



COVERSHEET

Minister	Hon Dr Ayesha Verrall	Portfolio	Research, Science and Innovation
Minister	Hon Barbara Edmonds	Portfolio	Economic Development
Minister	Hon Kiri Allan	Portfolio	Associate Transport
Title of Cabinet paper	Release of the Aotearoa New Zealand Aerospace Strategy	Date to be published	14 August 2023

List of documents that have been proactively released

Date	Title	Author
June 2023	Release of the Aotearoa New Zealand Aerospace Strategy	Offices of the Minister of Research, Science and Innovation; Office of the Minister for Economic Development; Office of the Associate Minister of Transport
7 June 2023	Release of the Aotearoa New Zealand Aerospace Strategy DEV-23-MIN-0104 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 reasons of commercial information, confidential information entrusted to Government, confidential advice to Government and legal professional privilege.

In Confidence

Office of the Minister of Research, Science and Innovation

Office of the Minister for Economic Development

Office of the Associate Minister of Transport

Cabinet Economic Development Committee

Release of the Aotearoa New Zealand Aerospace Strategy

Proposal

- 1 This paper seeks agreement to release the Aotearoa New Zealand Aerospace Strategy (the Strategy) by July 2023.
- 2 This paper also seeks approval for a funding transfer to support implementation of the Strategy.

Issue Identification

- 3 New Zealand has a rapidly growing aerospace sector which still requires active government support to survive and thrive. The rest of this decade will be critical in determining the long-term future of this sector in New Zealand, and we have a time-limited opportunity to secure this future by publishing a clear statement on the Government's support for and priorities in the sector. The sector has made clear to us that Government needs to provide systemic leadership to continue providing the conditions the aerospace sector needs to thrive and retain leading innovators in New Zealand.

Relation to Government priorities

- 4 The Strategy will support our aim to encourage high-value innovation and investment in New Zealand. In the 2020 Speech from the Throne, the Prime Minister stated that New Zealand would continue to invest in research and development and would expand programmes to attract innovative companies to New Zealand.
- 5 The Strategy will also support our objectives under the Emissions Reduction Plan to decarbonise transport. Our social, cultural and economic connectivity to the world relies on aviation, which needs to adopt new technologies to reduce emissions. The Strategy will build resilience in New Zealand's aviation and space infrastructure and services over the long-term and support our response to climate change.
- 6 Implementation of the Strategy will support a range of sector-focused government objectives – including Just Transition, Future of Work and Māori and Pacific wellbeing objectives. The Strategy creates a platform for us to enable opportunities for job creation throughout New Zealand, increase diversity in the aerospace sector, modernise the workforce and address equity issues for diverse population groups.

Executive Summary

- 7 We are seeking Cabinet’s approval to release the Aotearoa New Zealand Aerospace Strategy. The Strategy sets out key ambitions for the aerospace sector and outlines how the Government will work with the sector to achieve the 2030 Future State outlined in the Strategy.
- 8 Public consultation on the Strategy took place in September and October 2022. The consultation document included three proposed Pillars to underpin sector development and five Goals for 2030 to set ambitious technological objectives.
- 9 Fifty-five submissions were received during the consultation period, with the most common feedback relating to education and capability building, Māori involvement and enabling regulatory systems. Submitters were largely positive, supportive of the need for a Strategy and strongly interested in contributing to implementation.
- 10 Officials have updated the Strategy based on feedback received during the consultation period. The revised Strategy is attached at Appendix One, along with an Action Plan for implementation of the Strategy attached at Appendix Two.
- 11 Several workstreams are underway to address areas of feedback from the consultation period. Further information will be gathered through studies to inform future Māori involvement in aerospace and understand the composition of the sector. Existing projects will also continue to be supported through the Strategy, including Tāwhaki.¹
- 12 The space elements of the Strategy align with the values and objectives set out in the National Space Policy. The implementation processes for both the National Space Policy – recently considered by Cabinet [CAB-23-MIN-0111 refers] – and space elements of the Strategy will be closely linked.
- 13 We are seeking Cabinet approval for fiscally neutral in-principle expenditure transfers to support initial implementation of the Strategy.

