



# Pulp & Paper: Focus on Hardwood Opportunities

Sector Overview

# Disclaimer

© New Forests 2017. This presentation is issued by and is the property of New Forests Asset Management Pty Ltd (New Forests) and may not be reproduced or used in any form or medium without express written permission.

This document is dated 2017 with information as at September 30 2015. Statements are made only as of the date of this document unless otherwise stated. New Forests is not responsible for providing updated information to any person.

The information contained in this document is of a general nature and is intended for discussion purposes only. The information set forth herein is based on information obtained from sources that New Forests believes to be reliable, but New Forests makes no representations as to, and accepts no responsibility or liability for, the accuracy, reliability or completeness of the information. Except insofar as liability under any statute cannot be excluded, New Forests, its associates, related bodies corporate, and all of their respective directors, employees and consultants, do not accept any liability for any loss or damage (whether direct, indirect, consequential or otherwise) arising from the use of this information.

The information contained in this document may include financial and business projections that are based on a large number of assumptions, any of which could prove to be significantly incorrect. New Forests notes that all projections, valuations, and statistical analyses are subjective illustrations based on one or more among many alternative methodologies that may produce different results. Projections, valuations, and statistical analyses included herein should not be viewed as facts, predictions or the only possible outcome.

New Forests Advisory Pty Limited (ACN 114 545 274) is registered with the Australian Securities and Investments Commission and is the holder of AFSL No 301556. New Forests Asset Management Pty Limited (ACN 114 545 283) is registered with the Australian Securities and Investments Commission and is an Authorised Representative of New Forests Advisory Pty Limited (AFS Representative Number 376306). New Forests Inc. has filed as an Exempt Reporting Adviser with the Securities and Exchange Commission.



# Wood Pulp

Wood pulp is a major commercial product created from mechanical or chemical breakdown of woodchips into pulp fibres.



By 2020, pulp and paper is expected to represent approximately 40% of all global timber trade

- Pulp is a fibrous material prepared by chemically or mechanically separating cellulose fibres from wood. It is most commonly used as raw material in papermaking and can be made from either softwood or hardwood timber.
- **Softwood Pulp** - coniferous trees, like pines or firs, typically produce papers with a rougher finish such as paper bags and cardboard.
- **Hardwood Pulp** - from broad-leaved trees. Wood has very short fibres.
  - Hardwood timbers include Eucalyptus species like blue gum (*Eucalyptus globulus*)
  - Paper made from these species is generally smooth and therefore better for writing, copy, and print paper



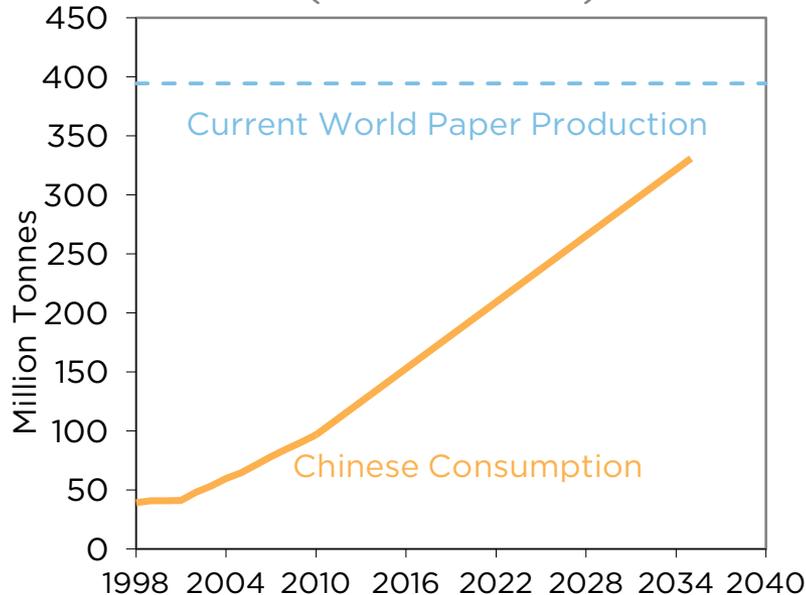
# A Changing Market for Pulp

A fall in demand for traditional pulp needs has been offset by new uses.

While pulp and paper demand has steadily grown over decades, there are structural changes occurring in the sector.

