



13 March 2019

Document Number: Sub19-0007

Review of Crown Forestry joint ventures

Purpose:

This paper reviews the purpose and progress of Crown Forestry joint ventures. It recommends the Minister request Cabinet extend the timeframe for signing up joint ventures, and proposes specific issues where the usefulness of a new joint venture mechanism could be explored.

Minister	Action Required:	Minister's Deadline
Minister of Forestry	<p>Forward the draft Cabinet paper to the Forestry Ministers, the Minister of Finance, and the Minister of Māori Development as part of CAB100 consultation.</p> <p>Provide feedback before the end of Monday 25 March so that the submission can be lodged with Cabinet Office on Thursday 28 March.</p> <p>Agree to lodge the Cabinet paper with the Cabinet Office by Thursday 28 March 2019 for consideration by the Cabinet Economic Development Committee on 3 April 2019.</p>	<p>Ahead of proposed lodgement date: Thursday 28 March 2019.</p>

MPI Officials Attending the Meeting

Ruth Fairhall, Director Afforestation Policy

Contact for telephone discussion (if required)

	Name	Position	Work	Mobile
Responsible Manager	Ruth Fairhall	Director Afforestation Policy	Privacy	Privacy
Principal Author	Privacy	Senior Policy Analyst	Privacy	

Key Messages

1. In December 2017, Cabinet agreed to Crown Forestry entering into new commercial forestry joint ventures to build the forestry sector, boost the One Billion Trees programme, and contribute to Māori and regional development.
2. Cabinet agreed to fund the planting of up to four million trees in 2018 and up to 20 million trees in 2019. To achieve this would require signing joint ventures covering 24,000 hectares by 30 June 2019. The combined 30 year funding for the 24 million trees is \$256.6 million.
3. Crown Forestry joint ventures completed to date have:
 - boosted planting by 900,000 trees in 2018, and are projected to plant seven million trees in 2019, with nine million in outyears;
 - driven the expansion of forestry nurseries through seedling orders;
 - developed local labour pilots providing forestry training and qualifications;
 - contributed to Māori and regional development by bringing 8,300 hectares into more productive use via forestry (rising to 18,000 hectares by July);
 - built pathways with Māori Trusts to build capability for forestry self-management and forestry ownership (one third of joint ventures to date).
4. Crown Forestry have a pipeline of more than 47 potential joint ventures which is sufficient to meet their targets. At 30 June 2019 it is expected that 70 to 80 percent of the joint venture funding will be committed to signed contracts. With an extension of a further year Crown Forestry could sign up enough joint ventures to meet their targets and realise the full benefits of the programme.
5. Te Uru Rākau considers that the One Billion Trees objectives are best advanced by continuing to sign up joint ventures as they have a different role and seek complementary outcomes to grants and partnerships.

Draft Cabinet submission

6. The attached draft submission [Sub19-0007] sets out the progress of joint ventures for Cabinet and recommends Cabinet extend the time for Crown Forestry to enter into joint ventures to 30 June 2020.
7. We propose submitting this paper to the Cabinet Office by Thursday 28 March so it can be considered by the Cabinet Economic Development Committee (DEV) on Wednesday 3 April.

Exploring the potential for forestry joint ventures

8. Joint ventures may be a useful tool to address long-term forestry and sustainable development goals such as Māori development, forestry on erosion-prone land, and increasing the diversity of New Zealand's productive forests.
9. Te Uru Rākau is seeking approval to work up detailed proposals, and funding options, for tools to advance these long-term forestry and development goals.

Recommendations

10. The Ministry for Primary Industries recommends that you:

- a) **Forward** the draft Cabinet paper to the Forestry Ministers, the Minister of Finance, and the Minister of Māori Development as part of CAB100 consultation.

Agreed / Not Agreed

- b) **Provide** feedback before the end of Monday 25 March so that the submission can be lodged with Cabinet Office on Thursday 28 March.

