

Macht Macht Märkte?

30. Freiburger Winterkolloquium Forst und Holz
29. Januar, 2010



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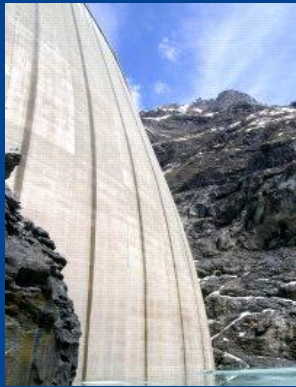
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The POYRY Group



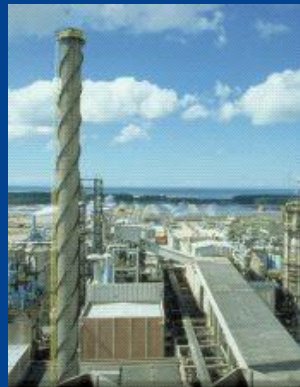
Net sales €821.7m in 2008

Personnel 7924



Energy

- Renewables, Waste to Energy
- Energy markets, policies
- Sector/producer strategies
- Plant design and operations



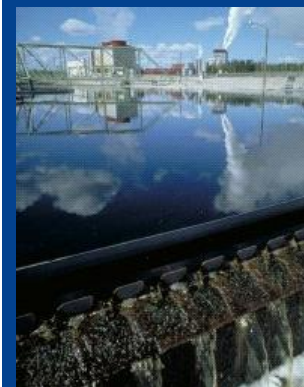
Forest Industry

- Investment studies, Design, Engineering
- Management consulting
- Performance Improvement
- Bioenergy, Renewables
- Recycling, Value from waste, sustainability



Transportation

- Rail transportation systems
- Road, tunneling and bridge projects
- New service offerings



Water & Environment

- Water supply/waste water
- Organic waste management
- Flood protection



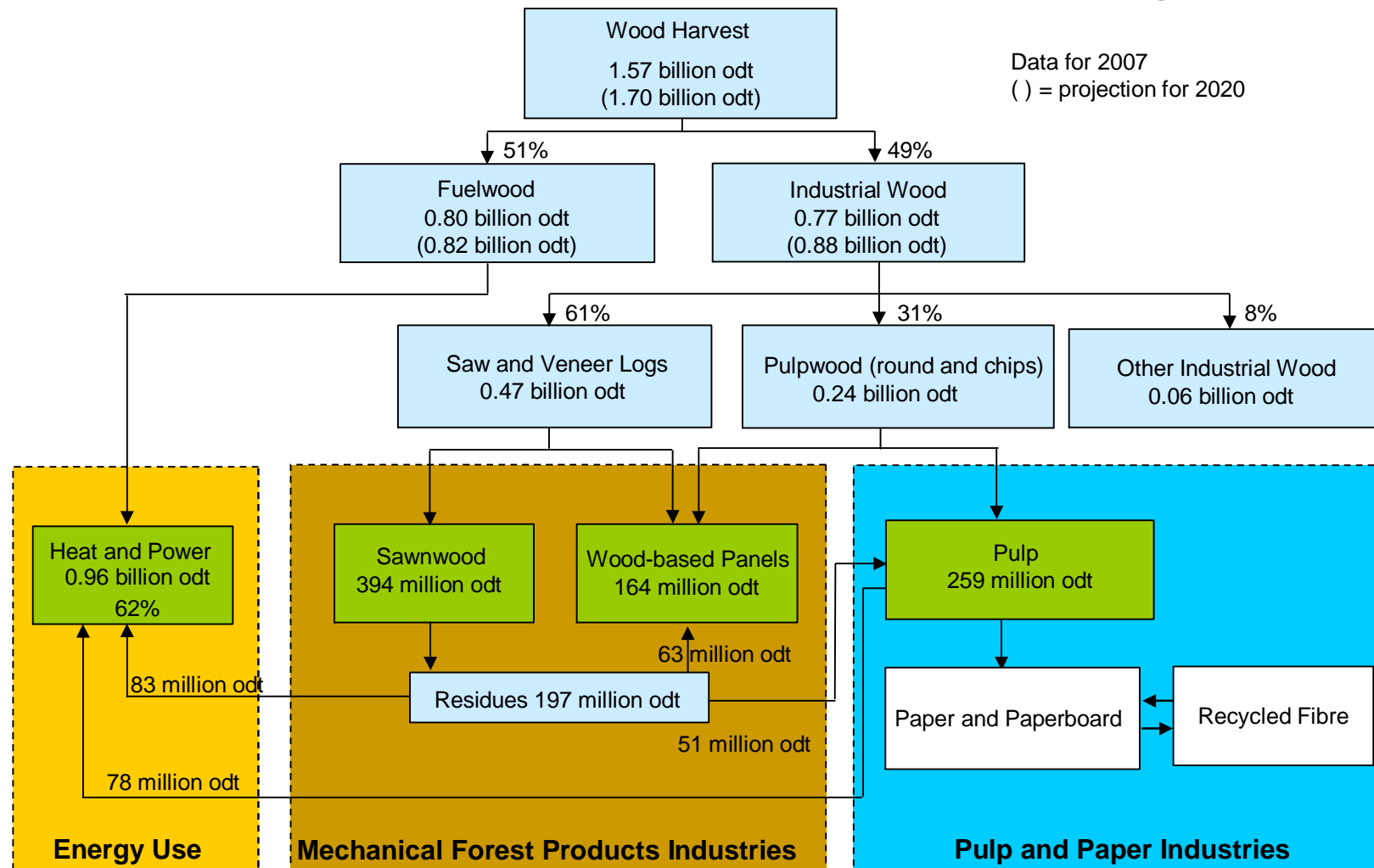
Construction Services

- Project management
- Architectural design
- Structural engineering
- Building technology
- Construction supervision

