



ANNEXES: Mapping priorities against existing investments

Supporting information for the PMSITAC



Annexes for Section 1 – Giving effect to strategy by investing more in Advanced Technology

Annex 1: Current state funding and reprioritisation to Scenario 2 ‘Modernise’

Current State

	Economic Growth & Resilience	New Economy/ Advanced Tech	Environment	Health & society
Strategic	\$157m	\$44m	\$72m	\$31m
Infra	\$18m	\$16m	\$24m	\$1m
Workforce	\$1m	\$4m	\$5m	\$34m
Contest	\$151m	\$57m	\$55m	\$166m
Totals	\$327m	\$121m	\$156m	\$232m

Reprioritise **\$122m** by 2028/29 from Current to New Economy and Advanced Tech

	Economic Growth & Resilience	New Economy/ Advanced Tech	Environment	Health & society
Strategic	-\$26m (-17%)	+\$89m (202%)		
Infra				
Workforce		+\$10m (250%)		-\$10m (-29%)
Contest	-\$59m (-39%)	+\$23m (40%)		-\$27m (-16%)
Totals	\$242m -\$85m (-26%)	\$243m +\$122m (101%)	\$156m N/C	\$195m -\$37m (-16%)

*Rounded to nearest million

- Funding freed up from established sectors (Primary)
- Preserves public-good funding, but requires reduction in contestable and strategic investment in EG&R pillar
- Sector-aligned private sector funding could offset reductions

Annex 2: Fitting Advanced Technology into the pillar framework

- At its August meeting, PMSITAC considered the positioning of the New Economy and Advanced Technology (NE&AT) pillar, including whether advanced technology should be treated as a cross-cutting enabler rather than being confined to a single pillar.
- We seek confirmation of your views regarding the role of advanced technology within the new funding framework, as this will:
 - affect understanding of the overall framework; and
 - have implications for NZIAT and ongoing design and establishment activities.

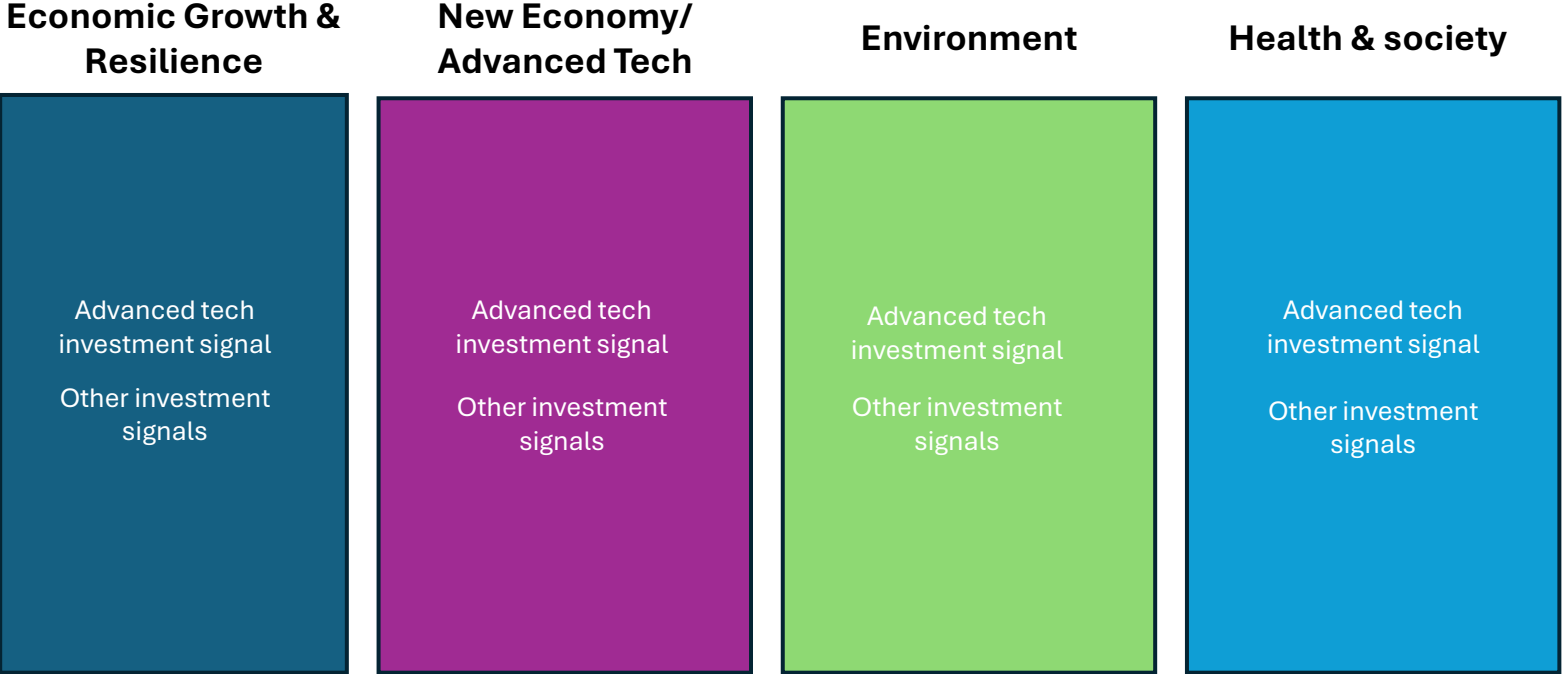
Key considerations:

- Advanced technology should not be restricted to the NE&AT pillar, nor should funding be limited to its application within that context.
- We expect researchers across all pillars to enhance their use of advanced technology.
- PMSITAC could issue targeted investment signals that promote the uptake and application of advanced technology across all pillars and funding instruments.

Annex 3: PMSITAC should set expectations about the priority use and uptake of advanced technology in all pillars

This solution has some advantages over creating a single cross-cutting advanced technology theme across all pillars.

- 1. Allows for different expectations regarding development, adaptation, and uptake of advanced technology, recognising variation across pillars.
- 2. Maintains transparency in funding allocations, clarifying how resources are distributed.
- 3. Preserves the distinct mission of NZIAT, which is focused on economic growth through technology development, rather than system-wide technology adoption.



Annex 4: Rename New Economy/Advanced Tech pillar to better reflect its intent

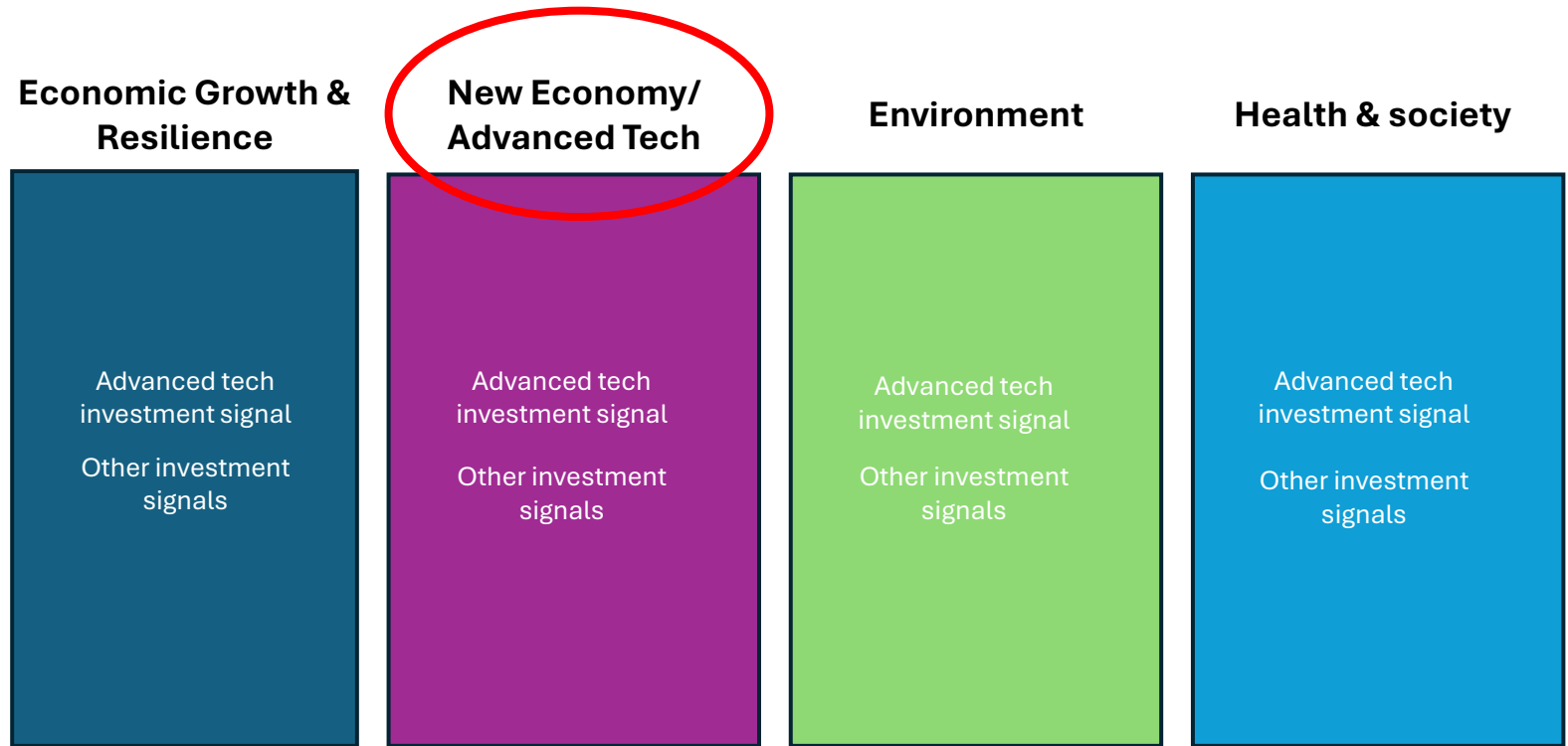
PMSITAC may wish to consider whether the current title of the pillar accurately reflects its purpose.

