Awatea Forest Fund

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Matawai Hill
(Feasibility Study)

February 2022

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Roger Dickie (N.Z.) Limited

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1. Introduction

Client and propose

This report has been prepared for Roger Dickie (N.Z.) Limited **(RDNZ)**. The purpose of this feasibility study report is to review of the input assumptions applied in the financial model provided by RDNZ and its forest manager, Forest Management New Zealand Limited **(FMNZ)**. The input assumptions reviewed by PF Olsen Limited (**PF Olsen**) for this Matawai Hill feasibility study include:

- Mapping quality;
- Yield projections;
- Production cost assumptions - harvesting and cartage;
- Forestry cost assumptions;
- Log price and market assumptions; and
- New Zealand Emissions Trading Scheme (NZETS) assumptions for the plantation development.
- Estimate the impact on IRR of any revised input changes.
- Evaluate the sensitivity of IRR to key project assumptions.

This feasibility study is intended to assist RDNZ in acquiring the Matawai Hill property. The Matawai Hill project includes:

- A land purchase and afforestation opportunity with NZETS eligibility of the property at 2433 Te Karaka Road (after proposed subdivision) in the Gisborne region of New Zealand.

Information relied on

In preparing this feasibility study, PF Olsen has relied on:

- The information of the property provided by RDNZ and vendor (pending subdivision);
- FMNZ's local knowledge of costs of contractual forest operations;
- The area information (GIS data) provided by FMNZ;
- FMNZ's knowledge of the resource and region;
- The assumption that formal easements will be established over the land for access and forest roading in the Matawai Hill property after the proposed subdivision;
- The financial model provided by RDNZ on 12 October 2021; and
- Logan Stone's land valuation report as at 8 October 2021.

PF Olsen has not conducted independent investigations to verify the property information, including title area, plantable areas, improvement values of the property, and the values of other facilities or improvements provided by the vendor, RDNZ, and FMNZ.

Business structure

RDNZ intends to set up the Awatea Forest Fund (AFF) as a Portfolio Investment Entity (PIE) for passive investment.

The proposed business structure is to set up FMNZ as the lessee of the land owned by AFF and pay AFF the lease payment at the time of harvest. AFF still technically owns both of the freehold land and tree crop. According to the Deed of Lease between AFF and FMNZ, the lease payment paid by FMNZ will be calculated (inclusive of GST) as:

- **Lease Payment to AFF** = (Gross Revenue – Production Costs) x **95.75%**

FMNZ will retain the remaining 4.25% of the lease payment as a harvest management fee.

Despite a forestry right agreement already been in place, the tree crop is technically still planted on freehold land. As a result, PF Olsen will value the tree crop in this valuation as on freehold land.

2. Resource descriptions

Introduction

The Matawai Hill property is situated in the Gisborne District of New Zealand (Appendix 1).

Property information

Details of the certificates of title are summarised in Table 1.

Table 1: Summary of the Certificates of Title (before subdivision)

Title No.	Description	Title Area (ha)	Rates (excl. GST)
GS117/62	Sect 48 Block IV Waikohu SD	0.3566	
GS6A/222	Lot 4-6 DP 8727, Lot 3 and Part Lot 1 DP 3085	88.5021	
GS6A/220	Lot 1-2 DP8727, Part Lot 4 DP 3085 and Ruangarehu J1 Block	67.8431	
Total		**156.7018**	**6,252**

Source: Information Memorandum (Bayleys, 2021) and Gisborne District Council

According to information memorandum from Bayleys (2021), these titles will be sub-divided into three different lots (Appendix 2):

- **Lot 1 and Lot 3** – will be retained by the vendor (23.84 hectares); and
- **Lot 2** – will be sold to the investors of the Matawai Hill property (131.31 hectares more or less subject to survey), which this feasibility study will be based on.

Forest description

After the subdivision, the Matawai Hill property is expected to have a total plantable area of 110.7 hectares. Of which 98.7 hectares are currently greenfield and unplanted, but will be planted in radiata pine in Winter/Spring 2022. The remaining 12.0 hectares are currently planted in radiata pine in 1998 and 1999.

Productivity

The national productivity index layer developed by Scion for radiata pine, 300 Index, has been used to predict site productivity. Appendix 3 shows the 300 Index of the Matawai Hill property (before subdivision) for radiata pine ranges between 30.0 and 37.5 m^3 per hectare per annum. This indicates the site productivity of the Matawai Hill property is relatively good and above the national average.

NES-PF

The National Environmental Standard for Plantation Forestry (NES-PF) are regulations made under the Resource Management Act that came into effect on 1 May 2018. Under the NES-PF (Appendix 4), the Matawai Hill property has been mainly categorised as "Low", "Moderate", and "Very High" erosion susceptibility. Hence, resource consent will be required for afforestation, mechanical land preparations, earthworks (on a slope of 25^{o} or more), harvesting, and replanting.

Forest inspection

PF Olsen undertook a forest inspection in October 2021. The objectives of the inspection were to:

- Observe the existing tree crop and site conditions.
- Identify any barriers to afforestation.
- Estimate forest development and harvesting costs.
- Understand access requirements and/or restrictions.

Observations from the field inspection in October 2021 were:

- The land was generally clean, being well grazed. Hard grazing prior to planting will be the only land preparation required for the majority of the first rotation plantation.
- Some power poles were observed further into the block than as mapped. Remapping of setback required.
- There are individual trees planted for erosion control scattered around the potential plantable area that could be poisoned to maximise area and growth.
- Topography is variable, with a large proportion of the plantable area expected to be harvested using a hauler crew but with enough ground based mixed in to ensure a lowish hauler rate.
- Infrastructure was mixed, with easy road access to the back of the property to service the telecommunication equipment but some other tracks navigable only by motorbikes and side-by-sides (especially in winter).

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- The existing tree crop is typical of a farm woodlot. The expected pruned logs on the smaller block were too small and would not attract P40 prices. This was due mainly to high stocking for a pruned block. The larger block has suffered some wind damage particularly near the ridge but had some nice trees in the more sheltered lower slopes. Wind damage and stumps suggested that thinning may have been later than optimal.
- There is permission for the existing tree crop to be extracted via the main track through the property and through the proposed housing subdivision. However, future access to the public road for logging trucks will have to rely on a new road and access point. The logical access point for harvest roading is to the north of the property, away from the existing house and farm buildings.
- Two archaeological sites were inspected but the setbacks around these will need to be assessed by an expert.

Photos from the field inspection are presented in Appendix 5.

Area adjustments

PF Olsen has not made any area adjustment to the plantable area provided by FMNZ and RDNZ once the plantable area was remapped due to powerline location. PF Olsen has adapted RDNZ's assumptions, but we adjusted the yield tables instead of the plantable area in this feasibility study.

3. Inventory and Growth & Yield model

Growth & Yield model

Forecaster modelling software (version 2.2.1.1553) has been used to estimate log yields for the Matawai Hill property.

Model and site settings can be found in Appendix 6. In our view, these settings are appropriate for estimating future radiata pine log yields at Matawai Hill property. Validation of the outputs generated from these settings was carried out by comparing to similar existing or recent harvested forests in the region.

Cutting strategy

The cutting strategy applied in Forecaster is summarised in Table 2.

Table 2: Cutting strategy in Forecaster

Grade	Min Small End Diameter (SED) (cm)	Max Branch Size (cm)	Length (m)	Description
P40	42	0	4.4, 5.0	Large pruned log
P35	37	0	4.4, 5.0	Small pruned log
A	33	12	4.0, 6.0	Large sawlog
K	24	12	4.0, 6.0	Small sawlog
KI	26	25	4.0	Industrial log
KIS	14	No limit	4.0	Small Industrial log
Pulplog (Domestic)	10	No limit	3.7-8.1@1m	Domestic pulplog

Yield table analysis

For the existing tree crop, PF Olsen has compared the yield tables provided by RDNZ with some of the actual harvest operations in the Gisborne region.

For the new plantings, PF Olsen has compared the yield tables generated in Forecaster with the MPI Gisborne regional yield tables and PF Olsen's actual harvest operations in the region.

The results of the yield table analysis are presented in Appendix 7.

Yield table assumptions

PF Olsen applied some adjustments based on the results of our yield table analysis in Appendix 7. The adjusted yield tables applied in this feasibility are presented in Figure 1 and Figure 2.