Global biomass consumers and their market power

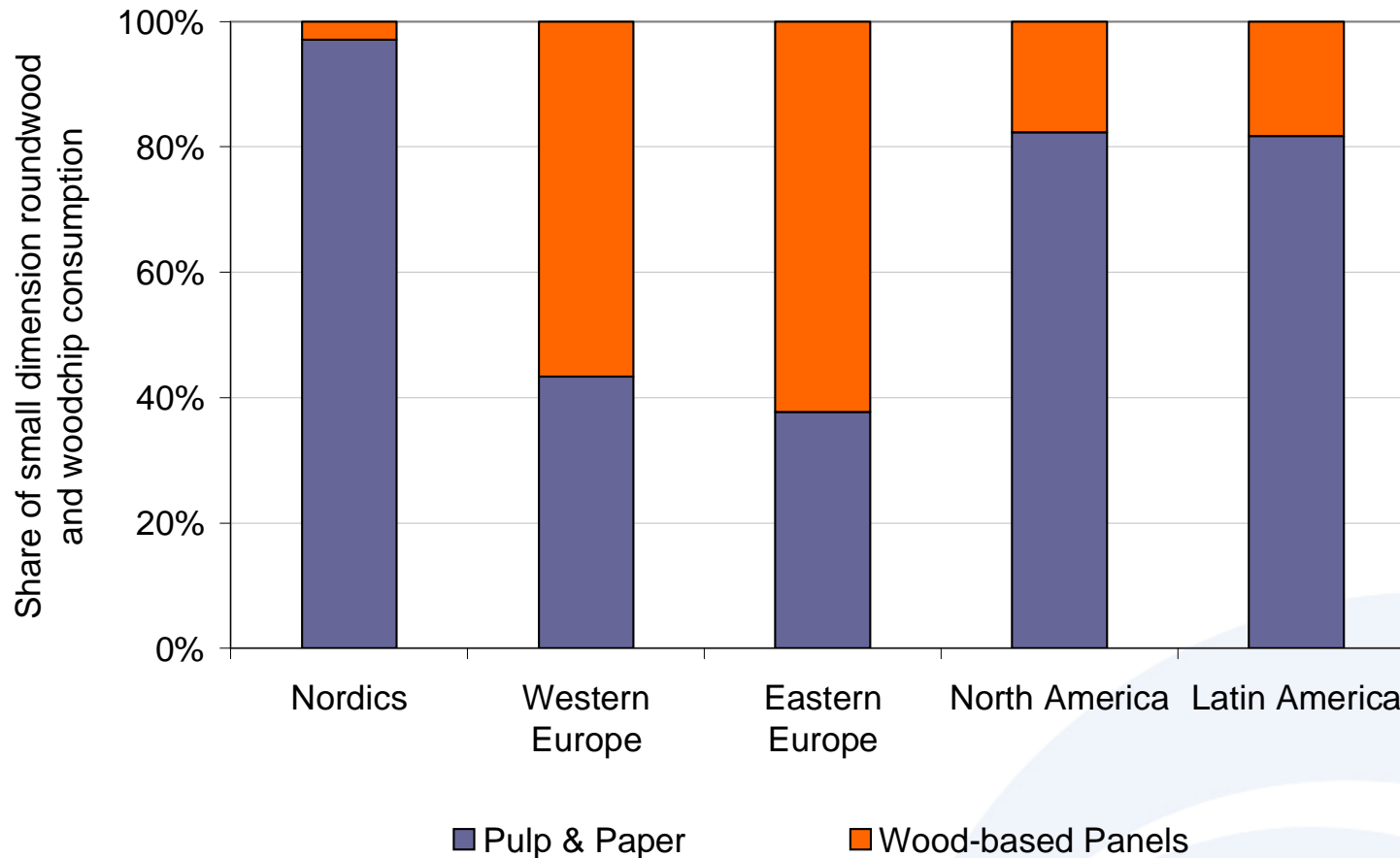
Wood Consumption by Industries

More than half of the wood currently used on a global level, is used in energy production in one way or the other. The pulp industry is by far the largest consumer of small dimension roundwood and woodchips in most regions.



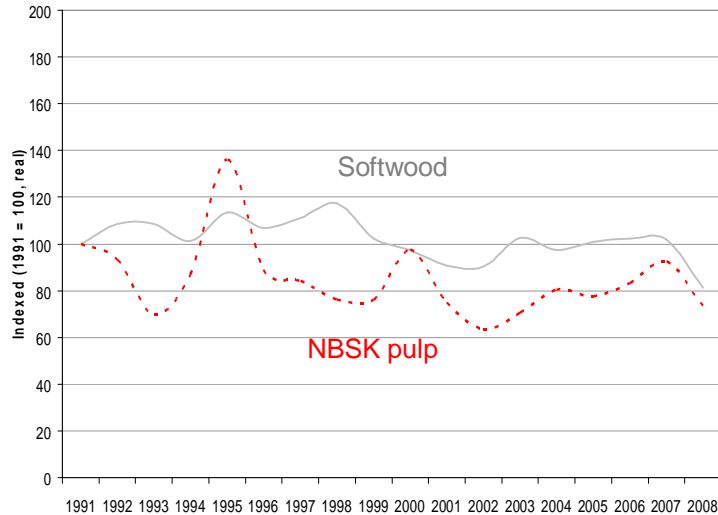
Regionalised Wood Consumption Pattern

In the Nordics and in the Americas most of the small dimension roundwood and sawmill woodchips have historically been used for pulp production, while in Western and Eastern Europe the wood-based panel industry has a relatively larger share.



Correlation of pulp and panel prices and wood prices

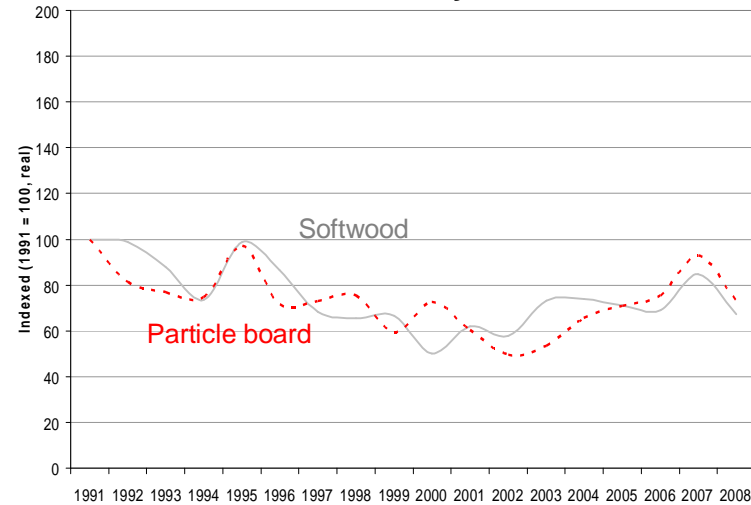
Historical price correlation US Southeast



The pulp industry is the biggest end-user of pulpwood and woodchips in US Southeast and in Canada.

Historically, biomass prices have fluctuated around the wood paying capability of the pulp mills, tracking the price development of Northern Bleached Softwood Kraft (NBSK) pulp

