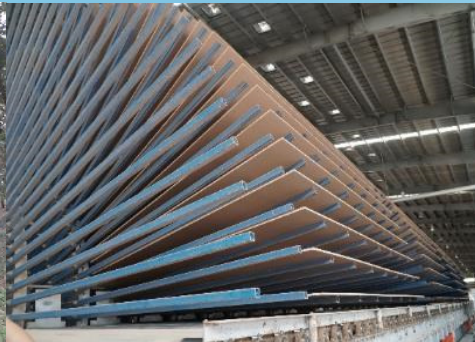




綠河股份有限公司

Green River Holding Co. Ltd.

Stock Code: 8444.TT



## Results Presentation Third Quarter 2017

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# Company Overview

# 1.1 Company Overview



## Green River Holding Co. Ltd. (8444.TT)

Year of Founding: 2011

Year of Listing: 2015

Chairman: Hsieh, Jung-Hui

CEO: Huang, Teng-Shih

Operating Headquarters: Thailand

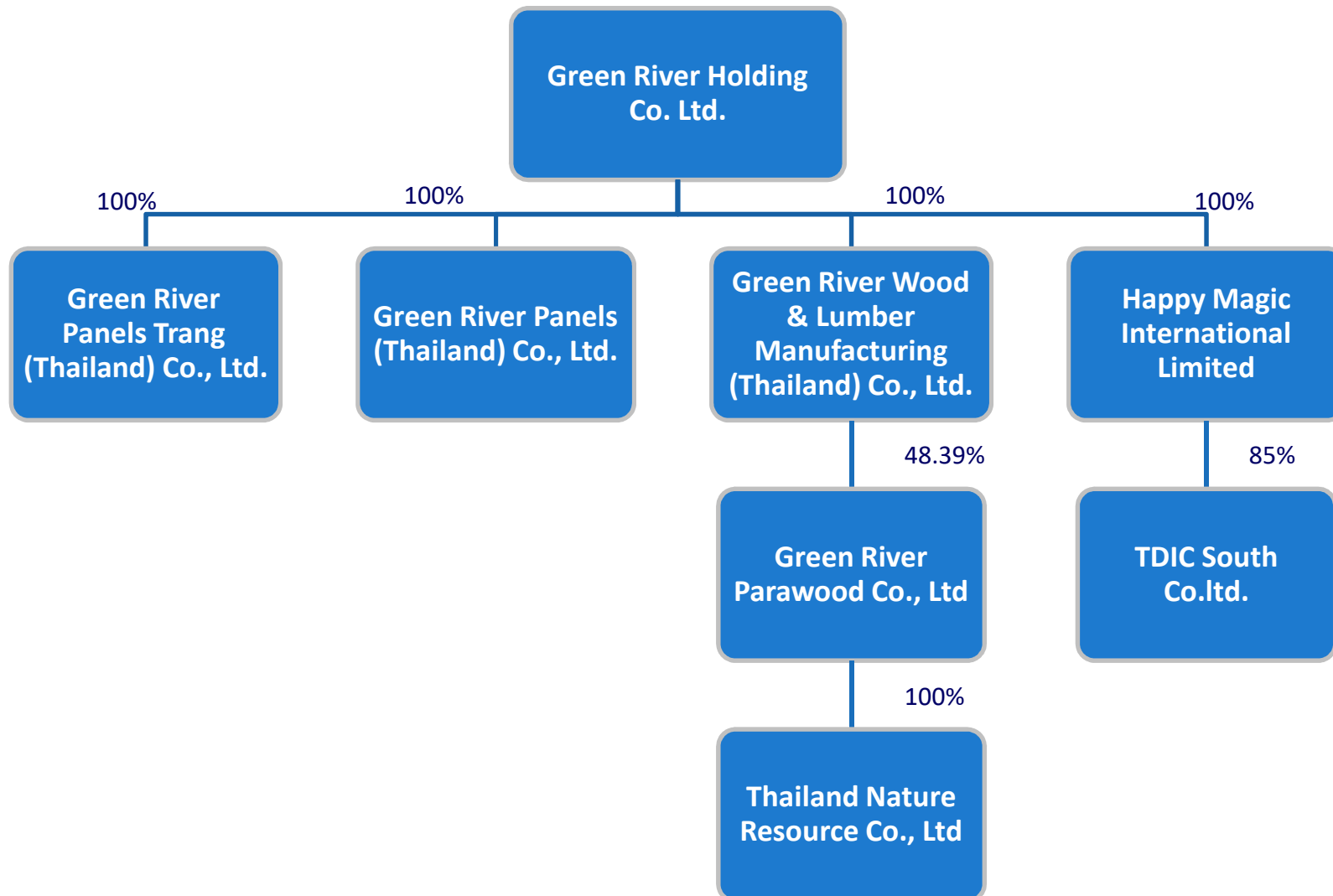
Number of Employees: 895 (2017.09)

Market Capitalization: NTD 11.29 billion  
(USD 376.3 million)

Operating Revenue: 2016: NTD 2.83 billion  
(USD 94.37 million) 20173Q: NTD 2.63 billion  
(USD 87.68 million)

Main Products: Particle Board、Solid wood、Melamine Faced Chipboard

## 1.2 Group Structure





# Product Overview



# 2.1 Main Products



## Panels:

- ☐ Particle Board

- ☐ Melamine Faced Chipboard (MFC)

◆ Applications by our customers:

Kitchen Cabinets、Office furniture、Drawer Units、Flooring、Pallets、Speaker Boxes、Green Buildings、Eco-Friendly Engineered Building Products



Green

Sustainability

Technological

Cost Effective

Fashionable

## 2.1 Main Products



### Solid Wood

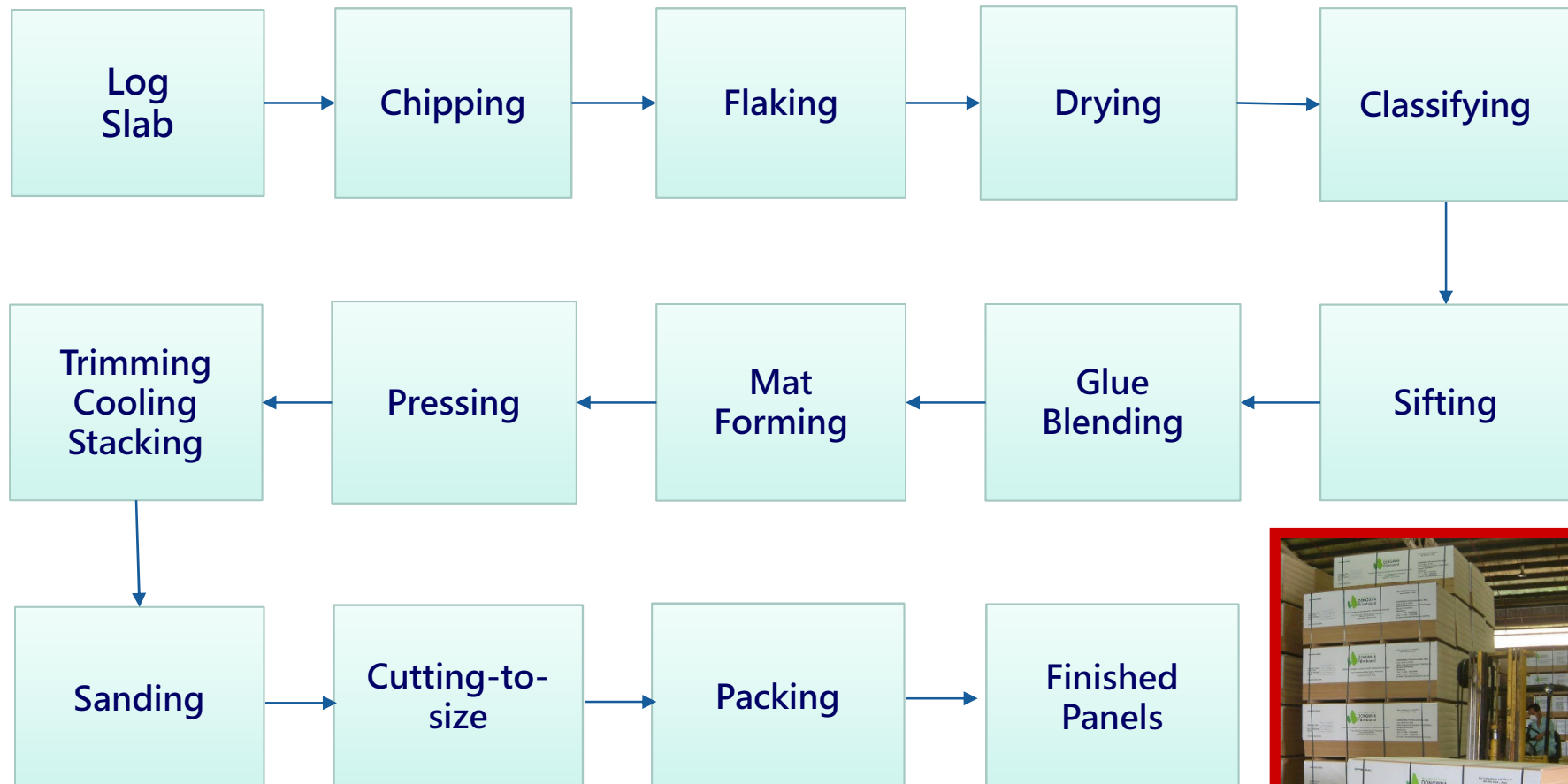
◆ Applications by our customers:

Table tops, Chairs, Floorboards, Engineered Building Products and other Decorative Products





## 2.2 Production Process - PB





# Industry Overview

## 3.1 Development of PB Industry - Europe



### Europe in the past (1961)

- ◆ PB Production: 2.58 Million m<sup>3</sup>
- ◆ PB Industry in budding phase
- ◆ Population: 604 Million

70 Years



### Europe at present

- ◆ PB Production: 39.21 Million m<sup>3</sup>
- ◆ PB: **66% of wood panels**
- ◆ Population: 743 Million
- ◆ Consumption: **50m<sup>3</sup>/capita '000**

### Asia at present (2004)

- ◆ PB Production: 15.15 Million m<sup>3</sup>
- ◆ PB Industry steadily growing
- ◆ Population: 3.9 Billion
- ◆ Consumption: **4 m<sup>3</sup>/capita '000**

25~30 Years



### Asia in future

- ◆ PB Production: Steady Growth
- ◆ Population: 4.4 Billion (2017)
- ◆ Rising standard of living

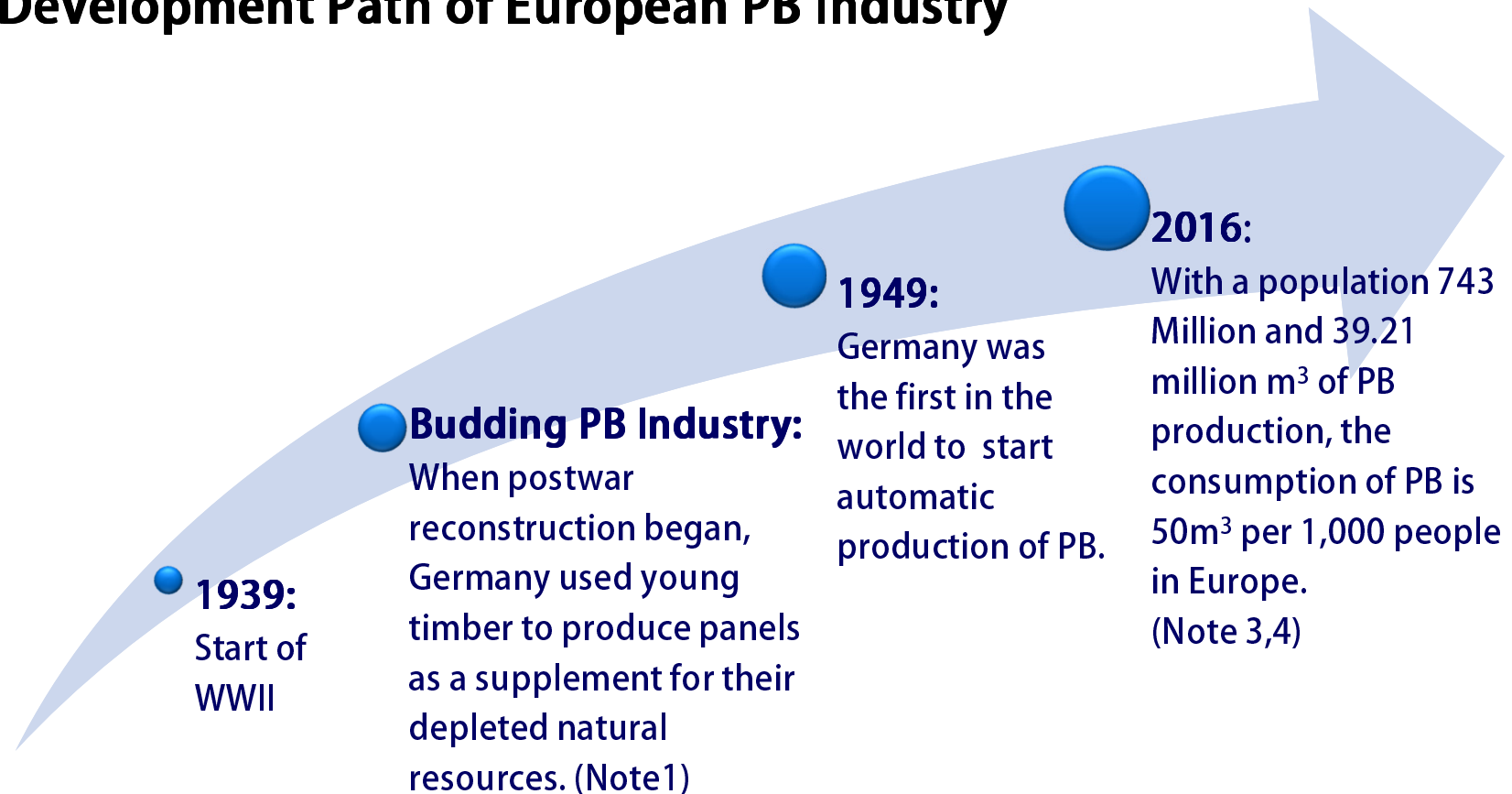
**An  
opportunity  
for the  
Asian PB  
Industry**

Source: 1. FAOSTAT Forestry;  
2. UN World Population Clock

## 3.1 Development of PB Industry - Europe



### ◆ Development Path of European PB Industry



Note :1. 2007 "Particle Board, Their Manufacture and Uses: Standard Steel Buildings ; Adhesives in Building

2. " Wood Production, Wood Technology, and Biotechnological Impacts"