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Yield table assumptions *(existing tree crop)*

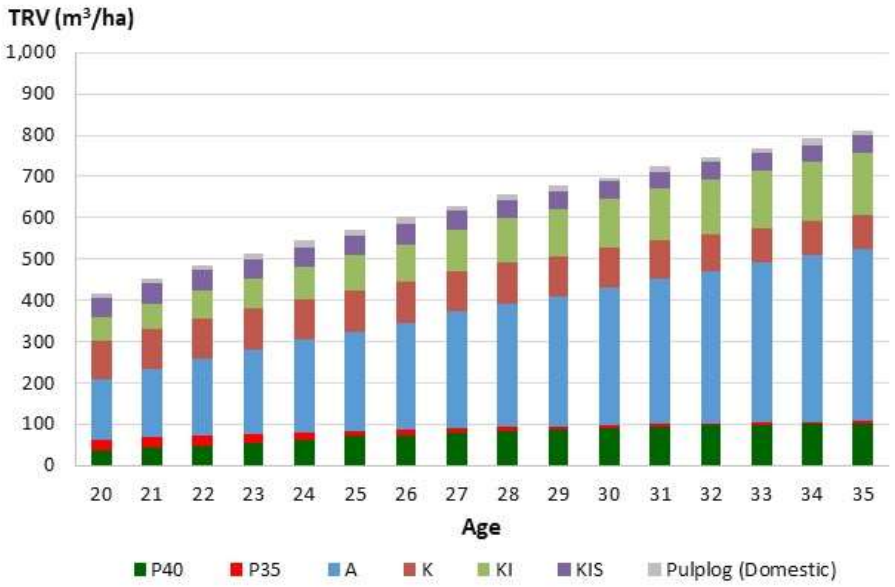

Figure 1: Yield table for existing plantings (clearwood – pruned)

Yield table assumptions *(new plantings)*

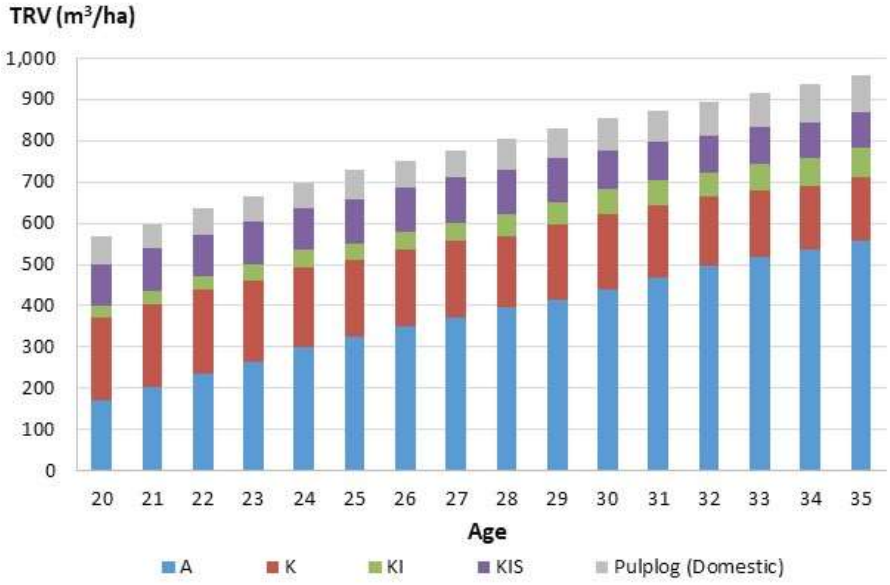

Figure 2: Yield table for new plantings (framing – unpruned)

4. Cost assumptions

Introduction

The cost assumptions applied in this review have been divided into three categories: production, forestry, and general overheads.

Production costs (roading)

Road construction cost refers to construction of harvesting roads and skid formation, while road maintenance cost refers to the road maintenance cost during harvest operations.

The roading cost estimated by RDNZ/FMNZ in October 2021 are presented in Table 3.

Table 3: Roading Construction and Maintenance Cost Assumptions

	Roading construction ($/ha)	Road maintenance ($/m^3)
Existing planted area – 1st rotation	5,000	2.00
Existing planted area – 2nd rotation	5,000	2.00
New planting area – 1st rotation	5,000	2.00
Matawai Hill feasibility study	**5,000**	**2.00**

PF Olsen has no reason to believe the roading construction and maintenance cost assumptions provided by RDNZ and FMNZ are inadequate. We have applied the same assumptions derived by RDNZ/FMNZ this feasibility study.

Production costs (harvest & load)

Log and load costs relate to the felling, extraction, processing and loading of logs.

The harvesting cost assumptions derived by RDNZ/FMNZ in October 2021 are summarised in Table 4. These estimates are very similar to the ones derived by PF Olsen. Therefore, PF Olsen has opted to adopt the percentage of hauler-based and ground-based area, and unit rate assumptions provided by RDNZ/FMNZ in this feasibility study.

Table 4: Harvest cost assumptions

	Hauler-based	Ground-based	Hauler-based	Ground-based	Area weighted average rate
	($/m³)	($/m³)	%	%	($/m³)
Existing planted area (1st & 2nd rotation):					
RDNZ/FMNZ	47.00	35.00	100%	0%	47.00
Greenfield new planting area (1st rotation):					
RDNZ/FMNZ	47.00	35.00	70%	30%	43.40
Matawai Hill feasibility study:					
Existing planted	**47.00**	**35.00**	**100%**	**30%**	**47.00**
All planted	**47.00**	**35.00**	**75%**	**30%**	**44.00**

Production costs (cartage)

The cartage unit cost is based on:

- The lead distance from a forest block to a destination (a route).
- The assigned type of cartage schedule for each specific route.

The cartage cost assumptions applied by RDNZ/FMNZ in this feasibility study are summarised in Table 5.

Table 5: Cartage cost assumptions

	Lead distance	Unit cartage cost
	(km)	$/m³
RDNZ/FMNZ	31	13.80
PF Olsen	31	14.00-16.00
Matawai Hill feasibility study	**31**	**14.40**

Production costs (other)

RDNZ's assumptions for other production related costs for the Matawai Hill property are summarised in Table 6.

These other production related costs are in-line with what PF Olsen expects in the Gisborne region, and PF Olsen has no reason for not adopting these cost assumptions from RDNZ.

Table 6: Other production cost assumptions

	Pre-harvest inventory (PHI)	Harvest supervision & management fee + Post-harvest, other harvest costs, and contingency
	($)	($/m^3)
Existing planted area:		
RDNZ/FMNZ	-	7.00
PF Olsen	-	5.50-7.50
Matawai Hill feasibility study	**-**	**7.00**
All planted area (1st & 2nd rotations):		
RDNZ/FMNZ	6,000	7.00
PF Olsen	$60 to $120/ha	5.50-7.50
Matawai Hill feasibility study	**6,000**	**7.00**

Forestry costs

Based on our forest inspection in October 2021, PF Olsen believes that FMNZ's forestry cost assumptions are adequate. The forestry cost assumptions applied in this feasibility study (including a 15% forest management supervision, and QC charge) are summarised in Table 7.

For this feasibility study, PF Olsen has assumed that forestry is the highest and best use of the Matawai Hill property. This will be especially relevant in the future due to the carbon liability created if the land owner decides to participate in the NZETS. The land will be replanted with the second rotation tree crop before selling both land and tree crop after the first rotation tree crop is harvested.

Table 7: Forestry cost assumptions (in $/ha)

Operation	Age	RDNZ/FMNZ		Feasibility study	
		% of Area	FR550	% of Area	FR550
Land preparation (1R)					
- Aerial spray	0	5%	30		
- Poplar control	0	2%	36		
Land preparation (2R+)					
- Aerial desiccation	0	100%	284	100%	284
Establishment (1R)					
- Planting (labour)	0	100%	726	100%	726
- Seedling	0	100%	463	100%	463
- Post-plant releasing	0	100%	375	100%	375
- Contingency blanking	1	5%	60	5%	60
- Contingency release	1	5%	19	5%	19
Silviculture					
- Waste thin (PRAD)	9	100%	948	100%	948
Establishment (2R+)					
- Planting (labour)	0	100%	726	100%	744
- Seedling	0	100%	463	100%	463
- Post-plant release	0	100%	375	100%	375
- Contingency blanking	1	5%	60	10%	60
- Contingency release	1	5%	19	20%	19

General overheads, other fixed costs, and NZETS costs

The general overheads, other fixed costs, and ETS cost assumptions are summarised in Table 8. In addition, there is a Forest & Operation Management fee based on 5% of the forest tracking cost, animal control, and property maintenance & protection fee in Table 8, as well as all the forestry costs summarised in Table 7.