Historical price correlation Germany

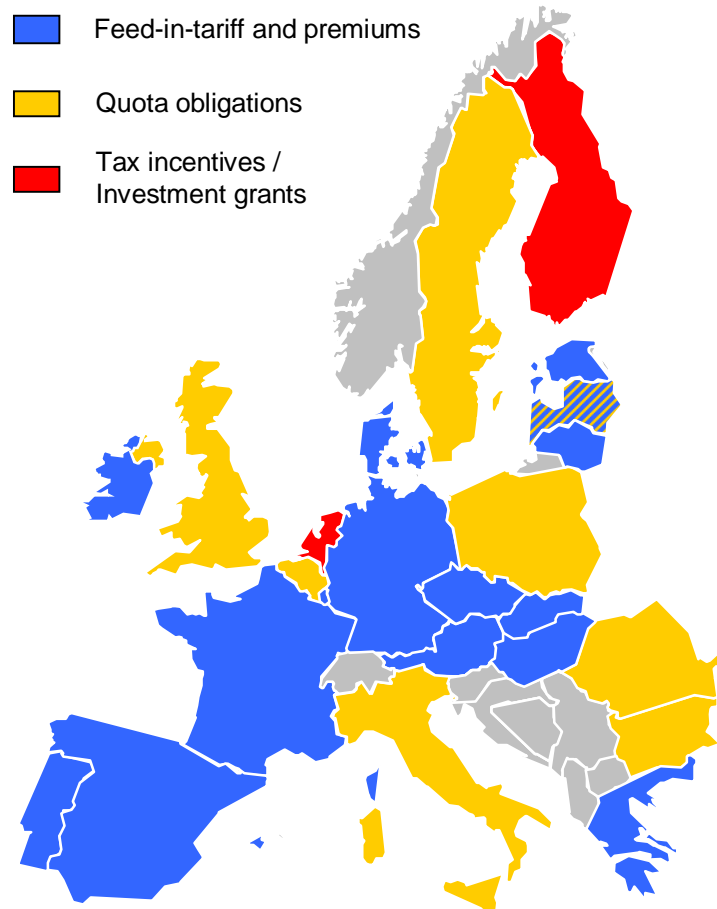


Historically, Germany has the highest biomass prices in Europe. The biomass price is largely driven by the wood panel industry - particleboard and MDF and an already well developed bioenergy market.

Bioenergy as a new market power?

Bioenergy as a new Market Power?

EU Member States have created a range of support measures and market based instruments for promoting renewable energy production. Currently, the 27 Member States operate 27 different national support schemes. Most of them are different forms of feed-in tariffs and premiums or quota obligations.



Feed-in tariff and premiums

Government controlled feed-in tariffs are granted to operators of eligible domestic renewable electricity plants for the electricity they feed into the grid. Premiums are paid to the producer on top of the electricity market price. The feed-in tariffs normally are granted for 10-20 years and provide a strong long term degree of certainty which lowers the market risk faced by investors.

Quota obligations

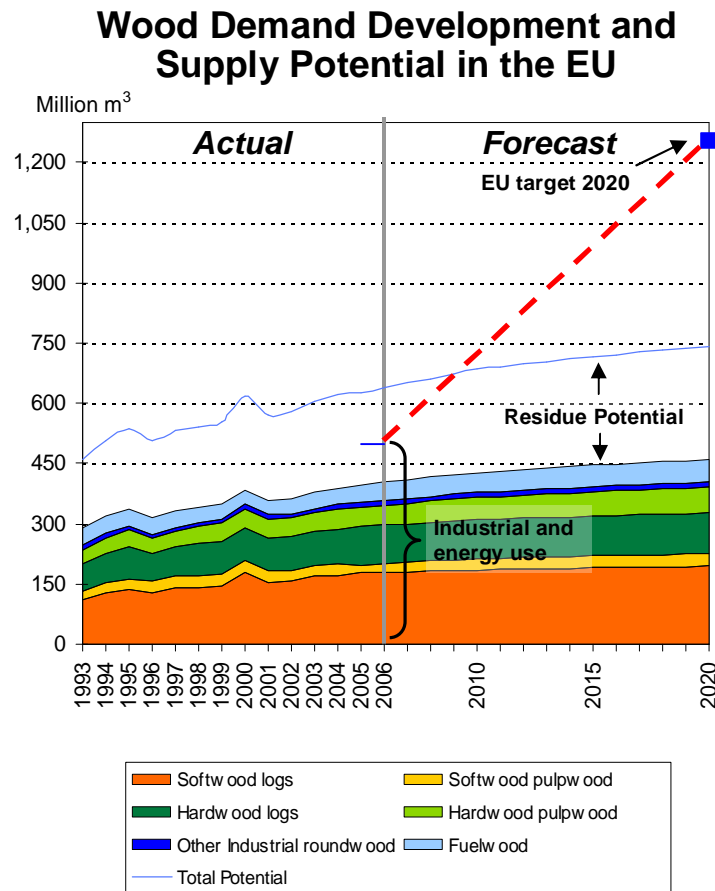
Governments impose an obligation on consumers, suppliers or producers to source a certain percentage of their electricity from renewable energy.

Fiscal incentives

Producers of renewable electricity are exempted from certain taxes (e.g. carbon taxes).

Bioenergy as a new Market Power?

Even if both the theoretical harvest and residue potential were fully utilised, the current EU target for renewable energy, maintaining the current share of wood-based biomass within the renewable energy sources, is impossible to achieve on a sustainable basis from the EU forest resources.



The EU aims at achieving 20% renewable energy share of total energy consumption by 2020. Assuming the current share of wood-based biomass within renewable energy sources the target means a combined industrial and energy use of wood of over 1,200 million m³ in 2020. This is not possible to achieve on a sustainable basis from the EU forest resources.

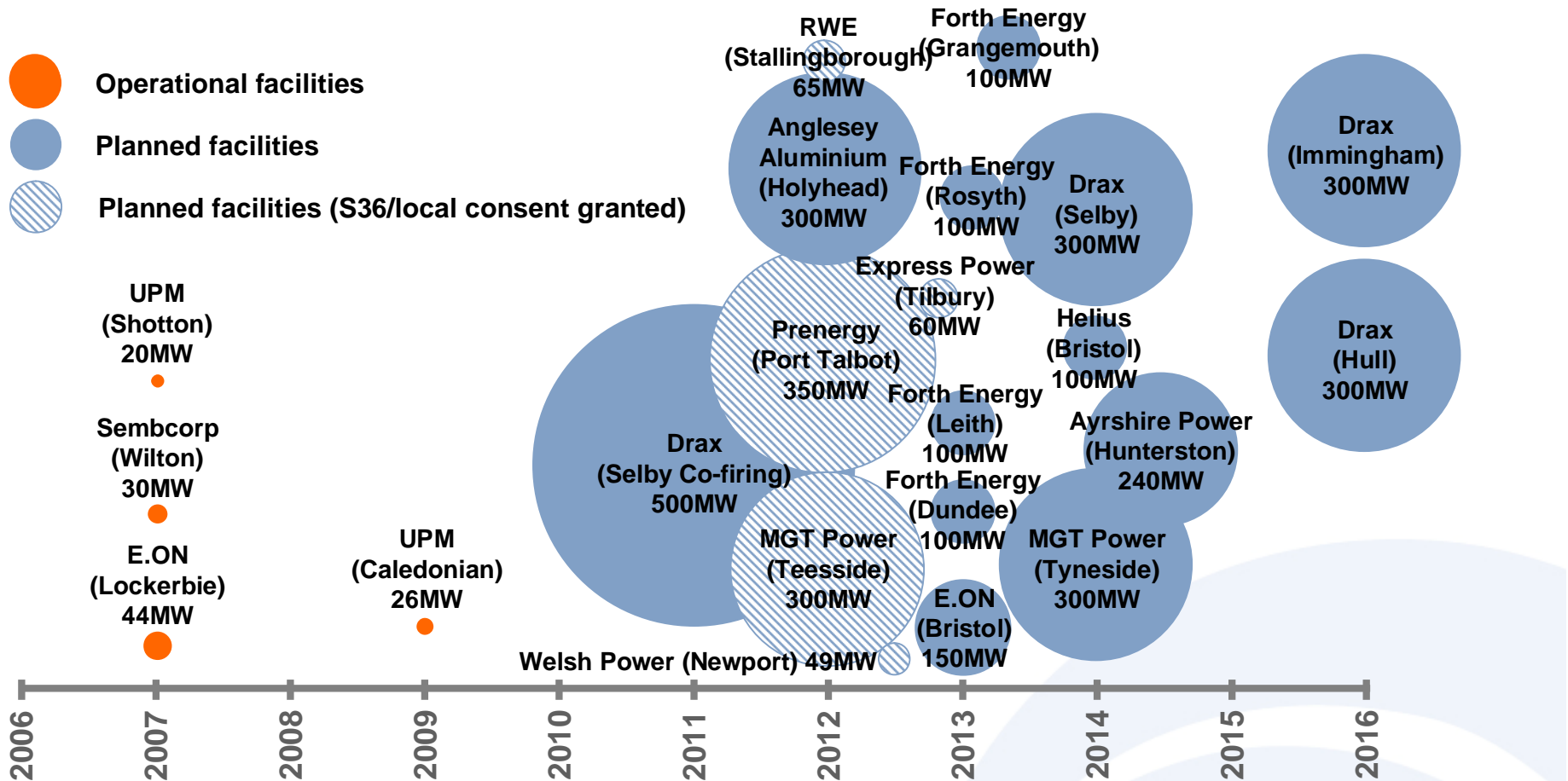
Market adjustment will take place through:

- the level of achievement of the EU target
- the share of wood in renewable energy
- increased use of harvest residues and low quality wood
- high-yield bio-energy plantations
- import of biomass into the EU

Case study: The UK biomass market

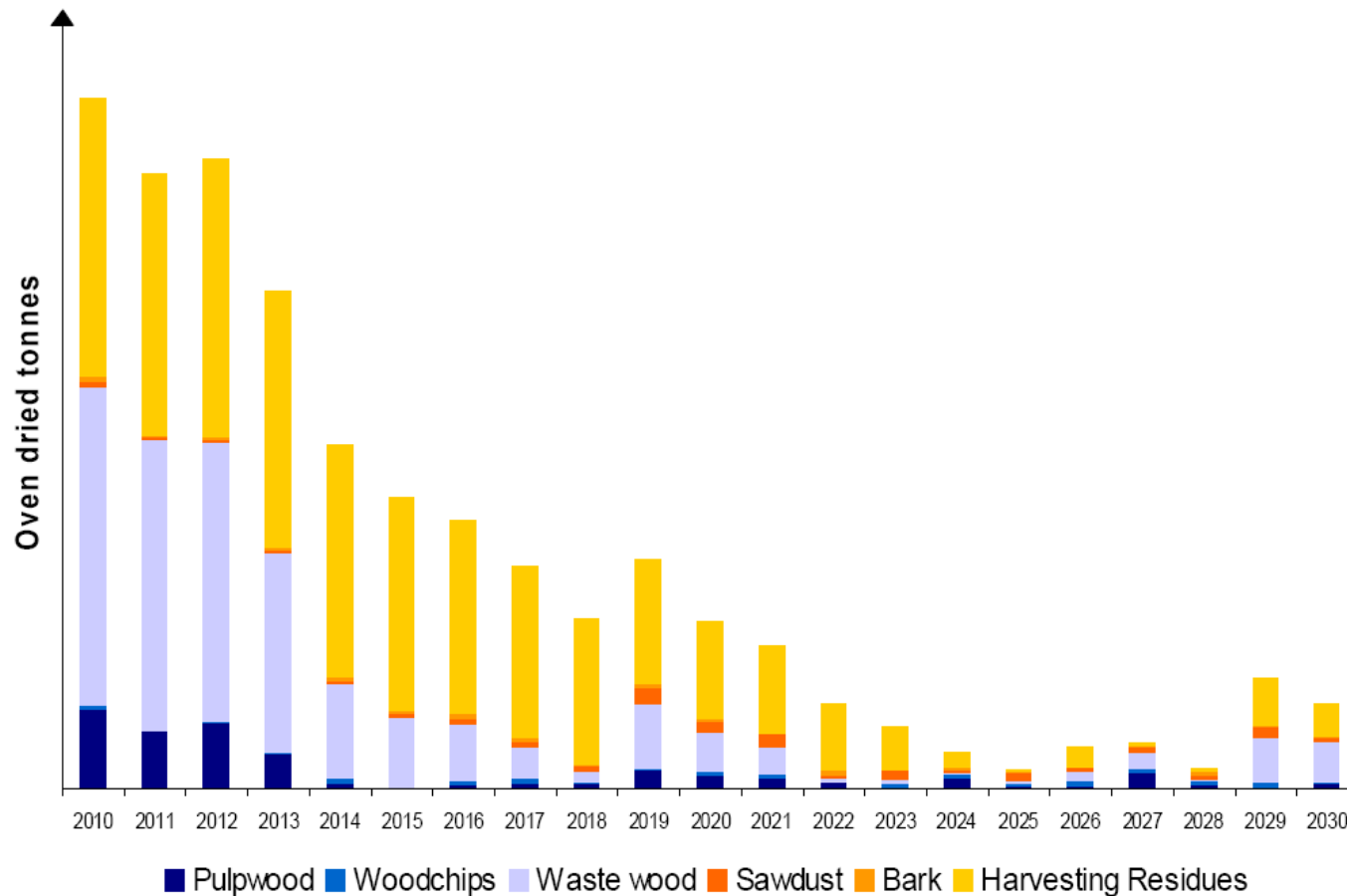
Case Study UK: Bioenergy Players

If most of the large-scale projects planned in the UK are successfully completed, an additional 3GW of biomass-based energy capacity will be created by 2016. This is likely to create a demand for in excess of 25 million gmt of biomass.



