

THE FUTURE OF THE COMPOSITE PANEL INDUSTRY IN NORTH AMERICA



PÖYRY

**MARKETS, INDUSTRY TRENDS AND
PROFITABILITY – NORTH AMERICA 2022**

Summer 2015

REPORT OBJECTIVES

BACKGROUND

- The market for composite panels in North America has been slow to recover from the collapse in demand caused by the financial meltdown in 2008 and the subsequent debt crisis. Consequently, **composite panel producers struggle** with low capacity utilisation and low profitability.
- However, there are **regional differences** within North America. The panel industry remains under pressure in Canada, while demand is recovering in the USA and new capacity investments are expected in the next few years in Mexico.
- Low demand, a struggling economic recovery, increasing wood costs, on-going industry restructuring, capacity rationalisation and regional differences in the supply and demand outlook pose **challenges to decision makers**, customers, suppliers, owners and financiers to the industry.
- In the light of these developments, Pöyry offers **the first strategic review of the future of the composite panel industry in North America**. In this forward looking report Pöyry addresses all the fundamental issues of composite panel markets; demand, capacity, profitability, wood supply, investments and rationalisation. Its conclusions will assist the key decision makers in the value chain in making strategic decisions relating to the direction of their company's development and competitive position.

KEY ISSUES

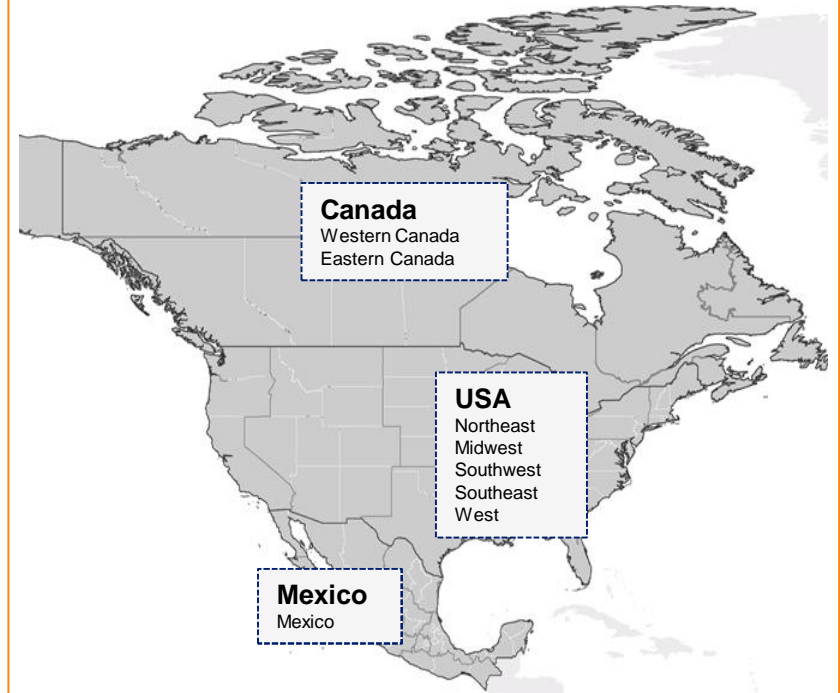
- What is the current **demand, production** and **capacity** for composite panels in North America by grade and region and how will it develop to 2022?
- How will the market for **decorative surfacing materials** develop in North America to 2022 under the different demand scenarios for particleboard and MDF?
- What are the product **substitution trends** that will shape the future? Which panel grades are winning and which are losing?
- How will composite panel **prices** develop on a regional and North American level? Where are the attractive regions and what is driving prices?
- Who makes money and who does not? What **gross margins** have been achieved in the industry, where and by whom?
- How will composite panel **capacity utilisation** and **gross margins** develop over time? Who are the winners and who will be under pressure?
- What are the composite panel **investment needs**? Is there room for new production capacity in North America? If so, where, how much and when?
- How will new composite panel capacity **impact the existing industry** in terms of prices, margins and utilisation rates? Is there further need for **capacity rationalisation**? Where are mills likely to close?
- What will be the impact of **bioenergy** developments on wood price and availability?

