THE FUTURE OF THE WOOD BASED PANEL INDUSTRY IN EUROPE

MARKETS, INDUSTRY TRENDS AND PROFITABILITY – EUROPE 2020

Published in December 2013

REPORT OBJECTIVES

BACKGROUND

- The market for wood based panels in Europe has been slow to recover from the collapse in demand caused by the financial meltdown in 2008 and the subsequent European debt crisis. Consequently, ***wood based panel producers struggle*** with low capacity utilisation (75% on average in Europe in 2012) and low profitability (operating profits are down 45% compared to 2007).
- However, there are ***big regional differences*** within Europe. The panel industry is under continued pressure in Southern Europe, while demand is stabilising in Central Europe and growing rapidly in parts of Eastern Europe. In Eastern Europe, especially in Russia, significant new capacity investments are expected in the next few years, while more production lines could still be closed in Southern and Western Europe.
- Low demand, a struggling economic recovery, increasing wood costs, on-going industry restructuring, capacity rationalisation and big 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 wood based panel industry in Europe.*** In this forward looking report Pöyry addresses all the fundamental issues of wood based panel markets; demand, capacity, profitability, wood supply, investments and rationalisation. Its conclusions will assist the key decision markers in the value chain in making strategic decisions relating to the direction of their company's development and competitive position.

KEY ISSUES

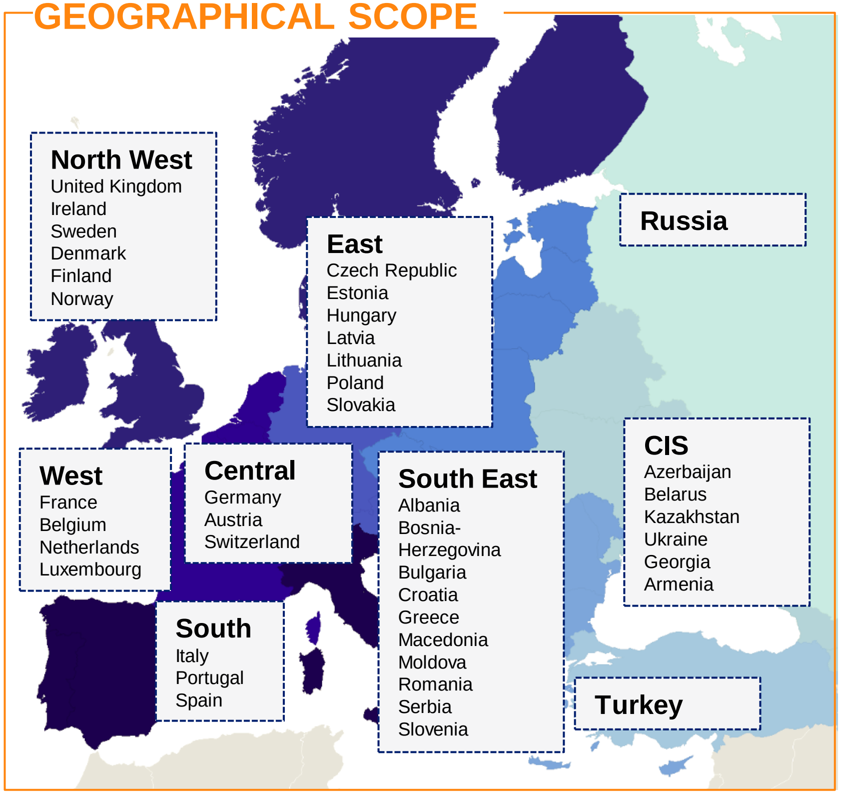
- What is the current ***demand, production*** and ***capacity*** for wood based panels in Europe by grade and region and how will it develop to 2020?
- How will the market for ***decorative surfacing materials*** develop in Europe to 2020 under the different demand scenarios for particleboard and MDF?
- What are the product ***substitution trends*** that will shape the future? Which panel grades are winning and which are losing?
- How will wood based panel ***prices*** develop on a regional and pan-European level? Where are the attractive markets 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 wood based panel ***capacity utilisation*** and ***gross margins*** develop over time? Who are the winners and who will be under pressure?
- What are the wood based panel ***investment needs***? Is there room for new production capacity in Europe? If so, where, how much and when?
- How will new wood based 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 2020 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 Europe is modelled (EUR / m^3 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 wood based panel industry, is used to forecast prices on a regional level to 2020.
- A comprehensive comparison of ***bioenergy incentive levels*** between key countries and regions and an outlook for the expected impact of bioenergy developments (National Renewabel Action Plans) on ***future wood availability***
- Zeno model derived forecasts for the development of ***gross margins*** of standard grade panels, ***production volumes*** and ***capacity utilsisation*** 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.