Rationale:

- The term "new economy" may not fully capture the nature of the sector, given that many TIN200* firms are well-established and collectively generated \$17.95 billion in revenue in 2024.
- If advanced technology is to be treated as an investment signal, its inclusion in a pillar title may cause confusion.

Suggested alternative:

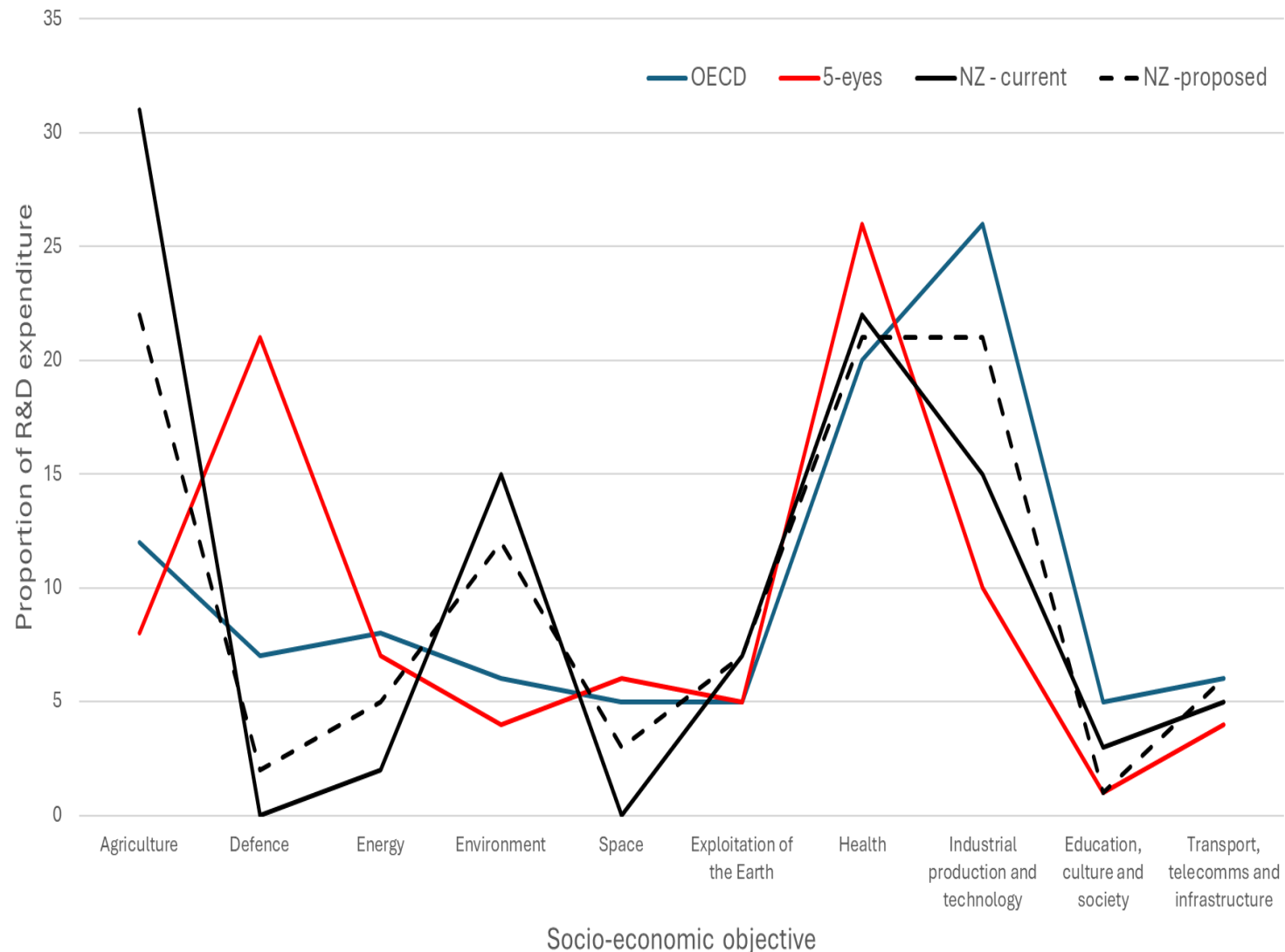
“Technology Economy” – a term that better reflects both these factors.