- Office technology created huge demand for paper in the 1990s as personal printers became part of business.
- However, the emergence of e-readers, iPads, and other digital devices has eroded demand for printing.
- This has been offset by growth in packaging, tissues, fluff pulp, and new biochemical industries, as well as the growth in China's middle class and increasing demand throughout Asia. Per capita consumption of paper products is positively correlated to per capita income (GDP).
- The growth of China's middle class has brought sweeping economic and social change. By 2022, purchasing power is expected to sit close to the average income of Brazil and Italy. Just 4% of Chinese households fell within that range in 2000—but 75% are expected to reach that level in 2022.

Paper consumption in China, with projection for 2035 (million tonnes)

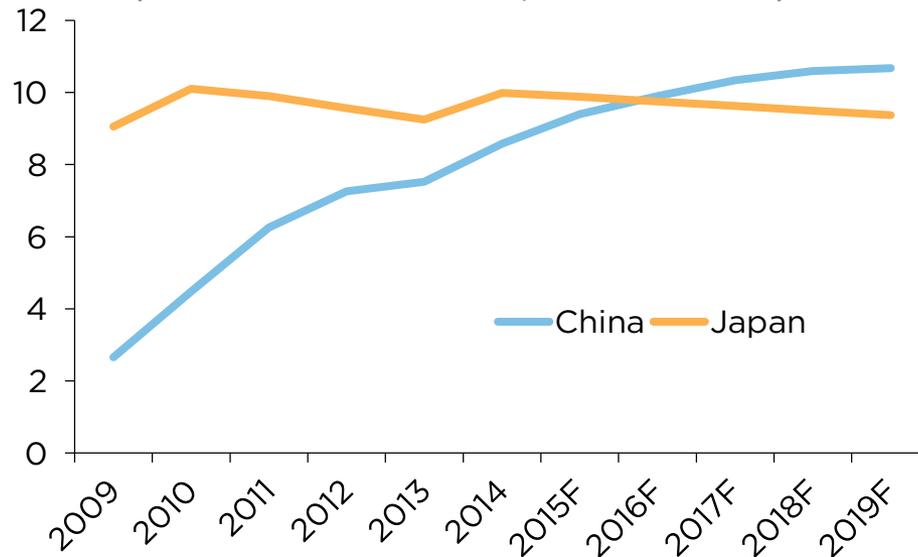


# Pulp Market Demand in Asia - Japan and China

Japan takes a step back as China becomes the primary driver of demand.