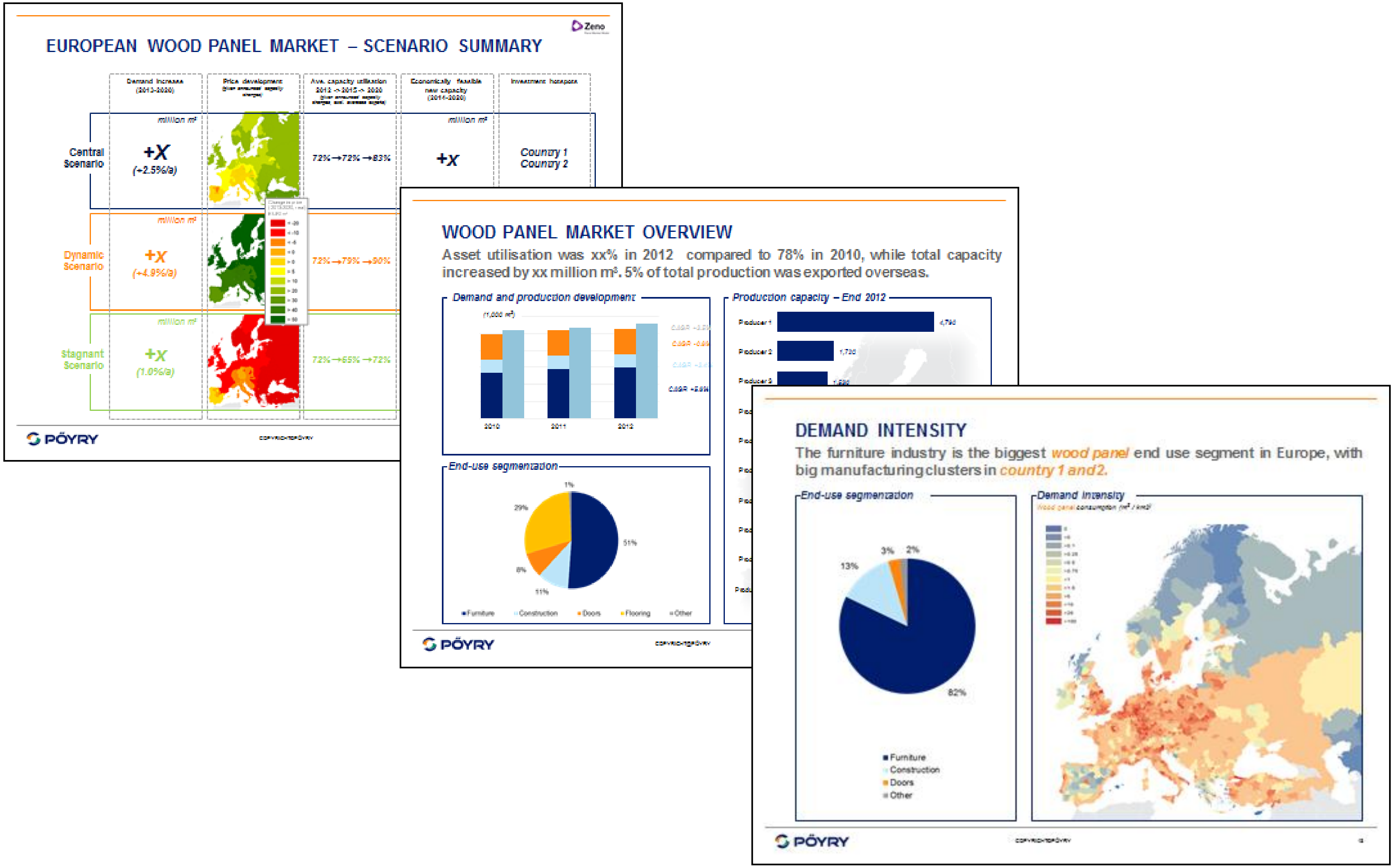
GEOGRAPHICAL SCOPE



PRODUCT SCOPE

- **Medium Density Fibreboard**
  - *Standard MDF*
  - *HDF*
  - *Thin MDF*
- **Particleboard**
- **Oriented Strand Board**