REPORT SCOPE

CONTENTS OVERVIEW

- A comprehensive review and revision of all available data sources to provide an accurate and consistent view of the **current state of the industry** and its customers.
- Detailed **demand forecasts** by region out to 2022 under three different macro economic scenarios, highlighting the demand impact of product substitution trends and the underlying demand drivers.
- **Supply cost curves** for each panel grade. The cost competitiveness of each individual production line in North America is modelled (USD/ m³ ex-mill) based on mill specific technical data and local input costs.
- **Price forecasts** under each demand scenario. *Pöyry's Panel Market Model (Zeno)*, the first linear optimisation model specifically developed for the composite panel industry, is used to forecast prices on a regional level to 2022.
- A comprehensive comparison of **bioenergy incentive levels** among regions and an outlook for the expected impact of bioenergy developments on **future wood availability**
- Zeno model derived forecasts for the development of **gross margins** of standard grade panels, **production volumes** and **capacity utilisation** on a mill by mill and regional basis
- A detailed view the **need for investments and/or capacity rationalisation** under each of the demand scenarios by region in terms of volume, number of mills and location.

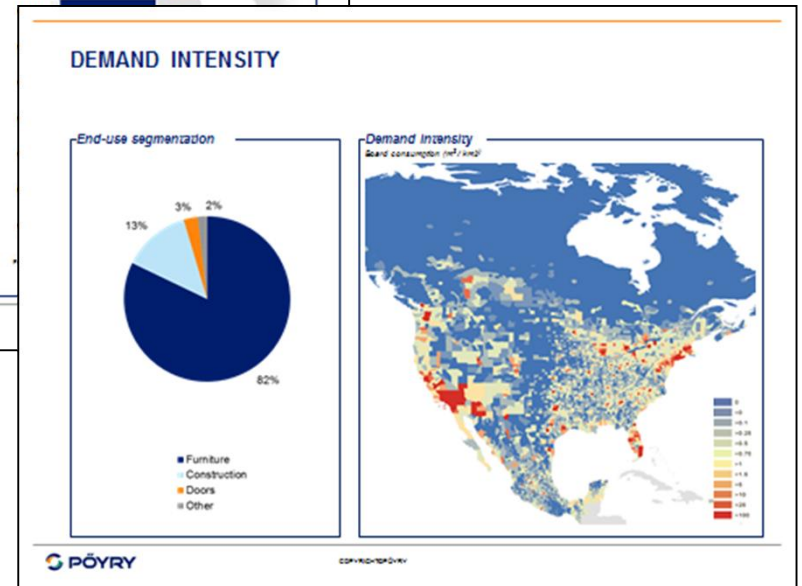
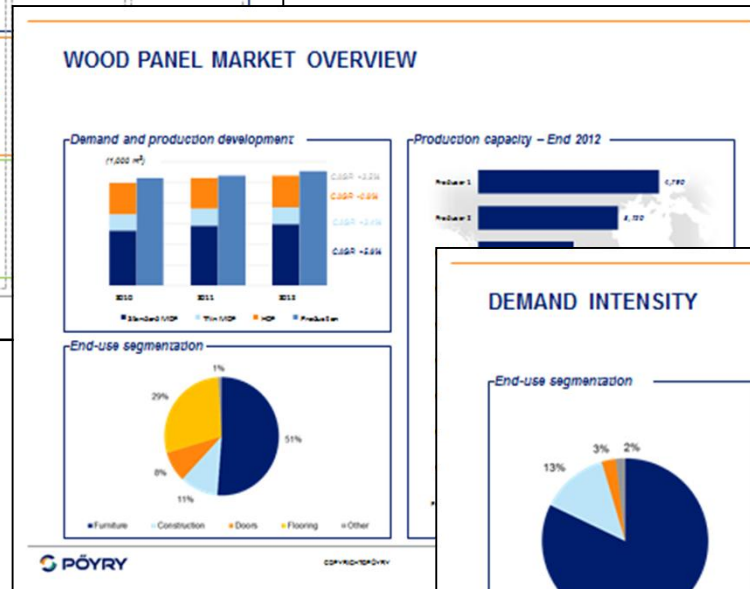
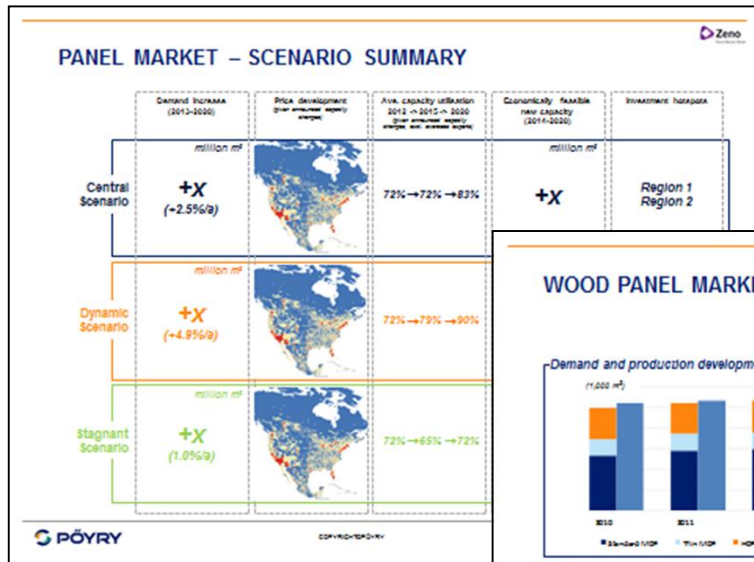
GEOGRAPHICAL SCOPE