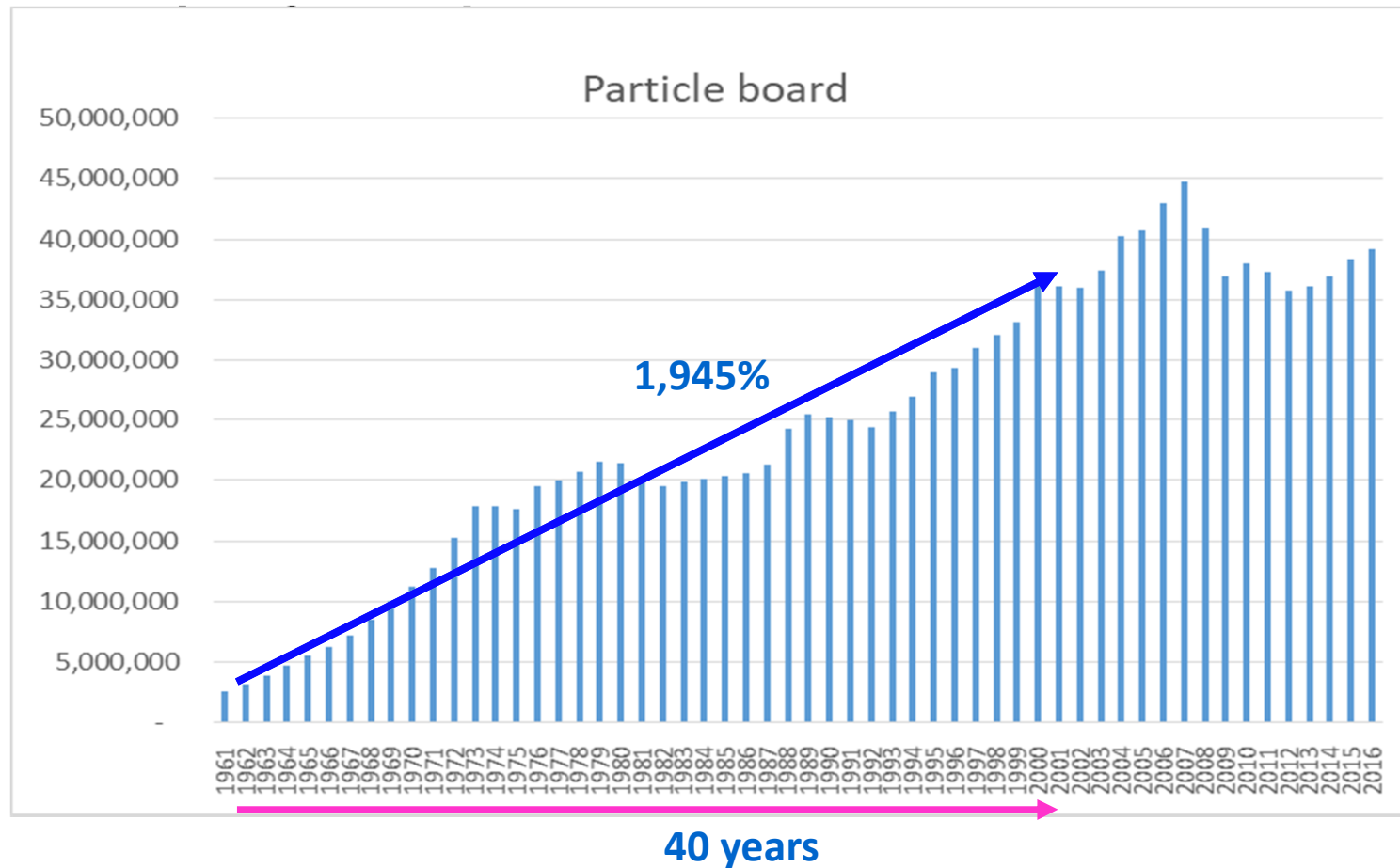
3. FAOSTAT Forestry

4.UN World Population Clock

## 3.1 Development of PB Industry - Europe



### ◆ PB Production in Europe - Steady

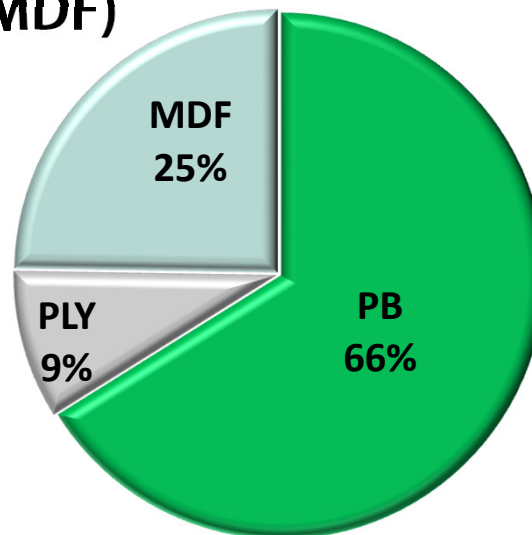


Source: FAOSTAT Forestry; summarized by Green River Holding co. Ltd

## 3.1 Development of PB Industry - Europe



### ◆ Percentage of European Engineered Wood Production, 2016 (PB, Plywood and MDF)



Source: FAOSTAT Forestry ; summarized by Green River Holding co. Ltd

#### ➤ PB accounts for up to 66% of Engineered wood panels in Europe, mainly resulting from:

1. Maximum utilization of trees
2. Sustainability of Forest Resources; development of Eco-Friendly panels
3. Low Material and Manufacturing cost
4. Suits wide range of Applications



## 3.1 Development of PB Industry - Europe



### ◆ European Forest Resources

- With the awareness of environmental protection and sustainability, under a comprehensive policy and regulation, the area of planted forest in Europe has increased 0.17% to 1,015 million hectares since 1999. Nowadays, 25% of the world's forest are in Europe. (Note1)。
- Comparison of wood sources for Engineered wood panels:
  - 1.PB – Waste from other wood processing industries (sawmills, furniture factories), chiplogs (thinings from sawlog plantations i.e. undersized trees), urban wood waste.
  - 2.MDF – Chiplogs (thinings from sawlog plantations)
  - 3.Plywood – Sawlogs (mature trees from plantation and natural forests)



- PB utilizes waste wood resources, thereby reducing:**
- **demand for expensive mature trees from plantation forests**
  - **depletion of natural forests.**

## 3.1 Development of PB Industry - Europe



### ◆ Particle Board - Green, eco-friendly and using Sustainable Resources

#### ➤ Green:

Particle board manufacturing makes optimal use of residuals and by-products from the forest products industry, turning this waste and recycled material into higher-value products.

By its very nature, particle board is among the greenest products available for architectural, construction and consumer product applications.(Note 1)。

註1:(The Composite Panel Association, CPA)

註2:European Panel Federation

## 3.2 Development of PB Industry – Europe



### ◆ Particle Board - Green, eco-friendly and using Sustainable Resources

#### ➤ Eco-friendly and Sustainable

1. Europe' s annual wood consumption is estimated at 160 million tonnes. This includes 15 million tonnes of recycled wood. (Note 2). Vienna has made an inventory of its urban wood resource in developing a strategy to optimize the life-cycle of wooden building materials and to extend re-use and recycling in order to minimize greenhouse gas emissions. (Note 1)。
- 2.To achieve Eco-Certified Composite (ECC) Sustainability Standard, particle board must be made from a minimum of 75% recycled or recovered fibre; OR at least 50% recycled or recovered fibre AND a minimum of 5% post-consumer fibre. And factories are required to follow related carbon footprint regulation. (Note 2)

Note 1:European Panel Federation

Note 2: (The Composite Panel Association, CPA)

## 3.2 Development of PB Industry – Europe



### ◆ Lower Manufacturing Cost of Particle Board

#### ➤ Lower Material Cost:

Particle board is manufactured from waste wood:

- ☐ Thinings from sawlog plantation forests
- ☐ Slabs, off-cuts, shavings, sawdust from sawmills, furniture factories
- ☐ Other lignocellulosic materials e.g. flax, hemp
- ☐ Urban wood wastes

The use of such wood resources which are residues and by-products of other industries results in low cost for raw material. (Note1).

