Sustainable Space Initiative

RESEARCH SUMMARY

JOURNAL OF THE ROYAL SOCIETY OF NEW ZEALAND · 2024 · OPEN ACCESS

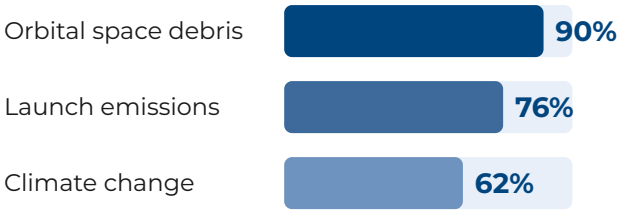
Sustainability within Aotearoa New Zealand's aerospace sector: current state and implications for the future

Sarah Bickerton, Carolle Varughese, Cody Mankelow, Stevie Katavich-Barton, Thomas Dowling, Minduli Wijayatunga, Catherine Qualtrough, Benjamin Kirollos, Lena Henry, Nicholas Rattenbury, Adam Morris, Priyanka Dhopade

A young aerospace sector is a chance to build sustainability in from the start. But our survey and interviews found the sector puts economic growth ahead of environmental sustainability and Te Tiriti o Waitangi.

WHAT SUSTAINABILITY MEANS TO THE SECTOR

Survey respondents who linked sustainability with...



22%
response rate from 100 aerospace businesses surveyed

10
expert interviews, 4 with Māori participants

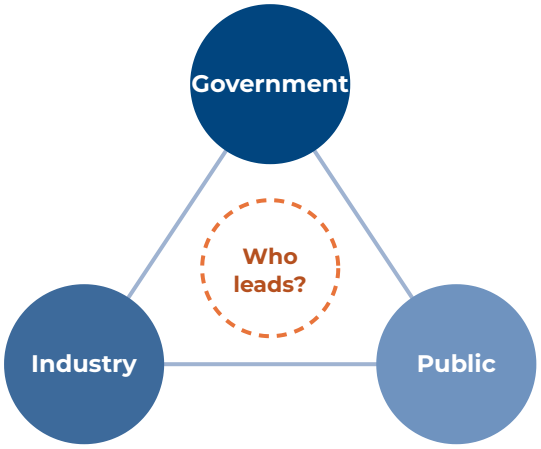
NZD 1.75b
a year from the sector (2019)

20 yrs
before respondents expect sustainability to become a major issue

Biggest pressures: funding, staffing and regulation. Respondents expect the Government to lead on sustainability.

A SUSTAINABILITY LEADERSHIP VACUUM

customer · investor · regulator



The space sustainability paradox. The sector focuses on how space data helps sustainability on Earth, not on its own footprint. Debris and emissions are treated as technical problems to fix, not system-wide issues.

The Government paradox. The Government is the sector's customer, investor and regulator, and is relied on to lead. With limited resources, it skews towards growth, and no one takes responsibility for sustainability.

The way forward: co-leadership through co-designed, whole-system governance, in partnership with Tangata Whenua. Tāwhaki shows what this can look like.

ISSUES, RISKS AND OPPORTUNITIES

Issues

- A siloed sector with little Te Tiriti engagement
- Congestion and lost room in low Earth orbit
- Weak international regulation and enforcement
- Reliance on fossil fuels

Risks

- Limited resources and political leadership
- Privatisation of data and open access
- Gaps in rules on public safety, data and privacy
- Growing debris and emissions

Opportunities

- Industry: innovation, accountability, transparency
- Government: leadership, incentives, agile rules, bi-cultural frameworks
- Public: Indigenous knowledges, intergenerational thinking
- Sustainability as a skill

Bickerton, S. et al. (2024). Sustainability within Aotearoa New Zealand's aerospace sector: current state and implications for the future. *Journal of the Royal Society of New Zealand*. doi.org/10.1080/03036758.2024.2377316

ssi.org.nz