

## Contract between the New Zealand Government and Rocket Lab

### Proposal

1. To seek Cabinet's agreement to the Minister for Economic Development signing the contract between the New Zealand Government, Rocket Lab New Zealand, and Rocket Lab USA (the contract). A near to final draft of the contract is attached as Annex One.

### Executive Summary

2. Space is of immense strategic importance around the world. Globally the space industry is big business and growing at pace. To facilitate the development of a New Zealand-based space industry, in December 2015, Cabinet agreed to the high-level design of a new domestic regulatory regime for space activities [Cab Min (15) 0274 refers]. The Outer Space and High Altitude Activities Bill (the Bill) is scheduled for introduction in the House in late August 2016, and to be passed into law in mid-2017.
3. Rocket Lab, a New Zealand-based company whose United States (US) parent has a substantial New Zealand shareholding, intends to start its launch activities from the Mahia Peninsula later this year. The contract between the New Zealand Government, Rocket Lab New Zealand, and Rocket Lab USA (the contract) is an interim measure intended to:
  - authorise Rocket Lab's space activities from New Zealand;
  - manage Government liability under the United Nations Liability Convention (the Liability Convention); and,
  - implement New Zealand's obligations under the Technology Safeguard Agreement with the United States (TSA), enabling it to enter into force.
4. Once the contract is signed, Rocket Lab will be authorised to launch an unlimited number of launch vehicles for which it holds relevant US licences. As the responsible Minister, I can decide not to permit the launch of each payload (including US payloads).
5. Officials, including from the security agencies, have undertaken a number of steps to provide assurance that all the necessary checks and balances are in place to permit Rocket Lab's launch operations in New Zealand under the contract.
6. Once the Bill is enacted, Rocket Lab will be subject to the new regime and the Government can choose to terminate the contract. My officials have taken into account the requirements provided for in the draft Bill as part of developing the contract to ensure consistency between the two.
7. The contract is now almost finalised. As the Minister responsible, I am seeking Cabinet approval that I finalise the contract and make any minor adjustments needed, and sign the contract on behalf of the Government after Parliamentary treaty examination for the TSA is completed.

### Background

8. Rocket Lab, a New Zealand-based company whose United States (US) parent has a substantial New Zealand shareholding, intends to offer regular commercial space launches from the Mahia Peninsula. A recent independent economic analysis estimates that Rocket Lab's operations could contribute between \$400 and \$1,150 million over 20 years in value added to the New Zealand economy in the form of direct, indirect and induced impacts.<sup>1</sup>
9. The opportunities for New Zealand are much wider than Rocket Lab's specific operations. Space is of immense strategic importance around the world. Globally the space industry is big business and growing at pace.<sup>2</sup> An internationally competitive, well-connected and

<sup>1</sup> Sapere, 2016

<sup>2</sup> OECD, The Space Economy at a Glance, 2014

credible New Zealand-based space industry would create new openings to design, build and have satellites in space, and to apply associated advanced technologies to a range of downstream applications that would feed into other New Zealand high technology businesses. It would also increase New Zealand's international reputation as a high-tech and innovative economy.

10. To facilitate the development of a New Zealand-based space industry, in December 2015, Cabinet agreed to the high-level design for a new domestic regulatory regime, to:
  - enable safe, secure and responsible space launches from New Zealand; and,
  - comply with our international obligations, including those arising from the United Nations (UN) Outer Space Treaty and the Liability Convention (acceded to in 1968 and 1974, respectively) [Cab Min (15) 0274 refers].
11. In May 2016, Cabinet also agreed to:
  - New Zealand's accession to the UN Registration Convention, which will provide a mechanism to agree with other State Parties on who should register, and retain jurisdiction and control, over a space object [Cab Min (16) 0237 refers]; and,
  - enter into a Technology Safeguard Agreement with the US (TSA) which will allow commercial entities in New Zealand, including Rocket Lab, to import launch technology and satellites from the US [EGI-16-Min-0121 refers].
12. I will soon seek Cabinet's approval to introduce the Outer Space and High Altitude Activities Bill (the Bill) to the House. The Bill is scheduled to be passed into law in mid-2017. The Registration Convention and the TSA will be implemented via the Bill, and are currently undergoing Parliamentary treaty examination (PTE).