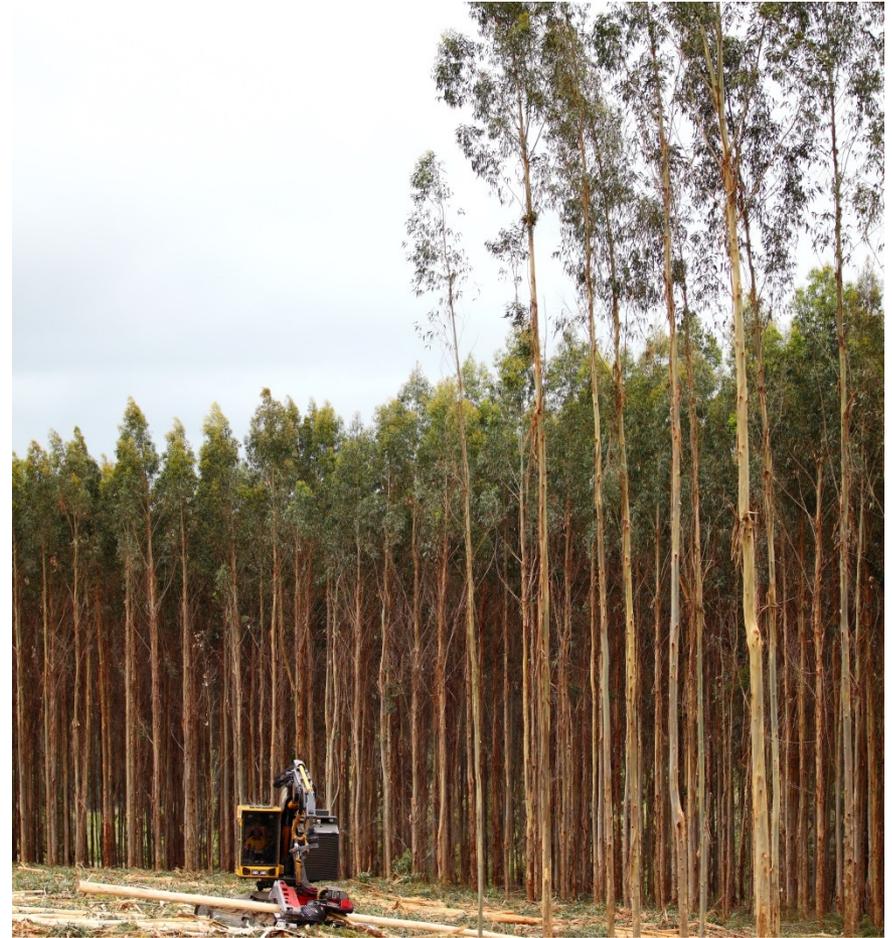
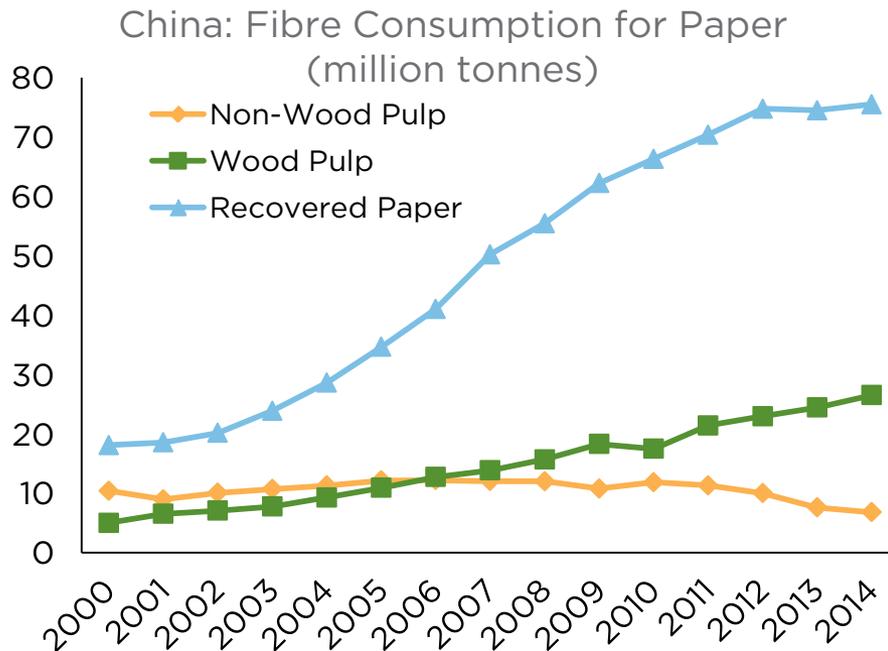
China and Japan Hardwood Chip Imports  
(Actual and Forecast, BDMT '000s)



- Historically, Japan has been the main source of demand for hardwood woodchip in the Pacific Rim due to limited local supply and trade barriers to competing paper imports.
- Demographic trends and technological change are leading to declining demand in Japan.
- In contrast, the growth of pulp and paper production in China has increased almost threefold since 2003, and China will likely surpass Japan in total woodchip imports in 2016.

# Pulp Demand from China

- China's consumption of wood pulp increased at an annual rate of 13% between 2002-2014. This included 9.0 million tonnes of additional pulp imports.
- Per capita paper and paperboard consumption in China is approximately 72 kg per person (world average is 58 kg per person).\*



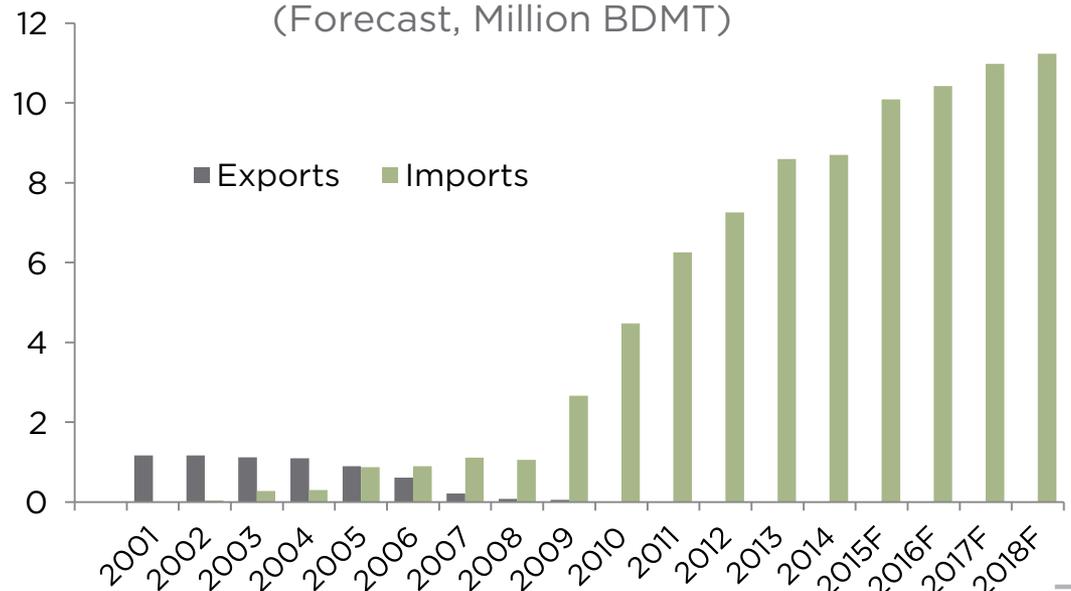
# Chinese Demand Expected to Continue Growing