Note: The New Economy and Advanced Tech pillar is re-named to ‘technology economy’.

*TIN200 refers to the top 200 NZ tech export firms by revenue

Annex 5: System Impact - Impact of proposed funding shifts on proportion of R&D expenditure by socio-economic objective



- **Percentage spend in Agriculture is still significantly above international comparators**, despite the reduction in percentage of R&D spend
- **Increased proportion of spend is in the Technology Economy related fields** Defence, Space and Industrial Production and Transport, Telecomms and Infrastructure
- There is a **small drop in proportion of environment spend**. This is because climate resilience and natural hazard research falls within the Economic Growth and Resilience pillar

'Proposed' reflects the reallocation of funding in 'scenario 2'. The above reflects one possible way the 'new economy' funding could be allocated across the following outcome areas: defence, energy, space, industrial production, and transport and infrastructure

Annex 6 Financial Impacts - Detailed picture of reprioritisation from contestable to strategic funding

		Economic Growth & Resilience \$242m (\$332m)	Technology Economy \$243m (\$283m)	Environment \$155.5m (\$220.5m)	Health & Society \$194.5m (\$244.5m)
Strategic	\$80m (+\$19m) Missions/thematic	\$14m	\$45m (+\$19m)	\$7m	\$14m
	\$266m (+\$44m) Institutional	ESI/BSI \$116m (-\$26m)	NZIAT \$70m (+\$70m)	ESI/BSI \$64m	PHFS funding \$16m
	\$20m International	\$1m	\$18m	\$0.5m	\$0.5m
Infrastructure	\$59m	\$18m	\$16m	\$24m	\$1m
Workforce	\$44m	\$1m	\$14m (+\$10m)	\$5m	\$24m (-\$10m)
Contestable	\$366m (-\$63m)	Endeavour \$92m (-\$59m)	Endeavour \$50m (+\$20m) Marsden \$30m (+\$3m)	Endeavour \$39m Marsden \$16m	Endeavour \$25m Marsden \$21m (-\$15m) HRC \$93m (-\$12m)
Other government	\$245m	Including MPI, MoE \$90m	Including MPI, MoE, MoD \$40m	Including MPI, MfE, DoC, MoE \$65m	Including MoH, MoE, MSD, DIA, others \$50m

This shift in funding will mean NZ is closer to international comparators in terms of funding mix and structure

- 2022/2023 RSI funding in New Zealand is split roughly 55-45 between competitive and strategic funding, a higher proportion of competitive funding than most other OECD countries.
- OECD and European Commission studies found significant variance in the competitive/strategic split between countries, ranging from less than 10 per cent competitive funding (Italy) to around 70 per cent (Ireland). The median value was around 35 per cent competitive.
- The proposed changes shift New Zealand's system to a 40-60 competitive/strategic split, which is close to but still slightly more competitively-focused than the OECD average.