The insurance cost (fire & public liability) by age assumed in this feasibility are presented in Appendix 10. Recently, insurance premiums for fire and wind damage of tree crops in New Zealand have increased substantially. As RDNZ manages various forest investments in the Gisborne region as well as other regions in New Zealand to diversify the fire damage risk, RDNZ and its insurance provider advised that the insurance premium for the Matawai Hill property will not be subject to a substantial increase in insurance premium. The insurance premium assumption applied in this feasibility study is in-line with what RDNZ is paying for its current insurance coverage.

Table 8: Property maintenance & management fees, administration, general overheads

	FMNZ/RDNZ		Feasibility study	
YE March	**$**	**$/ha (p.a)**	**$**	**$/ha (p.a)**
Property maintenance & protection		20		20
Fire & public liability insurance		8-82		8-82
Council rates (2023+ p.a.)[1]	5,001		5,001	
Accounting and audit (2023+ p.a.)	3,000		3,000	
Forest & operation management:				
- *Administration expense (p.a)*	12,000		12,000	
- *Fixed fee (p.a.)*	6,000		6,000	
- *% of forestry related operational expenditures*	*5.00%*		*5.00%*	
Archaeology assessment (2023)			10,000	
Tracking (2023)				
Animal control (2023)	2,500		2,500	
Animal control (2024)	2,000		2,000	
Animal control (2025)	1,500		1,500	
Animal control (2026)	1,000		1,000	
Animal control (2027-2049)	500		500	
Animal control (2050-2051)	1,500		1,500	
Remapping & inventory (2031)	6,000		6,000	
NZETS registration (2025)	1,500		4,345	
NZETS annual return (2026-2039) (p.a)	750		822	
NZETS FMA plots (2026, 2031, 2036)	8,000		1,1400	

Source: RDNZ, FMNZ, PF Olsen

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[1] Total council rate was $7,189 (incl. GST) for a title area of 155.15 ha in 2021/22 (YE June). The vendor will retain 23.84 ha of the title area (155.15 ha) after the settlement. $7,189 ÷ 1.15 x 80% = $5,001 p.a

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The initial investment, initial set-up cost, divestment assumptions applied in this feasibility study are summarised in Table 9. The fund level annual cost assumptions are presented in Table 10.

Table 9: Initial investment, set up cost, and divestment assumptions

Item	Year (YE Mar)	RDNZ	Feasibility study
Initial investment (Capital costs)			
- Land acquisition (100%)		1,433,000	1,433,000
- Tree crop acquisition (100%)		277,000	277,000
Total purchase price (100%)		**1,710,000**	**1,710,000**
- *Land & tree crop acquisition (5%)*	2022	*85,500*	*85,500*
- *Land & tree crop acquisition (95%)*	2023	*1,624,500*	*1,624,500*
Set Up costs – fund level			
Capital raise fee: - *2.00% on total capital raised*[2]	2022	34,200	34,200
Legal	2022	35,543	35,543
Marketing fees	2022	23,695	23,695
FMA	2022	1,975	1,975
FMA supervisor	2022	1,185	1,185
Set up costs – property level			
Establishment fee - 2.75% on purchase price	2023	47,025	47,025
Legal due diligence & conveyancing	2022	5,000	5,000
	2023	5,000	5,000
Feasibility and tree crop valuation	2023	19,000	19,000
Land valuation	2023	5,000	5,000
Contingency	2023	10,000	10,000
Divestments			
Sale of land[3]	2050	774,900	497,700
Sale of tree crop[4]	2050	221,400	221,200

Source: RDNZ

Table 10: Fund level annual cost assumptions

Item	Year (YE Mar)	RDNZ	Feasibility study
Investment management (p.a.):			
- *0.75% of total asset value*	2023-51	0.75%	0.75%
Assurance & accounting	2023-51	3,000	3,000
Valuation	2023-51	4,000	4,000
FMA	2023-51	592	592
FMA supervisor	2023-51	1,975	1,975

Source: RDNZ

[2] Total capital raised is assumed to be NZ$1.71 million.
[3] PF Olsen assumes that the land will be divested at NZ$4,500/ha.
[4] RDNZ assumes that the tree crop will be divested at NZ$2,000/ha.

5. Log price and market assumptions

Pricing perspective

PF Olsen's actual historical export log prices at wharf gate (AWG) at the Eastland Port are presented in Figure 3.

Figure 3: PF Olsen export log prices – Eastland Port (Real 2022$ AWG)

Log price assumptions

Although the log export market recovered from the first Covid-19 lockdown in March/April 2020, interruption of global logistics has caused a substantial rise in demurrage and freight costs. The demand for logs from China is slowing down due to the rising default risk of some property developers and weaker manufacturing activity.

The log price assumptions applied in RDNZ's financial model are mostly in-line with PF Olsen's log price assumptions, expect pruned log prices (P40, P35).

The log price assumptions assumed in this study are presented in Table 11, based on the historical actual log prices at Eastland Port (see Appendix 8 for more detailed information). A sensitivity analysis of the log prices will be examined in Section 8 to evaluate the potential impact of market uncertainty.

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Table 11: Log price assumptions – radiata pine (YE March) at Eastland Port

	Actual	Projection				
Log grade	**Last 12 months**	**2022**	**2023**	**2024**	**2025**	**2026+**
P40	170	171	173	175	177	179
P35	168	145	147	149	150	152
A	131	133	135	136	138	140
K	118	120	121	123	124	126
KI	104	106	107	109	110	112
KIS	94	96	97	99	100	102
Pulplog (Domestic)	55	Break-even				

6. Land and property values

Introduction

PF Olsen staff are NZIF Registered Forestry Consultants, but we are not Registered Land Valuers. The Matawai Hill property consists of the acquisition of the land after subdivisions.

Land value

RDNZ engaged Logan Stone (a registered rural property valuer) in January 2022 to value the subdivided freehold land of the Matawai Hill property (after subdivisions). In the Logan Stone report, the title area "As If Complete/As Proposed" is assessed to be 131.31 hectares more or less.

The market land value (after subdivision) estimated by Logan Stone was $1.69 million as at 17 January 2022 (Table 12). Of which, the unimproved land value was estimated to be $0.54 million.

Table 12: Land value – Matawai Hill (17 January 2022)

	Logan Stone ($)
Unimproved land (ground-based)	116,000
Unimproved land (hauler-based)	421,000
Potential carbon (greenfield)	1,065,000
Other improvement	87,000
Total market value	**1,690,000**

Source: Logan Stone (January 2022)

Divestment land value

In this feasibility, PF Olsen has assumed that all the sequestered carbon will be sold and most of the improvement will be depreciated. The divestment land value assumptions are presented in Table 13.

Table 13: Divestment land value – Matawai Hill

	Feasibility study ($)	Plantable area (ha)	Divestment land value ($/ha)
Unimproved land (ground-based)	116,000	110.6	
Unimproved land (hauler-based)	421,000		
Potential carbon (greenfield)	0		
Other improvements	0		
Total market value	**540,000**	**110.6**	**4,850**

Source: Logan Stone (January 2022)

7. New Zealand Emissions Trading Scheme (NZETS)

Overview

The New Zealand Emissions Trading Scheme (NZETS) was created by an amendment to the Climate Change Response Act 2002. Under the NZETS, carbon is sequestered and traded in the unit of New Zealand Unit (NZU), which represents one metric tonne of carbon dioxide equivalent.

This feasibility study assumes the NZETS eligible area of this property will be registered into the NZETS under the Averaging Accounting Approach (or Averaging Carbon Approach) in the financial year of 2024 (YE March), once stocked area can be reliably mapped from aerial photography.

More details of the NZETS, definitions, obligations, compliance & penalties, and carbon price are described in Appendix 9.

Carbon table assumption

PF Olsen has assumed that RDNZ will manage this property along with other properties within the fund, which allows the NZETS eligible area in the Matawai Hill property to be registered under the NZETS with Field Measurement Approach (FMA).

Under the FMA, PF Olsen has assumed that the total carbon (NZU) sequestered at age 16 will be higher than under the MPI Look-Up Table Approach by approximately 49% (Figure 4). This is based on what Forecaster predicted and what PF Olsen experienced in the region (Appendix 9).

The total number of NZUs available for trading in this feasibility study is projected to be 58,800 NZUs by age 16.

