



foresta
foresta.nz



An aerial photograph of a dense forest of evergreen trees, likely spruce or fir, with a mix of green and some yellowish-brown foliage. The trees are packed closely together, creating a textured canopy. The lighting is soft, suggesting an overcast day or late afternoon. The overall tone is natural and serene.

Powering the future
with sustainable
biomass products



IMPORTANT: YOU MUST READ THE FOLLOWING BEFORE CONTINUING.

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Foresta Bay of Plenty Project Summary

1. Resource-driven infrastructure-based opportunity, manufacturing a drop-in coal replacement from sustainable pine wood pellets with associated high value byproducts of pine-based chemicals.
2. Two signed offtake term sheets for pine chemicals – 20,000 tonnes of terpenes at market rates, with the current market rate at approximately NZ\$4,000 per tonne & 80,000 tonnes of rosin (tree resin) at market rates, with the current market rate at approximately NZ\$3,200 per tonne.
3. Foresta has now signed a binding ten (10) year Supply Agreement to supply up to 65,000 tonnes of torrefied wood pellets per annum to reflect the production capacity of the first manufacturing facility (Stage 1a) in the Bay of Plenty.
4. 50 year site lease ready for signing and consenting in the next quarter.
5. Wood supply secured with PF Olsen.
6. World first mover in this space - patented chemical manufacturing process with a second provisional patent over the integrated pellets and chemicals process.
7. Project fully costed and independent valuation with associated engineering reports contracts.
8. Overall opportunity to be funded through project investment into Bay of Plenty Foresta Project LTD Partnership.



Foresta: adding value to the forestry sector by producing sustainable biofuels and replacements for petrochemicals.

Foresta is an innovative resource, energy and biotechnology sector company. We are in the process of establishing our first plant in New Zealand, which will use proprietary technology to extract natural pine chemicals for export, where they displace the need for petroleum-based chemicals, and manufacture torrefied “black” wood pellets that can be used as a substitute for coal in commercial and industrial uses, including electricity generation.

New Zealand is phasing out coal boilers by 2037 (1) and there are few energy alternatives for high-process heat. New Zealand consumes 2.1 million tonnes of coal every year, contributing to 5% of New Zealand's total annual greenhouse gas emissions.

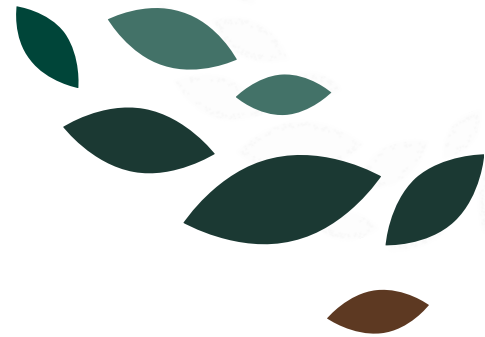
By manufacturing 2.1 million tonnes of torrefied “black” wood pellets, which have very similar properties to coal but with 95% less emissions (2) we can provide a viable alternative renewable energy source.

Foresta’s world first, patented integrated manufacturing processes, deliver multiple products, giving multiple revenue streams that provide nearly double the revenue of traditional pine chemical or wood pellet plants.

1. <https://woodresidues.events/nz-government-bans-new-coal-boilers>.

2. Assessment completed by Tonkin & Taylor - Estimate of Emission Reduction due to replacing coal with torrefied wood pellets (1 August 2023)





Signed Offtake Agreements

Foresta NZ and Tailored Energy Resources Limited (TERL) have now signed a binding ten (10) year Supply Contract to supply up to 65,000 tonnes of torrefied wood pellets per annum to reflect the production capacity of the first manufacturing facility (Stage 1a) in the Bay of Plenty, New Zealand.

Yasuhara Chemical Co Ltd have signed an letter of intent for 20,000 tonnes* of terpenes at market rates, with the current market rate at approximately NZ\$4,000 per tonne.

Lawter (NZ) Limited have signed a letter of intent for 80,000 tonnes of rosin* (tree resin) at market rates, with the current market rate at approximately NZ\$3,200 per tonne.