China transitioned from being a net woodchip exporter in 2005 to being a net importer of woodchips.



Wood pulp imports are expected to increase from 18 million tonnes in 2014 to 20.7 million tonnes in 2017 and 24.3 million by 2022.\*

China Woodchip Supply Deficit  
(Forecast, Million BDMT)



# Pulping Capacity in China

An increase in pulp consumption is underpinned by new pulp mills in China, which will require a stable source of supply.

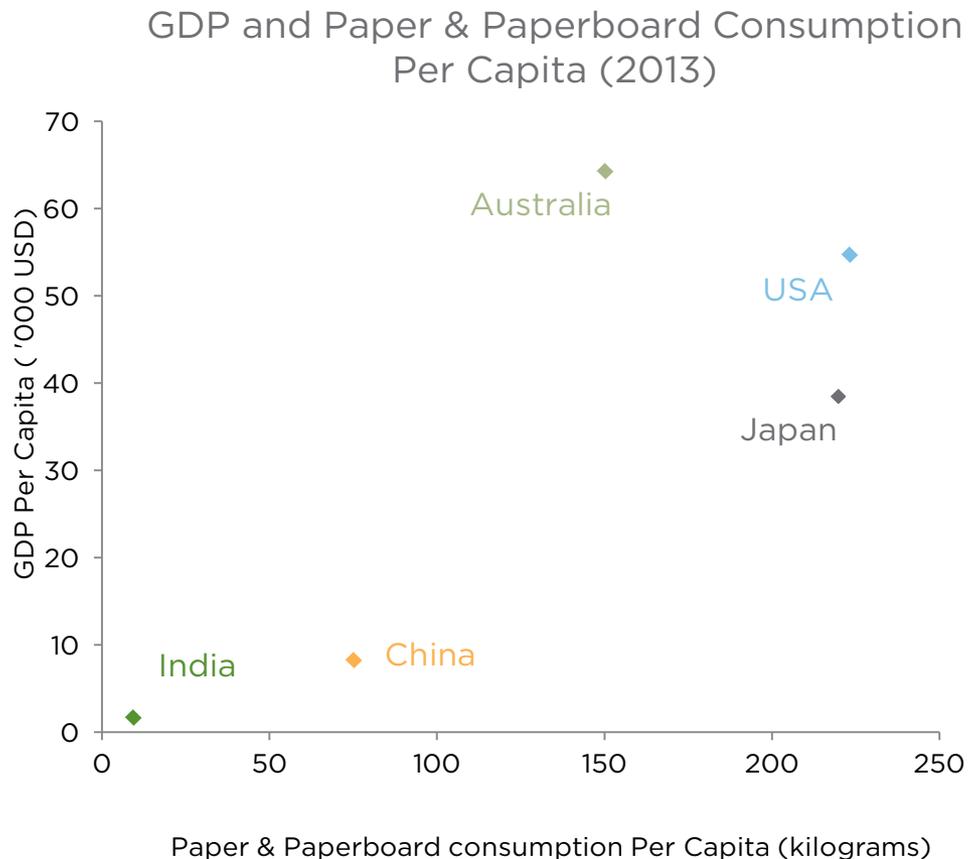
Between 2008-2013, woodchip imports into China grew by more than 50% per annum. However, in 2014 the growth rate in Chinese market for hardwood chips slowed, reflecting a change in government licensing of new pulp mills in China. China's demand for hardwood chips will continue to expand in 2015 and beyond, albeit at a slower pace.

Proponent	Location	New Capacity ('000 tonnes)	Start Date
Sun Paper	Zoucheng, Shandong	350	2015
Stora Enso	Beihai, Guangxi	250	2016
Chenming	Shouguang, Shandong	400	2016-7
Stora Enso	Beihai, Guangxi	700	2018
Qingshan	Putian, Fujian	300	TBD



# Pulp Market Demand in Asia - India

India's paper consumption is set to double by 2020 from its current level of 12 million tonnes.