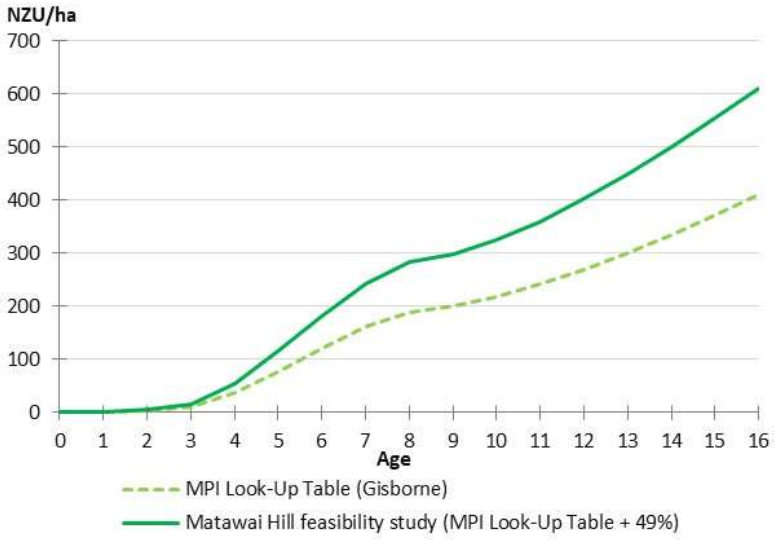


Figure 4: Potential tradable carbon per hectare by age from the Matawai Hill property– Average Carbon Approach (radiata pine)

NZETS set up and administration costs assumptions

Costs involved in set-up and participation in the NZETS have been estimated as follows:

- Costs to prepare application of approximately $4,345 (one-off) in 2025 (YE Mar):
  - MPI registration fee of $500 (one-off);
  - Mapping ($14/ha);
  - Young tree verification ($25/ha).
- Costs to administer NZETS participation of approximately $822 per year (including MPI emissions return filing fees of $90 per return) from 2025 (YE Mar); and
- Field Measurement Approach (FMA) inventory costs of approximately $11,400, incurred once every five years (based on NZ$380 per FMA plot and a minimum of 30 FMA plots will be required).

Carbon (NZU) price assumption

The carbon price assumptions applied in this feasibility are:

- NZ$72.00/NZU flat from 2022 and onwards (before carbon trading commission); and
- Carbon trading commission of 2.0% per transaction (NZ$70.56/NZU after trading commission).

8. Financial returns and sensitivity analysis

Assumptions

Assumptions for this feasibility study include:

- RDNZ has advised PF Olsen that the purchase price of the Matawai Hill property is confirmed for a total of NZ$1.710 million:
  - After the subdivisions, the title area is assumed to be 131.3 hectares more or less. Of which, 98.6 hectares are assumed to be plantable and 98% of the plantable area is assumed to be NZETS post-1989 eligible; and
  - Existing tree crop: 12 hectares of radiata pine planted in 1998 and 1999.
- Silvicultural regime: Framing regime, initial stocking at 833 stems per hectare, unpruned, waste thinned to a target of 550 stems per hectare at age 9;
- NZETS carbon trading strategy for NZETS post-1989 eligible area:
  - PF Olsen's projected Field Measurement Approach (FMA) carbon yield table;
  - Average Carbon Approach at age 16 (totalling 610 NZU per eligible planted hectare); and
  - A flat carbon price of NZ$70.56 per NZU (or per t CO_{2e}) (after trading commission of 2.0%).
- Forecasting log price assumptions: PF Olsen short-term average log prices gradually return to long-term average log prices;
- No notional land rental has been applied;
- Terminal Value in 2051 YE March (2050 YC April):
  - the second tree crop rotation and land are assumed to be sold for $0.22 million and $0.50 million respectively.
  - RDNZ has assumed that the land value will be reduced by around 70% from the initial acquisition land value (post-1989) at $14,300 per plantable hectare to $4,500 per plantable hectare after harvesting of the first rotation tree crop with NZUs.

Investor - real internal rate of return (real IRR, pre-tax)

The cash flow of this project is presented in the Investor Product Disclosure Statement. It shows the projected forest development expenditures, forecast revenues, in real terms, for the Matawai Hill property in accordance with the investment structure described earlier.

The original financial model provided by RDNZ on 12 October 2021 derived the project IRR (pre-tax) at 6.5%. By applying the revised assumptions described in this feasibility report, the IRR (pre-tax) is estimated to be 7.9%.

Sensitivity – log prices and production costs

Table 14 illustrates the sensitivity of the project IRR (real, pre-tax) to variations in log prices and production costs.

Table 14: Sensitivity - change in production costs and log prices

Investor IRR (%)	% Change in log price				
% Change in total production cost	*-10%*	*-5%*	**Base**	*+5%*	*+10%*
+10%	*7.1%*	*7.3%*	*7.4%*	*7.6%*	*7.7%*
+5%	*7.3%*	*7.5%*	*7.7%*	*7.8%*	*8.0%*
Base	*7.6%*	*7.7%*	**7.9%**	*8.1%*	*8.3%*
-5%	*7.8%*	*8.0%*	*8.2%*	*8.3%*	*8.5%*
-10%	*8.0%*	*8.2%*	*8.4%*	*8.6%*	*8.7%*

Sensitivity – carbon credit (NZU price)

Table 15 illustrates the sensitivity of the project IRR (real, pre-tax) to variations in carbon credit NZU price.

Table 15: Sensitivity - Change in carbon credit NZU price

Investor IRR (%)	% Change in NZU price				
	-50%	*-20%*	**Base**	*+20%*	*+50%*
Change in NZU price	*4.0%*	*6.2%*	**7.9%**	*9.7%*	*12.3%*

Sensitivity – recoverable volume (yields)

Table 16 illustrates the sensitivity of the project IRR (real, pre-tax) to variations in total recoverable volume yields (TRV in m^3/ha).

Table 16: Sensitivity - Change in recoverable volume (yields)

Investor IRR (%)	% Change in recoverable volume (yields)				
	-20%	*-10%*	**Base**	*+10%*	*+20%*
Change in recoverable volume	*7.1%*	*7.5%*	**7.9%**	*8.3%*	*8.7%*

Sensitivity – divestment value

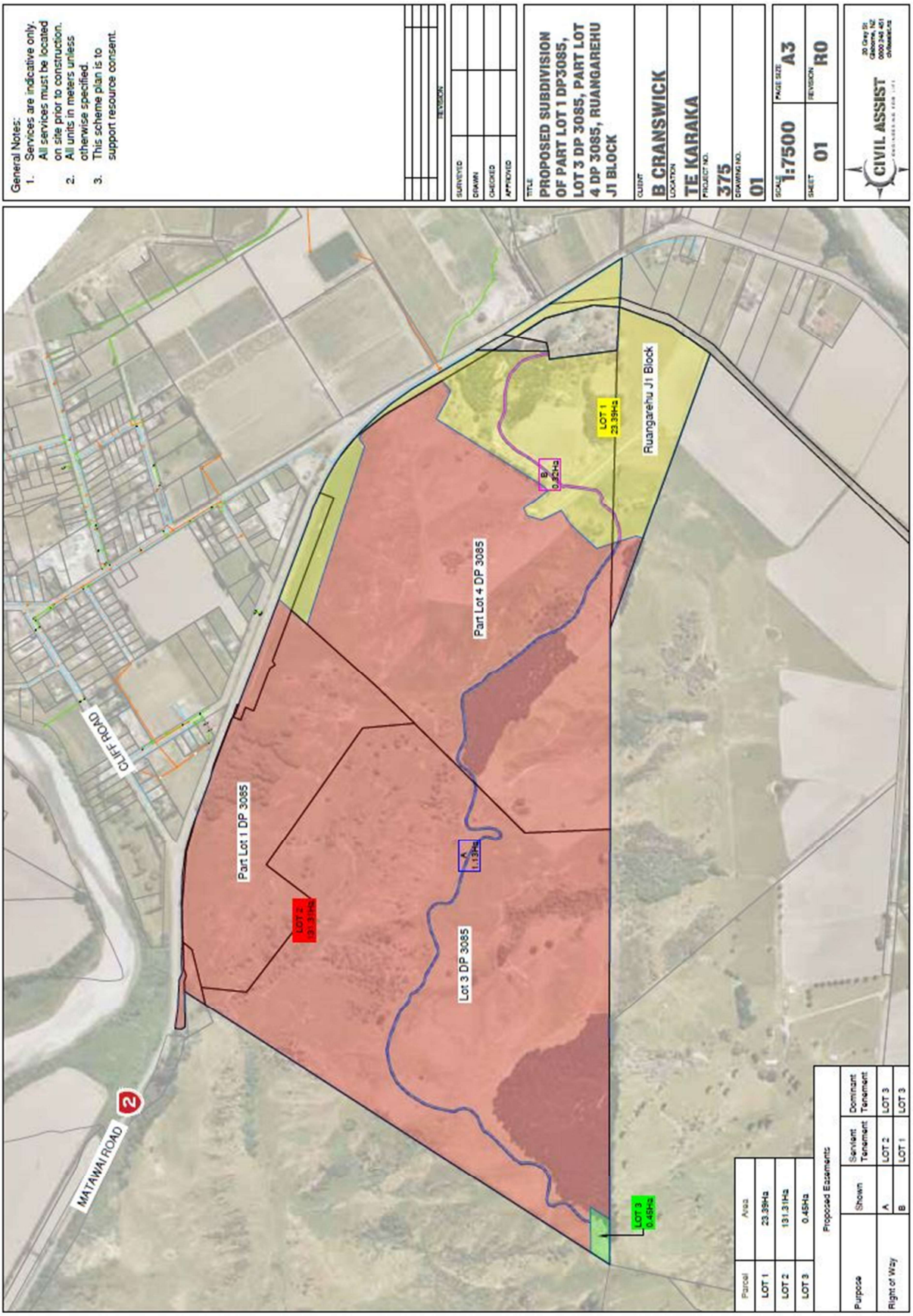
RDNZ has advised that the Matawai Hill property will be replanted and divested at the end of the project. The tree crop and land are estimated to be sold at a total of $0.76 million in 2051 YE March. Table 17 illustrates the sensitivity of the project IRR (real, pre-tax) to variations in divestment value. Because the divestment is anticipated to be in around 29 years from now, the change in divestment value has minimal impact to the IRR.