**Comment**

**Purpose of the contract**

13. Rocket Lab intends to start its space activities later this year, before the Bill is passed into law. As previously agreed by Cabinet [Cab Min (15) 0274 refers], the contract between the New Zealand Government, Rocket Lab New Zealand and Rocket Lab USA (the contract) is an interim measure intended to:
  - authorise Rocket Lab's space activities from New Zealand;
  - manage Government liability under the UN Liability Convention (the Liability Convention); and,
  - implement New Zealand's obligations under the TSA enabling it to enter into force.
14. Once the Bill is enacted, Rocket Lab will be subject to the new regime and the Government can choose to terminate the contract.<sup>3</sup> To ensure that the contract is consistent with the high-level design for a new domestic regulatory regime already agreed to by Cabinet, my officials have taken into account the requirements set out in the draft Bill as part of the:
  - pre-contract assurance processes undertaken to determine that we have the necessary checks and balances in place to permit Rocket Lab's launch operations in New Zealand; and,
  - definition of the terms and conditions to be included in the contract, including the types of activities authorised, controls and safeguards provisions, and insurance and indemnity requirements.
15. This also provides continuity for Rocket Lab between operating under the contract and, ultimately, the new regime once the Bill is enacted.
16. In addition to complying with the contract, Rocket Lab is required to comply with all other relevant areas of New Zealand regulation and law.

<sup>3</sup> Contract, clause 12, refers

**Pre-contract assurance processes**

17. The draft Bill provides that before authorising space activities (including launches and payloads), as the responsible Minister, I must be satisfied that the risks to public safety can be managed, the launch does not present a national security risk, and that proposed activities comply with New Zealand's international obligations.
18. To provide confidence that the Government can permit Rocket Lab to conduct its launch activities from New Zealand, officials have taken the provisions in the draft Bill into account and conducted a series of assurance checks. As Rocket Lab will also need to obtain a licence from the US Federal Aviation Administration (FAA) before it can conduct its activities from New Zealand, the FAA licencing processes have also been considered.
19. Officials have concluded that:
  - the New Zealand Government can rely on the FAA licence process to make a suitable determination about Rocket Lab's ability to manage launch safety appropriately;
  - all matters that may not be adequately covered (for our purposes) by an FAA licence can be suitably covered by existing domestic law and provisions within the draft contract;
  - Rocket Lab's vehicle and launch operation do not present any risks to New Zealand's national security;
  - no inconsistencies have been found between the launch operations permitted under the contract and our obligations under the UN space treaties;<sup>4</sup> and,
  - with respect to relevant international treaties in areas not directly related to space activities, there are a number of areas where Rocket Lab may need to do additional impact assessments or secure additional consents above those that they had already envisaged, to ensure consistency with New Zealand law that implements the relevant treaties. Analysis continues in order to provide certainty to Rocket Lab on what needs to be done.

**Space activities authorised**

20. Under the draft Bill, in line with the policy agreed to by Cabinet in December 2015, the responsible Minister may grant a:
  - launch licence for the launch of one or more launch vehicles of a particular type from a particular launch facility; and
  - payload permit for launching or procuring the launch of a payload.
21. The draft Bill also provides that the responsible Minister may treat the fact that an applicant holds a licence, permit, or other authorisation granted in a country other than New Zealand as satisfying the criteria for granting a licence or a permit, except for national security.
22. Consistent with the draft Bill, in authorising Rocket Lab's activities, the contract therefore provides that:<sup>5</sup>
  - in relation to launch vehicles, Rocket Lab is authorised to launch an unlimited number of its launch vehicles for which it holds relevant US licences from its facilities. This provides Rocket Lab with a degree of certainty to conduct their activities; and,
  - in relation to payloads (including US licensed and US Government payloads), Rocket Lab must provide all relevant information to the Government before launch. The Government has absolute and unfettered discretion to not permit the launch of payloads that are contrary to New Zealand laws or regulation, international obligations, or that prejudice New Zealand's national interest and national security. This ensures that the Government can on a case-by-case basis decide whether not to permit the

<sup>4</sup> New Zealand is currently a party to three out of five UN Space Treaties: namely the Outer Space Treaty, Liability Convention and the Rescue Agreement. Cabinet has recently agreed to the accession to the Registration Convention. Further advice on accession to the Moon Agreement will be provided.

<sup>5</sup> Contract, clause 3, refers

launch of each payload.