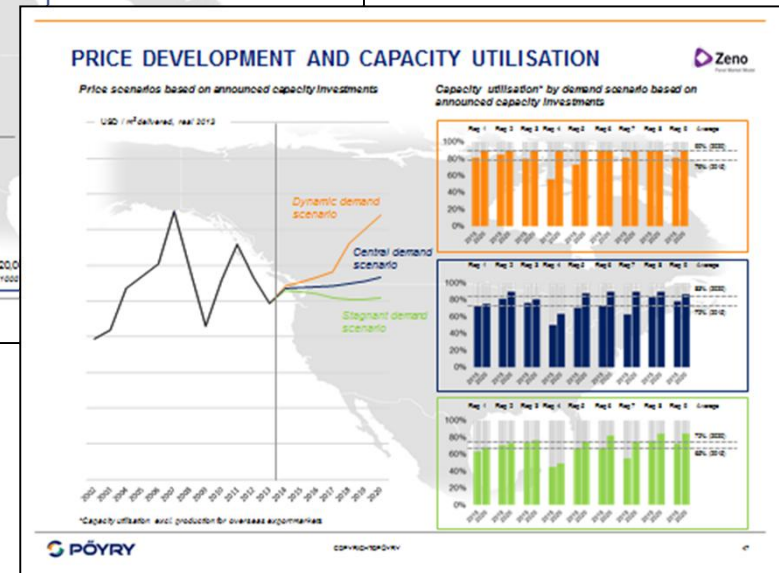
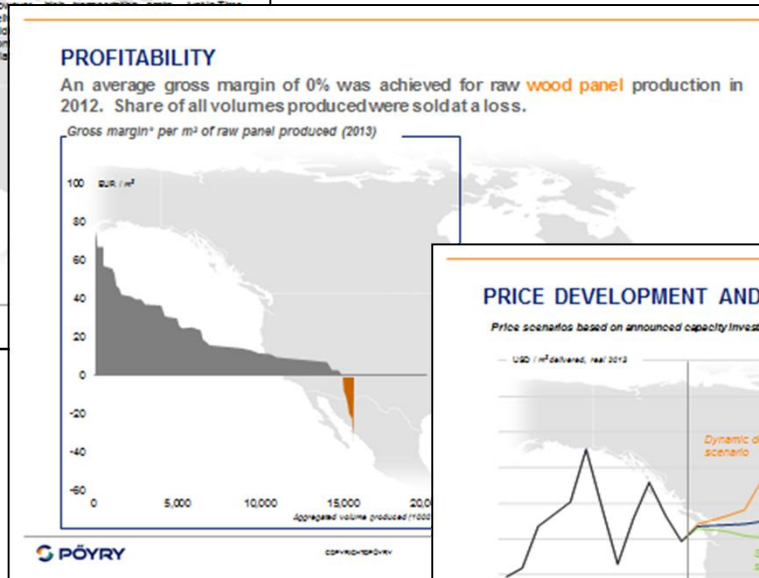
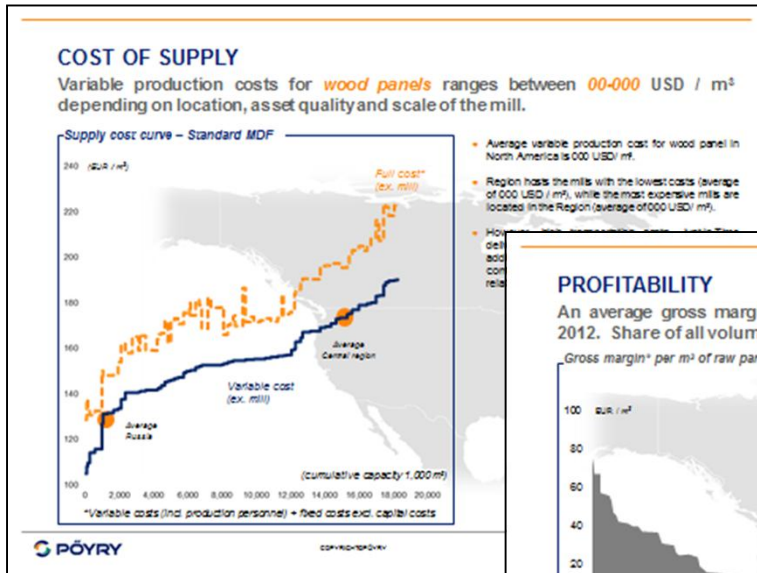
PRODUCT SCOPE