We are currently negotiating further similar sized offtake agreements with multiple other parties.



*pursuant to a non-binding LOI '5 years with the right to renewal after 5 years'

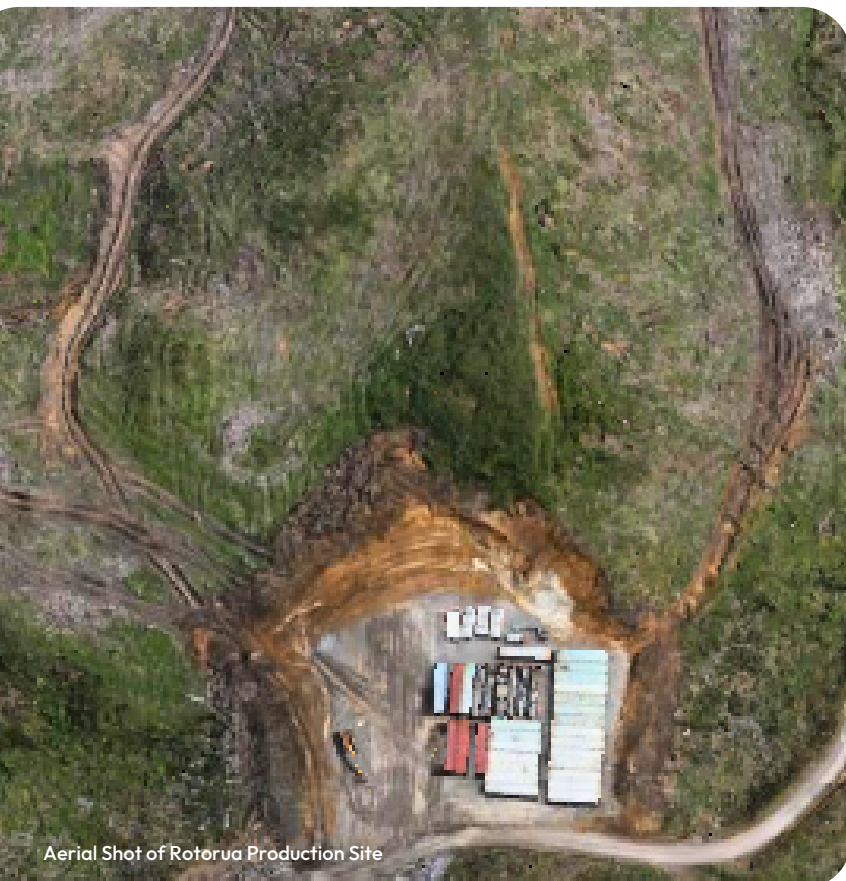
Bay of Plenty Production Site

We have a Memorandum of Understanding for a production site in the Bay of Plenty, which has an initial site area of 9.6ha. The Agreement to Lease is subject to funding and Overseas Investment Office approval.

The initial pine chemicals plant is stored on site, geotechnical investigations and earthworks design are complete and the earthworks consent has been lodged. Works are due to commence in line with funding.

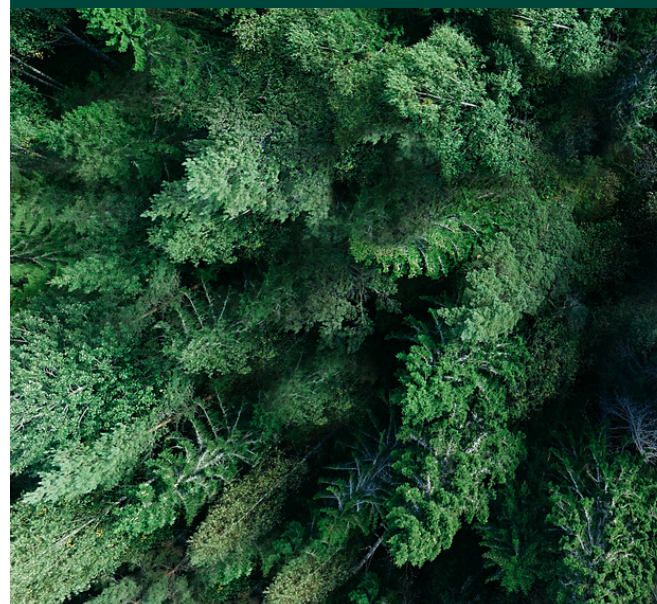
The initial proposed manufacturing plant is estimated to produce 210,000 tonnes of torrefied wood pellets and 50,000 tonnes of pine chemicals.