Table 17: Sensitivity - Change in divestment value

Investor IRR (%)	% Change in divestment value				
	-20%	*-10%*	**Base**	*+10%*	*+20%*
Change in divestment value	*7.9%*	*7.9%*	**7.9%**	*7.9%*	*8.0%*

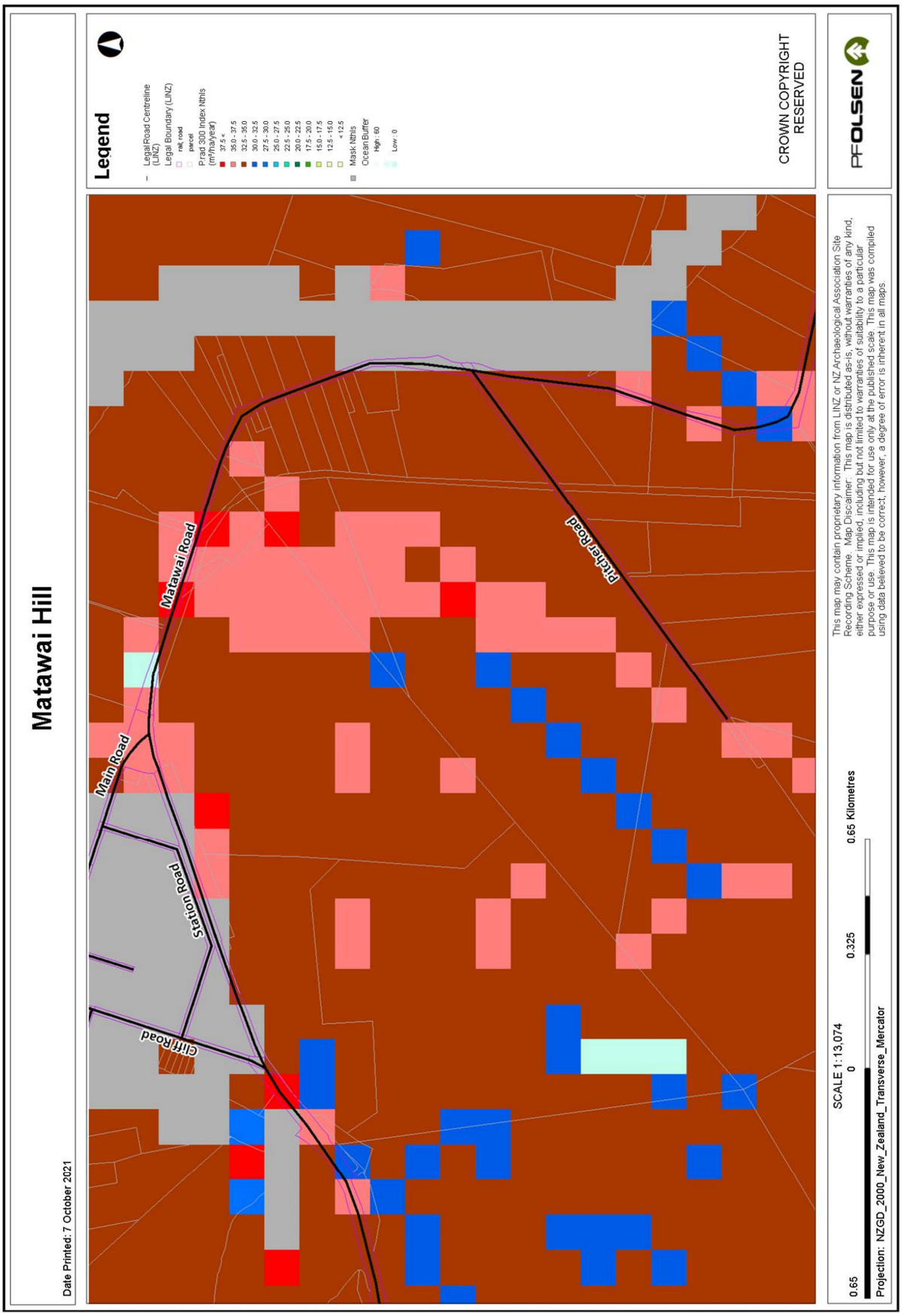
Appendix 1: Matawai Hill property

Appendix 2: Proposed subdivision Plan

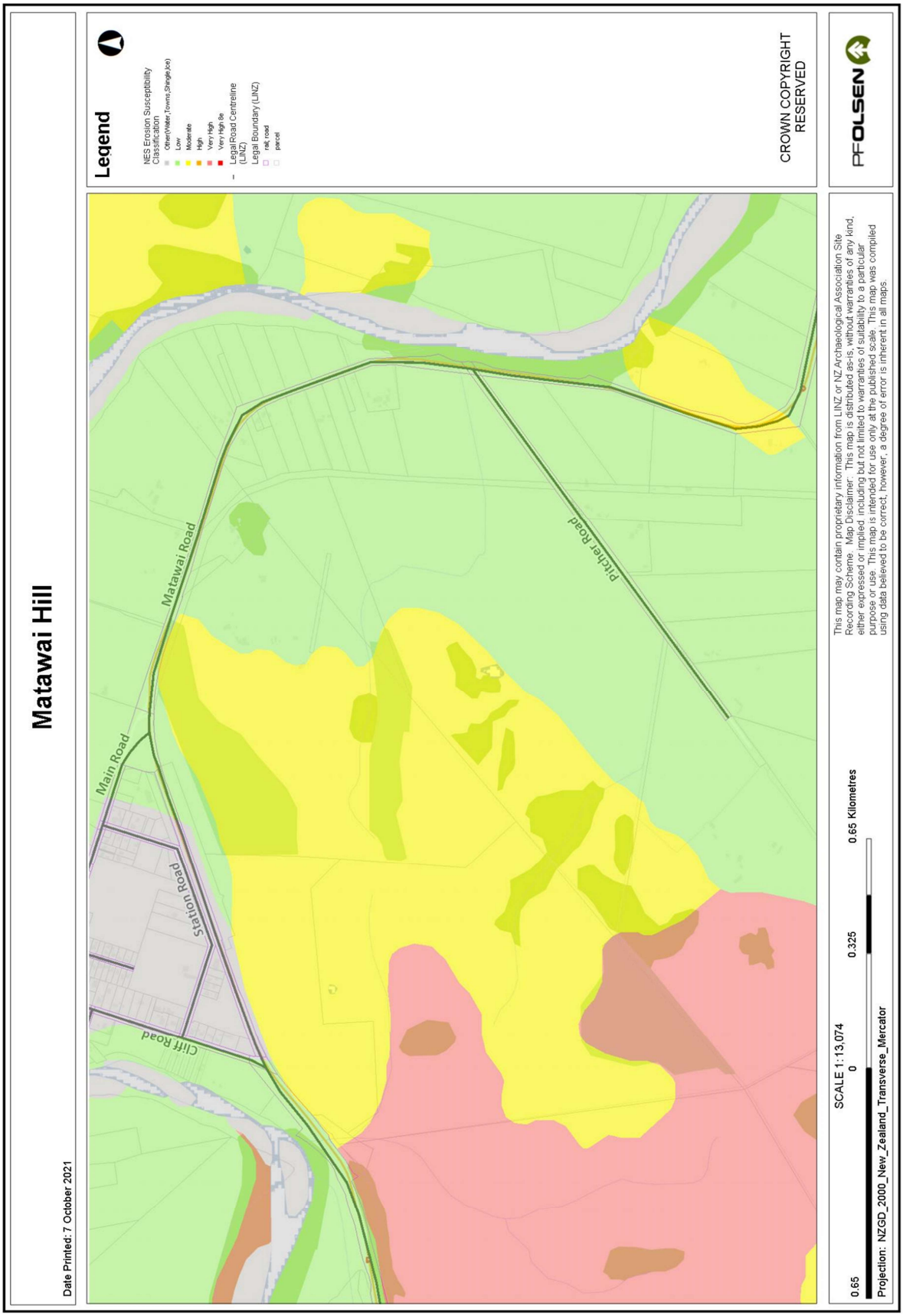


Source: Bayleys

Appendix 3: Matawai Hill – Radiata Pine 300 Index



Appendix 4: Matawai Hill - NES-PF



Appendix 5: Field inspection photos

Appendix 6: Forecaster settings

(existing tree crop and new plantings)

Model Settings:

Parameter	Setting
Growth model	300 Index
GM mortality additive adjustment	0
GM mortality multiply adjustment	0
Regional drift	0
Sweep model	Generic, Gisborne regional inputs
Forking model	Generic, Gisborne regional inputs
Branch model	Blossim, 0.05 prob, 3.0 scale factor
Carbon model	C_change
Volume & Taper model	460
Breakage model	1
Stump height	0.3 m

Site Settings:

Parameter	Setting
Latitude	38.481° South
Longitude	177.872° East
Altitude	104 metres
Site Index	32.35
300 Index	32.12

Appendix 7: Yield table analysis

Yield tables

No pre-harvest inventory is available for this valuation.

A single generic yield table was derived from Forecaster for this valuation.

Yield estimation methods

The Forecaster settings used to derive the yield tables are presented in Table 18.

Table 18: Forecaster settings

Parameter	Forecaster
Growth model	300 Index (PRAD)
Volume & Taper model	460
Breakage model	1
Stump height	0.3m

Cutting strategy

The cutting strategy applied in Forecaster is summarised in Table 19.

Table 19: Cutting strategy in Forecaster

Grade	Min Small End Diameter (SED) (cm)	Max Branch Size (cm)	Length (m)	Description
P40	42	0	4.4, 5.0	Large pruned log
P35	37	0	4.4, 5.0	Small pruned log
A	33	12	4.0, 6.0	Large sawlog
K	24	12	4.0, 6.0	Small sawlog
KI	26	25	4.0	Industrial log