Background

- 14 Emerging aerospace technologies² are driving rapid sector growth worldwide, offering solutions to challenges including decarbonisation of the transport system, environmental monitoring, agricultural productivity and safety, pest eradication, search and rescue, and supply-chain resilience. Aerospace technologies support responses to extreme weather events, including disaster recovery, modelling and adaptation. Space-based assets are also essential for modern communications, location services and maintaining New Zealand’s national security.

¹ Tāwhaki was established in 2021 as a commercial joint venture between Kaitōrete Limited (Te Taumutu Rūnanga and Wairewa Rūnanga) and the Crown. The project has dual kaupapa to heal and rejuvenate the whenua on Kaitōrete Spit in Canterbury and advance Aotearoa’s aerospace industry through the development of aerospace activities and research and development facilities on the site.

The Joint Venture purchased 1,000 hectares of land on Kaitōrete to progress each of these aims. Kaitōrete Limited and the Crown each own 50 per cent of shares in ownership of the property, in addition to 50:50 decision-making and profit sharing for the project [CAB-21-MIN-0193].

² The aerospace sector encompasses the research and development, design, manufacturing and launch of satellites, drones, flight vehicles, space launch vehicles, and spacecraft, as well as upstream and downstream services concerning the provision and use of aerospace data.

- 15 New Zealand already has a strong emerging aerospace sector and many natural advantages for aerospace activities, including our diverse geography and clear sea and skies [DEV-22-MIN-0200].
- 16 Combining our efforts in the space and advanced aviation sectors under a unified 'aerospace' brand will help us build critical mass and momentum. A combined aerospace strategy also recognises the growing number of high-altitude use cases that span both sectors.
- 17 By building momentum in aerospace and aligning Government and industry we can grow an internationally competitive sector that makes a significant contribution to New Zealand's economic performance and wider Government objectives. Partnerships, particularly with New Zealand's international partners, are essential given the global nature of the aerospace sector.
- 18 The economic opportunity of the aerospace sector also adds a new dimension to New Zealand's security risks that requires proactive management. Sensitive aerospace technologies are inherently dual-use, with both civilian and military applications. Government has an important role to play in regulation to maintain a safe and secure aerospace sector, including through the export controls imposed on dual-use technologies as set out in the Customs and Excise Act 2018.
- 19 As New Zealand's aerospace sector continues to grow, so do the risks posed by misuse of sensitive technologies. Regulation, protection of intellectual property and strong public engagement to build and maintain social licence will be critical to legitimise aerospace activities in New Zealand.

Development of the Strategy

- 20 In 2021, aerospace sector representatives asked Ministers for greater policy leadership in aerospace. In response, Ministers agreed that the Ministry of Business, Innovation and Employment (MBIE) would develop an aerospace sector strategy.
- 21 On 24 August 2022, the Cabinet Economic Development Committee agreed to the release of a consultation document on the proposed framework for an Aotearoa New Zealand Aerospace Strategy [DEV-22-MIN-0200].
- 22 Consultation on the document *Developing the Aotearoa New Zealand Aerospace Strategy* (the consultation document) was open from 5 September to 31 October 2022.
- 23 Fifty-five submissions were received from a range of stakeholders, including commercial organisations and researchers working in the aerospace sector, Māori and interested members of the public.
- 24 Consultation was undertaken in parallel with consultation on the Space Policy Review. These pieces of work are connected and complementary, with the Strategy setting out an approach for sector development and the National Space Policy setting out New Zealand's values and principles as they relate to space.