- **Medium Density Fibreboard**
 - Standard MDF
 - HDF
 - Thin MDF
- **Particleboard**

EXAMPLE OUTPUT – ILLUSTRATIVE



EXAMPLE OUTPUT – ILLUSTRATIVE (CONT'D)



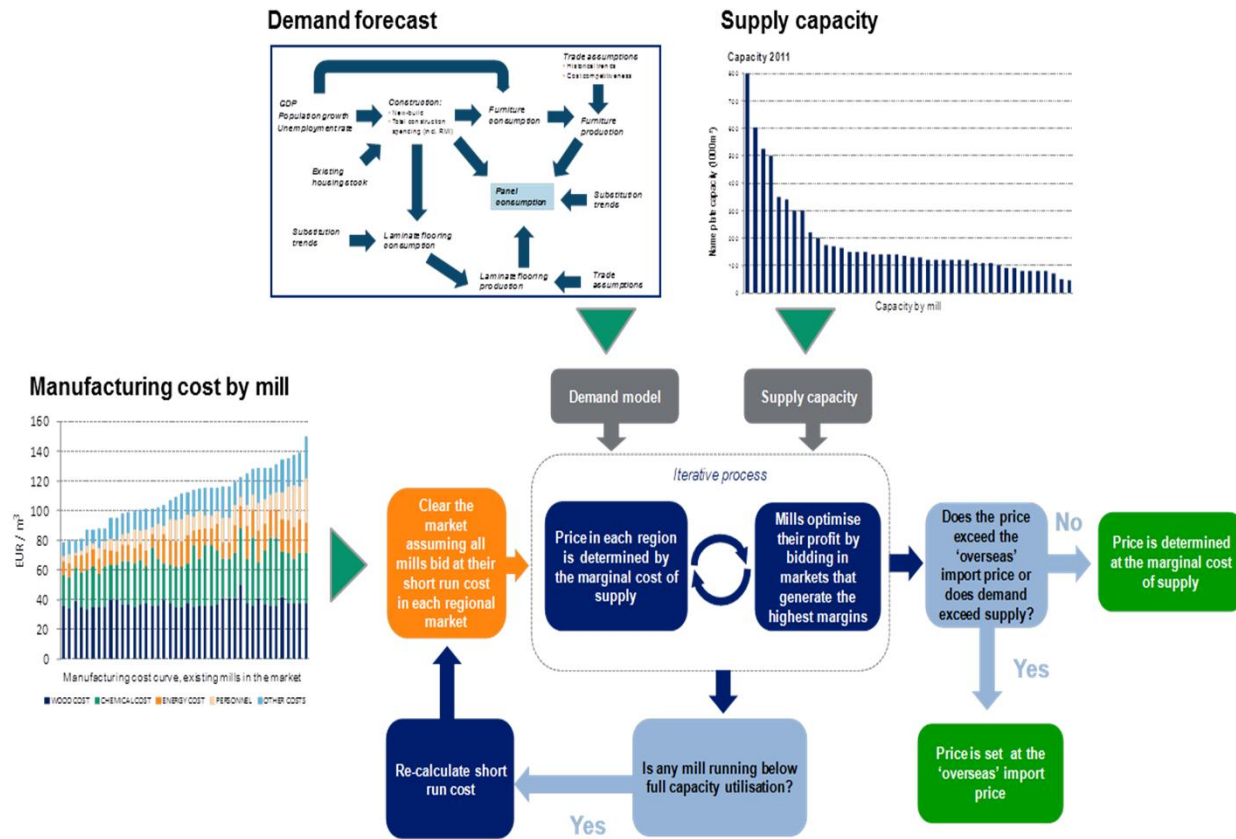
PÖYRY PANEL MARKET MODEL – METHODOLOGY

PÖYRY'S PANEL MARKET MODEL



Step 1 - Using detailed manufacturing costs, production capacity data and scenarios for future panel demand, a linear optimisation model is developed to determine prices, margin developments, panel production and capacity utilisation on a regional level and on a mill by mill basis.

The price in each region is determined by the marginal cost of supply. An optimal price solution where no mill is better off selling into a different region and no region is better off buying from a different mill is developed for each year.

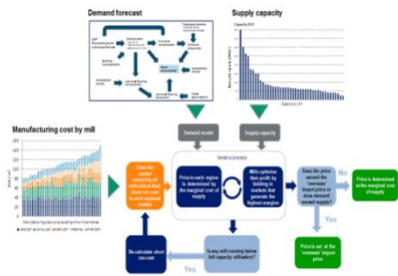


PÖYRY PANEL MARKET MODEL – METHODOLOGY (CONT'D)

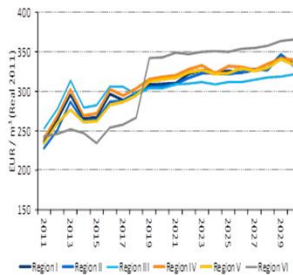