The project is fully quoted with preliminary design completed and key equipment suppliers with EPC contracts ready to be implemented upon funding.




Aerial Shot of Rotorua Production Site


- **Innovative**
- **Energy**
- **Resource Driven**
- **Biotechnology**





Foresta intends to utilise sustainable forestry resources to manufacture **Torrefied Black Wood Pellets** and **Wood Based Chemicals** as a direct replacement for fossil fuels and petrochemicals.




 Resins

 Wood pellets


 Fragrances


 Wood based biochemicals


Foresta products can be used in the following industries

 Adhesives


 Flavourings


 Car tyres

 Cleaning products


 Perfumes


 Paints and Coatings


 Roads

 Cosmetics and personal care

 Energy Generation

 Printing inks

 Chewing gum

 Soft drinks and sports drinks

Powering the future with sustainable biomass products.

Foresta reduces carbon emissions with torrefied “black” wood pellets which are a direct replacement for coal.*

Similar properties to coal

=

Capex savings at end-user e.g. minimal additional equipment needed

Better water resistance (torrefied pellet)

=

Cost savings in storage and transport

High energy density

=

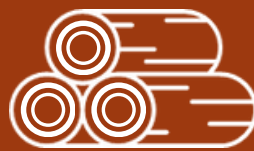
Cost savings as less pellets needed



Coal
Emissions

1930 kg

Per Tonne



Wood
Pellet Emissions

90 kg

Per Tonne

95% Reduction in Emissions

*based on third party evaluation. Wood pellets produce 95% less emissions than coal



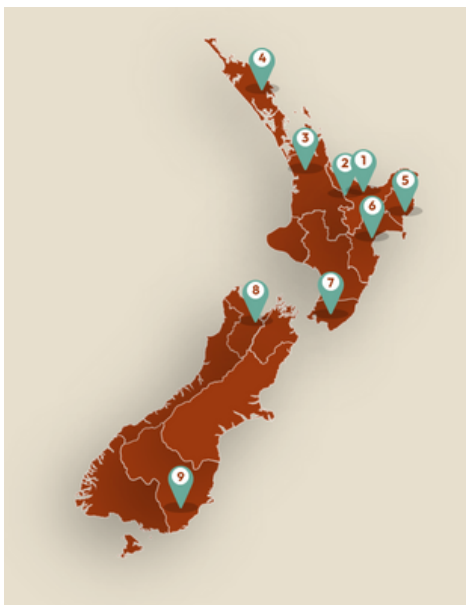
Pine Resource

In total New Zealand has 1.7 million Ha of sustainably managed pine plantations. For every tree harvested another is planted to replace it.¹

Foresta uses both the stem of the tree and the stump for its raw material feed. Approximately 37.1 million tonnes of wood are harvested every year and only circa 14.5 million tonnes is utilised within New Zealand, with 22.6 million tonnes exported as raw logs.² These are sold on the open commodity market and Foresta is targeting initially approximately 1 million tonnes of these.

Upon funding Foresta is purchasing cutting rights and forests to secure the supply chain and we will be supplementing the supply with stumps sourced from existing forests as they are harvested since there are no other buyers. Stumps have the highest chemical content of any pine.