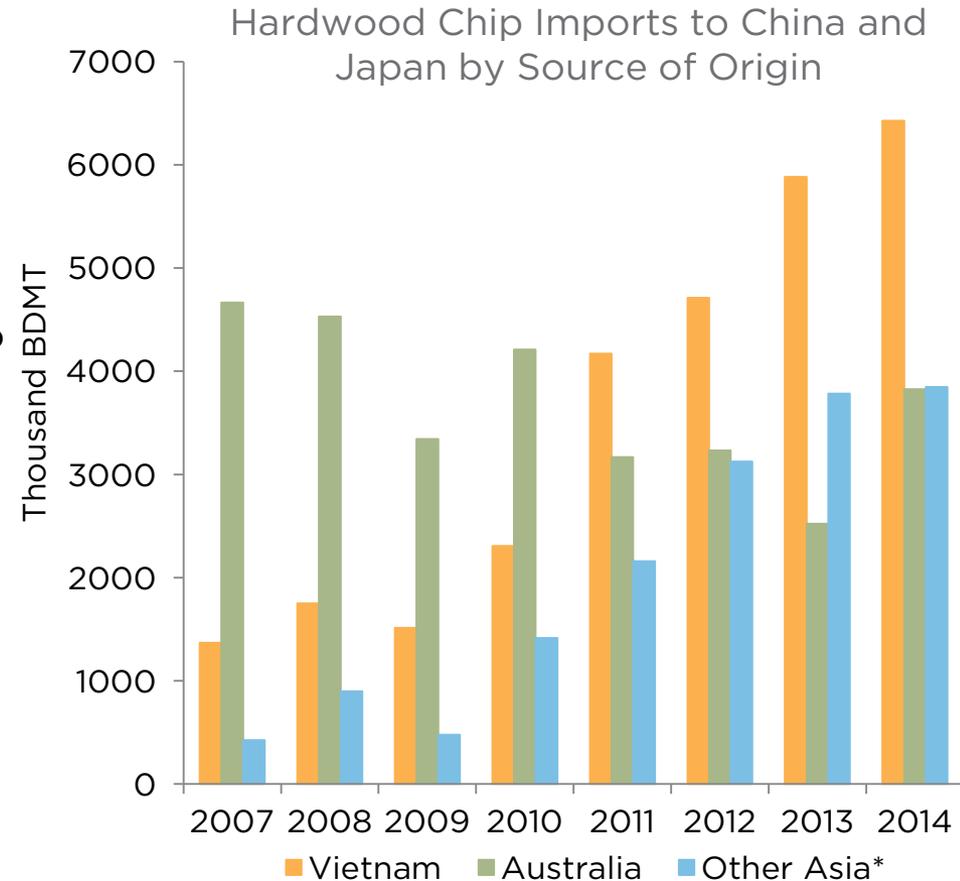
- Paper consumption is linked to economic development. India has 17% of the world's population, but consumes just 3% of paper globally.
- Indian per capita paper consumption has grown at a steady rate of 8% per annum over the last five years and is approximately 9 kg per person, well below the global average of 58 kg per person.
- Indian paper demand is increasing given rising disposable incomes and the expanding middle class. An increased budget allocation by the Indian Government to education also means that as literacy rates improve, so will demand for writing paper.



# Asia Pacific Woodchip Supply Dynamics

Australia is set to benefit as regional demand outpaces capacity of alternative supply sources.

- Southeast Asia has been a cheap source of supply.
  - Vietnam is the largest supplier of hardwood woodchips globally, but harvesting rates in Vietnam (and elsewhere in Southeast Asia) are unlikely to be sustainable due to overall economic challenges, lack of access to capital and government decisions to restrict woodchip export in favour of domestic processing.
- Australian blue gum woodchip is viewed as premium woodchip due to high pulp yield and consistency of product.
- Market has a preference for FSC certification, increasing the attractiveness of suppliers that can meet sustainable supply chain requirements.