PÖYRY'S PANEL MARKET MODEL



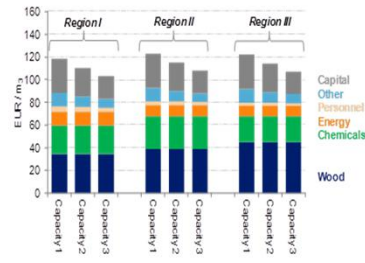
Step II - The economic viability (ROI) of new capacity investments and capacity closures are tested against the forecasted price development (3 year foresight) and capacity adjustments are made before a new optimal price solution is calculated
 Future market prices are settled on a yearly basis and the model tests whether new production capacity is economically feasible; iterative procedure – starting in year 0, and progressing year by year (assuming 3 year perfect foresight applied for the full forecasting period, i.e. 2014-2022)



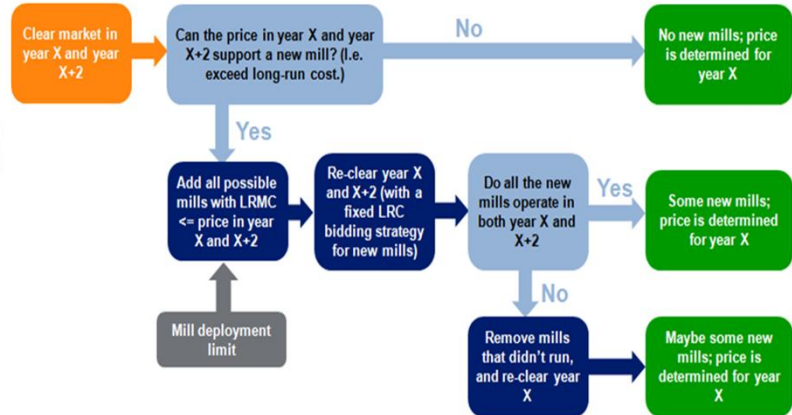
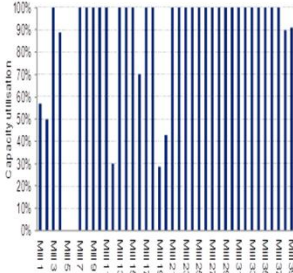
Price development if there is no change to the supply Central



Levelised manufacturing costs of new generic mills



Capacity utilisation by mill, year X



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