The forests are located as per the table below:

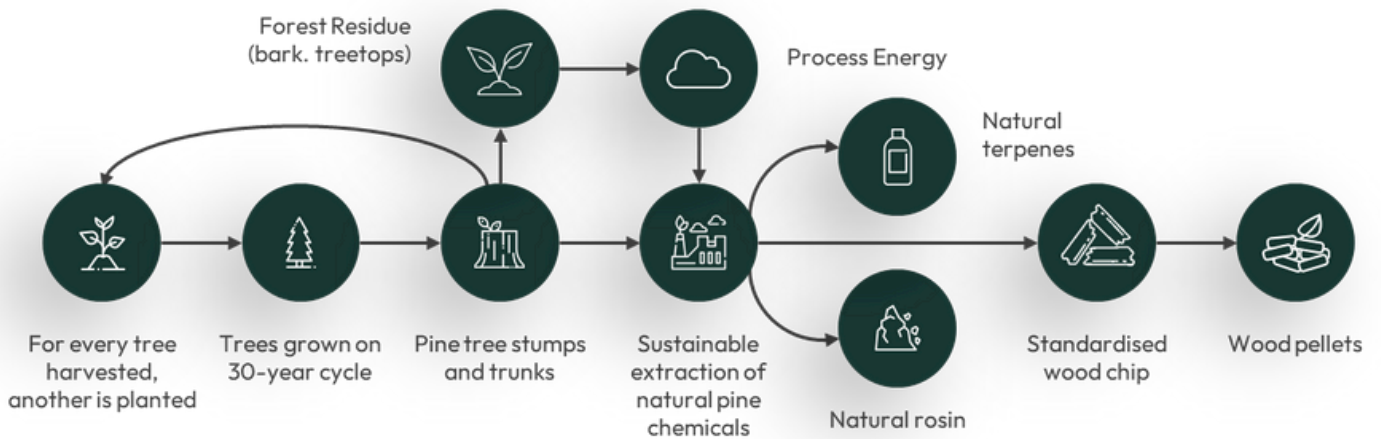


Location	Forest Size Required	Total forest area 2021
1 Kawerau	157,000	351,200
2 Rotorua	96,600	306,100
3 Waikato	32,200	94,300
4 Northland	64,400	194,000
5 Gisborne (East Coast)	64,400	157,000
6 Hawkes Bay	32,200	139,000
7 Southern North Island	64,400	176,000
8 Nelson	32,200	167,000
9 Otago Southland	64,400	219,000

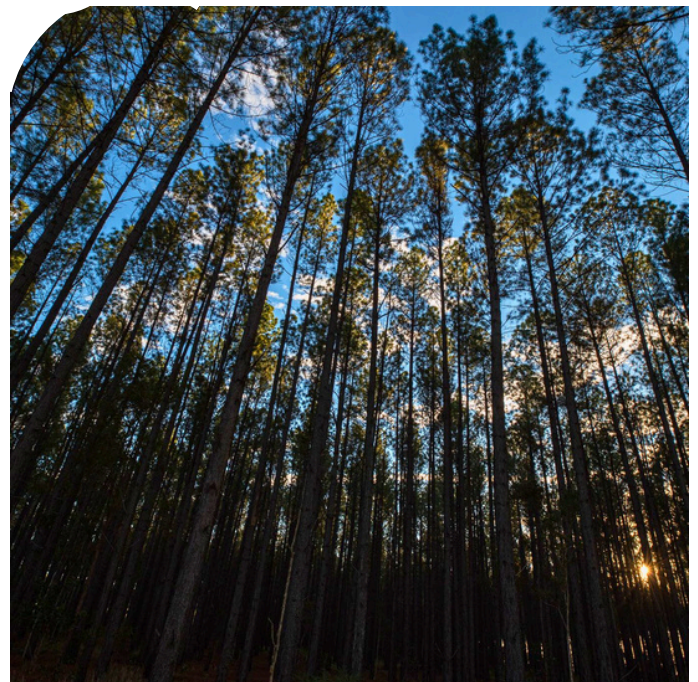
^{1&2} Forest Owners Association. Facts and figures 2021/22 New Zealand Plantation Forest Industry.

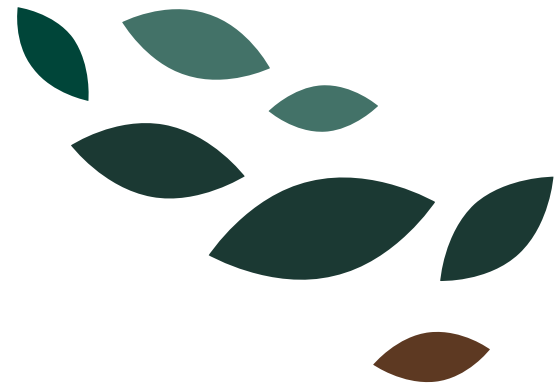


Our integrated processing technologies give us manufacturing cost efficiencies and scale.