\*includes Thailand, Malaysia, Cambodia, Indonesia

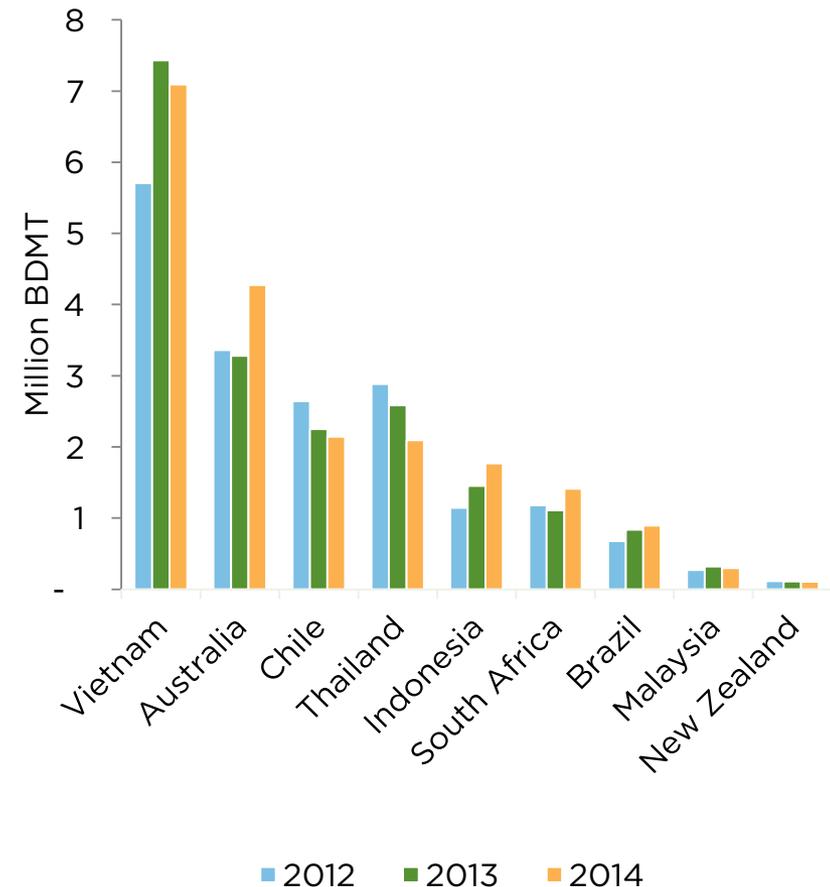


# Global Woodchip Supply Dynamics

The Pacific Rim woodchip trade comprises 90-95% of the global market and is primarily a hardwood chip market supplying Asian demand hubs.

- Vietnam has emerged as the top global hardwood chip exporter, having surpassed Australia, although there is now evidence that Vietnam's exports have peaked, with a fall in exports in 2014. This is partly the result of government policies to limit woodchip exports. This suggests that high volumes exported by Vietnam in 2013 and 2014 may not be sustainable in the future.
- Australian exports are back on the rise since 2014, supported by a combination of factors, including favourable currency movements, new larger woodchip vessels, and the maturing of almost 1 million hectares of plantations established in the late 1990s and early 2000s.

Top Global Hardwood Chip Suppliers

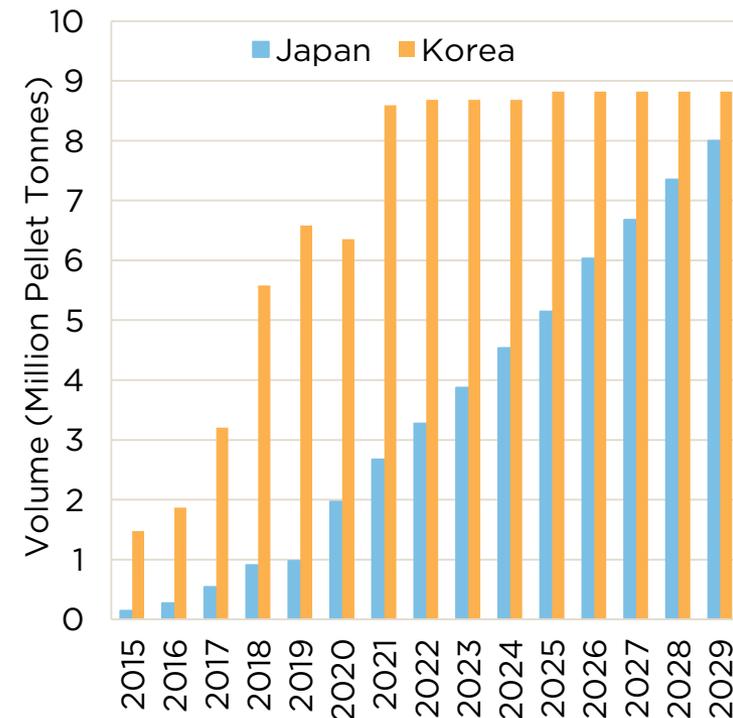


# Growing Demand for Wood Pellets for Biomass

Japan will require more than 6 million tonnes of biomass by 2030.