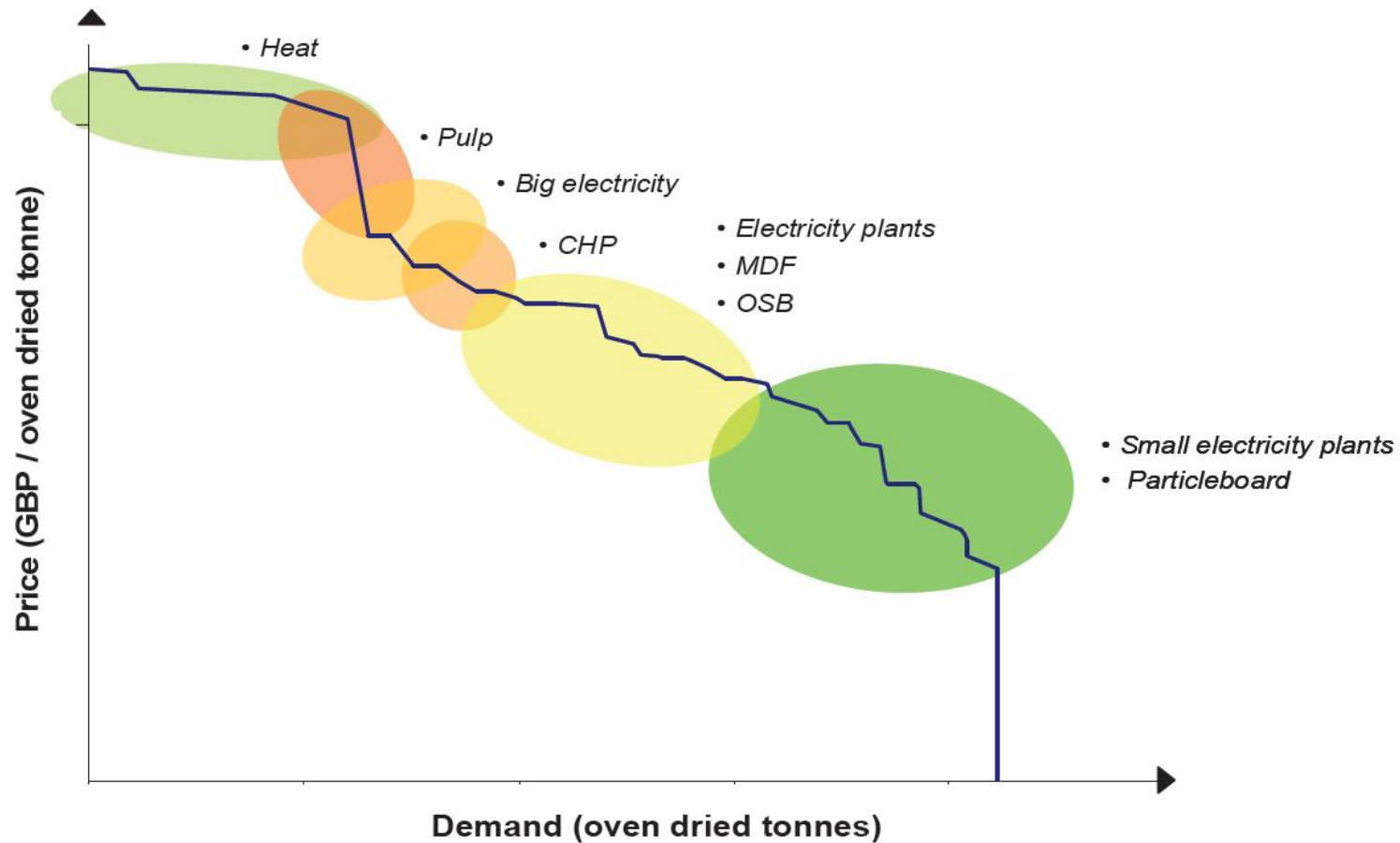
Case Study UK: Supply Surplus Development

Waste wood and harvesting residues are the only biomass assortments in the UK, which still offer a good supply surplus. Bioenergy players will mainly target these assortments and most of the current surplus will be consumed by 2022.



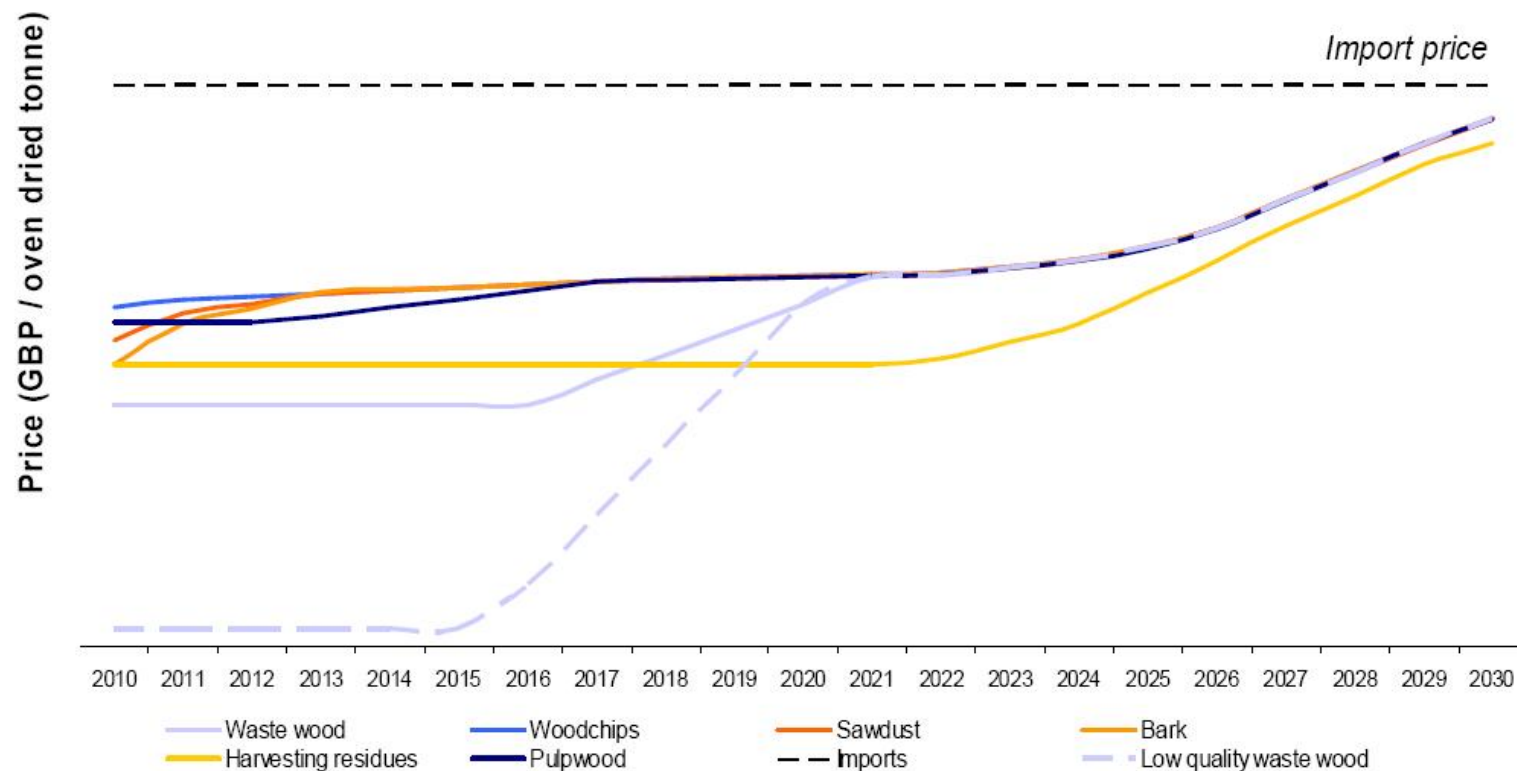
Case Study UK: Aggregated Demand Curve 2020

Particleboard mills and small electricity plants have the lowest wood paying capability and are hence facing the highest risk for potential market exits.