Structure of the Strategy

- 25 The Strategy is built around a vision for aerospace in New Zealand – the 2030 Future State – as an inclusive sector supporting tens of thousands of jobs and inspiring a diverse range of people. The Future State sees government supporting a sector which is safe, innovative and productive, made up of hundreds of firms with strong international connections and actively contributing to our environmental objectives.
- 26 The Strategy outlines three Pillars that will align how government and the sector work together in innovative, collaborative and agile ways to reach the Future State. The three Pillars cover sector-wide needs that will benefit from joined-up efforts:
- 26.1 Unlocking Aerospace Potential – creating strong economic foundations that meet the needs of the sector
 - 26.2 Future-Facing Government – building aligned and supportive government-led initiatives
 - 26.3 Aerospace Nation – strengthening engagement in the Aotearoa New Zealand aerospace sector and marketing to the world.
- 27 The Strategy also sets out five Goals for 2030 – bold ambitions that will push New Zealand to the forefront of global aerospace activities. The Strategy includes goals specific to space, advanced aviation and data to address the specific needs of each of these subsectors in the wider aerospace sector:
- 27.1 Goal One – Build a sustainable air passenger journey
 - 27.2 Goal Two – Safely integrate autonomous aerial vehicles
 - 27.3 Goal Three – Be at the forefront of global sustainable space activities
 - 27.4 Goal Four – Actively support human exploration in space
 - 27.5 Goal Five – Enhance decision-making using aerospace-enabled data.

Analysis of feedback from public consultation

- 28 Feedback received on the consultation document was largely positive, with most submitters supportive of the need for a Strategy and strongly interested in contributing to implementation.
- 29 The most common feedback in submissions related to education and capability building, Māori involvement and enabling regulatory systems. The following outlines the feedback from submitters and how that feedback has been incorporated into the Strategy and/or its implementation.

Education and capability building

- 30 *Feedback received:* Submitters highlighted the need to build a sustainable and diverse talent pipeline in New Zealand to support the growing aerospace sector.

Input into Strategy: Education and training has been a key focus for officials in refinement of the Strategy. While some New Zealand universities are beginning to introduce qualifications in fields such as aerospace engineering, the sector is currently heavily reliant on international talent. The Strategy notes the importance of building domestic capability in these specialised fields, as well as the need to build awareness of opportunities for people with transferrable skills to move into the aerospace sector.

Māori involvement

- 31 *Feedback received:* Submitters wanted to see clarification of the role of Māori in the implementation of the Strategy and greater reference in the Strategy to the role of Māori in the sector, as well as the significance of space to Māori.
- 32 *Input into Strategy:* Officials in MBIE engaged a Māori stakeholders group during development of the Strategy, including experts with subject matter expertise or strong interest in the aerospace sector. This group developed a proposal which will form the starting point for engagement with Māori on implementation of the Strategy, including a landscape report on current levels of participation and research on specific opportunities for Māori in aerospace.

Enabling regulatory systems

- 33 *Feedback received:* Regulatory capability and capacity was flagged as a critical enabler for the success of the sector. While the space regulatory system was seen as operating well, submitters noted the need for greater capacity in the Civil Aviation Authority to respond to the pace of innovation.
- 34 *Input into Strategy:* Officials are undertaking ongoing work to respond to resourcing pressures in the Civil Aviation Authority. While New Zealand has a supportive, risk-based regulatory environment for aviation, this system has been under significant strain as the pace of innovation in the sector has increased. Maintaining a fit-for-purpose and future-focused regulatory environment will be a key enabler for the success of the Strategy, building on the recent establishment of an Emerging Technologies Unit in the Civil Aviation Authority.
- 35 Consideration of growing national security risks to the sector will also be important for both the aviation and space regulatory systems. The technical review of the Outer Space and High-altitude Activities Act noted the need for changes to the high-altitude portion of the regulations to address national security risks.