Agreed / Not Agreed

- c) **Agree** to lodge the Cabinet paper with the Cabinet Office by Thursday 28 March 2019 for consideration by the Cabinet Economic Development Committee on 3 April 2019.

Agreed / Not Agreed

Free and frank expression

Noted

- e) **Note** subject to your feedback, Te Uru Rākau can develop detailed proposals and funding options on whether a joint venture mechanism could be used to advance the long-term forestry and sustainable development goals noted above.

Noted

Julie Collins
Head of Te Uru Rākau
for Director-General

Hon Shane Jones
Minister of Forestry

/ / 2019

Background

Crown Forestry joint venture delivery – output measures

11. In December 2017, Cabinet agreed to Crown Forestry entering into commercial forestry joint ventures with the objectives of:
 - building the forestry sector’s capacity, particularly the forestry nurseries;
 - providing an initial boost for the One Billion Trees programme; and
 - contributing to the Government’s objectives for Māori development, regional economic growth, and the environment [CAB-17-MIN-0061 (Revised)] and [SUB17-0073].

12. To achieve these objectives Cabinet agreed to fund the planting of up to four million trees in 2018 [CAB-17-MIN-0061 (Revised)] and up to 20 million trees in 2019 (Budget 2018) through joint ventures. This would require joint ventures covering 24,000 hectares and it was envisaged that these could be signed up by 30 June 2019.

13. The combined funding for the 24 million trees is \$256.6 million. This covers the establishment of the trees and maintenance until harvest. s 9(2)(b)(ii)

14. Crown Forestry has received over 250 enquiries from interested parties. Around 150 of these enquiries have been assessed as either not suitable or have withdrawn from the process.

15. Enquiries about forestry joint ventures have primarily come from:
 - Farmers (generally sheep and beef), including Māori farmers, motivated by:
 - i. diversifying their land use and revenue streams;
 - ii. more productive use of poorer pasture, or steeper, less accessible land;
 - iii. an active interest in farm-scale forests for multiple benefits
 - iv. relief from financial distress or smaller than viable farm
 - v. capital injection for investment in other parts of the farm¹
 - vi. Aging or less active farmers looking to reduce workload and secure a steady income. A forestry asset can also help with succession on family farms.
 - Māori landowners with unproductive land – including several with failed eucalypt or acacia tree crops;
 - Second rotation Māori forest-land owners where legacy issues associated with first-rotation leases have inhibited replanting; and
 - Investors seeking rural properties (attracted by prospect of Crown paid rent and the opportunity to earn carbon income).

¹As set out by Treasury, Crown Forestry are able to pay a capitalized lump sum up front for payments in years one to eight.

16. Joint venture proposals do not proceed for a variety of reasons, commonly including:
- projects not meeting initial size, land cover, location, or access criteria for consideration;
 - sites restricted by the National Environmental Standards for Plantation Forestry (red and orange zoned land has higher levels of uncertainty, and probable cost, around planting and harvesting activities);
 - parties disagree on rental price, or other issues such as species choice, plantable area, and boundaries.
17. Funding was provided to contract Crown Forestry joint ventures to the end of 2018/19. Without further Cabinet direction Crown Forestry will stop executing contracts after 30 June 2019. As negotiations and contracting typically take several months, it will not be possible to progress the entire pipeline of interest to execution by that date (refer tables 1 and 2 below). Without a clear signal to continue, Crown Forestry will need to cease negotiations with many of the landowners shortly, to avoid creating a moral obligation that it is unable to fulfil.
18. The contracts include planting over multiple years as for many of the joint venture partners this provides a more sustainable development model (better employment and cashflow outcomes).
19. As at 13 February 2019 [To be updated closer to lodgement], Crown Forestry have executed 14 joint ventures (refer Appendix 1 for a synopsis of the 14) covering 8,300 hectares which will entail planting 6.4 million trees between 2018 and 2024.
20. Table 1 shows there is more than sufficient interest already under consideration for Crown Forestry to meet its targets. However, it will require more time.