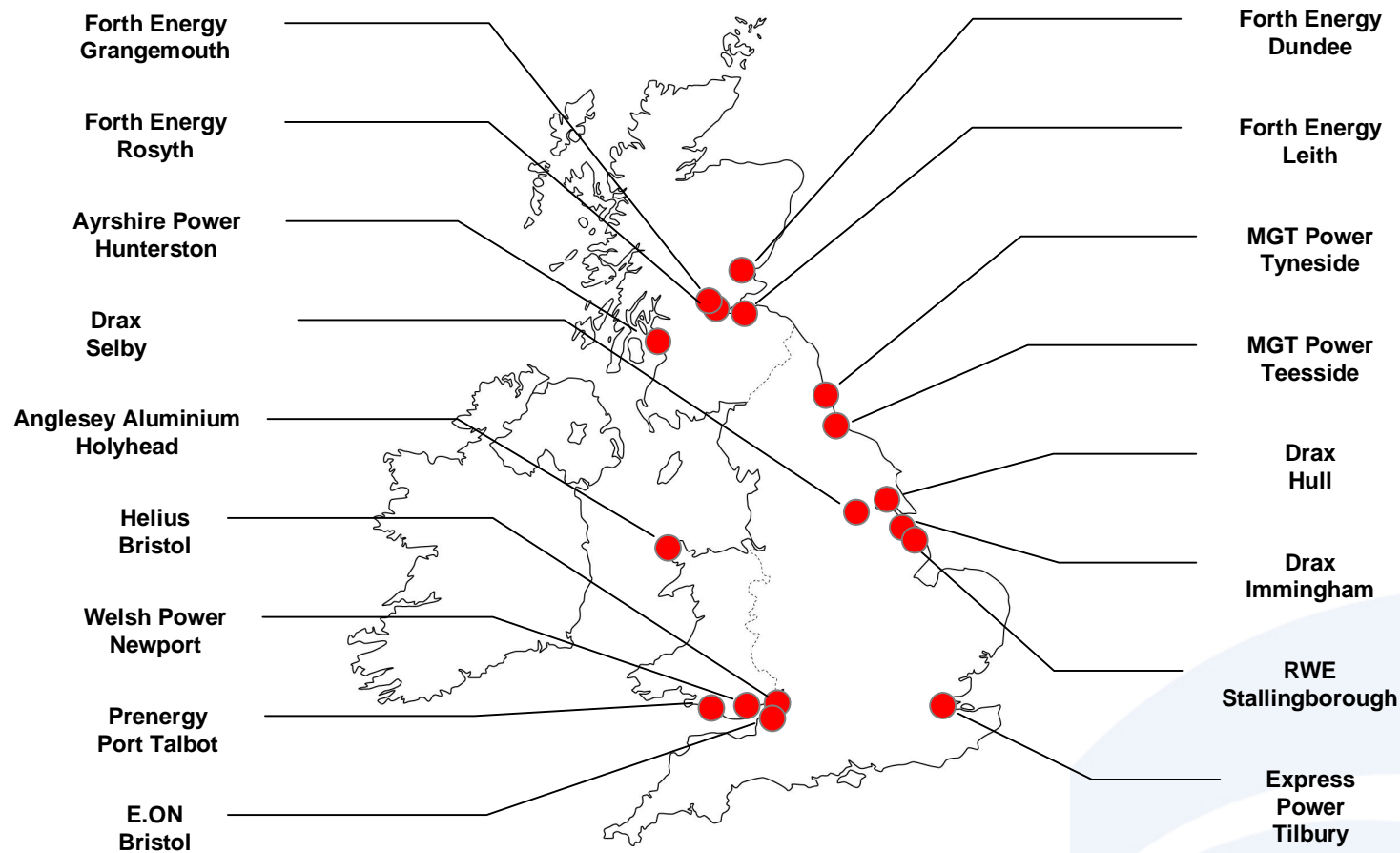
Case Study UK: Bioenergy Price Forecast

The forecasted UK demand development will result in significantly rising domestic biomass prices, capped by the average price for imported biomass.



Case Study UK: Bioenergy Players

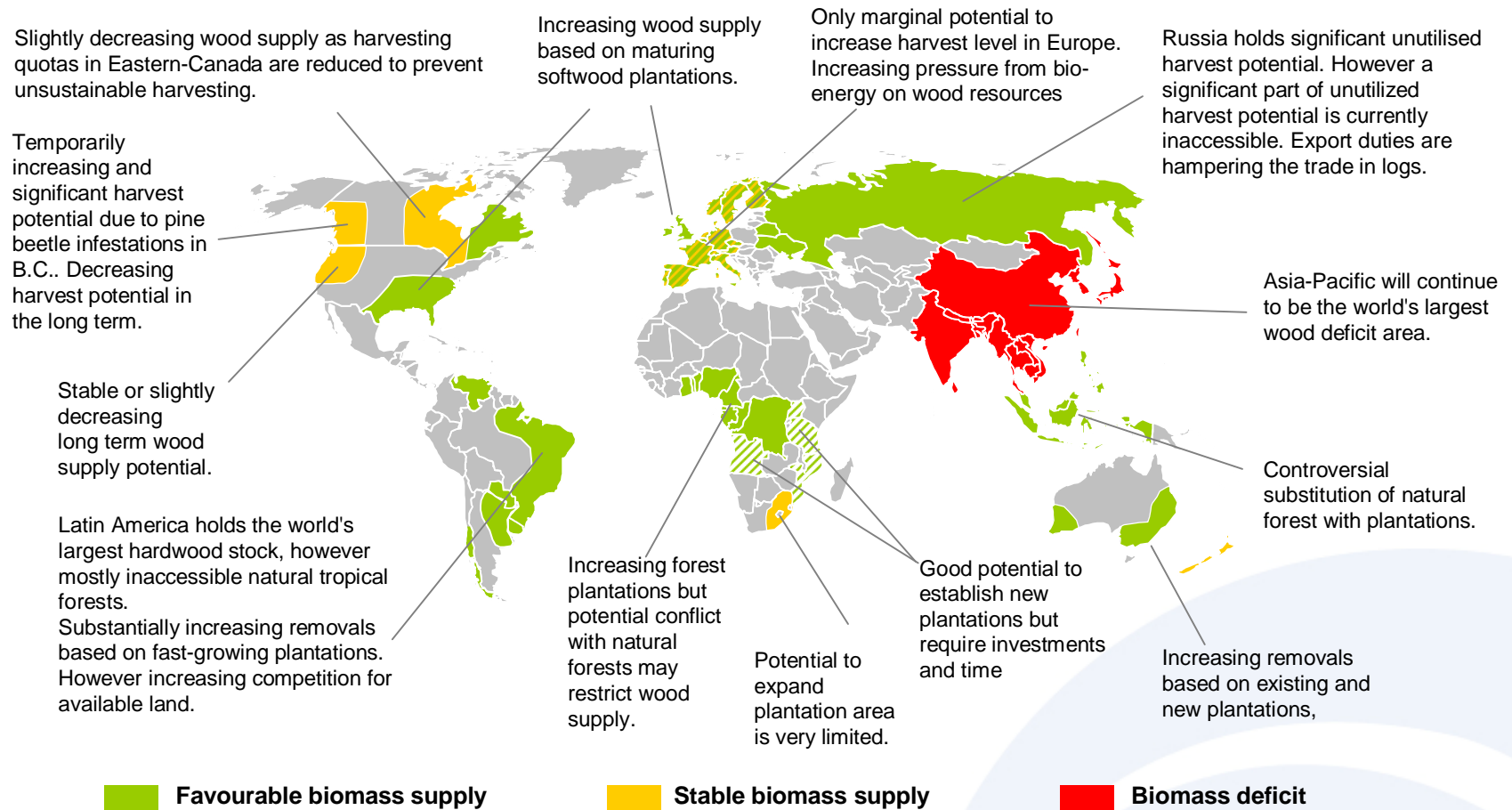
The scale of the planned biomass-based energy capacity in the UK is such that the majority of the biomass will need to be imported. Therefore most of the large-scale projects will strategically be located at deep-water ports.