EXAMPLE OUTPUT – ILLUSTRATIVE



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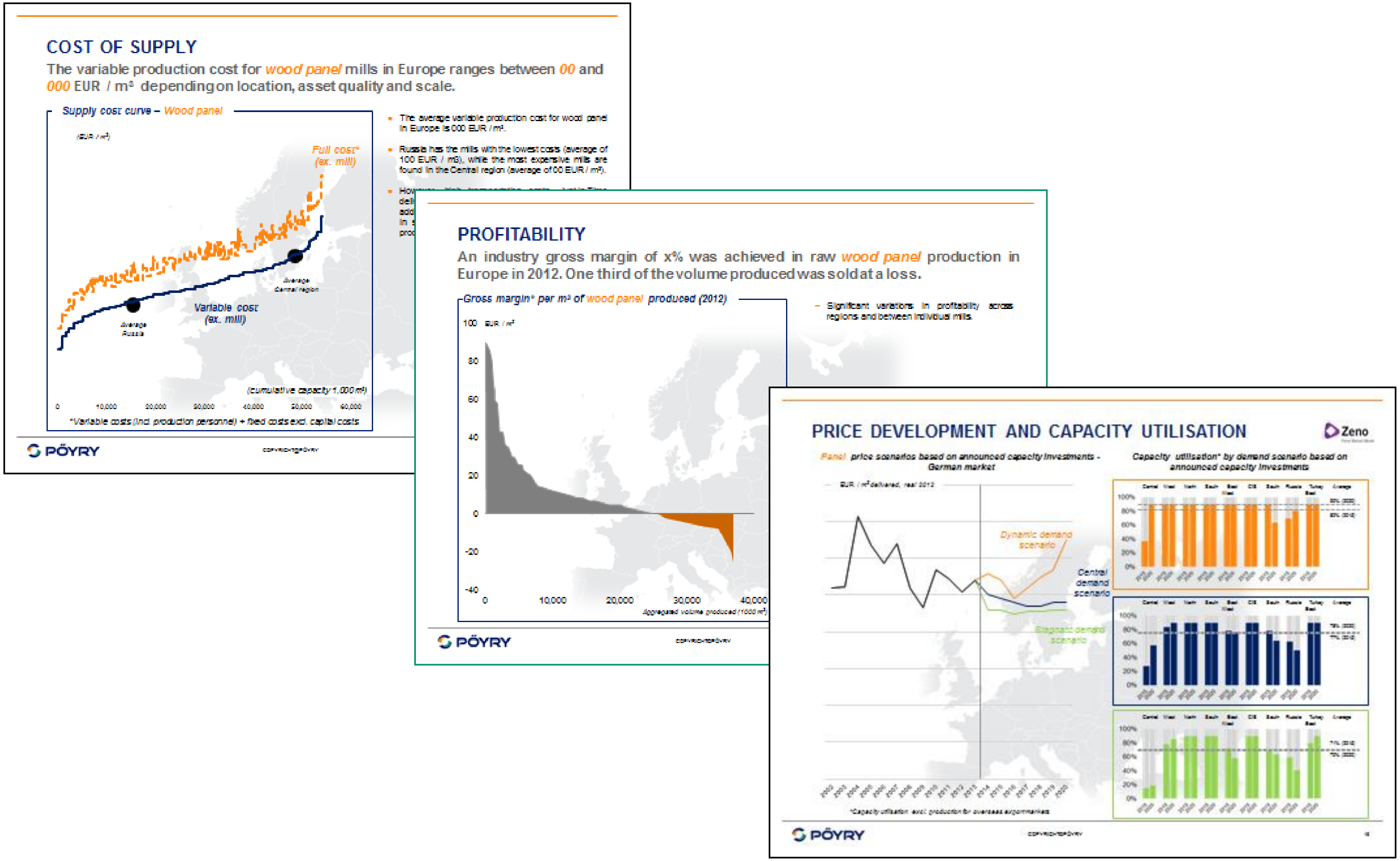


