

#36

COMPLETE

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Page 3: Submitter Information

Q2**No**

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

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:

Q8

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

As a parent & a grandparent, I would like my descendants to be able to experience the wonder of space without fear.

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	Agree
Responsibility	Strongly agree
Stewardship	Strongly agree
Partnership	Strongly 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.

Humanity's engagement with the space beyond our planet has mostly been Co-operative until recent times (eg: spy satellites) - we should keep military hardware inside terrestrial limits, not extended into orbit or beyond.

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	5
Regulating to ensure space activities are safe and secure	2

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

I'm concerned about some private sector space businesses internationally - Starlink, & Virgin space flights come to mind - as examples of activities that maybe shouldn't be done, even though they can be done.

Q14

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

Adhering to a policy of demilitarised space would be a good start.

Q15

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

We already have RocketLab taking contracts from DoD in USA - who knows what they're putting into orbit?
Better oversight of private enterprise activities is needed.

NZ has had long-running collaboration with NASA around sharing space exploration discovery, through programmes run by Observatories around the country. The visits by NASA's SOFIA flying observatory have given opportunities to local astronomers to see the skies above our country, which is a great example of sharing technology.
R&D collaboration in space is to be pursued diligently, science in general is not being studied by our younger generations & inspiration from space programmes is a great resource for science teachers at every level.

Page 8: Promoting the responsible uses of space internationally

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
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Collaborating internationally to increase New Zealand's influence and capabilities in the global space sector	Agree
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Q17

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

'Peaceful' is ok, but explicitly ruling out military applications of technology in space might be useful. Y'know, for the avoidance of ambiguity.

Current wording is a loophole big enough to drive a truckload of munitions through.

Q18

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

How about an objective around keeping space accessible to all of humanity aka 'no privatisation of space'

[maybe closing the barn door after the horse has bolted...]

Eg: Lots of discussions about mining the moon/asteroids for 'rare' minerals, which from a physics standpoint might be risky in terms of changing the mass of an orbiting object, sufficient to destabilise that object. [Whole textbooks have been written on that one, but I digress, it's just an example of the kind of examination prospective activities need to undergo.]

Q19

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

Small concerns around 'partnering internationally' ending up meaning 'forward base for NASA, all data from research sucked back to USA & only shared on need-to-know basis'.

Like Waihopai & the NSA in Hawai'i .

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	Neither agree nor disagree
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Manage the broad range of security risks in space to protect New Zealand's space industry	Neither agree nor disagree
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Collaborate with international space and security partners to pursue New Zealand's national security and economic interests	Neither agree nor disagree
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Q21

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

As soon as you add 'National Security' to the sentence, you open up the Pandora's Box of space weaponry.

Keep space for peaceful purposes, there's enough warfare going on in conventional terrestrial environments.

Q22

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?

Don't put weapons in space.

It just encourages others to do the same, and then the same old Mexican stand-off ensues, with added 'my arsenal is bigger than yours' grandstanding. Sooner or later, someone wants to use those capabilities.

Cf: Russia, nuclear weapons, Ukraine 2022.

Q23

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

I interpret 'National security and economic interests' to be connected with already active spy satellites, which are currently harvesting data at ridiculous rates.

How much benefit any of the existing collection is to NZ is a point that can only argued by a few people with high security clearances, so I won't speculate on what it's worth to NZ.

But if policy is to address this objective, talking to those highly secured individuals would be prudent.

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 **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 **Agree**

Q25

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

Space debris is a fact of space exploration, and tonnes of it are generated with each launch. The Pacific Ocean, long a touchdown location for NASA, is known to have debris scattered around the seabed, despite claims that detached parts 'burn up on re-entry'.

Having policy that clearly state a goal of designing launch vehicles & deployed objects that don't shed parts during their journeys would be a positive step.

Consideration needs to be given to materials used & what lifetime they have, how they are disposed of at end-of-life.

(Eg: International space stations have been powered with small nuke plants - quite impossible to return to Earth - essentially, they become space junk forever.)

Q26

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

Objectives around regulating use of toxic materials on space industry manufacturing and launch sites would be useful. Including disposal of wastes from production and deployment.

Q27

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

Using satellite data in meteorological research is commonplace now, & I understand that modelling of effects of climate change is heavily reliant on data from high atmosphere orbit satellites. Committing to keeping that information available for international collaboration by climate research bodies is important - I'm not sure that these objectives capture that in fine enough detail.

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 **Strongly agree**

Clarifying what New Zealand space activities are inconsistent with the national interest **Strongly agree**

Promoting and protecting New Zealand's interests through permitting space technologies **Agree**

Q29

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

Specifying activities that are not in our interest needs detail.

Our nuclear free legislation probably did not anticipate 'nukes in space' - I'll leave it to you to look that up.

Militarisation of space is repugnant, whether conventional or nuclear weapons are involved.

Q30

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

A specific objective around banning any military uses of space would alleviate current concerns about the ambiguity of the current objectives.

Q31

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

I am concerned that 'permitted space technologies' may allow for weapons satellites. That which is permitted in one jurisdiction (Eg: USA) should not automatically be permitted in ours.

"Just because you CAN do something, doesn't mean you SHOULD" being the adage to keep in mind.

Space ethics is another whole shelf in the academic library...

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?

Again, I would say that SpaceLab taking payloads from DoD *probably* breaches those principles - but as the payloads are classified, how would MBIE or the Minister find out?

Q33

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

It all depends on whose definition of 'National interest' you use. It will be framed differently by Min Def, GCSB, DPMC, or MBIE itself.

If you stick to a civil (non-military) definition, then the economic interests of corporate entities will most likely have more prominence. Whether this takes into account what is in the best interests of NZ citizens/taxpayers is another layer of the discussion.

I urge you to consider all of the above factors, in defining 'national interest'.