We are able to manufacture multiple products from the one feed resource potentially doubling the revenue opportunities when compared to traditional business models.





Foresta Products

1. Torrefied “Black” Wood Pellets
2. Rosin
3. Terpenes

1. Torrefied “Black” Wood Pellets

Manufactured using world-class value-added processing technology combining and utilising all the tree resource, this unique and exclusive process provides gains with High Energy Output as a direct replacement of fossil fuels i.e. coal. The torrefaction process creates a solid uniform product with lower moisture and approx. 30% more energy than white wood pellets.

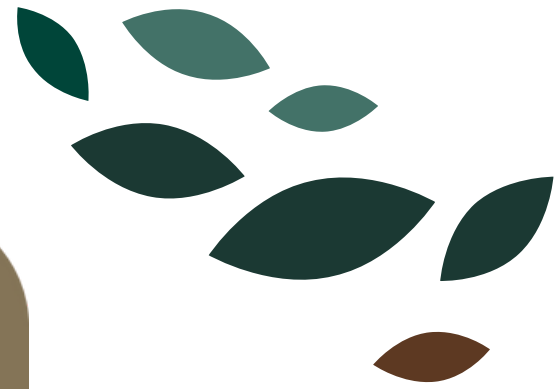
Advantages

- Higher energy content and grindability can improve boiler unit capacity, operability and economics.
- Superior transportation and storage features. (outside bulk storage)
- Sourced from sustainably managed NZ forestry.
- Equivalent energy burn compared with coal. (22-24GJ/t)
- Torrefied wood pellets' superior properties can enable a low CapEx approach to a coal-biomass conversion.
- Emission reduction. Comparison with coal by weight, (CO² -e) 95% reduction using torrefied black wood pellets.

Commercial Partnerships

- Foresta NZ Ltd has secured a sales contract for 65k tonne per annum and is creating partnerships to support a long term resilient and sustainable supply chain to ensure renewable energy demands are met.
- Transitioning onto Foresta torrefied wood pellets will assist these clients on their emission reductions strategies.





Wood Based Chemicals

We are working towards producing world class natural pine terpenes and natural pine rosin in its purest form, with zero additives.

2. Rosin

We extract natural wood rosin from Radiata Pine using steam distillation. Found along with terpene in pine logs and stumps, pine rosin is a highly sought-after material, used in various everyday products, from chewing gum to tires. The highest grade of natural rosin is produced through distillation. A process which only uses steam and no toxic chemicals. This results in a lighter golden colour rosin which is considered superior quality and can demand a premium pricing.

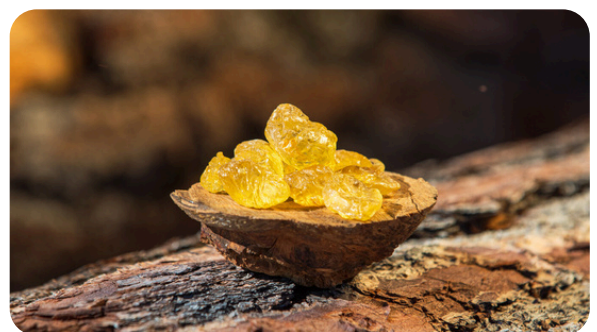
Advantages

- A non crystallising rosin.
- The ability to cook the rosin (without losing colour grades).
- Consistency of supply and product.
- High acid number (168-170).
- Good pale yellow colour.
- Good dropping point (73-74).

Commercial Partnerships

- Prospective customers with high demand Rosin
 - 80,000 tonnes, Resin/Chemicals manufacturing.
 - Company is appointing international traders to bulk sale rosin.

Global
reduction in
carbon
emissions.





3. Terpenes

We use a chemical-free, continuous counter flow steam distillation process, extracting terpenes that are immiscible with water, has a high boiling point, and very good refractive qualities. Our natural organic solvent extraction technique results in nothing but 100% terpene.