Table. 1 Pipeline of forestry joint ventures as at 13 February 2019

Forestry joint ventures	Number of joint ventures	Total forest hectares	2018 tree planting (000s)	2019 tree planting (000s)	2020 tree planting (000s)	Out-years tree planting (000s)	Standing forest [†] Hectares
1. Signed	14	8,300	600	3,100	1,700	1,000	1,900
2. Drafted	12	4,800	100*	2,500	1,300	500	400
3. In negotiation	9	5,300	200*	1,700	2,100	500	800
4. Active discussion	11	4,000	-	200	3,300	500	-
5. Expression of interest	15	5,400	-	-	4,400	1,000	-
Total	61	27,800	900	7,500	12,800	3,500	3,100

* Two Māori-land blocks chose to undertake planting in 2018 ahead of a Crown joint venture being signed. When these agreements are completed they will cover the areas planted in 2018.

[†] There are areas of existing plantation forest in some joint ventures which do not require planting. The reasons for this are explained in the 'Standing trees' section later in the paper.

22. Crown Forestry expect to sign a further 22 to 28 joint ventures by 30 June 2019 which will increase the number of trees contracted to be planted, hectares covered, and funding committed as shown in Table 2 below.

Table 2. Projection for expected signed joint ventures to 30 June 2019

Measure	Projection to 30 June 2019
Tree planting (2018 to 2024)	15 million to 17 million trees 60% to 70% of up to 24 million target
Forestry hectares	18,000 ha to 20,000 ha 75% to 85% of up to 24,000 target
Funding committed	\$177 million to \$201 million 70% to 80% of funding

Constraints on signing up joint ventures by 30 June 2019

23. The availability of land has not been a constraint with plenty of landowners expressing interest in joint ventures. However, once Crown Forestry has reached agreement on terms with a landowner, it is taking longer than anticipated to work through the legal and procurement process and to begin tree planting. Many landowners, and their legal agents, are unfamiliar with forestry rights and Crown Forestry spends time helping them to understand standard forestry clauses.
24. For new plantings, forestry is a switch to a 30 year land-use. Many landowners understandably want to take the time to carefully consider this long-term investment before fully committing.
25. Further, to meet the broader objectives of the joint ventures Crown Forestry has actively sought out relatively small land parcels. The average size of a joint venture is less than 500 hectares which has meant greater administrative time and effort per million trees planted.

Standing trees, forest hectares and tree planting

26. The divergence between the tree target and the hectare target is due to the inclusion of areas of standing forest within joint ventures. The largest areas relate to existing or regenerating radiata pine forest on Māori land blocks. One of the objectives for those joint ventures is to provide a greater level of management than the Māori land trust could afford otherwise.
27. Some smaller areas of existing plantation forestry have been included in joint ventures for pragmatic reasons. For example an area of existing forest enclosed by the new planting is included, as providing shared access through the new forest would introduce unnecessary risks and complicate forest management.
28. There are 3,100 hectares of such standing forest in the current joint ventures. These hectares still require funding for management and will reduce the achievable tree planting target by around 3 million trees.

Forestry joint venture programme delivery – outcomes

29. The outputs of tree planting and forest hectares are intended to build towards achieving the broader objectives for the joint venture programme:
- building the forestry sector’s capacity, particularly the forestry nurseries;
 - providing an initial boost for the One Billion Trees programme; and
 - contributing to the Government’s objectives for Māori development, regional economic growth, and the environment.

Commercial forestry nurseries have increased capacity

30. In New Zealand the seedling production from commercial forestry nurseries has hovered around 51 million for the past five years². In 2018 seedling production rose to 60 million [AM19-0038]. The Forest Nursery Growers Association has commented that it believes production will increase to close to 90 million in 2019 and has cited Crown Forestry joint ventures as a key contributor to these increases.