Other feedback incorporated into the Strategy

- 36 The following outlines examples of other changes that have been incorporated into the Strategy based on feedback received during consultation:
- 36.1 *References to sustainability:* Submitters wanted to see sustainability embedded more in the Strategy. As a result, references to sustainability have been expanded to note the potential benefits of aerospace technologies while also highlighting the need to ensure broad sustainability considerations for aerospace activities.
- 36.2 *Providing changes for greater clarity or emphasis, including:*

- 36.2.1 Changing the goal “Actively support a permanent human presence in space” to “Actively support human exploration in space” to reflect the intent of the goal to capture ways that New Zealand can contribute to space exploration beyond sending astronauts into space
 - 36.2.2 Reinforcing the importance of cross-cutting enablers like manufacturing and supply chains for aerospace activity
 - 36.2.3 Clarifying how the Pillars and Goals for 2030 fit together in the Strategy, and explaining the justification for the Strategy including both space and advanced aviation, as previously outlined to Cabinet
 - 36.2.4 Emphasising the importance of international partnerships
 - 36.2.5 Noting that concerns around peaceful uses of space are addressed by the National Space Policy
 - 36.2.6 Noting the importance of public support for and engagement with aerospace to enable the sector to succeed.
- 37 Other responses to feedback, including outlining connections to other work across government and highlighting case studies that showcase New Zealand’s strengths in aerospace, will be included in supplementary information provided on the MBIE website to allow this to be updated throughout the lifetime of the Strategy.

Implementing the Strategy

- 38 Responsibility for delivering the Strategy will require action across agencies beyond MBIE. In particular, the Ministry of Transport and Civil Aviation Authority will play a critical role in delivering the Goals of the Strategy, as agencies responsible for setting and administering policy and regulations for the sector. The objectives of the Strategy also require action across a wide range of Government interests that reflect the highly international, research and development intensive, and skill-intensive nature of the sector.
- 39 Officials will use a range of governance, advisory and planning mechanisms in implementing the Strategy, including:
- 39.1 *Existing governance and working groups:* At the governance level, this will include the Space Senior Leadership Group and the Emerging Technologies Leadership Group which together encompass most agencies with strong interests in the Strategy. The recent establishment of the Sustainable Aviation Aotearoa public-private partnership also provides a forum to feed into ongoing actions that support the sustainable aviation goal in the Strategy.

- 39.2 *Considering external advisory mechanisms:* The space elements of the Strategy align with the values and objectives set out in the National Space Policy and implementation processes for both the National Space Policy and space elements of the Strategy will be closely linked. In addition to the above cross-government mechanisms, MBIE will explore external advisory options to support implementation of both the Strategy and National Space Policy, including confirming processes for ongoing engagement with Māori.
- 39.3 *Cross-government workstream coordination:* MBIE will undertake further engagement with education officials, industry-facing Workforce Development Councils, universities and other relevant educational institutions, and local economic development agencies. Wide engagement will support coordination on inclusive workforce development planning for the sector, including options to strengthen links between industry and the education system, at all levels.
- 40 Initial actions set out in the Strategy include an economic study to establish a baseline for the composition of the New Zealand aerospace sector. This sector study will support more detailed planning on steps under each of the Goals and Pillars.
- 41 MBIE will release progress updates on the Strategy through its website, including progress towards the Goals and Pillars.

Example of action underway – Tāwhaki

- 42 As part of the implementation of the Strategy, engagement will be strengthened with the Tāwhaki Joint Venture (Tāwhaki). This partnership contributes to the Strategy through work with tangata whenua to improve infrastructure for aerospace research and development, as well as developing a candidate for future space launch facilities in New Zealand in addition to Rocket Lab’s existing Mahia complex.
- 43 Tāwhaki continues to engage with domestic and international firms as potential users of the site, with negotiations on testing for users **Commercial Information** progressing to advanced stages. International interest from space launch firms remains high and Tāwhaki is discussing launch requirements with several potential users.
- 44 **Confidential information entrusted to the Government**
- 45 Tāwhaki is also progressing environmental management planning for the site to support revitalisation of the landscape, supporting whānau engagement and enhancing opportunities for mātauranga Māori as part of the project.

Supporting diversity and inclusion

46 The Strategy will inform plans to address a lack of diversity in the aerospace sector building on targeted interventions to ensure that the benefits of aerospace activity are equitably distributed. Work to implement the Strategy will include building an evidence base about population groups’ participation in the sector beyond existing anecdotal evidence.