MoE funding does not include broad mechanisms like the PBRF that support research capability generally, but not specific outcomes Endeavour fund shift from EG&R to NE&AT is a 'worst case' scenario assuming no existing activity is 'advanced tech' Limited data on other government investment means mapping to pillars is "best guess"

Annex 7: The Marsden Fund

The Marsden Fund 2026 will award about \$55m to a forecasted 70 projects, down from \$78m to a forecasted 100 projects in 2025.

- This drop is due to another fund reprioritisation in the SI&T portfolio **not connected** with PMSITAC.
- The Marsden fund is honouring previous contracts awarded on a three year term. As a result, the total annual appropriation does not equal the amount available for new grants.
- Rather, annual appropriation covers the cumulative cost of all active contracts, and also takes account of other variations, including contract terminations and underspends.

	Funding Round FY	24/25	25/26	26/27	27/28	28/29	29/30	
	Appropriation	\$78,545	\$78,545	\$73,008	\$70,613	\$55,842	\$55,842	\$(000)
Actual	Marsden Fund 2021	\$9,350						
Actual	Marsden Fund 2022	\$31,677	\$6,125					
Actual	Marsden Fund 2023	\$29,676	\$29,676	\$12,300				
Actual	Marsden Fund 2024	\$13,000	\$25,000	\$25,000	\$13,000			
Forecast	Marsden Fund 2025**		\$12,000	\$27,000	\$27,000	\$12,000		\$78,000
Forecast	Marsden Fund 2026			\$5,000	\$22,500	\$22,500	\$5,000	\$55,000
Forecast	Marsden Fund 2027				\$4,000	\$17,000	\$25,000	
Forecast	Marsden Fund 2028					\$2,000	\$25,000	
Forecast	Marsden Fund 2029						\$3,000	

** Decisions due November 2025

Caveat: These figures are for illustrative purposes only and should not be taken at face value.

Annexes for section 2 – Identifying research priorities and areas to deprioritise

Annex 8 Approach to identifying research priorities (and areas to deprioritise) within the funding pillars

- We have adopted a structured approach to identifying research priorities across the funding pillars As part of our commitment to a strategy-driven Science, Innovation and Technology (SI&T) system. This approach ensures coherence with system-wide reforms and supports transparent, evidence-informed decision-making.
 - **Classification of Pillars Using ANZSRC Codes**

We assigned Australian and New Zealand Standard Research Classification (ANZSRC) codes to each funding pillar to establish a consistent classification and enable alignment with existing research domains. We specifically used Socio Economic Outcome (SEO) codes and identify research areas against MBIE investment in SI&T.
 - **Mapping Existing Research Priorities (current state & future state)**

We then aligned the current research activities and priorities with the funding pillar framework using designated ANZSRC codes. This enables us to systematically identify gaps, overlaps, and areas of strategic opportunity. To verify alignment, we draw on previously provided SI&T data sets and cross-reference these with desktop analyses of existing strategy and priority documents from across government, industry, and Māori knowledge systems.
 - **Development criteria for prioritisation**

We established a clear set of criteria to evaluate and prioritise research areas. The framework considers alignment with government priorities, potential for impact, scientific excellence, and the capability and capacity of the system — including workforce and institutional strength. In shaping this framework, we draw on previously provided principles and strategic design documents to ensure consistency with broader SI&T system reforms.
 - **Presentation of Priorities**

We outline and recommend options for presenting the identified priorities
 - **Presentation of areas to deprioritise**

Rather than explicitly identifying areas to deprioritise, we focus on surfacing the broad signals that guide our strategic emphasis. This approach ensures alignment with government priorities and the direction of SI&T reforms, supporting a shift toward a more proactive and strategy-led system.