#### ➤ Lower Manufacturing Cost / Mass Production :

Despite relatively high wages in Europe and USA, labor cost for PB manufacturing is a small proportion of total cost due to high volume production in highly automated factories. (Note1)

## 3.3 Development of PB Industry - Europe



### ◆ Wide range of Applications

#### ➤ COMMON USES FOR PARTICLEBOARD (Note1):

- Kitchen Cabinets
- Office and Residential Furniture
- Countertops
- Door Cores
- Floor Underlayment
- Manufactured Home Decking
- Shelving
- Stair Treads

- **By replacing solid wood** in a variety of applications, particleboard makes wooden products more **affordable**. (Note 2)

Note 1:The Composite Panel Association, CPA

Note 2:European Panel Federation, EPF

## 3.1 Development of PB Industry - Europe

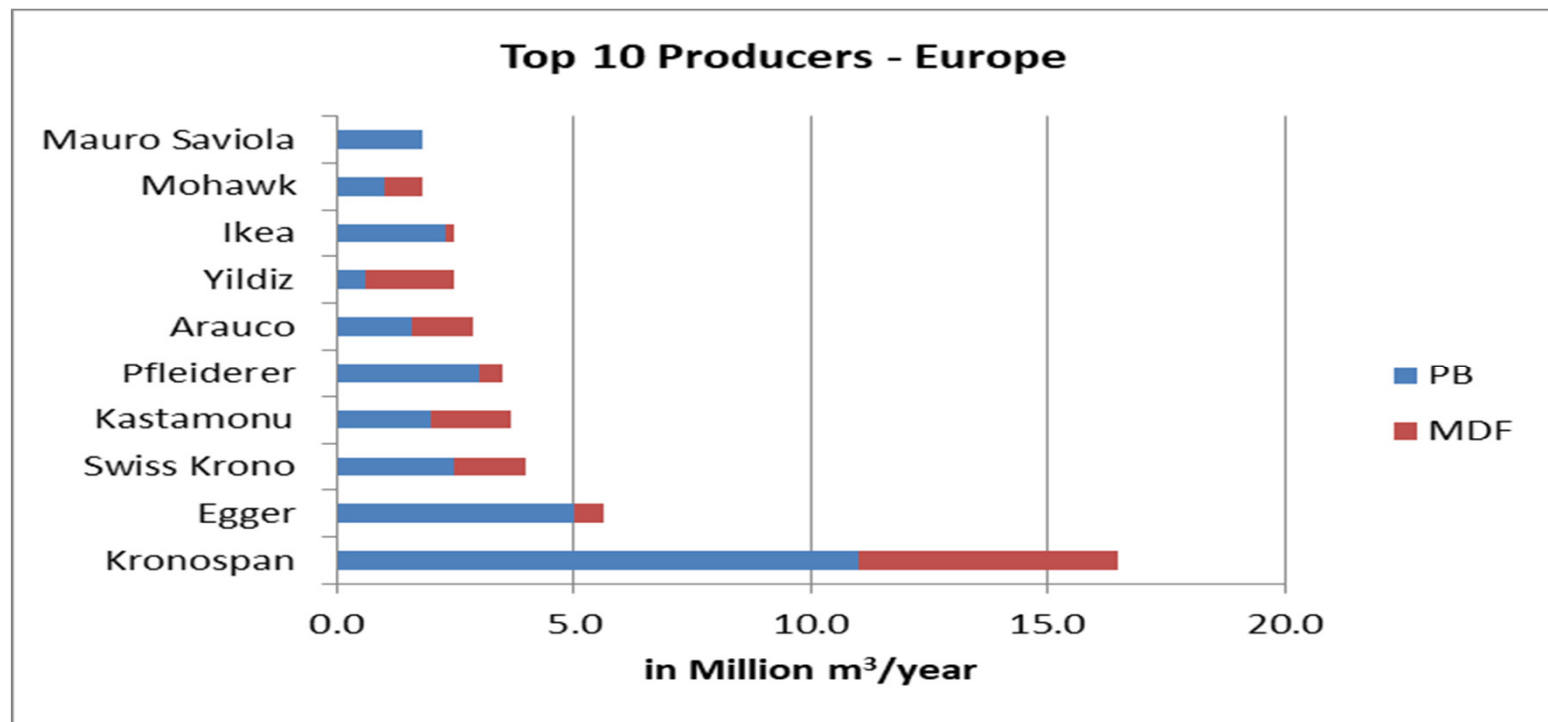


### ◆ Current status in European PB Industry—

**Bigger is Stronger.** Particleboard manufacturing is a volume business.

**Kronospan is the largest European PB producer.** It has more than 40 production sites and 11million m<sup>3</sup> per year of PB production capacity.

(<http://www.kronospan-worldwide.com/>),



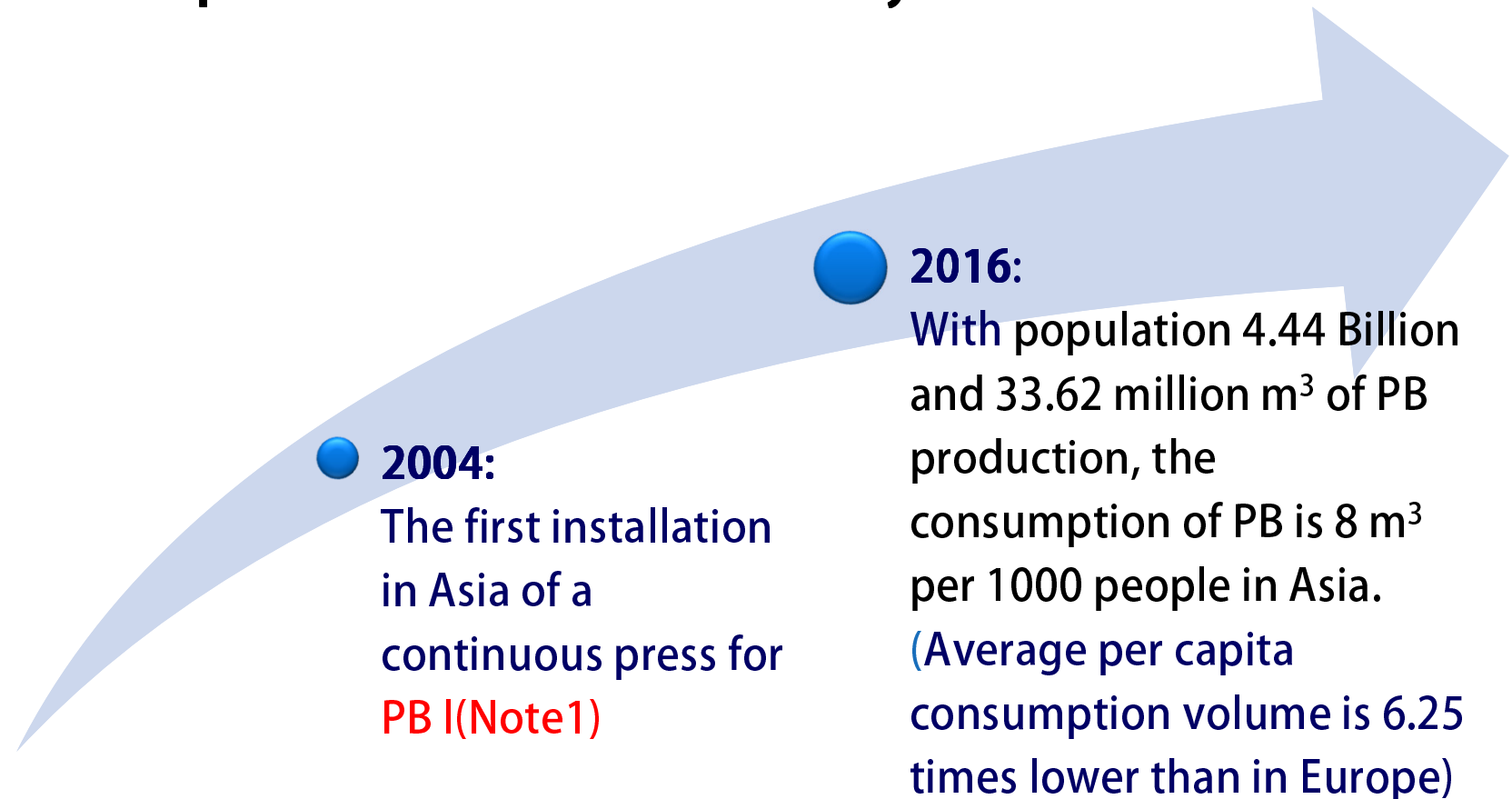
Source: Poyry (2015 Q4); summarized by Green River Holding co. Ltd