KIS	14	No limit	4.0	Small Industrial log
Pulplog (Domestic)	10	No limit	3.7-8.1@1m	Domestic pulplog

Consistency of yield estimates with the forest description

Yield tables are generated and expressed in m^3/ha. The base volume unit for the valuation is m^3, so there is no conversion factor required for the yield estimation process.

Yield adjustments *(existing tree crop)*

For the existing tree crop, PF Olsen applied these adjustments to the raw Forecaster outputs:

- A -10% adjustment across all grades
- 10% of P40 and P35 grades were downgraded to KI
- 20% of P40 and P35 grades were downgraded to A
- 25% of A grade was downgraded to KI
- 10% of K grad was downgraded to KIS.

Total recoverable volume (TRV) *(existing tree crop)*

Figure 5 compares the adjusted total recoverable volume per hectare with the Gisborne regional average published from MPI[5]. It can be seen that the adjusted TRV from Forecaster is only slightly higher than the regional average.

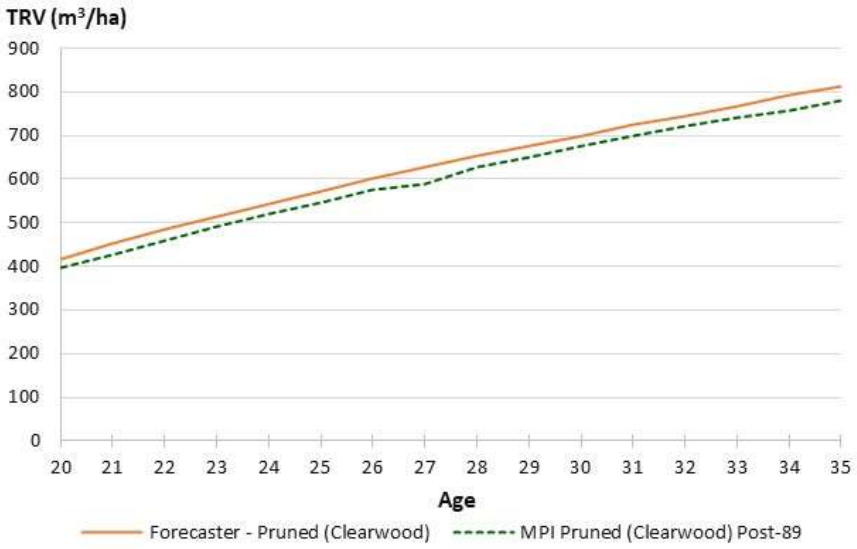


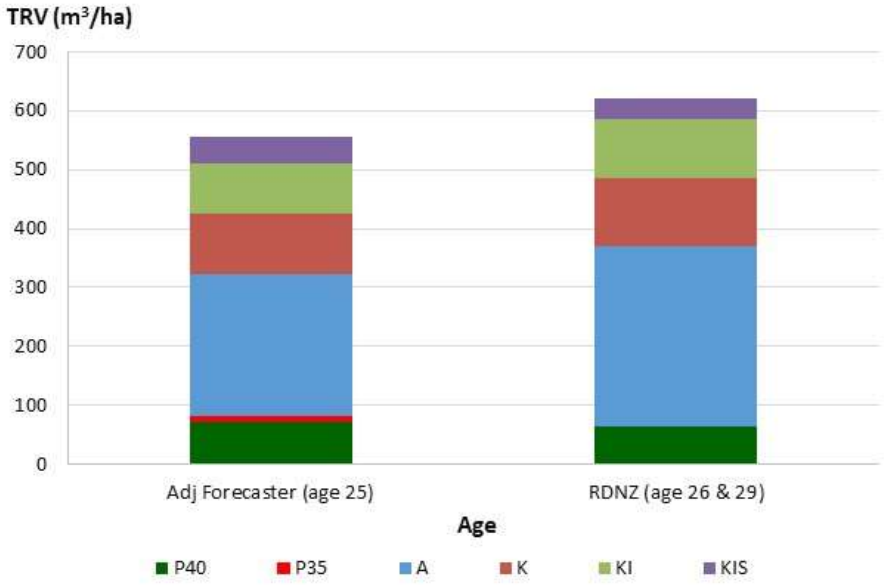
Figure 5: Yield table by total recoverable volume

[5] MPI – Ministry for Primary Industries

Grade out-turn *(existing tree crop)*

Figure 6 compares the adjusted grade out-turn with RDNZ/FMNZ's regional average at clearfell age around 26 years old. It can be seen that the adjusted Forecaster yield table is in-line with RDNZ/FMNZ's regional average.

Figure 6: Adjusted Forecaster yield table by grade



Yield adjustments *(new planting)*

For the existing tree crop, PF Olsen applied these adjustments to the raw Forecaster outputs:

- A -10% adjustment across all grades

Total recoverable volume (TRV)
(new plantings)

Figure 7 compares the adjusted total recoverable volume per hectare with the Gisborne regional average published from MPI[6]. It can be seen that the adjusted TRV from Forecaster is much higher than the regional average.