23. Once the contract is signed, Rocket Lab will be able to conduct the test launches for which it holds the relevant US licence but, as the Minister responsible, I can decline the launch of any payload.

### **Safeguards to manage any potential Government liability**

24. Under international law the New Zealand Government could potentially be held liable for certain damages caused by Rocket Lab's launch activities from New Zealand.
25. The UN Liability Convention provides that a launching State is absolutely liable (when the damage is caused on the surface of the Earth or to aircraft in flight), or on a fault-basis (when the damage occurs in space). When more than one launching State is involved, States are jointly and severally liable. Liability does, however, not arise for damages to nationals of the launching State(s) or foreign nationals participating in the operation of the space object (e.g. employees at a launch facility).
26. In other jurisdictions, Governments manage their potential liability for commercial space activities using a mix of:
- technical controls conducted as part of the processes authorising space activities (e.g. licences or permits) to reduce the likelihood of an adverse event occurring;
  - insurance and indemnity requirements on the commercial operator to manage any fiscal implications of an adverse event occurring by ascribing a certain amount of the financial responsibility to the commercial launch and/or payload operator; and;
  - Government indemnity arrangements, whereby a Government would assume some of the financial responsibility in excess of insurance (up to a certain amount, or for an unlimited amount)<sup>6</sup> in cases of damages caused by a commercial operator.
27. The draft Bill provides for technical controls as part of launch licence and payload permits requirements, and confers to the responsible Minister the ability to decide case-by-case whether to request the licensee or a permit holder to have insurance or to indemnify the Crown.
28. For the specific case of Rocket Lab's space activities authorised under the contract, technical controls are provided by the assessments conducted to assure that public safety risks associated with Rocket Lab's space activities are managed to acceptable levels (see para 19 above).
29. To manage any financial implications of an adverse event occurring, I propose that the contract includes insurance and indemnity requirements that are similar to those imposed under the US licencing regime. These are outlined in more detail below.

30. The requirements proposed leave a residual level of risk that the Government may be liable for certain damages caused by Rocket Lab's activities under the Liability Convention. However, as outlined in more detail below, the probability of this is very low. To eliminate risk entirely would mean not to allow space activities from New Zealand. s 9(2)(b)(ii)

  and as a result stifle the growth of a New Zealand-based space industry.

31. These requirements reflect the specific circumstances of the space activities Rocket Lab will undertake under the contract, and do not pre-empt any further decisions the responsible Minister may make on insurance or indemnity requirements under the new regime once the Bill is enacted.

*Rocket Lab is required to take up insurance in relation to launch activities*

32. As part of its FAA licence, Rocket Lab is required to have insurance up to Maximum

<sup>6</sup> In the US it is up to US \$ 1.5 billion (adjusted for inflation currently up to US \$ 2.8 billion). In the UK, China, Russia and Australia it is unlimited.

Probable Loss (MPL)<sup>7</sup> for launch activities (including launch of a launch vehicle and the payload). I propose that the contract requires Rocket Lab to include the New Zealand Government as a co-insured party to cover potential liability (up to MPL) from launch activities.<sup>8</sup> MPL is calculated by the FAA, and is a very conservative estimate of any possible damage to property and personal injury (including damages that are not covered by the Liability Convention) that could be caused by the launch of a rocket and by the payload as part of the launch activity.<sup>9</sup>

33. The US does not impose an additional insurance requirement on commercial launch operators for damages above MPL. For the specific circumstances of this contract, I do not propose that Rocket Lab be required to take up additional insurance for launch activities above the MPL, as the probability of damages occurring that exceed the MPL calculation is very low,<sup>10</sup> and there has never been a claim approaching or above MPL.
34. In the case of Rocket Lab's activities from New Zealand, the MPL calculation does not cover pre-launch activities (i.e. damages that could arise as a result of operations that occur before the moment of the ignition of the rocket). I do not propose that Rocket Lab be required to take up additional insurance for pre-launch activities. This is because liability under the Liability Convention is extremely unlikely to arise, as liability does not arise for damages to nationals of the launching State(s) and foreign nationals participating in the operation of the space object. In the event of damage to property, our domestic civil rights and remedies would apply as for any other commercial operator. Personal injury would be managed under the Accident Compensation Corporation scheme. Furthermore, the FAA licence requires cross-waivers between companies involved in the launch.