Where is all this biomass supposed to come from?

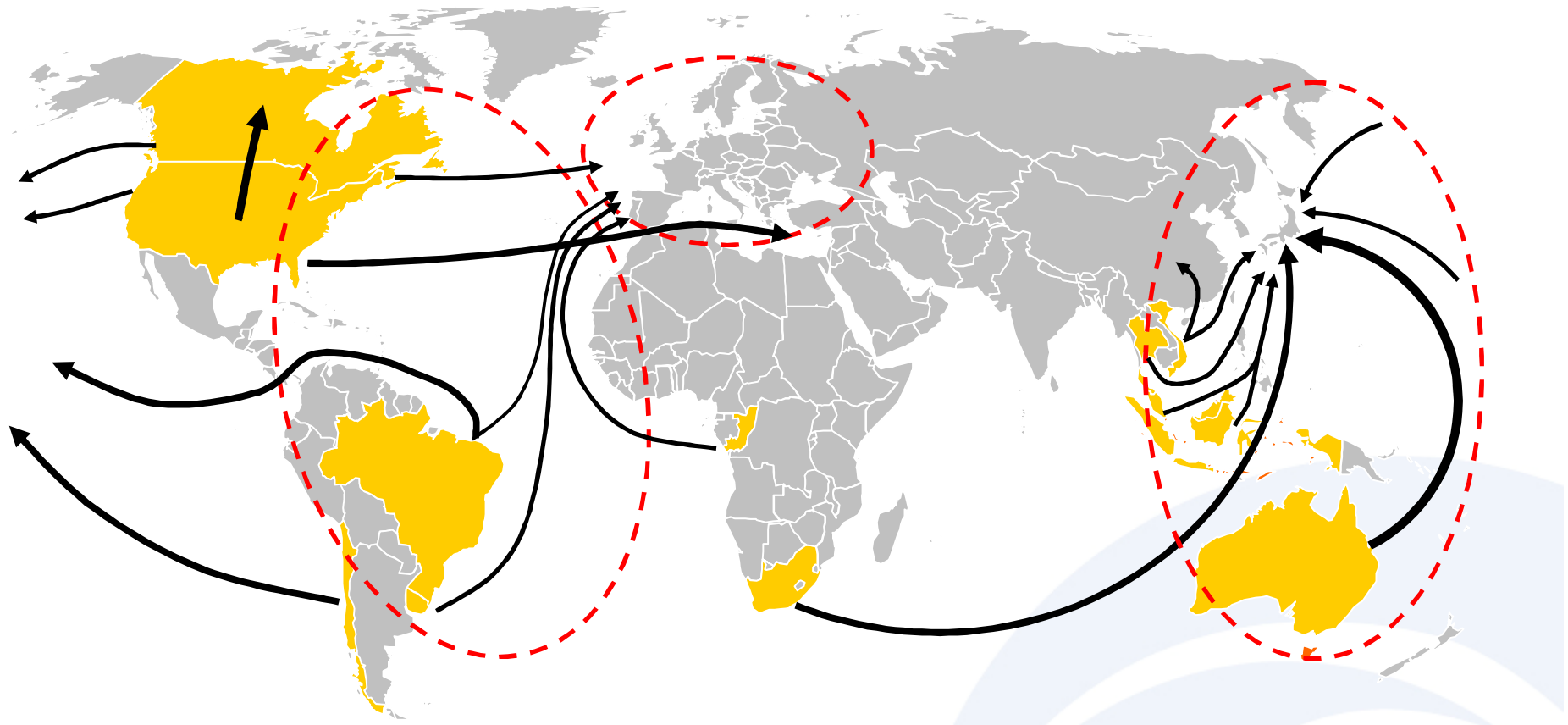
Global Biomass Resources

North America and Russia have the potential to become major biomass supply regions. Continuing plantation developments in Latin America also offer interesting opportunities as biomass source. Sub-Saharan Africa creates strong interest from plantation developers and could be a key strategic biomass source in the future.