31. In 2018 Crown Forestry directly purchased 1.1 million seedlings which accounted for about 12% of the estimated increase in sales and sent an important signal to the nurseries. Commercial sensitivity

Joint ventures will continue to support increased production from nurseries with an estimated 10 to 12 million seedlings required for 2020 and a further 2 to 3 million in outyears.

Boost to the One Billion Trees programme

32. As well as building the forestry sector’s capacity to meet increased planting rates, the direct planting from the joint venture programme provides a tangible early demonstration of the Government’s committing to planting One Billion Trees.
33. Crown Forestry joint ventures expected to be executed by 30 June 2019 are estimated to include the planting of around 15-17 million trees between 2018 and 2024. This is expected to rise to 21 million trees if a further year is granted to continue to sign up joint ventures. With the bulk of this planting spread over four years, joint ventures by themselves are expected to provide 10% of the required increase in annual planting rates in each of these years.
34. Because it was the first One Billion Trees programme up and running it has also been highly visible in the media and generated a lot of interest in forestry and the One Billion Trees programme.

²Provisional estimates of tree stock sales and forest planting in 2018 (MPI 2019)

Contribution to other Government objectives

35. Crown Forestry joint ventures are also anticipated to provide a contribution to the Government's objectives for Māori development, regional economic growth, jobs, and the environment [SUB17-0753].

Māori development

36. For Māori entities joint ventures through Crown Forestry are an effective means to increase community benefits, and build capability and self-reliance as forest managers. The joint ventures mitigate two key barriers Māori landowners experience by providing access to capital for development and building capability to manage commercial forests by involving owners in aspects of forest management [B18-0226].
37. Of the 36 to 42 joint ventures expected to be signed by 30 June 2019, 13 to 16 agreements or close to 40% are on Māori title. These agreements also account for 9,000 to 10,000 hectares, or 50% of the area under forestry joint ventures.
38. Eight of the agreements are likely to be with Māori owned entities who had been unable to find a commercial partner to replant previously harvested forest. Māori land owners consider many first rotation agreements have not turned out favourably for them. Such agreements have not transferred knowledge or built capability for Māori to manage their own forests and typically did not include replanting obligations after harvest. Harvest may have provided insufficient funds for replanting, or land trusts did not set aside funds to do so.
39. Commercial partners may exit after the first rotation because the block faces difficulties replanting (e.g. it is erosion prone land that is orange or red-zone) or it is expected to generate lower profits in the next rotation. Most blocks were also afforested before 1990, meaning the land must return to forest after harvest or the owners pay Emissions Trading Scheme deforestation liabilities.

Regional economic growth and jobs

40. The Government has committed to support sustainable economic development in the regions with a focus on the surge regions.
41. Establishing a greater area of commercial forests in the surge regions is expected to increase immediate and long-term employment, and expand the regions' economies. 60% of the joint ventures by number, and slightly more by area, are in the surge regions.

42. Te Uru Rākau estimates that Crown Forestry joint ventures created the full time equivalent of 15 tree planting jobs in 2018, and will create 100 to 115 planting jobs over the 2019 planting season³. This includes
- a pilot that Te Uru Rākau and the Department of Corrections are jointly developing which will provide eligible prisoners with forestry qualifications and work experience; and
 - a forestry training and work experience programme developed around the Ngāti Hine joint venture and mānuka plantings.

Environmental impacts

43. Joint ventures executed by 30 June 2019 are expected to establish 9-11,000 hectares of new forest planting⁴. Te Uru Rākau estimates this will remove 2.6-3.3 million tonnes of carbon dioxide from the atmosphere by 2030, potentially reducing New Zealand's 2030 carbon liability by around \$150-\$180 million dollars^{s 9(2)(b)(ii)}
44. The carbon benefit is only for a subset of the forest area under joint ventures. Two types of forestry which do not generate an additional carbon benefit are included in the joint ventures for their social and economic benefits. The inclusion of replanting on Māori land and standing forest are discussed above.