Annex 9 Criteria for Prioritisation

Criterion	Explanation
Economic Impact and Market Readiness	Demonstrates strong potential to contribute to economic growth through innovation, industry partnerships, and scalable commercial opportunities, with clear pathways to market and early signals that can guide strategic investment decisions.
Stewardship of Public Good and Strategic Capability	Delivers enduring public value by addressing societal and environmental challenges, while building and retaining critical national capabilities (workforce and institutional). It reflects responsible stewardship of public investment to support long-term wellbeing, equity, and resilience.
Global Relevance and Future Capability	Aligns with emerging global trends such as advanced technologies and builds future-ready capabilities that position New Zealand to lead or contribute meaningfully on the international stage.
Balanced Investment Prioritisation	Balance stable, long-term investments that build enduring capability with flexible, contestable funding to support emerging opportunities and system responsiveness.
Strategic Alignment with National Priorities	Should be guided by system-level priorities that reflect New Zealand’s aspirations for economic growth and wellbeing. This would include aligning with the emerging technology and ‘Going for Growth’ initiatives.
National resilience	Enhances New Zealand’s ability to withstand and adapt to future shocks, disruptions, or long-term challenges across critical systems.
Potential Return on Investment (ROI)	The expected benefits—economic, social, or environmental—are likely to outweigh the costs, offering high value for the investment made.

Annex 10 Further breakdown of priority research areas within pillars (contestable)

Endeavour, Marsden, HRC – Total Investment: **\$426.5M in 2024/25**

Economic Growth & Resilience

48.17% of \$150.5m is allocated towards the below research areas

Primary Production	\$33.0
• Plant production and Plant Primary Products	\$18.0
• Food production system components and fibre and trees	\$13.6
• Environmental Policy, Climate Change And Natural Hazards	\$1.3
Natural Hazards	\$23.8
• Environmental Policy, Climate Change And Natural Hazards	\$22.9
• Understanding climate change	41.7
Mitigation and adaption to climate change	\$15.7
• Adoption to climate change	\$9.0
• Mitigation of climate change	\$3.9
• Understanding of climate change	\$2.9

Technology Economy

84% of \$74.3m is allocated towards the below research areas

Basic and Fundamental Research	\$33.5
• Biological Sciences	\$15.3
• Physical Sciences	\$5.6
• Chemical Sciences	\$3.3
• Engineering	\$2.2
• Various	\$7.1
Manufacturing	\$17.1
• Instrumentation	\$8.0
• Human pharmaceutical products	\$6.6
• Various	\$2.6
	\$11.5
Energy and Minerals	
• Energy storage, distribution and supply	\$5.6
• Renewable energy	\$2.7
• Various	\$3.2

Environment

81.49% of \$44.3m is allocated towards the below research areas

Other Environment	\$16.0
• Environmental Policy, Climate Change And Natural Hazards	\$10.9
• Environmental management	\$4.9
• Various	\$0.2
Freshwater Environments	\$11.4
• Fresh, ground and surface water systems and management	\$11.4
Terrestrial Environments	\$8.7
• Terrestrial systems and management	\$8.7

Health & Society

89.45% of \$157.4m is allocated towards the below research areas

Health	\$99.5
• Clinical health	\$43.5
• Public health (excl. specific population health)	\$12.0
• Evaluation of health and support services	\$7.8
• Provision of health and support services	\$6.6
• Specific population health (excl. Indigenous health)	\$5.3
• Various	\$24.5
Basic and Fundamental Research – in areas such as:	\$26.9
• the biomedical and clinical sciences	\$7.2
• Psychology	\$3.8
• Health sciences	\$3.8
• Indigenous studies	\$3.5
• Human society	\$3.4
• Language, communication and culture	\$2.2
• Various	\$2.8
Heritage, Arts & Culture	\$14.4
• Māori heritage and culture	\$8.8
• Communication	\$1.5
• Pacific peoples heritage and culture	\$1.0
• Various	\$3.0

Annex 11 Types of science encompassed within each pillar

Economic Growth & Resilience

Focus: Science that directly supports economic sectors and foundational systems.

Sector-Specific Sciences:

- Biosecurity science – critical for protecting the primary sector (agriculture, horticulture, aquaculture)
- Metrology – foundational for standards, trade, and manufacturing
- Food science and agritech – innovation in food production and processing
- Geoscience and mineral exploration – supports extractive industries
- Construction materials science – resilience and innovation in infrastructure

Enabling Technologies & Disciplines:

- Supply chain analytics
- Resilience modelling and systems engineering
- Climate adaptation economics
- Remote sensing for land use and productivity
- Data science for productivity and forecasting

Technology Economy

Focus: Science that drives innovation, digital transformation, and future industries.