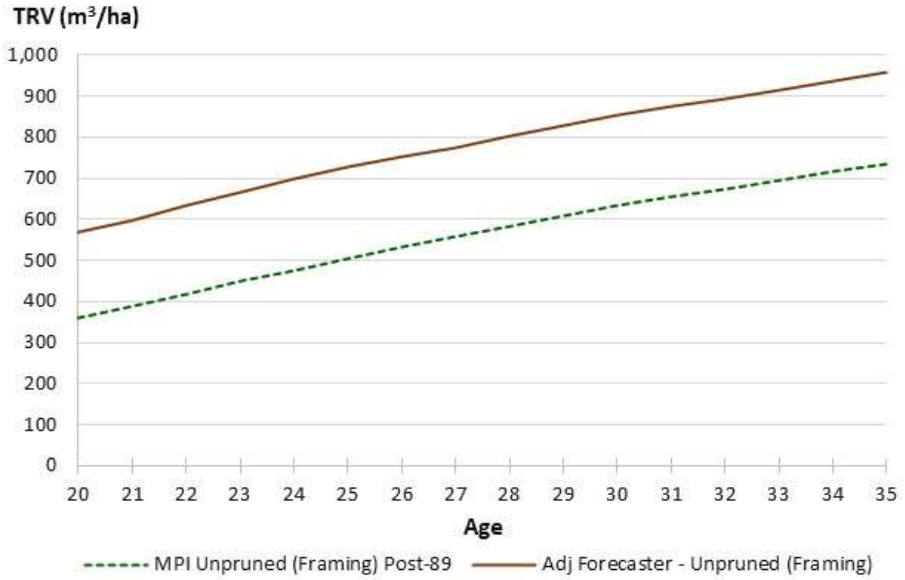


Figure 7: Yield table by total recoverable volume

Grade out-turn
(new plantings)

Figure 6 compares the adjusted grade out-turn with RDNZ/FMNZ's regional average at clearfell age 30 years old. It can be seen that the adjusted Forecaster yield table is in-line with PF Olsen's regional average.

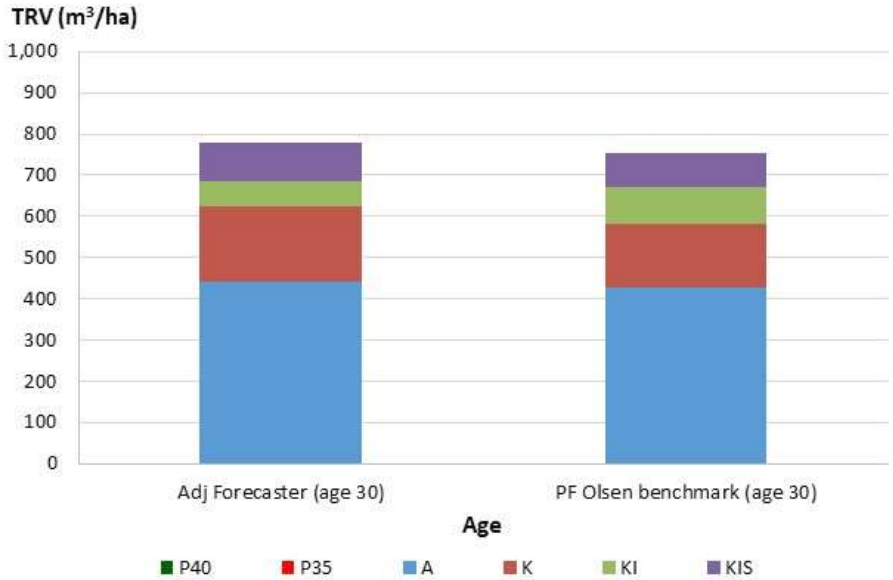


Figure 8: Adjusted Forecaster yield table by grade at age 30

[6] MPI – Ministry for Primary Industries

Appendix 8: Log prices

Conversion factors

Conversion factors (JASm^3/m^3) have been updated based on actual 2019-2020 regional averages for the respective log grades.

Table 20: Conversion factors applied in the Gisborne region

Log grade	JASm^3/m^3
P40	0.990
P35	0.990
A	1.050
K	0.965
KI	0.970
KIS	0.920

Log price assumptions

Export log prices are derived from an inflation-adjusted average of monthly prices offered to PF Olsen at the Eastland Port (at wharf gate).

We assume the log prices will gradually revert from near-term averages (last 12 months) to long-term averages by 2026 (YE Mar):

- The near-term averages are based on the actual prices that PF Olsen achieved in the last 12 months.
- The long-term averages (from 2026+ YE Mar) are based on the actual prices that PF Olsen achieved in the last 5 years (inflation-adjusted).

In the opinion of PF Olsen, based on market evidence analysed, the log prices assumed in this valuation represent a fair and reasonable view of long-term prices by log grade. These prices are considered suitable for use in estimating the market value of the tree crop situated on the Matawai Hill property.

Appendix 9: New Zealand Emission Trading Scheme (NZETS)

Overview

The NZETS was created by an amendment to the Climate Change Response Act 2002. The NZETS allows for a price to be set on emissions of greenhouse gases, providing appropriate incentives for sectors to reduce their net emissions.

The NZETS treats forest land in two distinct ways, depending on its status on 31 December 1989:

- **Pre-1990 forest land** – land that was established in forest species on or before 31 December 1989, remained forest land on 31 December 2007, and contained mostly exotic forest species on 31 December 2007; and
- **Post-1989 forest land** – land established with exotic or indigenous forest species after 31 December 1989, on land that was not forest land on 31 December 1989 (or on land that was forest on 31 December 1989 but was deforested before 1 January 2008).

Benefits of joining the NZETS are:

- Eligibility to acquire New Zealand Unit (NZU) credits for carbon sequestered;
- Opportunity to earn early income from the sale of credits; and
- Opportunity to accumulate credits for offsetting against emission liabilities.

This feasibility assumes the proposed shift to "Averaging" carbon accounting, as forest land registered into the ETS after 1 January 2019 will be able to utilise the Averaging accounting approach.

Definition of forest land

Forest Land is defined as a minimum area of one hectare of land planted with trees capable of reaching five metres in height and a canopy cover of 30% at maturity (in situ).

Determination of post-1989 forest land status will depend on evidence supplied by the participant. Acceptable evidence to assist in determining post-1989 forest eligibility could include aerial photographs from around 1990, land management records or an acceptable demonstration of forest establishment dates. It is the participant's responsibility to provide such evidence, if requested by MPI.

Obligations

Forest owners wishing to become post-1989 ETS participants have the following obligations under the ETS:

- **Open a holding account in the New Zealand Emission Unit Register (NZEUR)** – Participants in the ETS must have a holding account for NZUs;
- **Register as a participant with the ETS** - The participant must be able to supply evidence that the land qualifies as post-1989 forest land at this time;
- **Determine Carbon Accounting Areas** – Participants will be required to divide their forest land into discrete Carbon Accounting Areas (CAAs). MPI will hold a ledger of CAAs for each participant, to keep track of credits earned and surrendered on a particular CAA. This is required to ensure that a participant's liability on harvest does not exceed the number of credits earned on any particular piece of land;
- **Calculate changes in carbon stock** – Participants with 100 hectares or more registered in the ETS are required to measure their carbon stocks in a Field Measurement Approach (FMA) inventory at least once in every mandatory emissions return period. Based on these measurement plots a participant specific look up table will be generated. Participants with less than 100 hectares registered in the ETS do not need to install and measure inventory plots, instead using generic regional look-up tables;
- **File an emissions return** – Carbon stock change reports must be submitted at intervals of no less than one year, but at least once during each five-year commitment period. Returns must be submitted during the period 1 January to 30 June following the year to which the return relates;
- **Surrender NZUs** – Participants will be liable for surrenders associated with land deemed to be no longer eligible to remain in the ETS, or if the calculated average carbon stock of a forest area reduces (eg. through a shorter than normal rotation length, or a change in species). Participants with a liability to surrender NZUs must do so within 20 days of filing the return to which the liability relates;
- **Keep records** – Participants must keep records for 20 years of measurements, calculations, transactions and other information for audit purposes; and
- **Notify MPI if land is sold** – The participant is required to notify MPI as soon as practicable (within 20 working days) if the forest land is sold.

Termination

Individual participants can exit the ETS either when they sell the forest land to another party, or if they deforest the land and change its use, or if they voluntarily exit the scheme.

The participant is obliged to surrender credits equal to the net balance of credits on any CAA leaving the scheme.

Tax

Revenues from sales of carbon credit units (NZUs) are taxable and expenditures for units purchased are a deductible expense, provided the units were purchased to replace credits previously earned and sold. All transactions in NZUs will be zero-rated for GST purposes. This means that no GST will be charged.

All costs and revenues in this analysis have been assessed before consideration of income tax or GST.

Compliance and penalties

The ETS is intended to be largely self-policed, much as the tax system currently is in New Zealand. Registration applications and emissions returns will be reviewed, and spot checks and detailed audits will be carried out as MPI deems necessary.

Non-compliance under the ETS can attract both civil and criminal penalties.