Population group	Informing diversity and inclusion
Māori	Anecdotal evidence suggests Māori are currently underrepresented in the aerospace sector. There are specific regional interests for Māori in aerospace, including around the Rocket Lab launch site in Mahia and the Tāwhaki aerospace research site in Canterbury. Implementation of the Strategy will include work to better understand current levels of participation in the aerospace sector and opportunities to increase involvement.
Pacific peoples	Anecdotal evidence suggests Pacific peoples are underrepresented in high-skilled roles in the aerospace sector, although Pacific people are highly represented in manufacturing employment generally. Supporting Pacific engagement through targeted tertiary scholarships or internships will contribute to the aspirations of Pacific communities as expressed in Lalanga Fou Goal 2: Prosperous Pacific Communities, as well as support the diversification of the Pacific workforce into new higher-wage employment.
Women	Anecdotal evidence suggests women, including wāhine Māori, are underrepresented across all levels of the aerospace sector, from participation in STEM education through to industry-led training and university study in aerospace engineering and related fields. Implementation of the Strategy will include work to remove specific barriers to women’s entry to the sector and support for initiatives to assist and retain women in the sector. Strengthening women’s participation in the sector will contribute to eliminating the ethnic-gender wage gap, as well as supporting women’s economic resilience.
Rural communities	Rural communities are expected to benefit significantly from increased adoption of aerospace technologies. Aerospace technologies can improve the safety and efficiency of farming, build supply chain resilience and support emergency response. Specific attention will be given in the Strategy to promoting regional upskilling in aerospace.

47 Implementation of the Strategy will also consider other groups currently underrepresented in the sector, including disabled people and LGBTQIA+ communities, to remove barriers to participation in the sector and support greater involvement.

Financial Implications

- 48 Confidential advice to Government
- 49 Reprioritised funding was announced for implementation of aspects of the Strategy at the New Zealand Aerospace Summit in September 2022, alongside the announcement of the consultation period on the Strategy. This included \$9 million for research partnerships with NASA, \$3 million for research projects under the Government’s Airspace Integration Trials Programme and \$3.7 million for the CAA to establish an Emerging Technologies Programme.
- 50 Release of the Strategy was delayed to enable public consultation and to provide adequate time to incorporate feedback, meaning funding held by the Innovative Partnerships programme could not be drawn-down for implementation of the Strategy in the 2022/23 financial year as intended. This paper seeks approval to transfer funding between financial years to deliver the most critical support identified through public consultation on the Strategy.
- 51 To enable critical support for aerospace innovation in New Zealand through the regulatory system, we propose providing up to \$5 million to:
- 51.1 Enable access to world-leading external technical expertise on an as-needed basis, including for regulatory processes in the CAA
 - 51.2 Deliver targeted capacity for the CAA to address challenges faced by aerospace innovators in the regulatory system
- 52 We also propose providing up to \$3 million over two years for workforce development initiatives to be led by MBIE, including:
- 52.1 An extension of the New Zealand Space Scholarship scheme;
 - 52.2 Workforce development and educational initiatives developed in partnership with the sector and skills and education system, including support for diversity and inclusion;
- 53 We also propose providing up to \$3.5 million over two years for early-stage space companies to undertake R&D and further develop our space sector supporting sustainable uses of space and supporting a permanent human presence in space.
- 54 Final funding amounts and details are expected to be confirmed by Aerospace Ministers following the launch of the Strategy. Further funding needs and long-term options will be assessed as the Strategy progresses. Sustainable resourcing in the medium to long term will be important to achieve the goals of the Strategy, including maintaining a fit-for-purpose regulatory environment in the aviation system as outlined in the Air Navigation System Review final report.

International Implications

55 Legal professional privilege

Treaty Implications

- 56 We recognise that elements of aerospace are important in Te Ao Māori and we are committed to supporting Māori participation and equitable benefit in the aerospace sector through collaborative approaches based on the principle of partnership. A more detailed understanding of Māori perspectives and opportunities for involvement in aerospace will be gained through research undertaken as part of the Strategy.
- 57 Officials in MBIE are continuing to work with Te Puni Kōkiri and Te Arawhiti, in addition to Tāwhaki and the Māori stakeholders group engaged during development of the Strategy to ensure that implementation processes are inclusive of Māori.