Recommendation to extend the timeframe to execute joint ventures

45. Allowing Crown Forestry to continue to sign up joint ventures to 30 June 2020 will better achieve the objectives of the One Billion Trees programme. Joint ventures advance a different part of the forestry system and play a complementary role to other One Billion Trees initiatives. Progress across the system is required to achieve the One Billion Trees objectives. An extension of time requires no extra funding.

Does continuing with joint ventures better achieve the One Billion Trees objectives

46. Te Uru Rākau has considered whether The One Billion Trees objectives are best addressed by continuing joint ventures or through the grants and partnerships funds. The One Billion Trees programme aims to:
- create employment and workforce development
 - promote integrated land management and optimise land use
 - mitigate climate change
 - support Māori values and aspirations
 - protect our environment and improve our soils, water, and biodiversity
 - support New Zealand's transition to a low emissions economy.

³ Based on the tree planting requirements for joint ventures and employment for a four month planting season.

⁴ 'New forest planting' excludes areas of standing trees and also harvested areas that are being replanted, as these are not 'new' forests removing additional carbon. Most of these areas are in joint ventures with strong Māori development outcomes.

47. Te Uru Rākau considers the One Billion Trees objectives are best advanced by continuing to sign up joint ventures alongside the grants and partnerships. This is because they have different but complementary roles in the forestry system, and the whole system needs to be progressed to achieve the objectives.
48. The key features of grants and partnerships are that they:
- focus on delivering wider public benefits (soil, water, biodiversity, carbon) by integrating plantings into our productive landscapes;
 - aim to plant two thirds indigenous trees and, supported by partnerships, build the capacity of the indigenous tree sector and the capability of land managers to integrate trees;
 - will also fund community, amenity, and landscape projects; and
 - are not likely to cover the full costs of establishment. Some funding and all management is required from the applicants. Grants therefore will not address the most capital and capability constrained landowners, such as some multiply-owned Māori land.
49. The key features of joint ventures are that they:
- focus on the commercial forestry sector (radiata pine) and deliver economic and social benefits;
 - have shown themselves to be a successful commercial investment for the Crown. s 9(2)(b)(ii)
 - require a commercial rate of return and therefore do not primarily focus on the environmental benefits, indigenous or alternative exotic species; and
 - provide capital and capability building which caters to the particular needs of some landowners unlikely to be as effectively addressed by grants;
50. Reallocating unspent funding to grants and partnerships could potentially fund 25 to 40 million trees (two thirds indigenous). However, the grants programme is already seeking a significant increase in indigenous planting rates. It is too early to be able to tell if additional funding would be taken up within the three year Provincial Growth Fund period.
51. Joint ventures could be paused at 30 June 2019 and the final decision on allocation could be made at a later date. However, joint ventures have an established pipeline of demand. Landowners in the pipeline would not appreciate a lengthy and uncertain delay of several years until uptake of grants is better known. Such a course of action would likely cause significant reputational damage.

What joint ventures can achieve with a further year

52. On a pro rata basis, the uncommitted funding at 30 June 2019 could fund a further 5,500-8,000 hectares and see planting of 4.7-6.7 million more trees between 2020 and 2024. This would see the 24,000 hectare target achieved or exceeded and bring total tree planting under joint ventures to 21 million trees.

53. More joint ventures continue to build the forestry sector's capacity and further boost the early plantings under the One Billion Trees programme. They would also increase the programme's contribution to the Government's Māori development, regional economic growth, and environmental objectives.

The impact on forestry sector capacity to meet higher planting rates

54. Providing Crown Forestry with a further year to continue to sign up joint ventures will provide more sustained support for the forestry sector to build capacity. The main constraint to increased planting rates is now training and recruiting a larger planting and silvicultural workforce (Appendix Two). Planting demand from joint ventures spread over multiple years provides more sustained employment opportunities better supports the sector to expand the capacity of this constraining factor.