## 3.4 Development of PB Industry - Asia



### ◆ Development Path of Asia PB Industry

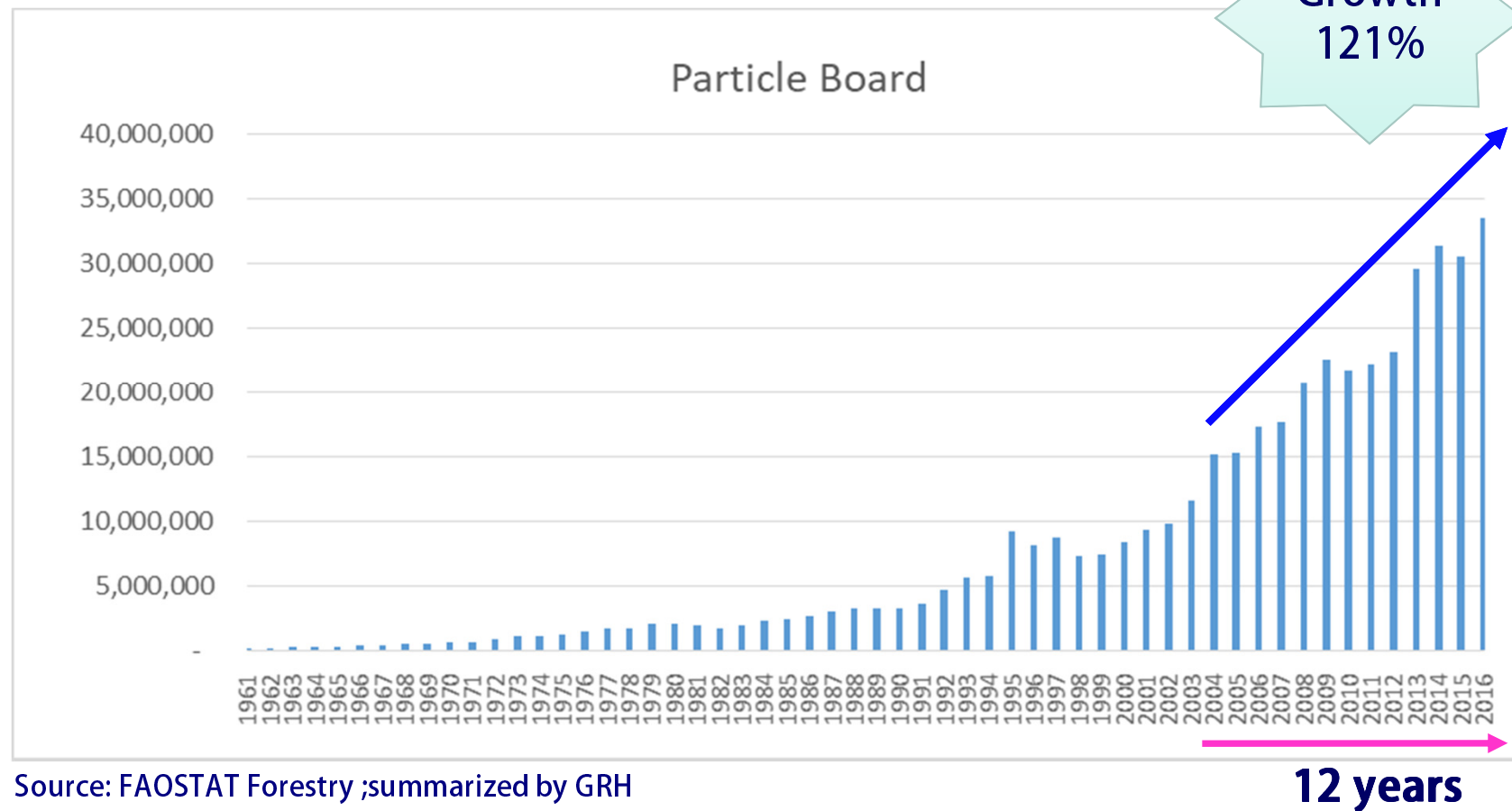


註:1. World Forestry Research,2007  
2. FAOSTAT Forestry  
3.UN World Population Clock

## 3.4 Development of PB Industry - Asia



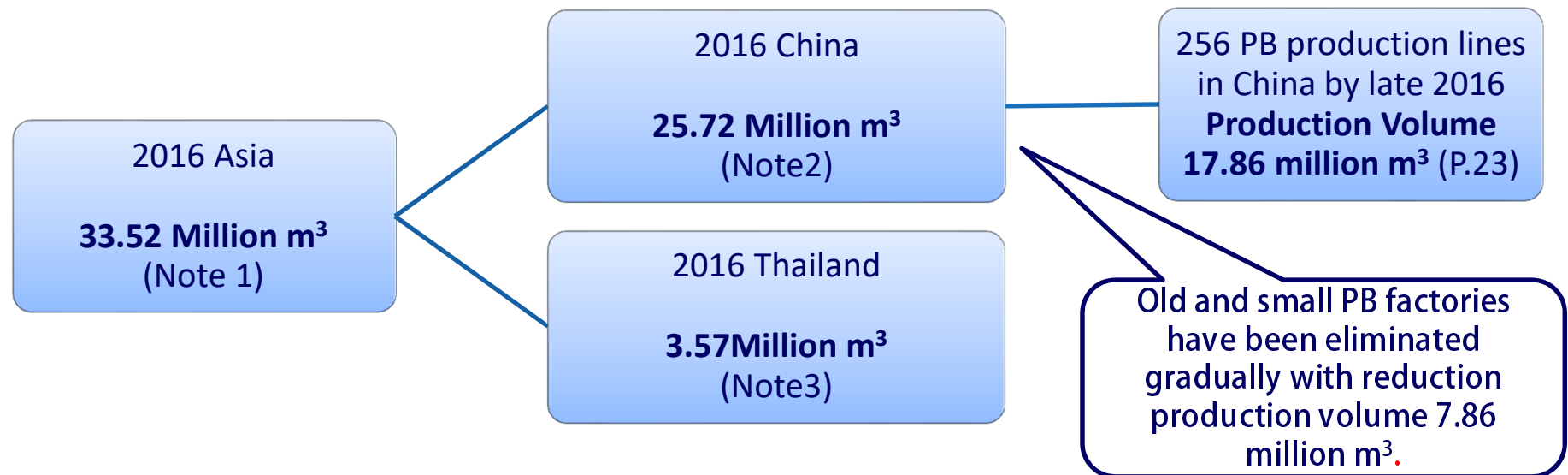
### ◆ PB Production in Asia (m<sup>3</sup>)



## 3.4 Development of PB Industry - Asia



### ◆ Particle board Production Volume in Asia -Analysis 2016



Note1: FAOSTAT Forestry

Note2: Chinese Particle Board Industry Report (2016)