*Rocket Lab is not required to take up insurance in relation to payloads in orbit*

35. As part of their FAA licence, Rocket Lab is not required to take up insurance in relation to payloads once they are in orbit.<sup>11</sup> For the specific circumstances of the contract, I do not propose that Rocket Lab (or its customers) be required to take up insurance for damages caused by a payload in orbit. The probability of an event causing damage from a payload in orbit, especially cube satellites, is very low. A recent UK study found the probability of collision of a standard satellite platform in Low Earth Orbit (LEO) is  $7.7 \times 10^{-6}$  per year (that is 0.0000077).<sup>12</sup> Causality for damage caused by a payload in orbit (which is fault based) could also be extremely difficult to establish.
36. Similar approaches are taken by China, France and Russia. In the UK, insurance can be required for payloads in orbit (for up to Euro 60 million), § 6(b)(i)

*Rocket Lab is required to pass on any indemnity provided by the US Government to the New Zealand Government*

37. Under the US regime, pursuant to an Act of Congress, the US Government may choose to provide an indemnity in cases of a successful claim (including reasonable litigation or

<sup>7</sup> The maximum loss that an insurer would be expected to incur on a policy. MPL analysis yields, in dollar amount, the greatest potential losses for bodily injury and property damage that could reasonably be expected to result from a launch accident.

<sup>8</sup> Contract, clause 15, refers

<sup>9</sup> For example, section 417.107(b) of the US Code Of Federal Regulation allows a launch operator to initiate flight only if the risk associated with the total flight to all members of the public, excluding persons in waterborne vessels and aircraft, does not exceed an expected average number of 0.00003 casualties ( $E C \leq 30 \times 10^{-6}$ ) from impacting inert and impacting explosive debris, ( $E C \leq 30 \times 10^{-6}$ ) for toxic release, ( $E C \leq 30 \times 10^{-6}$ ) and for far field blast overpressure. Additionally, a launch operator must implement water borne vessel hazard areas if the probability of impact with debris capable of causing a casualty on any given water borne vessel did exceed 0.00001 ( $1 \times 10^{-5}$ ).

<sup>10</sup> The MPL is structured so that the risk estimate of government indemnification obligations is no greater than 1 in 10 million commercial space launches (a probability of 0.0000001). US Department of Transportation and FAA, *Liability Risk-Sharing Regime For U.S. Commercial Space Transportation*, April 2002:

<sup>11</sup> Generally the FAA launch licence would cover the payload for up to 30 days after launch. This may vary depending on the specific circumstances of the launch and characteristics of the payload.

<sup>12</sup> This probability was calculated by the UK Department of Business Innovation and Skills, *Impact Assessment of the Review of the Outer Space Act (1986)*, 2011.

settlement expenses) of a third party.<sup>13</sup>

38. In practice, however Congress has never been asked to make such a decision in response to a claim under Liability Convention, as there has never been a successful claim brought against the US.

39. The contract requires Rocket Lab to pass on to the New Zealand Government the benefits of any indemnity provided by the US Government. s 9(2)(j)

### Safeguards and controls included to give effect to the TSA

40. In May 2016 Cabinet agreed to the text of the TSA [EGI-16-Min-0121 refers]. In the long-term the TSA will be implemented via the Bill. However, Cabinet agreed that in the interim New Zealand would implement the TSA through the contract with Rocket Lab [Cab Min (15) 0274 refers].

41. The contract contains provisions to enable the requirements of the TSA to be met.<sup>14</sup> In practice, these provisions provide the New Zealand and the US Governments with the assurance that the sensitive technology is secure. This allows Rocket Lab to access sensitive US space launch and satellite technology that it needs to start its commercial operations from New Zealand before the Bill is enacted.

### Additional controls, suspension and termination

42. Under the contract, Rocket Lab is required to notify the Government of any changes to their US licences, and the Government has the right to require any information as necessary.