Our natural pine terpenes are intended to be exported in large quantities and used in the creation of food flavouring essences, disinfectants, pharmaceuticals and perfumes.

Advantages

- Replacing petroleum based chemicals in the supply chain.
- High Alpha Pinene content.
- High Beta Pinene Content.
- Zero sulphur making it an ideal raw material for value added products, particularly Aroma Chemicals.
- Very good refractive qualities.

Commercial partnerships

- Prospective customers with high demand Terpene.
 - 20,000 tonnes, Resins/Distillation/flavours/fragrance processing Plant.
 - 5,000 tonnes, Distillation Processing Plant.
 - Company is appointing international traders to bulk sale terpenes.



The global pine-derived chemicals market size was US\$ 10 Billion in 2017.



Market Size

Pine Chemicals/Wood-based chemicals

Industrially produced chemical substances are present in more than 90% of manufactured goods.(1) Transitioning to bio-based chemicals is essential for companies to work towards a net-zero economy.

This acceleration to net-zero is fueling the demand for bio-based chemicals. A segment of this is pine chemicals, for which the addressable pine chemical market is estimated at US\$10bn. The demand is growing at a 5% Compound Average Growth Rate(CAGR) until 2027.(2)

(1) <https://cefic.org/a-pillar-of-the-european-economy/facts-and-figures-of-the-european-chemical-industry/>

(2) PCA Industry Report – Global Impact of Modern Pine Chemical Industry 2019

Wood Pellets

The global coal demand breaches 8 billion tonnes.(1) The burning of coal contributes to over 30% of global greenhouse gas emissions, so rapidly phasing out and replacing with clean alternatives is a priority to mitigate climate change.

The global white wood pellet market was valued at approximately USD 4.1 billion in 2019 and is expected to reach around USD 6.1 billion by 2026. (2)

The global black pellets market was valued at USD 71 million in 2020 and it is expected to reach USD 182 million by the end of 2027, growing at a Compound Average Growth Rate(CAGR) of 14.1% during 2021-2027 (3)

(1) IEA energy Coal Analysis and forecast to 2025

(2) <https://dataintelo.com/report/white-wood-pellet-market/>

(3) Black Pellets Market Share 2022 | Growth Insights, Regional (globenewswire.com)

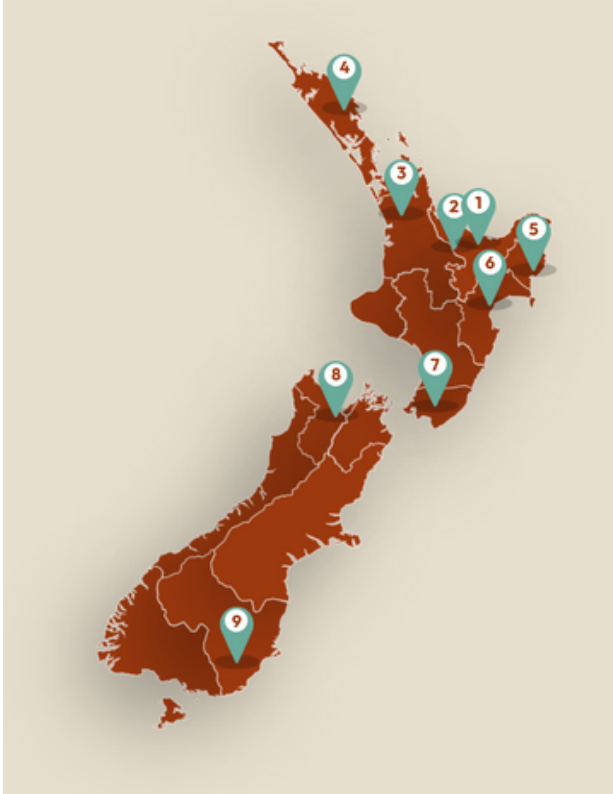


Foresta's products
are key enablers
to accelerate the
transition to net
zero.