Note3: Panel Products Industry Club, Thailand

## 3.4 Development of PB Industry - Asia



### ◆ Particle board Production Volume in China - Analysis 2016

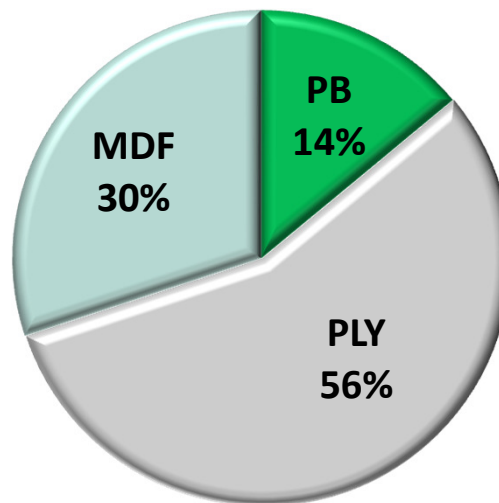


By late 2016, nearly 960 production lines have been paused or shut down, **with a capacity of 16.30 million m<sup>3</sup>.**

## 3.4 Development of PB Industry - Asia



### ◆ Percentage for Asian Engineered Wood Panels Production, 2016 (PB, Plywood and MDF)



Source: FAOSTAT Forestry ;Summarized by GRH

- **PB accounts for 14% of Engineered wood panels in Asia, mainly resulting from**
  1. Late introduction of PB industry.
  2. Fewer applications for particleboard compared with Europe.

## 3.4 Development of PB Industry - Asia



### ◆ Asian Forest Resources

- Forest area in Asia has increased 0.17% to 5.93 billion ha since 1999 which is 14.82% of world forest area. However, a high proportion of planted forests has concealed the fact that natural forests are disappearing rapidly throughout Asia. (Note1)
  - **Governments have increased their efforts to protect the environment:**

China, as an example, with 2.08 billion ha of forest area representing 21.63% of land coverage, is below the global average of 31% (Note 2)

    - 1.To raise its forest coverage rate, China published the ” **Natural Forest Protection Program**” in 1999. Implementing logging restrictions in ancient forest has resulted in declining availability of wood.
    - 2.To protect forest resources, China has “completely stopped commercial logging in natural forests to enlarge its forest area and forest stock volume” in its 13<sup>th</sup> five year plan. This should increase forest coverage to 23.04% by 2020.
- ➡ **Policy which restrains logging in natural forests reduces available forest resources. Particle board production is less affected by such policies since it uses residues from other wood industries.**

Note1:FAO-Global Forest Resources Assessment 2015

Note2:8<sup>th</sup> National Forest Inventories (2014)



## 3.4 Development of PB Industry - Asia



### ◆ Green、Eco-Friendly and Sustainability

- In response to environmental issues such as global warming, Asian countries are facing the destruction of the environment from estrepement and will need to take rescue actions, such as:
  1. Thailand banned commercial deforestation due to flooding which resulted in massive landslides in 1988.
  2. Flooding of the Yangtze River caused China to prohibit logging at upstream areas of the river in 1998.
  3. Since 2001, deforestation in natural forest is forbidden in Taiwan

Deforestation in natural forest has been banned or partly banned in China, New Zealand, Thailand, Vietnam, Philippines, Taiwan and other Asia-Pacific countries.

## 3.4 Development of PB Industry - Asia



- China published “ **Environment Protection Comprehensive List** ” & “ **Most restrictive environmental Law** ” :

Plywood, PB and fiber boards are included in the list of highly polluting and environmentally risky products. Moreover, engineered wood which complies with environmental standards could be excluded from the list (amended in 2015).

Small factories are re-capitalized or shutdown due to the huge cost of pollution prevention.

- China published the “ **Guidance Catalogue for Industrial Structure Adjustment** ” :

Production will be restrained for lines with yearly capacity under:

- 50,000 m<sup>3</sup> for PB and fiberboard;
- 10,000 m<sup>3</sup> for plywood and block board.

➡ **Eliminating small capacity is the only way.** For the continuous development of the wood panel industry, it must upgrade and transform, as well as practice green manufacturing.(Note 1)

Note1:QIAN,XIAO-YU (Note2) “ Green Manufacturing Is Only Way to Go for China Wood-based Panels Industry” (2016/12)

Note 2: QIAN,XIAO-YU, the vice chairman of fibreboard committee of China National Forest Products Industry Association

## 3.4 Development of PB Industry - Asia



### ◆ Advantage on Cost

#### ➤ Material Cost:

With every country in Asia extending its limitation of deforestation, the cost of round wood from natural forests is increasing gradually.

Plywood relies on round wood which will become increasingly expensive.

However, PB utilizes waste wood which is low in cost.

#### ➤ Manufacturing Cost:

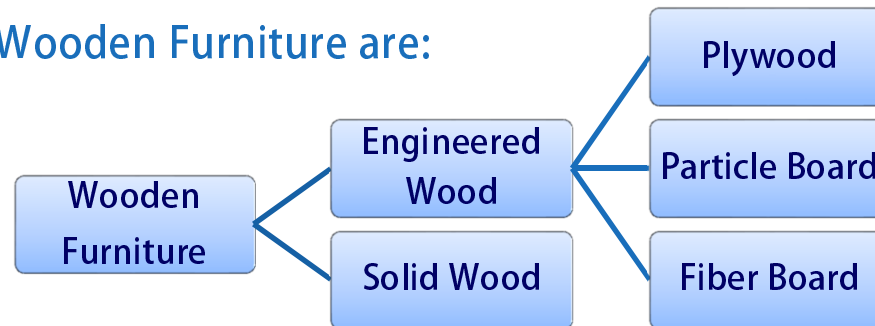
Compared with solid wood and plywood, the process of PB is highly automated which has cost advantages.

## 3.4 Development of PB Industry - Asia

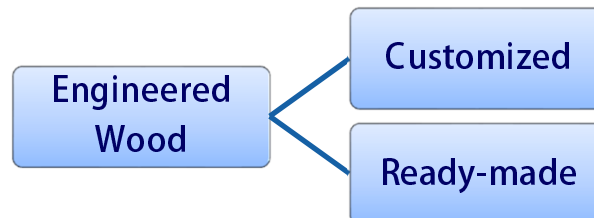


### ◆ Range of Application for Asian Particle Board

- PB in Asia is mainly used for the manufacture of **Wooden furniture**
- Sources of raw material for Wooden Furniture are:



- Furniture made from engineered wood could be distinguished by production types:



➔ China is an example of the rise of customized furniture manufacturing which has boosted the usage of particle board. An advantage for the manufacturer is that PB is available in standard dimensions with uniform properties which makes it suitable for the automation of furniture factories.

On the other hand, the manufacture of solid wood furniture is becoming more expensive due to the increasing scarcity and rising cost of solid wood of the required quality and its lack of uniform properties.

## 3.4 Development of PB Industry - Asia



### ◆ **Customized Furniture market has risen in China which improves the demand for particle board in wooden furniture.**

#### ➤ **2016 was named the first year of Chinese customized furniture:**

Ready-made furniture using engineered wood panels was mainly made from MDF in China until recently. With the rise of **customized furniture manufacturing** for local consumption in residential and commercial properties, greater use is made of particle board.

#### ➤ **Customized Furniture is the Future:**

1.China published the “Regulation of house decoration and repairing-in detail practice”:

The trend is away from traditional “bricks & mortar” housing construction with a long term goal of furnishing houses with customized built-in kitchen cabinets, closets, bathroom wash basins and bedroom cupboards. The scale of the customized furniture market in China will reach 449.3 million yuan by 2020. And its CAGR will be 21.73% between 2017~2020 which is larger than ready-made furniture with 3.53% CAGR.