Potential drivers of afforestation

55. Joint ventures were also intended to build capacity ahead of other drivers for increased afforestation such as:
- the One Billion Trees fund (short-term, expected to increase planting rates from 2020);
 - a rising carbon price (medium-term, delayed effects due to uncertainty); and
 - more sustainable use of land (long-term trends towards greater afforestation for environmental benefits including voluntary, market-driven, social licence to operate, and regulatory responses).
56. Demand from the short and medium-term drivers is not yet at levels to reliably replace joint venture demand (Appendix Three). Extending the timeframe to sign up joint ventures for another year will help to sustain demand and build the forestry sector's capacity.

Contribution to Māori development, regional economic growth, and the environment

57. Extending the timeframe of joint ventures would allow further joint ventures from the existing expressions of interest to be signed up. The exact contribution to Māori development, regional economic growth, and the environment will depend on the agreements signed. However, the expressions of interest share the same general characteristics as those signed up to date.

Free and frank expression

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Consultation

64. The attached Cabinet paper has been drafted in consultation with Te Puni Kōkiri, the Ministry for the Environment, Treasury, the Department of Conservation, and the Ministry for Business, Innovation and Employment. The Department of Prime Minister and Cabinet have been informed.
65. Minor comments from agencies have been incorporated. One significant amendment is the inclusion of the option to reallocate funding to One Billion Trees grants and partnerships.

Next steps

Date	Action
Friday 15 March	Circulate the Cabinet submission to the Forestry Ministers, Minister of Finance, and the Minister of Māori Development for their comment.
Monday 25 March	Officials prepare a final version incorporating any feedback, including from Ministers.
Thursday 28 March	Lodge Cabinet submission with the Cabinet Office.
Wednesday 3 April	Cabinet Economic Development Committee
Monday 8 April	Cabinet

Appendix One: Synopsis of 14 joint ventures signed as at 13 February 2019

Forestry Right Grantor	Region	Forestry Right Plantable Area (ha)	Land Title	Description
Ngāti Hine Forestry Trust	Northland	3,195	Māori	Commercial sensitivity [Redacted]
Proprietors of Waimarama 3A6B6B	Hawke's Bay	270	Māori	Commercial sensitivity [Redacted]
Nelley Forests 2018 Ltd (Haumanga)	Northland	171	General	Commercial sensitivity [Redacted]
Broughton/Bell – two properties/Forestry Rights	Wellington	205	General	Commercial sensitivity [Redacted]
Ngāti Tuwharetoa Holdings Ltd	Bay of Plenty	292	Māori	Commercial sensitivity [Redacted]
Richardson (Waitawhiti)	Wellington	512	General	Commercial sensitivity [Redacted]
Ngāti Hine Forestry Trust (Ruatangata Block)	Northland	430	Māori	Commercial sensitivity [Redacted]
Accident Compensation Corporation (Lone Pine)	Otago	1,378	General	Commercial sensitivity [Redacted]

Skye Farm Limited (Murphy)	Manawatu-Whanganui	185	General	Commercial sensitivity [Redacted]
Puketawa Station (R & J King)	Wellington	475	General	Commercial sensitivity [Redacted]
Adventure King Limited	Northland	343	General	Commercial sensitivity [Redacted]
Kingz Home Farm, (L & P King)	Northland	87	General	Commercial sensitivity [Redacted]
The Proprietors of Pukahukiwi Kaokaoroa No. 2 Block	Bay of Plenty	194	Māori	Commercial sensitivity [Redacted]
Tukurua Forests Limited Partnership	Northland	362	General	Commercial sensitivity [Redacted]

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Appendix Two: Key constraints to higher annual planting rates