43. The Government also has the right to suspend Rocket Lab's activities if it considers that any launch activities, a launch, or a payload would or might be contrary to New Zealand regulations or policy, cause New Zealand to breach its international obligations, or prejudice New Zealand's national security interests or other national interests.<sup>15</sup>

44. The Government can terminate the contract at any time in a broad range of circumstances, including if:<sup>16</sup>

- the Government reasonably considers the safety of persons involved in launch activities or other persons in New Zealand face risks to their safety which cannot be reasonably managed;
- the Government considers that launch activities may raise a significant actual or potential risk to New Zealand's national security or other national interests;
- the Government introduces a regulatory regime in respect of space activities;
- the TSA is terminated;
- Rocket Lab undertakes any activities which result in, or the Government reasonably considers will result in, it being in breach of any of its obligations under the TSA or any other agreements, treaties or conventions; or
- Rocket Lab gives or provides any information, representation or statement to the Government that is misleading or inaccurate in any material respect; or
- Rocket Lab becomes financially unviable;
- Rocket Lab is removed from the register of companies, or the U.S. equivalent to the register of companies; or;
- Rocket Lab's US licences or any other approval, authorisation or consent required

<sup>13</sup> The FAA may choose to seek an Act of Congress to pay indemnity up to a US\$ 1.5 billion amount, adjusted by inflation (currently US \$2.8 billion) [51 U.S. Code § 50915, refers].

<sup>14</sup> Contract, clause 6 and Schedule 1, refer

<sup>15</sup> Contract, clause 3.5, refers

<sup>16</sup> Contract, clause 12, refers

under the laws and policies of the US is suspended, terminated or revoked.

### Process for signing the contract

45. As the contract with Rocket Lab will implement the TSA, I propose that the contract not be signed before PTE for the TSA is completed. PTE for the TSA commenced on 14 June and will complete no later than 23 August 2016.
46. As the Minister responsible, I seek Cabinet approval that I finalise the contract, make any minor adjustments needed, and sign the contract on behalf of the Government after PTE is completed.

### Financial Implications

47. There are no direct financial implications associated with the signing of the contract.

### Publicity

48. Any publicity will be managed by the Office of the Minister for Economic Development.

### Consultation

49. The following government agencies have been consulted: the Treasury, the Ministry of Foreign Affairs and Trade, the Ministry of Transport, the New Zealand Defence Force, the Ministry of Defence, the Department of Prime Minister and Cabinet, the New Zealand Security Intelligence Service, and the Government Communications Security Bureau.

### Recommendations

50. I recommend that the Committee:
  - 1 **Note** that Rocket Lab intends to start its launch activities later this year, before the Outer Space and High Altitude Activities Bill (the Bill) is passed into law.
  - 2 **Note** that in December 2015 Cabinet agreed that the contract between the New Zealand Government, Rocket Lab New Zealand and Rocket Lab USA (the contract) would provide an interim measure, ahead of the Bill passing into law, to:
    - authorise Rocket Lab's space activities from New Zealand;
    - manage Government liability under the United Nations Liability Convention (the Liability Convention); and,
    - implement New Zealand's obligations under the Technology Safeguard Agreement with the United States (US)(TSA) enabling it to enter into force [Cab Min (15) 0274].
  - 3 **Note** that I am satisfied that the checks and balances are in place in New Zealand to ensure that Rocket Lab's operations will be safe, will not present risks to national security, and will be consistent with our international obligations.
  - 4 **Note** that once the contract is signed:
    - Rocket Lab will be authorised to launch an unlimited number of launch vehicles for which it holds relevant US licences; and,
    - the Government can decide on a case-by-case basis not to permit the launch of any payload (including US payloads).
  - 5 **Note** that under the Liability Convention, the New Zealand Government could potentially be held liable for certain damages caused by Rocket Lab's launch activities from New Zealand, and that the contract includes insurance and indemnity requirements to manage these.
  - 6 **Note** that the insurance and indemnity requirements proposed leave a residual level of risk that the Government may be liable for certain damages caused by Rocket Lab's activities under the Liability Convention, but that the probability of this eventuality is very low.
  - 7 **Note** that the contract contains provisions to enable the requirements of the TSA to be met.
  - 8 **Note** that the TSA is currently undergoing Parliamentary treaty examination (PTE).

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- 9 **Note** that the Government can suspend Rocket Lab's activities or terminate the contract at any time as provided for in the contract.
- 10 **Authorise** the Minister for Economic Development to finalise the contract, and to make any minor adjustments needed.
- 11 **Authorise** the Minister for Economic Development to sign the final contract after PTE completes on the TSA.

Authorised for lodgement

Hon Steven Joyce, Minister for Economic Development

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OFFICIAL INFORMATION ACT