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Page 3: Submitter Information

Q1

Personal Information

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Q2**No**

Are you making this submission on behalf of a business or organisation?

Q3**Yes**

Would you like to be kept informed of the outcome of the Space Policy Review?

Q4**Yes**

Are you happy for MBIE to contact you if we have questions about your submission?

Q5**Respondent skipped this question**

Privacy

Q6

Release of Information

I understand that if there is other information in this submission that I do not wish to be released, I will email this to spacepolicyreview@mbie.govt.nz with the subject line "Release of information", together with my reasons for withholding the information and grounds under the Official Information Act 1982, for consideration by MBIE

Page 4: New Zealand's interests in space

Q7

General interest in space,

What are your interests and relationship to space? Pick as many as apply below:

Academic involvement on space issues

Q8

Respondent skipped this question

Please note any other interests and relationship to space below that you would like to share.

Page 5: New Zealand's values in space

Q9

To what extent do you agree or disagree that these values should apply to New Zealand's space activities and engagements?

Innovation	Strongly agree
Responsibility	Agree
Stewardship	Agree
Partnership	Agree

Q10

Are there any other values, or aspects of kaitiakitanga (guardianship), that you think should apply to New Zealand's space activities and engagements? For example, cultural values regarding space.

While international partners are mentioned under "responsibility," they are notably absent from "partnership." Many space programs benefit from international partnerships, for instance a NZ scientific instrument could be built to be included in a larger NASA or ESA mission. This would allow NZ to leverage and grow its expertise.

Page 6: New Zealand's space policy objectives

Q11

Rank these key policy objectives in order of importance to you: Click and drag to reorder the objectives from 1 (most important) to 5 (least important)

Growing an innovative and inclusive space sector	3
Modelling sustainable space and Earth environments	4
Promoting the responsible uses of space internationally	1
Protecting and advancing our national security and economic interests	2
Regulating to ensure space activities are safe and secure	5

Page 7: Growing an innovative and inclusive space sector

Q12

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to grow an innovative and inclusive space sector?

Promoting New Zealand's natural advantage for conducting space activities, and research and development expertise across the space value chain **Agree**

Partnering within New Zealand and internationally to increase research and development capabilities **Strongly agree**

Identifying opportunities to increase diversity in the space sector **Agree**

Using cutting-edge space technology and space sourced data to support New Zealand's values and interests **Agree**

Q13

Do you have any comments on these policy objectives? (e.g. any suggested change to how they are framed? Is there anything missing?)

The basic university-level training that is needed to build a skilled workforce seems to be missing from these statements. This includes not just education for students, but research funding to attract the best professors to work in a university environment and pass along their knowledge and enthusiasm to their students. This could include funding for space-based science instruments, or for ground-based science programs that help build the skills that can be translated into space projects. These ground-based programs could include telescopes, detector development, or even more basic curiosity-driven science research funding.

Q14

Are there any other policy objectives that you think would help the New Zealand government to grow an innovative and inclusive space sector?

NZ suffers from a constant brain drain of its best and brightest overseas. Many of these individuals WANT to return, but they need to know that their work will be supported. Other countries have created specific programs to attract their overseas talent back home (e.g. China's 1000 Talents program), and I believe NZ is well poised to make incredible gains if it can bring its very best back home.

Q15

Do you have any questions or comments about what these objectives would mean in practice?

International partnerships have been a staple of NASA, ESA, and JAXA joint programs (e.g. the recent James Webb Space Telescope), but they require a strong and stable funding source as well as a strong and stable research community to build instruments that may take decades to launch. I encourage policy-makers to make available the budget resources to feed the ENTIRE pipeline of research and development which includes the very early basic research and not jump straight to the development stages that will struggle without a constant stream of ideas and human talent produced by the earlier (more fundamental) stages of the R&D pipeline.

Q16

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to promote the responsible uses of space internationally?