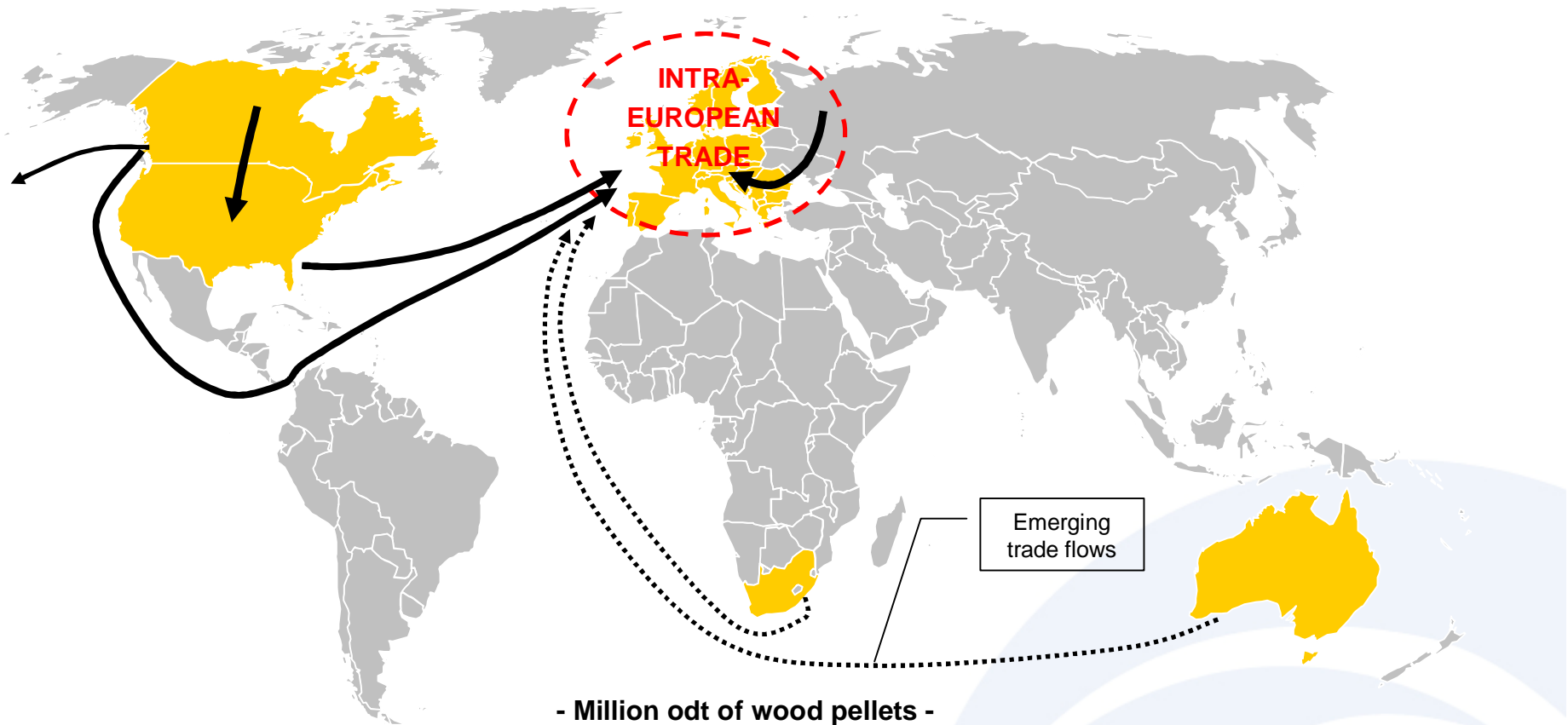
Current and Future Woodchip Trade Flows

The global export trade of woodchips is still mainly driven by the pulp industry and reached 19.4 million odt in 2008. The Pacific Rim trade accounts for 77% of this volume with Australia, South Africa, Chile and Vietnam being the major suppliers to Asia. The Atlantic trade is much smaller but is expected to grow significantly in order to meet biomass demand in Europe.



Wood Pellet Trade Flows (2008)

Global wood pellet production reached almost 11 million tons in 2008. The most established international trade flow has been between Canada and Europe, although potentially large flows from the US Southeast also began in 2008. More recently wood pellet producers in South Africa and Australia have started to supply the European market.



Consequences for wood markets and traditional players

Consequences for Wood Markets and Current Players

- The biomass demand for energy generation will continue to grow on a European and global level.
- The development of potentially large future bioenergy markets (e.g. US, Canada, China, etc.) depends on political key decisions and financial incentive schemes.
- The international biomass trade will grow, offering good opportunities for forest owners, plantation developments and trading organisations.
- Competition for key biomass assortments will increase and some biomass markets will show rising biomass prices, forcing players to exit the market.
- An increased utilisation of harvesting residues and recycled wood can provide a certain relief for biomass markets.
- A rising biomass demand offers good opportunities for forest owners to diversify their off-taker portfolio. However, traditional biomass users should and will always be part of this off-taker portfolio.
- Traditional forest industry players should not forget that they are in a very favourable position to participate in the bioenergy business sector, be it as partner for bioenergy developers or be it as single entities.

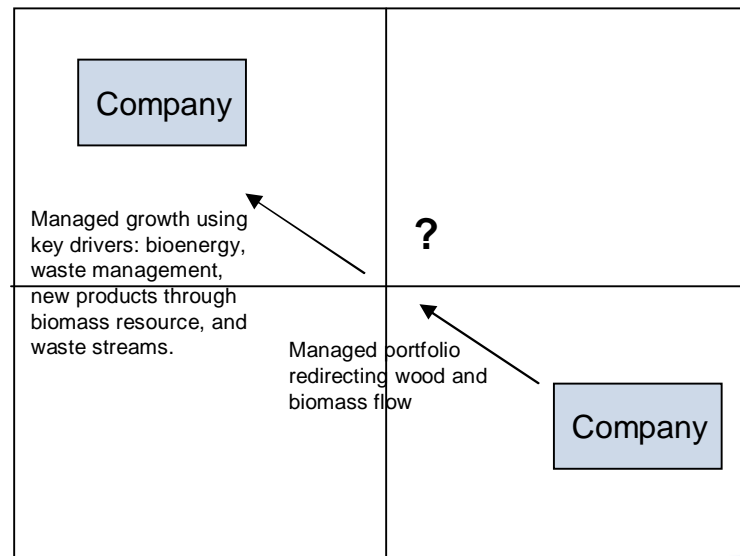
Is this the end?

The Strategic Choice – ‘Return on Site’

The wood, biomass and recovered paper/wood streams (in a new context of bioenergy and waste management) open the way to strategies based on best utilisation of the company’s infrastructure (= ‘return on site’).

Nordic, C-Europe, Southern Strategies - Return on site

**Bioenergy,
Waste Management
New Products**

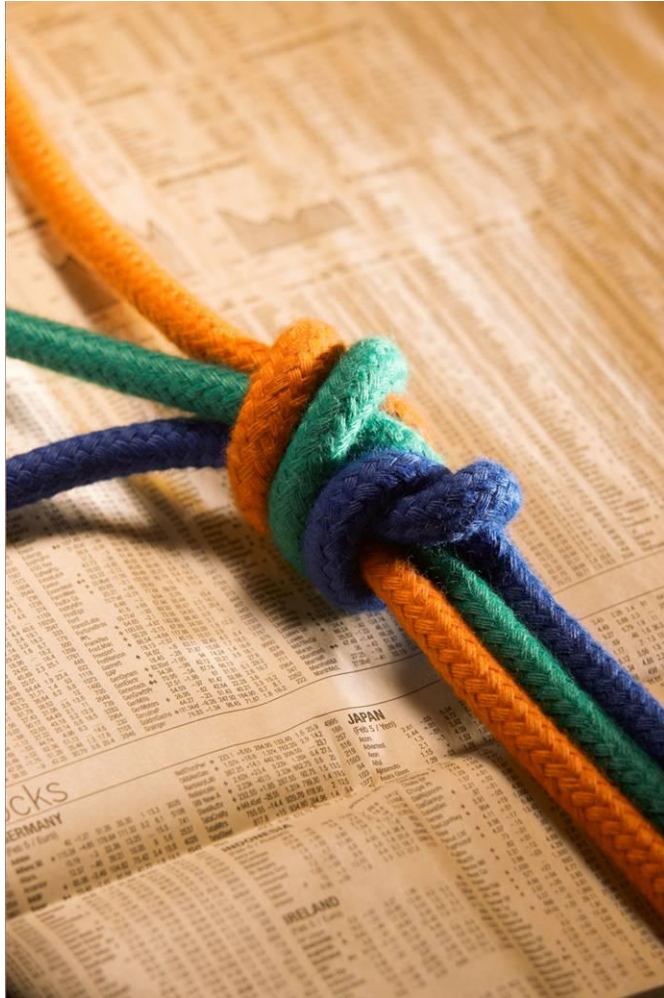


Wood Products, Paper

Strategy Concept. The strategy process is based on increasing the 'return on site' - increasing the return we get, measured on the current infrastructure we have - fully utilising these sites and infrastructure. New processing facilities (e.g. power plants, biowaste management, composite products etc) can be invited on-site (and not necessarily funded by the panel or paper industry).

Strategic Questions
 Life cycle of the site (current business) in terms of best return on site.
 α Paper demand
 α Wood/fibre paying capability

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