Technologies:

- Artificial Intelligence (AI)
- Quantum computing
- Photonics and optoelectronics
- Advanced manufacturing and robotics
- Cybersecurity and cryptography
- Blockchain and distributed systems

Disciplines:

- Computer science and software engineering
- Human-computer interaction
- Mathematics and algorithm design
- Materials science for electronics
- Spectrometry for precision instrumentation

Sector Applications:

- Fintech
- Digital health
- Smart cities
- Space technologies
- Synthetic Biology

Environment

Focus: Science that supports environmental stewardship, sustainability, and climate resilience

Disciplines & Technologies:

- Ecology and biodiversity science
- Climate science and modelling
- Hydrology and oceanography
- Environmental chemistry and toxicology
- Remote sensing and GIS
- Carbon capture and storage
- Circular economy technologies
- Low-emissions energy systems (e.g. hydrogen, solar, wind)

Sector Applications:

- Conservation science
- Environmental monitoring
- Sustainable agriculture and forestry
- Marine science and fisheries

Health & Society

Focus: Science that improves wellbeing, social outcomes, and public health

Disciplines:

- Neuroscience and cognitive science
- Public health and epidemiology
- Genomics and precision medicine
- Social science and behavioural economics
- Health informatics and digital health
- Medical physics and imaging
- Biostatistics and health data science

Technologies:

- Wearable sensors and diagnostics
- Telehealth platforms
- AI for clinical decision support
- Biotechnology and regenerative medicine

Outcome Areas:

- Healthier populations
- Mental health and wellbeing
- Equity and inclusion
- Education and learning sciences

Annex 12 Māori strategic interests relevant to the SI&T system

This summary provides PMSITAC with a synthesis of Māori aspirations and strategic interests relevant to the Science, Innovation and Technology (SI&T) system.

It is designed to inform the identification of priority themes and pillars in the current reform process.

The analysis is based on a comprehensive review of Māori organisational strategies and submissions undertaken in 2022. While still highly relevant, it should be noted that the data may not fully reflect developments since that time.

A total of **approximately 180 organisations** were reviewed, grouped into the following categories:

- **Iwi and Hapū Entities** (~130): Includes iwi authorities, PSGEs, hapū trusts, and incorporations.
- **Māori Rōpū and Collectives** (~25): Includes Māori-led advisory groups, kaupapa Māori organisations, and sectoral collectives.
- **Research Organisations** (~10): Includes Māori research institutes, iwi research centres, and Māori-led groups within CRIs and universities.
- **Community and NGO Entities** (~10): Includes Māori NGOs and social service providers.
- **Māori Businesses and Enterprises** (~5): Includes large Māori-owned commercial entities and land trusts.

Annex 13 Priority domains and themes for Māori entities

Environment and Climate Resilience

Key aspirations:

Restoration of waterways, forests, and marine ecosystems. Climate change adaptation and hazard mitigation. Sustainable land use and resource management.

SI&T Opportunities:

Environmental modelling, climate science, biosecurity, and mātauranga-led restoration. Development of regional hazard planning and managed retreat strategies.

Identity, Culture, and Mātauranga Māori

Key Aspirations:

Revitalisation of te reo, tikanga, and taonga. Protection of indigenous intellectual property and data sovereignty. Cultural mapping and digital heritage.

SI&T Opportunities: AI ethics, digital archiving, indigenous IP frameworks, and cultural technologies. Design of tools that embed and leverage tikanga and mātauranga Māori.

Health and Wellbeing

Key Aspirations: Kaupapa Māori health models and rongoā Māori. Mental health, chronic disease, and child wellbeing. Structural equity in health systems.

SI&T Opportunities

Genomics, precision medicine, public health research, and indigenous health data platforms. Māori-led health research institutes (e.g., Whakauae, Indigenous Genomics Institute).

Economy and Innovation

Key Aspirations:

Sustainable enterprise, carbon markets, aquaculture, and agritech. Development of Māori innovation hubs and regional SI&T institutes.

SI&T Opportunities:

Commercialisation of indigenous innovations. Support for ventures in climate tech, food systems, and bioeconomy with the Māori Economy.

