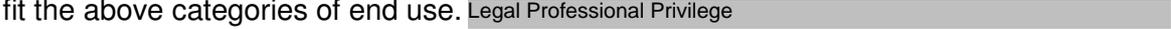
Principles for authorising space activity

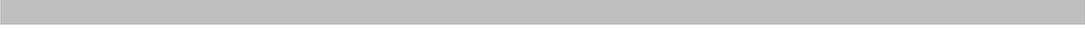
The following principles underpin New Zealand's approach to the national interest assessment of space activities

42. Given this increased understanding and in the interest of fuller transparency to the New Zealand public on what may be launched from New Zealand, I consider it appropriate to distil principles that will:
 - guide my assessment of national interest for space activities
 - assist in communicating New Zealand's permitting approach to potential applicants and the public.
43. These principles reflect broader government policy and the wide variety of New Zealand interests at play, while managing the potential risks. My intention is that these principles are applicable to all payload applications, regardless of the type of payload or applicant, and would also be relevant to applications for other licences for space activity under the OSHAA.
44. In considering the national interest, I propose to be guided by the following principles:

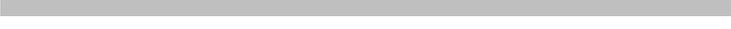
- **Responsibility.** The “new space” phenomenon is driving rapid change in how the world uses and operates in space. As a launching state with a growing space sector, New Zealand has a strong interest in demonstrating and promoting responsible behaviour. Beyond the relevant international obligations, such as the UN Outer Space Treaties, space activities from New Zealand should be conducted with due care and in such a way as to promote an orbital environment where actors avoid causing harm or interference with the activities of others. Relevant factors in considering whether space activity is responsible may include:
 - the nature of the entity with ownership or control over the activity and its history of responsible space activity
 - the nature and purpose of the proposed activity
 - consistency of the activity with best practice and accepted norms (as they emerge and are relevant).
- **Sustainability.** The immense and varied benefits New Zealand derives from global space activity depend on an environment that continues to support affordable access to, and operations within low-Earth orbit. Emerging issues such as increasing orbital congestion and debris can threaten access to these benefits by raising the risks and costs of operating in low-Earth orbit. New Zealand has a clear national interest in requiring and promoting sustainable space practices that preserve the benefits of space activity for future generations. Relevant factors in considering sustainability for space activity may include:
 - the impact of the activity on the space environment
 - whether the activity exists on its own or within a larger system (e.g. as part of a satellite constellation)
 - the consistency of the activity with international standards, guidelines and best practices for orbital debris mitigation.
- **Safety.** Space activities should be conducted in a way that does not jeopardise human safety (including the safety of people in space). Relevant factors in determining whether space activity is safe may include:
 - the impact on, or risk to, crewed spaceflight (e.g. the International Space Station)
 - the impact on, or risk to, human activity on the ground or in controlled airspace
 - the consistency of the activity with international standards, guidelines and best practices for space safety (as these emerge and where relevant).
- **Space activities should reflect New Zealand’s values and interests, and align with broader policy settings.** Space activity authorised by the Government should uphold the policies and values supported by New Zealand in international fora (e.g. positions on disarmament or environmental protection). Relevant factors in determining whether space activity is reflective of other interests may include:
 - the contribution of the activity to New Zealand capabilities and government priorities (e.g. through an arrangement with the operator for access to data, tasking or other services)
 - the impact of the activity on the Earth environment
 - the impact of the activity on third parties (including other states and private actors)
 - any relevant national and global political context
 - precedent for the activity in previous or analogous licencing or permitting decisions.

In accordance with our regulatory framework and the above principles there are some activities I will not authorise

45. To further manage any risks associated with space activities, and to ensure certainty and clarity for payload permit applicants there is benefit in articulating the classes of payloads or activities that are not in New Zealand's national interest.
46. I propose that the following payloads will either be inconsistent with the requirements of the OSHAA or conflict with the above principles to the degree that they are considered not in the national interest:
 - Payloads **that contribute to nuclear weapons programmes or capabilities**. New Zealand's domestic and international legal obligations (e.g. *the Nuclear Free Zone, Disarmament, and Arms Control Act 1987* and the *Treaty on the Prohibition of Nuclear Weapons*), as well as New Zealand's firm nuclear-free policy preclude the approval of payloads of this nature.
 - Payloads with the **intended end use of harming, interfering with, or destroying other spacecraft or systems on Earth**. Payloads with this intended end use may be inconsistent with New Zealand's legal obligations and are likely to conflict with the above principles to the degree that they are not considered in the national interest.
 - Payloads with the **intended end use of enabling or supporting specific defence, security or intelligence operations that are contrary to government policy**. For example, the launch of a payload will be contrary to our national interest where it is intended to enable foreign military operations that are themselves contrary to our national interest.
 - Payloads where the **intended end use is likely to cause serious or irreversible harm to the environment**. Space-based data and assets are important for climate and environmental monitoring, responsible resource management and other environmentally beneficial activities. However, payloads that officials assess will likely cause serious or irreversible harm to the environment would be inconsistent with New Zealand's broader set of obligations, positions and values concerning the responsible use and protection of the natural environment. For the avoidance of doubt, those payloads that are also inconsistent with New Zealand's international environmental obligations will not meet the other mandatory tests in OSHAA.
47. The above categories are not exhaustive nor do they replace the requirements of the OSHAA as the basis for permitting decisions. They are intended to act as a guide to my consideration of, and officials' advice on, national interest for payloads that have met the other mandatory tests in OSHAA.
48. In practice, some applications will raise complex legal and policy issues that may not neatly fit the above categories of end use. Legal Professional Privilege







49. As noted above, New Zealand undertakes reasonable enquiry of each payload application based on the information provided on stated end use as compared to its capability. In this regard, officials will, where appropriate, recommend risk mitigation measures (such as setting conditions or seeking undertakings) to ensure the operation of the payload is consistent with the conditions of its payload permit for the entire duration of its orbital life.