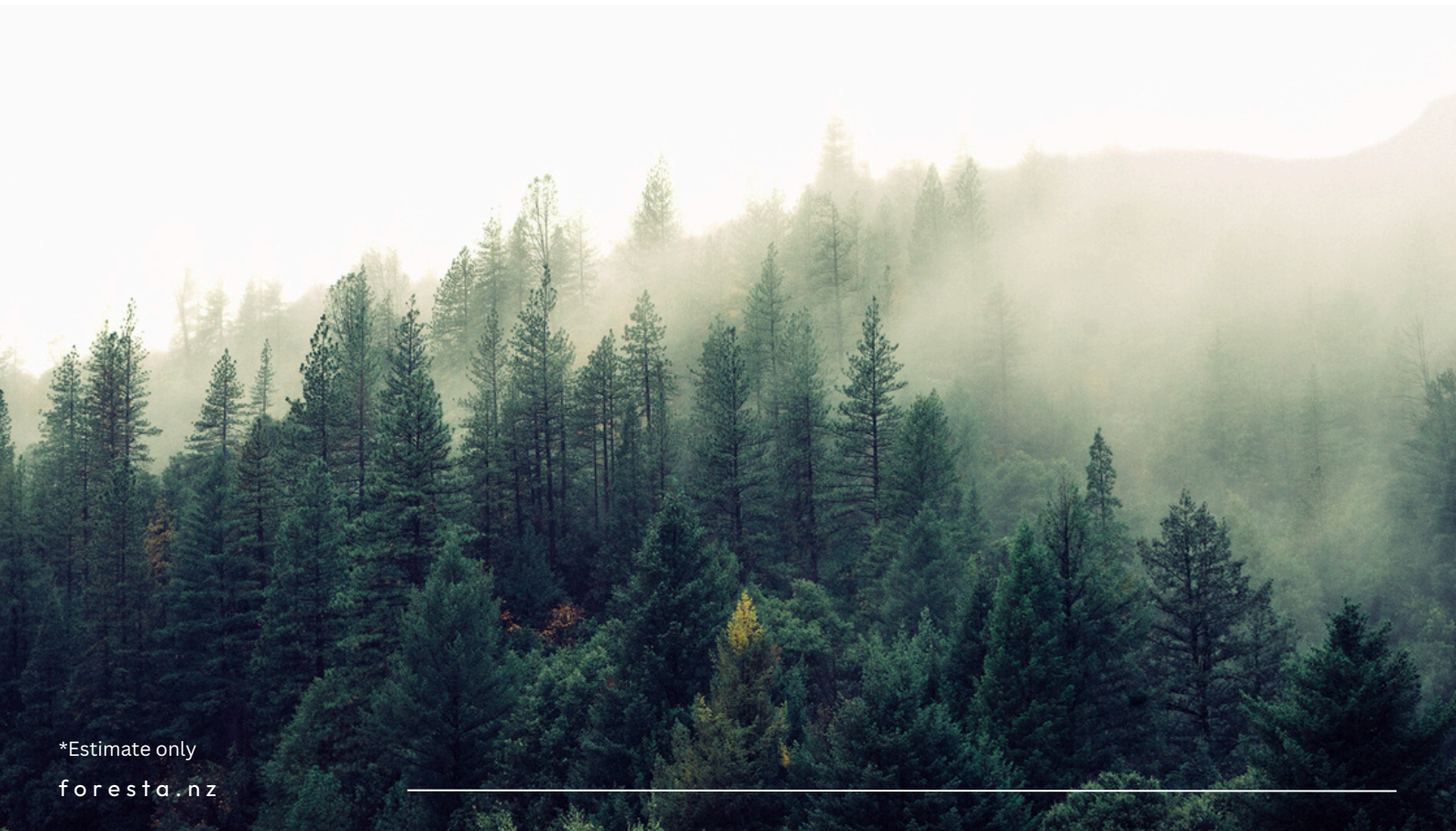


Process Plants

A “Build And Copy” approach, the new plants will be replicated across New Zealand close to productive renewable forests.