2.**Higher Penetration** and **expanded categories of customized furniture** will enlarge the scale of the customized furniture market in China.

Customized furniture in China is mostly kitchen cabinets and closets, with 60% and 30% penetration respectively. With the higher penetration and more categories of customized furniture in the future, China continues to expand its customized furniture market.<sup>30</sup>

## 3.4 Development of PB Industry - Asia



### ◆ Future of Particle Board in Asia

#### ➤ **Wide range of applications is expected:**

PB in Europe is used in the manufacture of kitchen cabinets, office and residential furniture, countertops, door cores, floor underlayment, manufactured home decking, shelving and stair treads.

But PB in Asia is mainly applied to kitchen cabinets and ready-made furniture. Hence there is potential for much wider application of particle board in Asia.

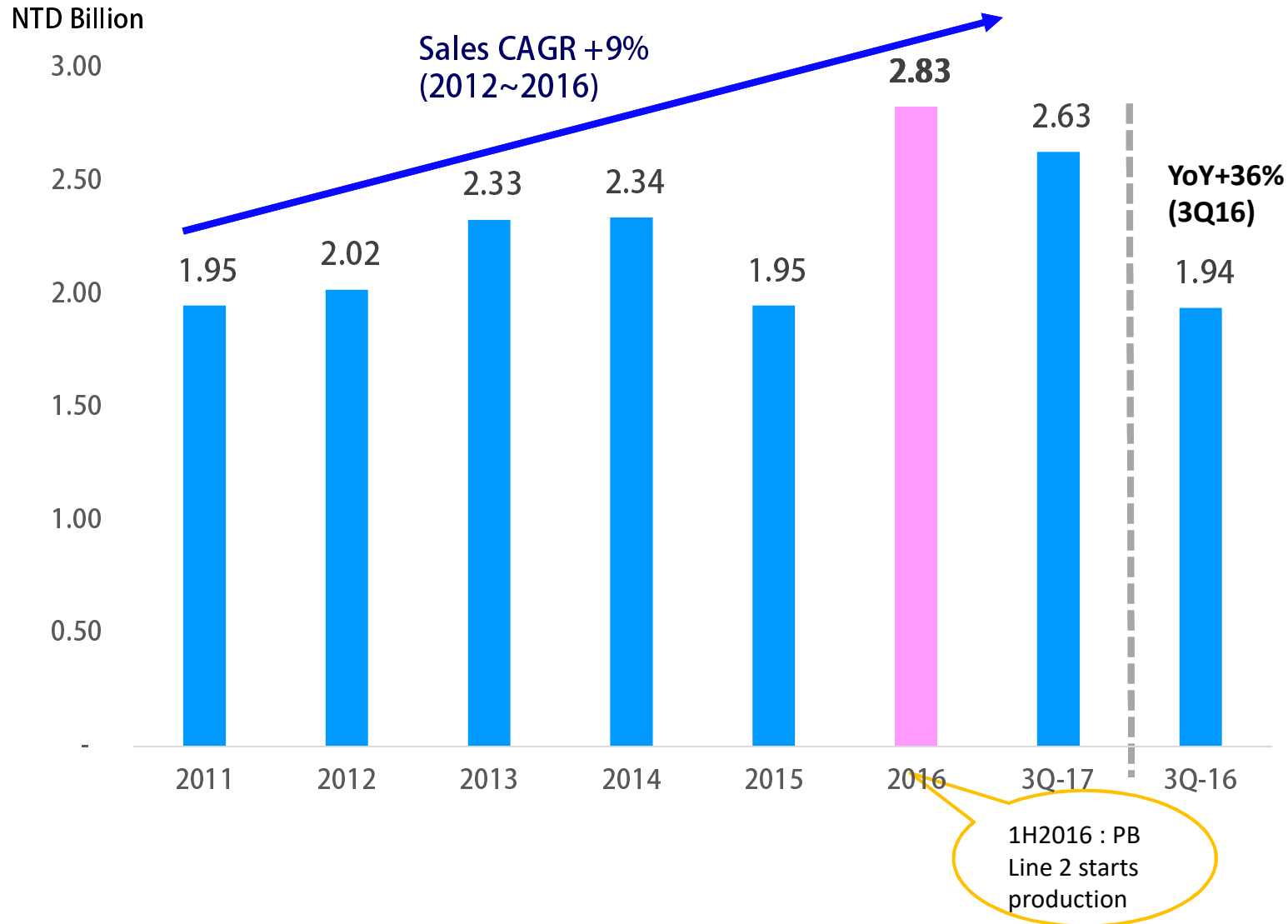
#### ➤ **Scarcity of natural forest resources, greater demand for Green, eco-friendly products and the advantage of low cost will foster the growth of PB demand in Asia.**



