

Prepared by the New Zealand Embassy in Tokyo

Summary

- [New Zealand's space industry](#) is estimated to be worth more than \$1.75 billion and growing, employing about 5,000 people and another 7,000 in support services. New Zealand's 240 space-related companies are diverse, ranging from launching payloads to satellite data collection, dark skies tourism and a re-usable space plane to take satellites into orbit. We provide an overview of Japan's space sector for New Zealand space companies considering collaboration with Japanese counterparts

Report

Overview of the Japan space industry

The market size of Japan's space industry is currently estimated to be worth NZ\$15 billion (annual revenue), and is expected to grow to NZ\$57 billion by 2050. Including space-adjacent sectors – e.g. services using location data from satellites – the market is predicted to grow to NZ\$770 billion by 2050.

The “upstream” segment of the market – focused on manufacturing space equipment – is worth NZ\$4.6 billion. The “downstream” segment – centred on using space to provide services, such as earth observation, global navigation and satellite communication – is worth NZ\$10.4 billion.

Segment	Focus	Types of companies	Market size
Upstream	Space equipment (goods)	“Old Space” “New Space”	NZ\$4.6 billion
Downstream	Space utilisation (services)	“New Space”	NZ\$10.4 billion
		Total market size	NZ\$15 billion

“Old Space” companies – i.e. large established companies, such as Mitsubishi Heavy Industry, IHI Aerospace, Mitsubishi Electric and NEC – dominate the “upstream” segment of the market, which relies heavily (90%) on government demand.

“New space” companies – i.e. smaller recent entrants to the market – dominate the “downstream” segment of the market, and have some presence in the “upstream” segment. The number of start-ups in the space industry is increasing, with 54 (as of 2020) operating in a range of fields (see diagram below). Approximately 70% of these start-up companies have some connection to Japanese universities. (Note: Japanese Earth-imaging company [Synspective](#) – bottom-left of the diagram below – launched a two-stage electron booster from Rocket Lab's New Zealand launch site in December 2020.)

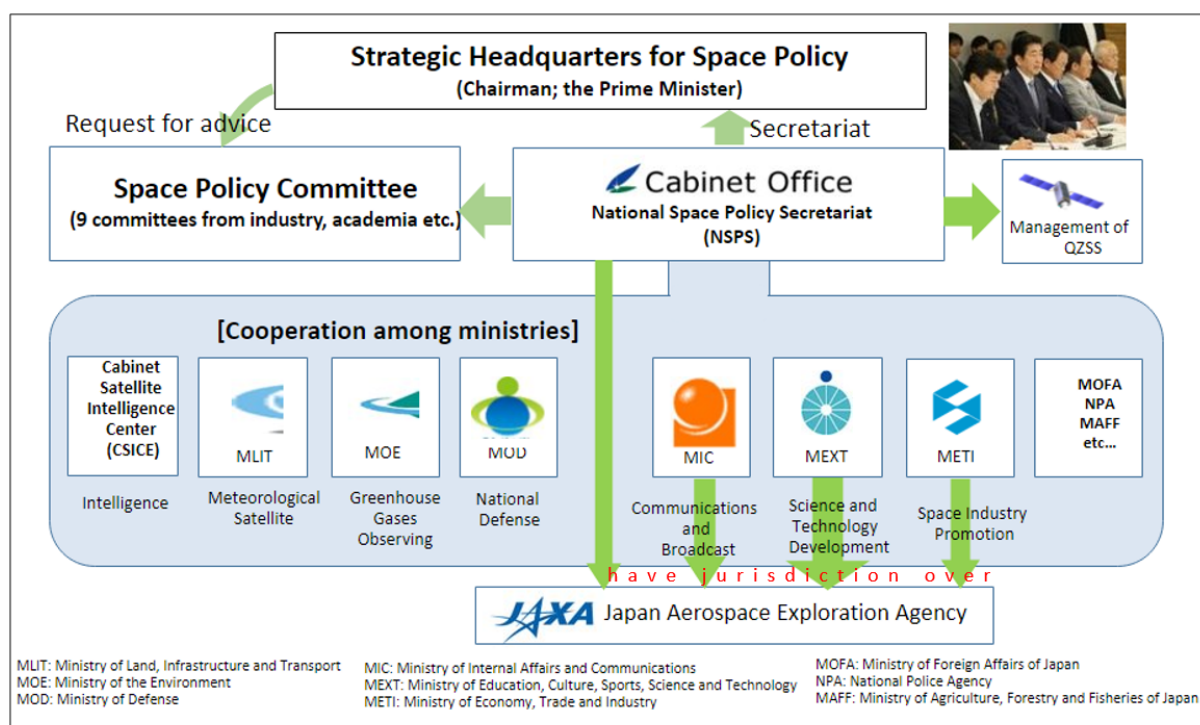


Source: METI

Traditionally the bulk of government funding was provided to “Old Space” companies, forcing many start-ups to rely on venture capital. However, the number of venture capital companies investing in the space sector is increasing rapidly (with 120 funds having invested NZ\$900 million, including NZ\$200 during 2020), and the government is moving to provide funding to both “Old Space” and “New Space” companies.

Japan's space sector – government structure

A wide variety of government agencies are involved in Japan's space sector, as illustrated below. The Cabinet Office's National Space Policy Secretariat (NSPS) – staffed with secondees from line agencies – plays a coordinating role in policy formulation. Line agencies provide space policy recommendations within their individual bailiwicks. For example, the Ministry of Economy, Trade and Industry (METI) formulates policy on space industry promotion; and the Ministry of Education, Culture, Sports, Science and Technology (MEXT) formulates policy on science and technology development in space. JAXA sits below the line agencies – its role is to implement the government's space policies, by conducting R&D in terms of both pure science and technological applications.



Source: Cabinet Office

Japanese government's economic development policies in the space sector

The areas of focus identified in June 2021 by the government in its Growth Strategy Action Plans, and the NSPS in its updated priority areas for the Basic Space Policy are almost identical:

- Building constellations of small satellites through procurement deals open to Japanese companies
- Demonstration of next-generation space technologies such as on-orbit computing and optical communications
- Launching the Quasi-Zenith satellite system and Earth observation satellites to have integrated disaster prevention and management capabilities
- Establishing a space system to monitor greenhouse gases
- Responding to social issues with R&D on space-based solar power
- Participation in the Artemis Program and Mars exploration, with industrial cooperation with the United States in sight, in pursuit of the goal of becoming Asia's hub in space business including spaceports
- Complete the development of [H3 rocket](#) and R&D on future space transportation system

JAXA's priorities and budget for the current financial year

JAXA's budget for the current financial year (April 2021 – March 2022) is NZ\$2.8 billion, out of the government's total space budget of NZ\$5.9 billion. JAXA's priorities are as follows.

Main activities	R&D for participation in the US-proposed international space exploration " Artemis Project " Development of the H3 Launch Vehicle and its payload Advanced Radar Satellite (ALOS-4) Promotion of research and development of next-generation aeronautical science and technology
New activities	Hayabusa2 extended mission R&D programme for future space transportation system R&D programme for small technology innovation satellite
Collaboration with Japanese companies	Quasi-Zenith Satellite System (QZSS) Satellite remote sensing International space exploration Low Earth orbit activities including International Space Station (ISS) Space transportation system – launch schedule: here JAXA also engages with Japanese companies via the JAXA Space Innovation through Partnership and Co-creation (J-SPARC) programme.
Collaboration with foreign companies	While JAXA does not prioritise engaging with foreign companies, the NSPS administers the S-Booster contest for "new business ideas utilising space assets from people who aim to launch new projects in their companies or start new businesses".

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