- Renewable energy is expected to account for 22-24% of Japanese energy mix by 2030, of which at least 4% is expected to be sourced from certifiable biomass
- Ministry of Economy, Trade and Industry (METI) wants hydroelectric, geothermal, and biomass capacity to try to replace nuclear power production, while wind and solar power capacity would replace coal-fired power plants. A feed-in-tariff scheme was introduced in 2011 to achieve these aims.
- Some critics expect that wind and solar power will not be able to meet the government's objectives. Thus, bioenergy may play a larger role. METI wants power generation by coal to be limited to a maximum of 50% of "thermal" power generation. This could be replaced with either LNG or biomass.
- Some large-scale coal-fired power plants have transitioned to the use of wood pellets, which requires less infrastructure changes than other fuel sources.

Demand for Internationally Traded Biomass



Source: Indufor and METI



# New Forests' World Class Hardwood Estate

Market dominant position as largest Australian supplier of hardwood chip to Asia



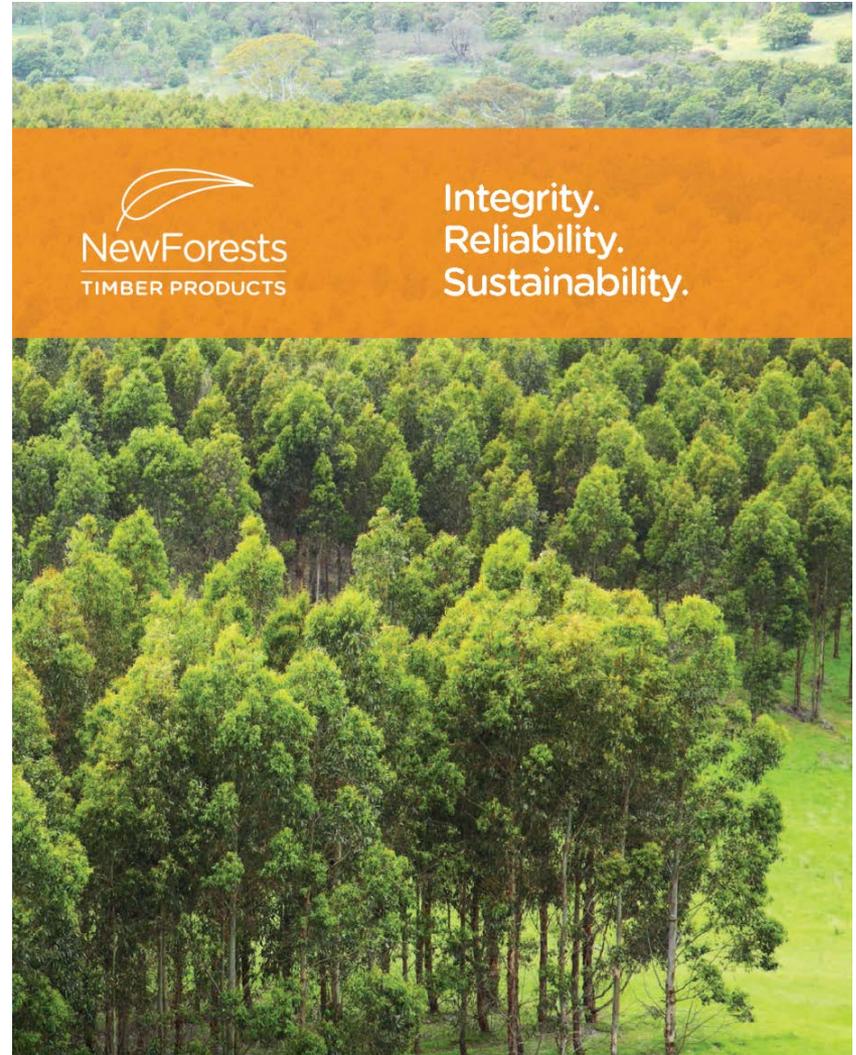
- Australian eucalyptus plantations owned by New Forests funds will soon be exporting a combined total of nearly four million green metric tonnes (GMT) of hardwood chip per annum.
- This volume, predominantly achieved across the estates of the Forestry Investment Trust and Forico – Australia’s largest freehold hardwood plantations – represents over 40% of Australia’s total hardwood chip export.
- New Forests is focused on performance in its hardwood estate through enhanced woodchip marketing, developing its network of relationships with buyers, and improved product quality from the forest.
- Launch of New Forests Timber Products in October 2015 positions the company to capture benefit of market position to ensure value is added to the forest.
- Additional hardwood estate located in Southeast Asia, where New Forests is actively investing in existing and new plantation opportunities, including acacia and eucalypts.