North Island Cluster	Production Capacity*
Plant 1 - Kawerau	624,892
Plant 2 - Rotorua	468,669
Plant 3 - Waikato	156,223
Plant 4 - Northland	312,446
Plant 5 - Gisborne	312,446
Plant 6 - Hawkes Bay	156,223
Plant 7 - Southern North Island	312,446
Plant 8 - Nelson	156,223
Plant 9 - Otago Southland	312,446



*Estimate only



Unlocking Opportunity

The CLIMATE CHANGE is a reality and will continue to impact the way we interact with the environment in the coming years.

Landscapes that were previously seen as barren or unsuitable are now suitable and situated/sited for growing plantation pine trees. We are developing our worldwide vision to work with the worlds changing climate whilst continuing to decarbonise the worlds climate through sustainable biomass.

We aim to keep up and grow with supply and demand, as the world embraces the opportunity in the climate crisis.

With our climate changing yearly, some of our landscapes are changing and new areas of land become perfect hosts for our specially selected and cultivated trees. We have patented processes to maximise chemical output and growth, minimising waste and carbon emissions. With coal being one of the biggest contributors of carbon emissions and it being limited we offer the opportunity to become limitless with biomass.

We are taking the world from a limited pollutant energy source to a sustainable biomass energy source.

Limitless opportunities...



- PELLETS
- CHEMICALS
- BIOTECH

Powering the world with FORESTA



Founders Story



My name is Ray Mountfort, I grew up on a sheep, beef and forestry farm in the Bay of Plenty, New Zealand. When I was 12 years old, my parents signed what was then New Zealand's first agriculture forestry joint venture and planted radiata pine trees on the back slopes of the farm. I found it fun to be involved with the crushing and burning of the scrub and land preparation for those pine trees.

At the age of 13 I started surfing and by 18 it was the ruling passion in my life. Surfing enabled me to connect with nature, the ocean and build great friendships as well as keep fit. I consider Murphy's Motor Camp at Matata my home break; it's located at the end of the road from the farm I grew up on. My first surf board was shaped by one of my best mates and named for our local break being 'White Sands' as this was the name of the Motor Camp, prior to Murphy's.

In my late teens while surfing at Otamorakau, a further 10km up the coast towards Tauranga, I encountered something that is common at the beaches at Matata and the Tarawera River Outlet. This was the smelly toxic discharge from the Tarawera River that originated inland at the Tasman Pulp and Paper Mill. Such was the pollution that upon arriving home at the farm, my whole family could smell me from a distance of several metres. My eyes were smarting and I smelt of sulphur and the mill. I couldn't believe that the Mill could do this to my local beach and to all of us who lived there and called it home. My dad is 81 today, and he can still remember my anger at being exposed to these chemicals and how the discharge must be damaging our fishery and water ways.

This experience in my late teens had a profound impact on my world view in regard to factories, pollution and their interaction with our environment. It has been with me ever since and has had tremendous influence when I realised that I had the opportunity to invent and commercialise new non-destructive processes for processing pine into chemicals and bio products.

This is why Foresta's process utilises the natural chemicals in the tree to extract the natural chemicals from the tree, eliminating smelly, toxic waste water discharges.

Management Team



Ray Mountfort

Managing Director

For the last 20 years Ray has been primarily involved in the pine chemicals industry.



Henry Cheng

Chairman

35 years of extensive experience in international business, resources, insurance, investment, finance and banking.



Maurice Fabiani

Executive Director

Over 30 years experience in international business.



Erich Van Zyl

Chief Financial Officer

15 years experience across multiple finance industries



Grant Yeatman

Chief Operating Officer

17 years experience in operations and management.



Alex Johnson

Senior Project Manager

15 years experience as a Project Manager.



Steve Pittman

Chief Development Officer

20 years of experience in Civil and Structural engineering and project management.



Rafael Moradei

Forestry Supply Manager

15 years experience in project management and science.



Dean Ormrod

National Sales Manager

30 years experience in sales



Teresa Aylott

Marketing Manager

15 years marketing experience.



Mikaela Sutton

Human Resources Manager

5 years experience in HR.



Michaela De Bruyne

PA

15 years experience in administration as a PA.



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Notes

The climate change threat brings opportunity
for greatness...