Education and Workforce Development

Key Aspirations:

STEM pathways for rangatahi. Kaupapa Māori education and tertiary access. Building Māori SI&T workforce capability.

SI&T Opportunities:

Investment in Māori STEM career pipelines. Support for Māori tertiary institutions and research centres.

Governance and Futures Thinking

Key Aspirations:

Māori participation in SI&T decision-making. Futures thinking grounded in mātauranga Māori. System transformation that reflects Māori aspirations.

SI&T Opportunities:

Indigenous foresight, scenario planning, and systems design.

Annexes for Section 1.2 - White Space Funding

Annex 14: White Space Funding – International and NZ context

Comparable White Space Fund style programmes like White Space (Singapore), Moonshots (Japan) & ARIA (UK) have key commonalities, they are:



- large in scale, including multi-year investments in billions and hundreds of millions of dollars
- supported by mature and sophisticated industries and infrastructure
- designed to advance long-term, well defined strategic missions
- embracing uncertainty to support bold transformative ideas, failure is an option
- allowing for devolved decision making by providing autonomy to expert programme managers
- anchored in targeted legislation

New Zealand's SI&T system is comparatively small, immature and underfunded, this creates different incentives and trade-offs for white space funding:



- white space could be considered in terms of addressing system funding 'blind spots'
- adding extra flexibility at a *much* smaller scale
- providing a contingency, or preparedness for emergency

The literature notes that whitespace-style programmes and agencies like US' ARPA (which UK's ARIA is modelled on) succeed when sufficient funding supports risk absorption, long time horizons, freedom to explore, investment signaling and requisite talent and infrastructure.

Annex 15: UK's ARIA White Space Fund Model

Advanced Research and Invention Agency (ARIA), based on US DARPA, est. 2023 with initial budget of £800 million over 5 years, underpinned by ARIA Act 2022.

1.Vision/Application	Month 0	PM applies to ARIA with a bold vision (e.g. flying personal transport device)
2.Seed Funding	Within weeks	£50,000 awarded to develop a 3-month proposal
3.Proposal Development	Months 1-3	PM develops a full research programme plan
4.Programme Approval	Month 4	Proposal approved with only 2 sign-offs (Director + CEO)
5.Programme Launch	Month 5	£20 million allocated for a 5-year programme
6.Commissioning	Months 5-12	PM commissions research across universities, startups, and consultants
7.Agile Execution	Years 1-5	PM starts/stops projects as needed, reallocates funds, and iterates rapidly
8.Exit/Transition	End of Year 5	IP transfer, spinouts, or co-investment in firms supported by ARIA staff

Note: white space mechanisms are used in different jurisdictions, but as strategic funds their design, input and output are not readily or publicly available for comparison.

*PM = **Programme Manager**

Key Enablers:

- ARIA has **legislated autonomy**
- ARIA is **exempt** from public procurement **regulations**
- ARIA is **not subject to** Freedom of **Information act**
- ARIA is **legally permitted** to prioritise **high-risk research**, even if failure is likely
- Only **two approvals** (Director + CEO) are needed **for major decisions**; peer review is optional
- ARIA **cannot be dissolved** for at least 10 years after its establishment
- ARIA **has flexible funding tools** – grants, loans, equity investments, prizes

Other Annexes – approach to research priorities, notes of data and caveats, and prioritisation criteria

Annex 16 Note on Data and Caveats

- This analysis draws on SEO ANZSRC codes applied to MBIE’s contestable and strategic investment funds for the 2024/25 financial year. While every effort has been made to ensure accuracy, it’s important to acknowledge the human element in the coding and interpretation process. Minor discrepancies may exist—for example, some totals may not fully reconcile due to the exclusion of very low-value investments to maintain clarity and focus.
- We have made a few adjustments to improve interpretability and alignment with policy intent:
 - The **‘Expanding Knowledge’** ANZSRC category has been relabelled to **‘Basic and Fundamental Research’** to better reflect its purpose in supporting foundational understanding.
 - The **‘Animal and Plant Production’ ANZSRC** category has been relabelled to **‘food production system components and fibre and trees’**
 - The **‘Various’** category includes small funding allocations spread across multiple ANZSRC codes within the same classification group.
 - Overall, we are confident that this approach provides a robust and representative view of the investment landscape, despite minor limitations.