# New Forests Timber Products

Set to be Australia's largest hardwood chip marketing business.

- In October 2015 New Forests launched New Forests Timber Products Pty Limited (NFTP).
- NFTP will be responsible for the sale and marketing of plantation timber products from all of New Forests' hardwood plantation estates in Australia, eliminating the need for intermediaries and lowering supply chain costs.
- NFTP aims to be the supplier of choice for certified plantation fibre.
- Marketing and sales led by industry veteran with more than 30 years' experience in forestry and export businesses in the Asia-Pacific region and having sold more than 50 million tonnes of timber products into Asian markets.
- Visit [www.nftp.com.au](http://www.nftp.com.au) to learn more.



# Market Opportunity – Australia

Australian hardwood chip has high pulp quality and FSC certification – positive features in a competitive market.

Australia	Considerations
Low Country Risk	<ul style="list-style-type: none"><li>• Long track record; mature forestry industry</li><li>• Attractive and safe operating environment</li><li>• Open to foreign investment</li></ul>
Low Technical Risk	<ul style="list-style-type: none"><li>• Blue gum is a fast growing, reliable tree native to southern Australia</li><li>• Blue gum has a pulp yield of 54-57%; Nitens has a pulp yield of 53-56%; major species in Asia have a pulp yield of 40-50%</li><li>• This means buyers can pay more for a tonne of blue gum woodchip because it will produce more pulp with lower production costs</li><li>• Can be grown on a relatively short 10-14 year rotation, but Asian species have even shorter rotation</li></ul>
Exposure to Asia	<ul style="list-style-type: none"><li>• Direct exposure to Asian growth story and rising demand in China</li><li>• Close economic ties in natural resources trade</li></ul>
Key Features	<ul style="list-style-type: none"><li>• Many plantations can offer FSC-certified product</li><li>• Large-scale volume available for export with infrastructure in place</li><li>• Hardwood prices are attractive</li></ul>
Currency Risk	<ul style="list-style-type: none"><li>• Closely linked to movements in AUD exchange rates, with links to competitiveness</li><li>• Objective to create more diversified markets including domestic markets for the hardwood timber</li></ul>



# Market Opportunity – Southeast Asia

Southeast Asia has grown in importance in woodchip and pulpwood markets, but the industry will need to improve quality and consistency of supply to maintain or grow market share.

Southeast Asia	Considerations
Variable Country Risk	<ul style="list-style-type: none"><li>• Diverse institutional frameworks, legal, and investment environments across countries</li><li>• Requires strong governance approach</li><li>• Must manage counterparty and joint venture risks</li></ul>
Variable Technical Risk	<ul style="list-style-type: none"><li>• Species options can be suited to site requirements, but pulp quality may be lower; major species in Asia have a pulp yield of 40-50%</li><li>• This means buyers pay less for Southeast Asian woodchip, because it will produce less pulp with higher production costs</li><li>• Can be grown on rotations as short as 6 years</li></ul>
Exposure to Asia	<ul style="list-style-type: none"><li>• Direct exposure to Asian growth story and rising demand in China</li><li>• Close access to a variety of markets in China, Japan, and India</li></ul>
Key Features	<ul style="list-style-type: none"><li>• Opportunity to upgrade operational management and create better, more consistent supply</li><li>• Can compete on cost and access to markets</li><li>• Pulpwood provides more immediate cash flow with fast-growing species while feature-grade timbers require longer rotations</li></ul>



# Looking to the Future

New market opportunities may help support demand for woodchip, pulpwood, and other hardwood uses into the future.

- New uses for pulp are likely to emerge over the next decade – innovation in biomaterials is key.
- Australia's eucalyptus estate could begin to supply biomass energy, liquid fuels, wood energy pellets, and biomaterials (resins, synthetic fibres).
- Fast-growing plantations of Asia will rise to replace natural forest chip volumes
- Movement to a 'green economy' is driving research and development work around plant-based fibres and energy materials.



# Want to Learn More?

To learn more about New Forests' investment programs related to woodchip and pulpwood markets in the Asia Pacific, contact the Investor Services team at [is-team@newforests.com.au](mailto:is-team@newforests.com.au).