Legislative Implications

- 58 There are no legislative implications in this paper.

Impact Analysis

Regulatory Impact Statement

- 59 This paper does not require a Regulatory Impact Statement.

Climate Implications of Policy Assessment

- 60 This paper does not require a Climate Implications of Policy Assessment. While the Strategy includes content on sustainable aviation, this does not introduce specific new initiatives to reduce greenhouse gas emissions and instead leverages existing work. A Climate Implications of Policy Assessment will be carried out if required for new initiatives established during implementation of the Strategy.

Human Rights

- 61 There are no human rights implications in this paper.

Consultation

- 62 A range of agencies have been consulted on the Strategy and this Cabinet paper during its development, including the Ministry of Transport, Civil Aviation Authority, the Treasury, Ministry for Primary Industries, Airways New Zealand, New Zealand Defence Force (including the Defence Technology Agency), Ministry of Defence, New Zealand Intelligence Community, Ministry of Foreign Affairs and Trade, Toitū Te Whenua Land Information New Zealand, Te Puni Kōkiri, Te Arawhiti, Statistics New Zealand, Ministry of Education, Tertiary Education Commission, Department of Conservation, New Zealand Trade and Enterprise, and Callaghan Innovation.

Communications

63 We expect to announce the release of the Strategy by July 2023.

Proactive Release

64 We intend to release this paper in conjunction with the public release of the Aotearoa New Zealand Aerospace Strategy.

Recommendations

The Minister of Research, Science and Innovation, Minister for Economic Development and Associate Minister of Transport recommend that the Committee:

- 1 **Note** that in August 2022, Cabinet agreed to the release of a consultation document on the Aotearoa New Zealand Aerospace Strategy [DEV-22-MIN-0200];
- 2 **Note** that feedback from the public consultation period was used to inform development of the Aotearoa New Zealand Aerospace Strategy;
- 3 **Approve** the release of the Aotearoa New Zealand Aerospace Strategy;
- 4 **Authorise** the Ministry of Business, Innovation and Employment to make design and minor editorial changes to the Aotearoa New Zealand Aerospace Strategy prior to release;
- 5 **Note** that we intend to release the Aotearoa New Zealand Aerospace Strategy in Quarter 2 2023;
- 6 **Note** that in order to use underspends to fund implementation of the Aotearoa New Zealand Aerospace Strategy, in-principle expense transfers are required from 2022/23 to 2023/24 and 2024/25 respectively;
- 7 **Approve** in-principle expense transfers of up to the following maximum amounts of operating expenditure from 2022/23 to 2023/24 and 2024/25 respectively, to give effect to the policy decision above:

	\$ million – increase / (decrease)				
Vote Business Science and Innovation	2022/23	2023/24	2024/25	2025/26	2026/27 & Outyears
Minister of Research, Science and Innovation					

IN CONFIDENCE

Departmental output expenses: Research, Science and Innovation: Innovative Partnerships	(2.000)	2.000			
Non-departmental output expenses: Research, Science and Innovation: Innovative Partnerships Strategic Facilitation Fund	(10.000)	5.000	5.000		

- 8 **Agree** that the proposed changes to appropriations in the recommendations above be included in the 2022/23 Supplementary Estimates and that, in the interim, the increase be met from Imprest Supply;
- 9 **Authorise** the Minister of Finance and the Minister of Research, Science and Innovation to jointly agree the final amounts to be transferred, following completion of the 2022/23 audited financial statements, with no impact on the operating balance and/or net debt across the forecast period.

Authorised for lodgement

Hon Dr Ayesha Verrall

Minister of Research, Science and Innovation

Hon Barbara Edmonds

Minister for Economic Development

Hon Kiri Allan

Associate Minister of Transport

Appendices

Appendix One: Aotearoa New Zealand Aerospace Strategy