International Relations



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Consultation

- 67. The following government agencies have been consulted: Department of Prime Minister and Cabinet, Ministry of Foreign Affairs and Trade, Ministry of Defence, New Zealand Defence Force, Government Communications Security Bureau and the New Zealand Security Intelligence Service.

Financial Implications

- 68. This paper does not have financial implications.

Human Rights

69. The proposals in this paper are consistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.

Legislative Implications

70. This paper does not have legislative implications.

Regulatory Impact Analysis

71. The regulatory impact analysis requirements do not apply to this paper as it has no or only minor impacts on businesses, individuals, or not for profit entities.

Publicity

International Relations

72. Ensuring public acceptability for space activity in New Zealand must start with demonstrating that we have a robust and fit-for-purpose regulatory regime that manages the complexities of the technology and meets the expectations of transparency held by New Zealanders. Public communications on space activities must therefore strike a balance between promoting the benefits of the sector for New Zealand and ensuring that New Zealanders have confidence in the credibility and independence of MBIE's regulatory functions.

73. International Relations and Confidential Information Entrusted to the Government

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Proactive release of payload information:

75. MBIE has recently implemented an initiative to proactively release information about all permitted payloads in the form of permitting decision summaries to foster transparency and public confidence in government oversight of space activity. The first release occurred in October, with further releases to occur quarterly thereafter.
76. Each payload summary includes the payload's name, owner/operator, a summary of its mission and purpose, and text detailing that the payload meets the threshold tests under the OSHAA. The accompanying press release highlighted the diversity of space activity enabled from New Zealand while noting that this activity will include defence, security and intelligence payloads and that the permitting regime ensures that payloads do not contravene our national interests.

International Relations

77. International Relations

International Relations and Confidential Information Entrusted to the Government

Ongoing messaging:

78. International Relations [redacted]
[redacted]
[redacted] Ongoing proactive and reactive communications will continue to demonstrate and promote the social, environmental and economic benefits from New Zealand's involvement in space. I have directed MBIE to, where appropriate, engage across agencies to ensure appropriate spokespersons and consistent, informed messaging

79. International Relations [redacted]
[redacted]
[redacted]

Proactive Release

80. I intend to proactively release this paper subject to redaction as appropriate.

PROACTIVELY RELEASED

Recommendations

The Minister for Economic Development recommends that the Committee:

1. **Note** that New Zealand is an attractive launch destination for a range of customers,
International Relations
2. **Note** that *The Outer Space and High-altitude Activities Act 2017* provides a robust regulatory framework that is enabling of space activities consistent with its requirements and other relevant New Zealand law.
3. **Note** that assessment of a particular payload and whether its operation, including its end use, is consistent with New Zealand's obligations, national security, or national interest may raise complex legal and policy issues and advice will be provided on each application.
4. **Note** that residual risks presented by payloads that otherwise meet the mandatory tests in *The Outer Space and High-altitude Activities Act 2017*, such as liability under the UN *Convention on International Liability for Damage Caused by Space Objects*, are able to be mitigated through permit conditions and other means.
5. **Note** that in April 2018 Ministers discussed guidelines on New Zealand's approach to reviewing payloads International Relations

Principles for authorising New Zealand space activity

6. **Agree** that the responsible Minister's consideration of national interest for space activities is informed by the principle of **Responsibility** – i.e. that space activities from New Zealand should be conducted with due care and in such a way as to promote an orbital environment where actors avoid causing harm or interference with the activities of others.
7. **Agree** that the responsible Minister's consideration of national interest for space activities is informed by the principle of **Sustainability** – i.e. New Zealand should promote sustainable space practices that preserve the benefits of space for future generations.
8. **Agree** that the responsible Minister's consideration of national interest for space activities is informed by the principle of **Safety** – i.e. space activities from New Zealand should be conducted in a way that does not jeopardise human safety (including the safety of people in space).
9. **Agree** that the responsible Minister's consideration of national interest for space activities is informed by **New Zealand's values and interests, and aligns with broader policy settings** – i.e. space activity from New Zealand should uphold the policies and values supported by New Zealand.

Activities considered not in New Zealand's national interest

10. **Agree** that it is not in New Zealand's national interest to authorise payloads that contribute to nuclear weapons programmes or capabilities.
11. **Agree** that it is not in New Zealand's national interest to authorise payloads with the intended end use of harming, interfering with, or destroying other spacecraft or systems on Earth.
12. **Agree** that it is not in New Zealand's national interest to authorise payloads with the intended end use of enabling or supporting specific defence, security or intelligence operations that are contrary to government policy.
13. **Agree** that it is not in New Zealand's national interest to authorise payloads where the intended end use is likely to cause serious or irreversible harm to the environment.

14. **Note** that the categories above are intended to act as a guide and some applications will raise complex legal and policy issues that may not neatly fit the above categories of end use.

International Relations

Publicity and communications

19. International Relations [redacted]
[redacted]
[redacted]
20. **Note** that MBIE proactively releases information about previously permitted payloads on a quarterly basis.
21. International Relations [redacted]
[redacted]
[redacted]
22. **Agree** that ongoing messaging on space activities:
- acknowledges the defence and security nature of some payloads approved for launch from New Zealand
 - incorporates the principles for space activity and the activities that will not be authorised as outlined in this paper
 - International Relations [redacted]
[redacted]

Authorised for lodgement

Hon Phil Tywford
Minister for Economic Development

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