1. To increase planting rates three key factors land, seedlings, and labour are all required to increase.
2. *Seedlings* – When joint ventures were established the availability of seedlings was judged the most pressing constraint as nurseries grow to order, with orders placed in the summer 18 months prior to their eventual winter planting season [Sub17-0073]. The seedling orders through joint ventures have stimulated increased nursery capacity to the point where this is no longer the most constraining factor.
3. *Land* – joint ventures have found no shortage of interest from landowners in establishing commercial forests. The constraining factor for land is the length of time it takes to guide landowners through the process of agreeing a forestry right. Some of this time is familiarising landowners new to forestry with the ins and outs of forestry rights. Forestry is also a long term investment and a landowners understandably wants time to properly consider their investment before ageing to a long-term land use.
4. *Labour* – A Te Uru Rākau and forestry industry survey indicates that planting contractors expect to increase their workforce by 73% in 2019. This level of recruitment into the industry will be challenging, Te Uru Rākau pursuing a programme of work in this area. The availability of labour is expected to be a constraining factor for 2019 planting [B19-0050].
5. Seedling supply is no longer the most constraining factor in expanding forestry sector capacity. While joint ventures could stop at 30 June 2019, the programme would better support an expanding forestry sector capacity by building a more sustained period of demand, providing greater certainty for the sector to build the workforce.

Appendix Three: Potential drivers of planting rates

1. Replanting rates are currently high. Industry sources cite the following factors as driving higher replanting rates:
 - high log prices, now sustained over several years, keep harvest and replant rates high;
 - high carbon prices, and anticipated future increases, are improving forestry's returns and attracting interest in forestry investments; and
 - extensive media coverage of the One Billion Trees programme, including Crown Forestry joint ventures, and through forestry's positive links to high-profile environmental issues such as water quality and climate change⁶.
2. Joint ventures are intended to build capacity ahead of other drivers for increased afforestation such as:
 - the One Billion Trees fund (short-term);
 - a rising carbon price (medium term); and
 - more sustainable use of land (long-term trends towards greater afforestation for environmental benefits including voluntary, market-driven, social licence to operate, and regulatory responses).

Discussion on the short and medium-term drivers

3. The One Billion Trees fund was launched in November 2018. Some planting is expected in 2019, but with many more applicants ready to plant from 2020 onwards. The fund offers a relatively neutral grant for radiata pine⁷ and is targeted to drive greater planting of indigenous and alternative exotic tree species. The demand it generates will be from a different part of the forestry sector than joint ventures which plant commercial radiata pine forests.
4. Due to its historical exposure to international carbon credits, the carbon price in New Zealand's Emissions Trading Scheme (ETS) experienced a large drop between 2011 and 2013 (\$21.00 to \$2.50 per tonne). Since 2014 the carbon price has risen relatively consistently to the current high of around \$25 per tonne. A sustained carbon price above \$15 per tonne is expected to drive greater planting of commercial radiata pine plantations, but with a lag period of around five years for the sector to respond⁸. The NZ Unit price has been above \$15 per tonne since late 2016.
5. The response for non-radiata afforestation is more variable since there are often different motivations behind the tree planting. There are indications that early movers are using the current carbon price to fund afforestation projects.

⁶Low emissions economy Productivity Commission report 2018

⁷ Carbon restrictions on grant funded radiata pine are roughly equal to value of the grant.

⁸ *Afforestation responses to carbon price changes and market certainties* (a 2016 report prepared for MPI by Bruce Manley, NZ school of Forestry)

6. The current carbon price reflects this Government's commitment's to act on climate change and increasing domestic and global concern. Crown Forestry and forestry nurseries are reporting more interest from carbon farmers. Current proposals to amend the ETS may increase forests return. However, investors may await more certainty around the changes before investing.

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s 9(2)(b)(ii)

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¹⁰ *Assessing the feasibility of a continuous cover forestry system for radiata pine in small-scale forests* (in press, NZ Farm Forestry Association with funding from the Sustainable Farming Fund)