NZETS Assumptions

Owners of post-1989 forests can voluntarily participate in the NZETS. They can join at any time. In this feasibility study, PF Olsen has assumed that the Matawai Hill property will enter the NZETS in the financial year of 2024/25 (2025 YE Mar), once stocked area can be reliably mapped from aerial photography, and credits can be claimed from the calendar year of 2024 (age 2) for the area planted in 2022 (calendar year). Credits sequestered in calendar year of 2022 (age 1) from the 2022 plantings are assumed to be forfeited in this feasibility study due to the processing time with MPI might not be sufficient enough to be completed.

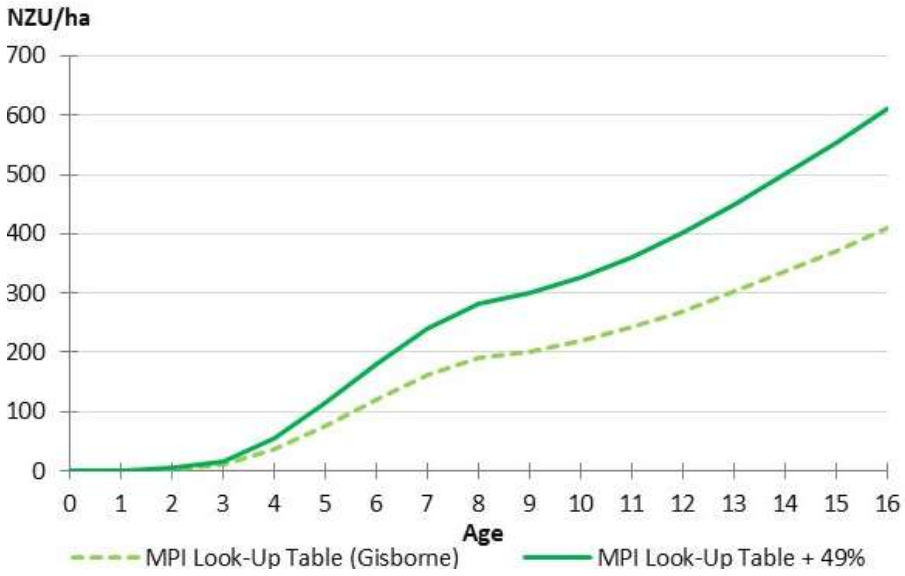
Carbon flow

The MPI Look-up tables are typically more conservative than those measured using the Field Measurement Approach (FMA). From PF Olsen's NZETS experience with other forest owners in the Gisborne region, the FMA usually achieves better yields (NZU) than the default MPI Look-up tables.

Under the FMA, PF Olsen has assumed that the total carbon (NZU) sequestered at age 16 will be higher than under the MPI Look-Up Table Approach by approximately 49% (Figure 4). This is based on what Forecaster predicted and what PF Olsen experienced in the region

Figure 9 shows the potential difference in tradable carbon yield between the MPI Look-up table Approach and the FMA in the Gisborne region on a per hectare basis.

Figure 9: Potential tradable carbon per hectare (radiata pine)



In this feasibility analysis, PF Olsen has derived a carbon yield table from Forecaster and compared to other actual FMA data achieved by other forests in the region. PF Olsen has also assumed that the Matawai Hill property will be able to trade its accumulated carbon up to age 16 years old, which is equivalent to 610 NZUs per registered hectare.

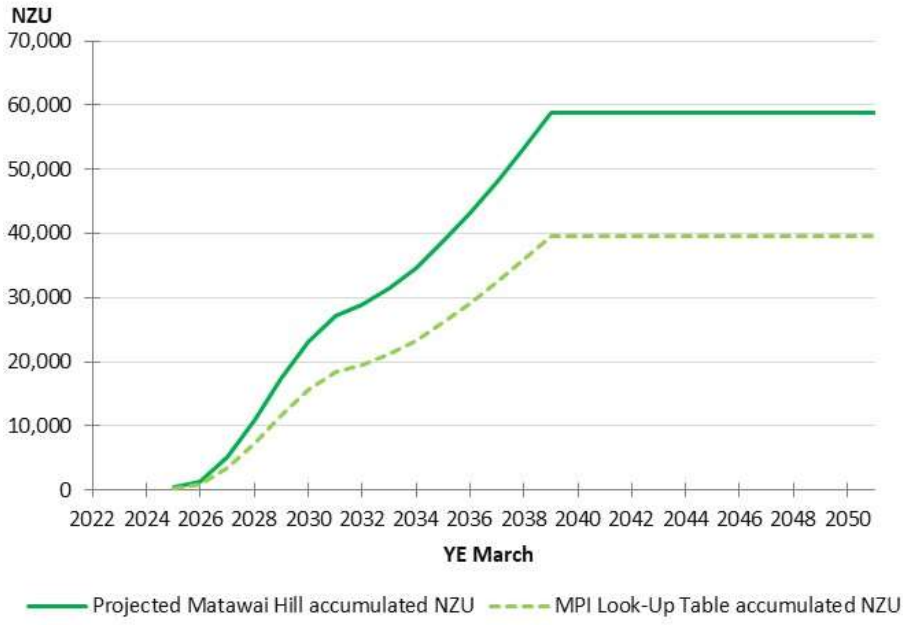
Continued on next page...

…continued

The resulting projected carbon flow (NZUs) for this feasibility analysis is illustrated in Figure 10 (assuming 98% of the 98.6 plantable hectare will be eligible as post-1989 land).

The total number of NZUs available for trading in this feasibility study is projected to be 58,800 NZUs by age 16 (less carbon sequestered at age 1).

Figure 10: Potential tradable carbon flows (radiata pine)



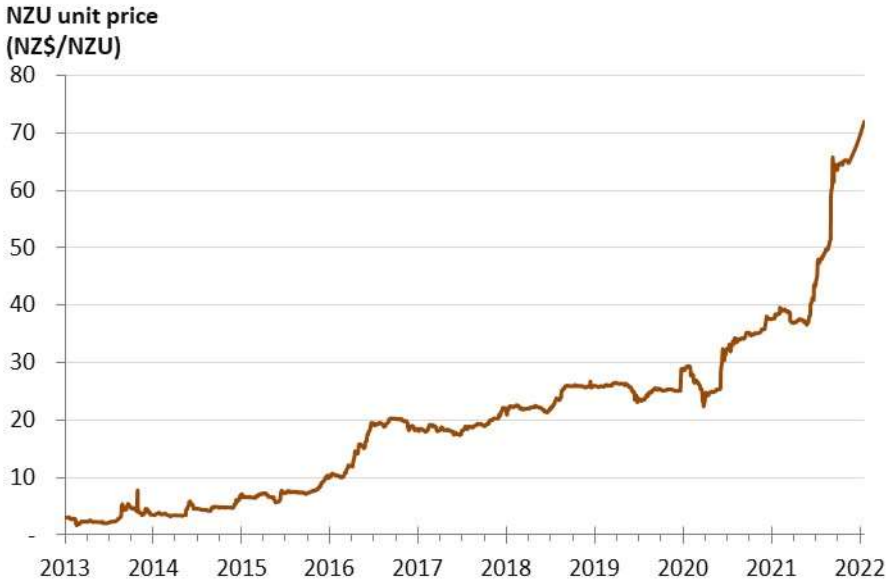
Carbon price

NZUs have traded in New Zealand since early 2010. Figure 11 shows NZU price trends since 2013. Prices are shown in real $2021.

The NZU liability was initially capped at NZ$25/NZU before June 2020 through a Fixed Price Option scheme (FPO). The 2020 NZETS Reform has revised the FPO cap upwards to NZ$35/NZU for the NZETS return year in 2020/21 (year ending March). From the carbon return year in 2021/22, the NZ$35/NZU cap has been revised upwards to NZ$50/NZU and replaced with an auction pricing mechanism.

The carbon trading commission for carbon brokers typically varies between 0.5% to 2% per transaction.

Figure 11: NZU prices (2022 real NZ$ per NZ Unit)



Source: Commtrade

Appendix 10: Insurance cost by tree crop age

Age	Cost ($/ha)
0	7.60
1	10.35
2	13.10
3	15.85
4	18.60
5	21.35
6	24.10
7	26.85
8	29.60
9	32.35
10	35.10
11	37.85
12	40.60
13	43.35
14	46.10
15	48.85
16	51.60
17	54.35
18	57.10
19	59.85
20	62.60
21	65.35
22	68.10
23	70.85
24	73.60
25	76.35
26	79.10
27	81.85
28	84.60
29	87.35
30	90.10
31	92.85
32	95.60
33	98.35