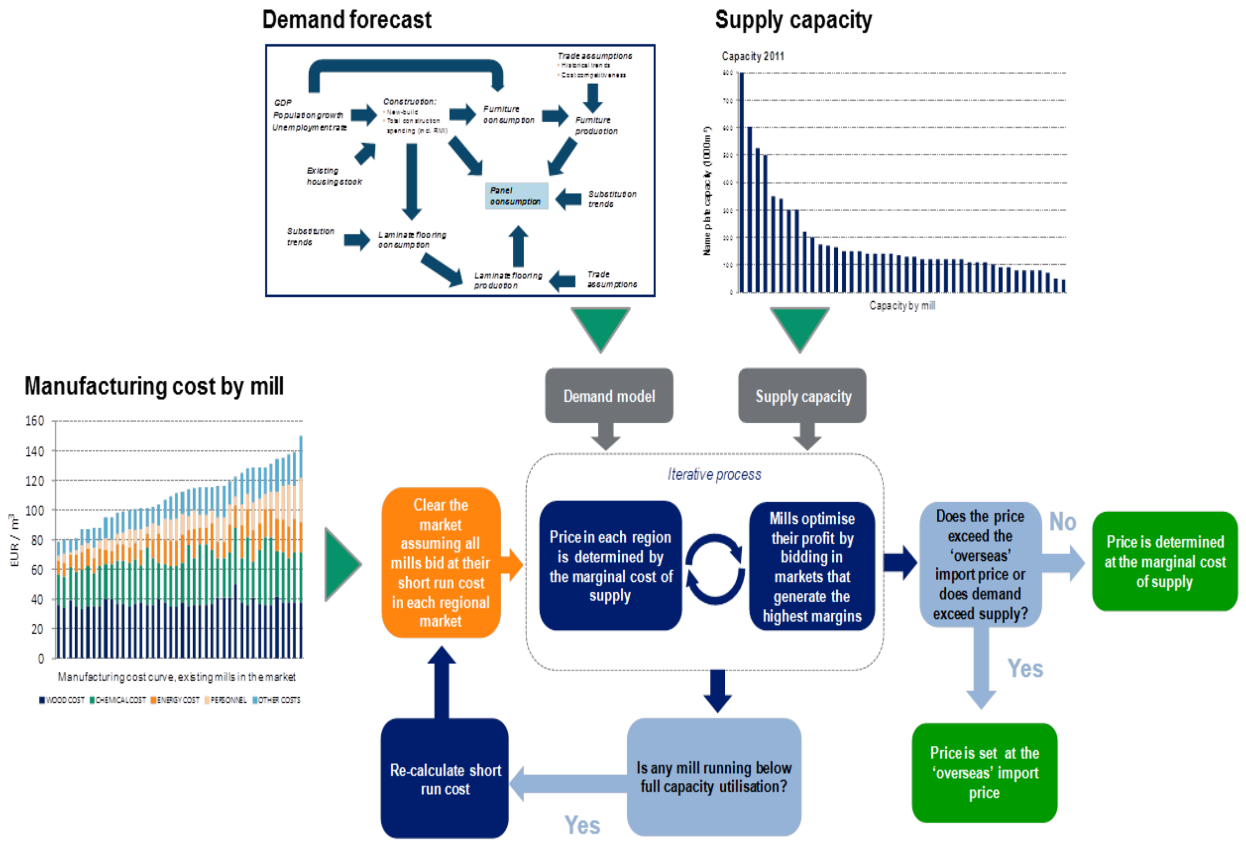
PÖYRY

PÖYRY PANEL MARKET MODEL – METHODOLOGY

PÖYRY'S PANEL MARKET MODEL

Zeno
Panel Market Model

Step I - 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

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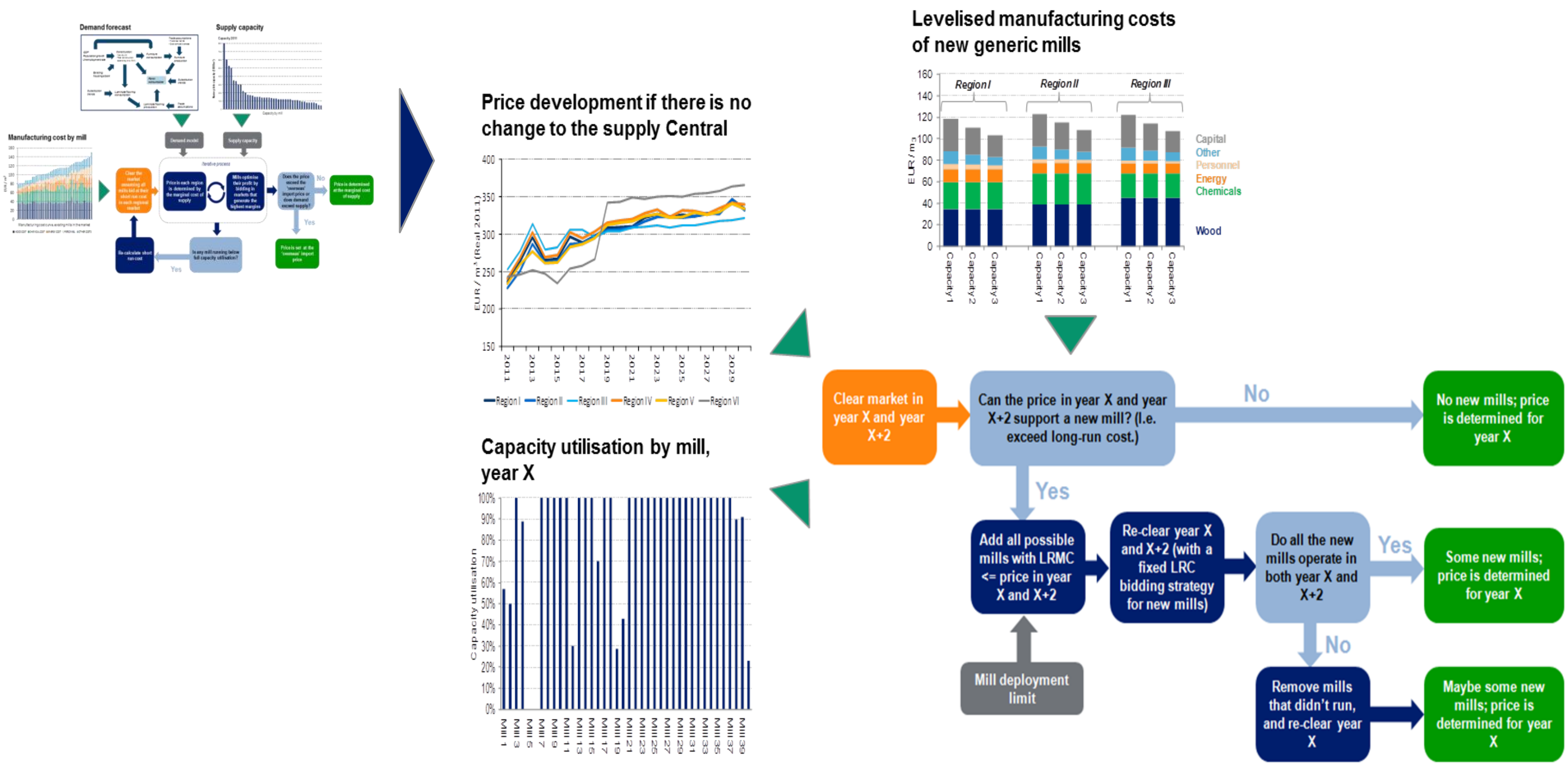
Step II **-** The economic viability (ROI) of new capacity investments and capacity closures are tested against the forecasted price development (3 year foresight) and capacity adjustments are made before a new optimal price solution is calculated

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. 2012-2020)



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