- Advocating for effective international rules, norms and standards in space **Agree**
- Partnering with like-minded launch states to adopt peaceful, responsible and sustainable space practices **Agree**
- Collaborating internationally to increase New Zealand's influence and capabilities in the global space sector **Strongly agree**

Q17

Respondent skipped this question

Do you have any comments on these policy objectives (e.g. any suggested change to how they are framed? Is there anything missing?)

Q18

Respondent skipped this question

Are there any other policy objectives that you think would help the New Zealand government to promote the responsible uses of space internationally?

Q19

Do you have any questions or comments about what these objectives would mean in practice?

Collaborating internationally is a great goal and will pay tremendous dividends if done well, but it will take substantial financial resources to make it a reality. I would encourage policymakers to make the budgetary commitments to make these goals a reality.

Page 9: Protecting and advancing our national security and economic interests

Q20

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to protect and advance our national security and economic interests?

- Use space assets to protect and advance New Zealand's national security and economic interests **Agree**
- Manage the broad range of security risks in space to protect New Zealand's space industry **Agree**
- Collaborate with international space and security partners to pursue New Zealand's national security and economic interests **Agree**

Q21

Do you have any comments on these policy objectives (e.g. any suggested change to how they are framed? Is there anything missing?)

The way these statements are phrased is incredibly vague and could use some examples to make it clear what sorts of security risks and national interests the authors have in mind.

Q22

Respondent skipped this question

Are there any other policy objectives that you think would help the New Zealand government to protect and advance our national security and economic interests?

Q23

Respondent skipped this question

Do you have any questions or comments about what these objectives would mean in practice?

Page 10: Modelling sustainable space and Earth environments

Q24

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to model sustainable space and Earth environments?

- | | |
|--|-----------------------|
| Encouraging inclusive, sustainable space collaborations within New Zealand | Strongly agree |
| Assessing the cumulative impact of space activities on the Earth environment | Agree |
| Assisting with solving sustainability challenges through space data, including to better monitor or understand the Earth's environment | Strongly agree |
| Investing in New Zealand's capability to retain, grow, access and use sustainable space technologies | Strongly agree |

Q25

Respondent skipped this question

Do you have any comments on these policy objectives (e.g. any suggested change to how they are framed? Is there anything missing?)

Q26

Respondent skipped this question

Are there any other policy objectives that you think would help the New Zealand government to model sustainable space and Earth environments?

Q27

Respondent skipped this question

Do you have any questions or comments about what these objectives would mean in practice?

Page 11: Regulating to ensure space activities are safe and secure

Q28

To what extent do you agree or disagree that these policy objectives will help the New Zealand government to promote the responsible uses of space internationally?

Facilitating the safe and secure use of emerging space technologies from New Zealand	Agree
Clarifying what New Zealand space activities are inconsistent with the national interest	Agree
Promoting and protecting New Zealand's interests through permitting space technologies	Agree

Q29

Respondent skipped this question

Do you have any comments on these policy objectives (e.g. any suggested change to how they are framed? Is there anything missing?)

Q30

Respondent skipped this question

Are there any other policy objectives that you think would help the New Zealand government to ensure space activities are safe and secure?

Q31

Do you have any questions or comments about what these objectives would mean in practice?

Clarifying what is meant by space activities in the national interest seems to be the hardest thing in this section. For instance, economic development is in the national interest, but military use of space is frequently cited as against the national interest. However, a project could have tremendous economic impact but have a military application (e.g. infrared sensors are incredibly useful for astronomy and earth sensing, but are also a key component of guided missile systems). Clarifying who (or what process) will be used to balance and resolve competing and/or contradictory national interests would be a helpful point for this section.

Page 12: Regulating in line with our national interests

Q32

Are there any comments you would like to make about these criteria that inform consideration of the national interest?

The removal of space debris is cited by many as an important beneficial activity, but it could be viewed as "harming other spacecraft."
Clarifying that removing space junk IS in the national interest might be helpful here.

Q33

What questions do you have about how the national interest is considered in practice?

"Uphold the policies and values" implies that all New Zealanders have the SAME policies and values, which is clearly untrue. How do policy-makers intend to respond if a vocal minority objects to some hypothetical space activity?