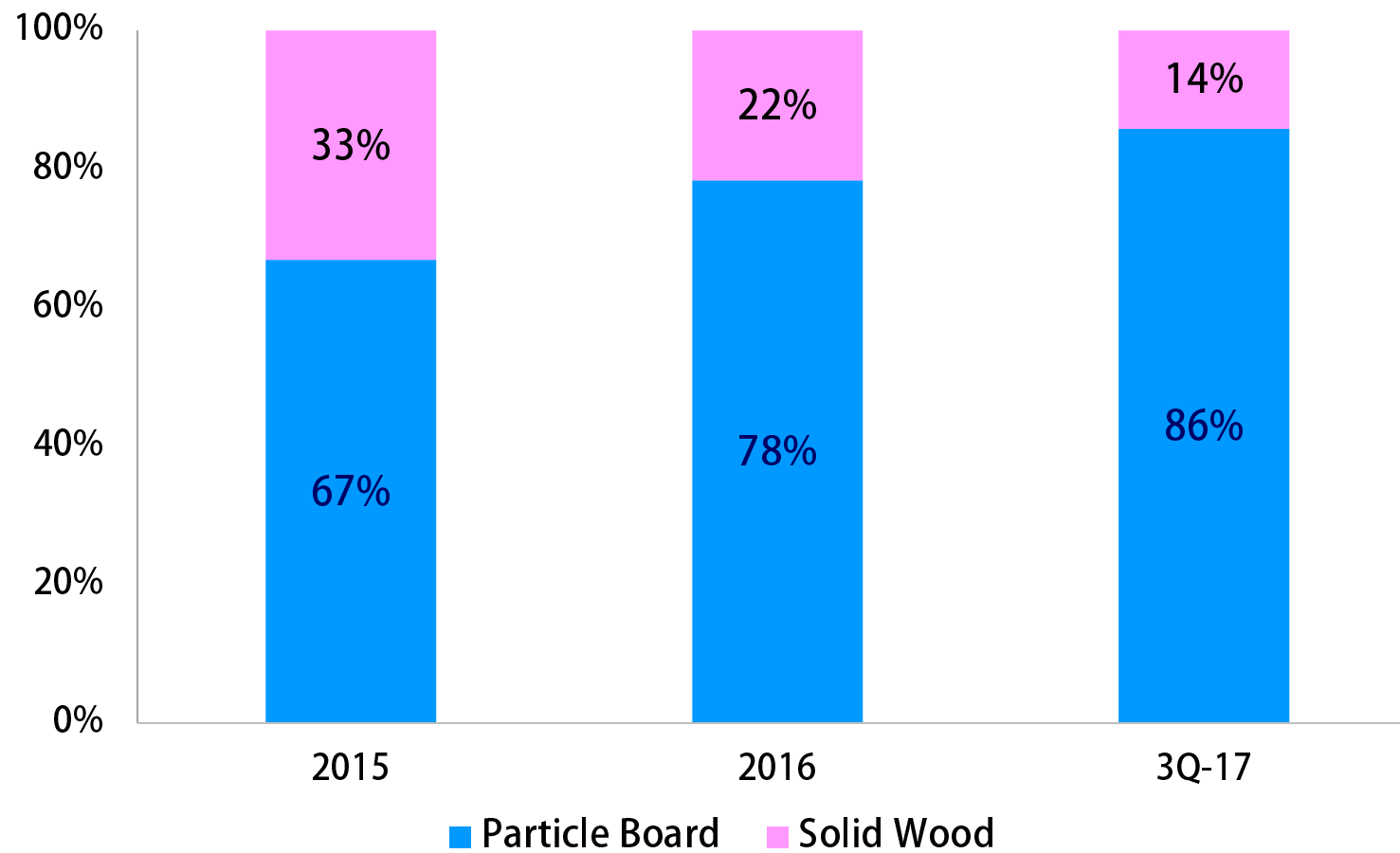


# Operating Performance

# 4.1 Annual Consolidated Revenues



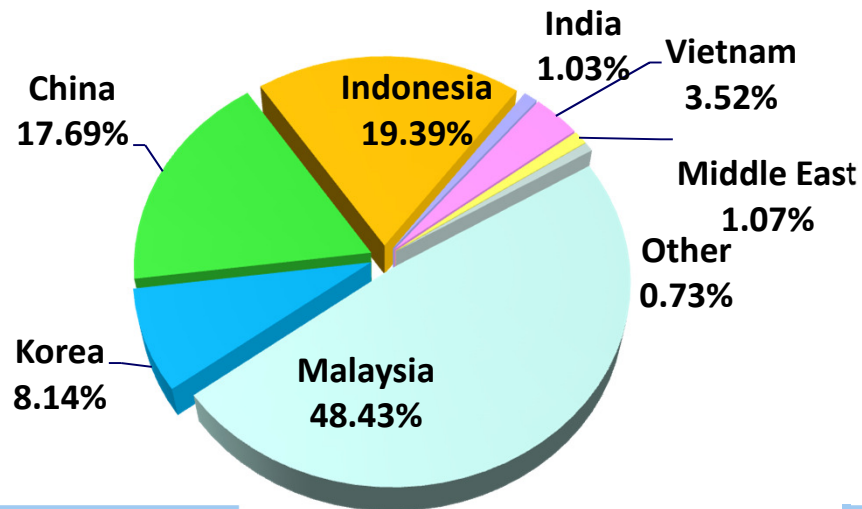
## 4.2 Sales Revenues by product



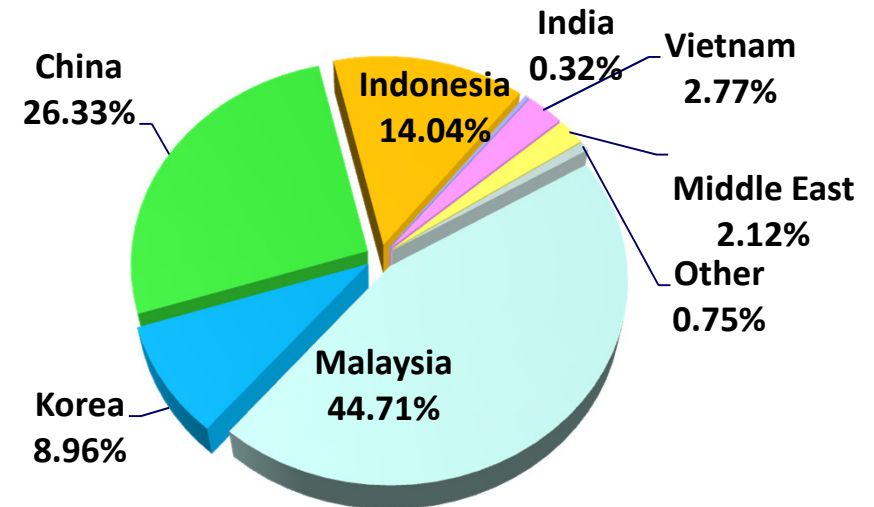
## 4.3 Market Sales Analysis - PB



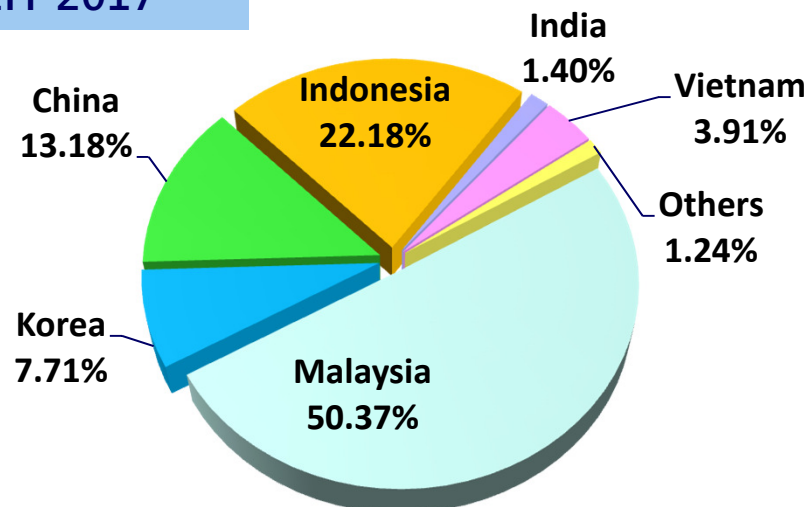
3Q-2017



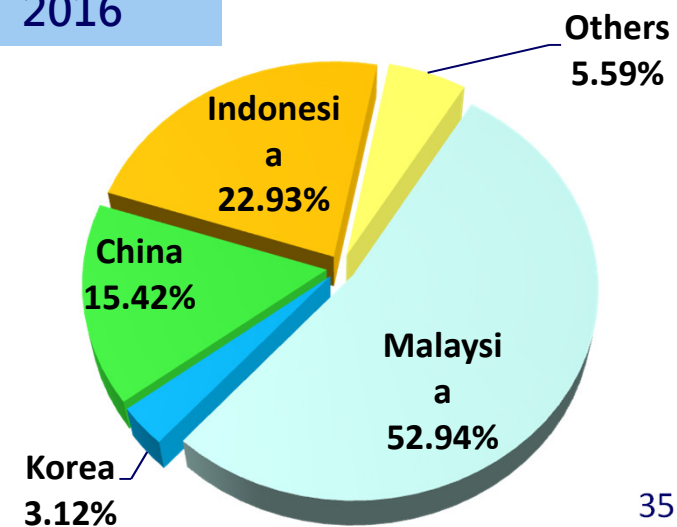
Q3-2017



1H-2017



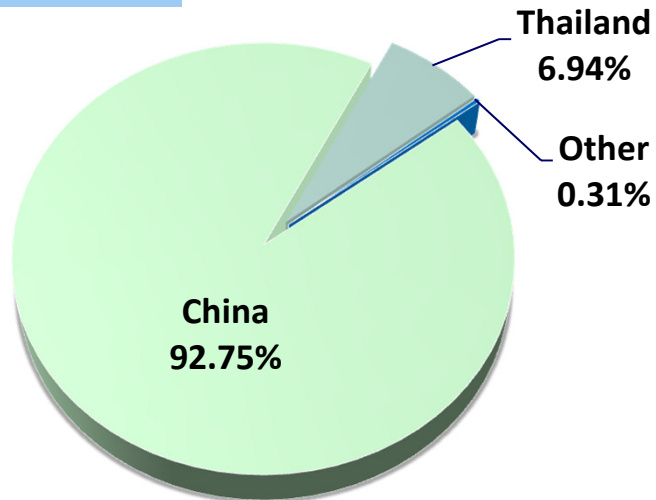
2016



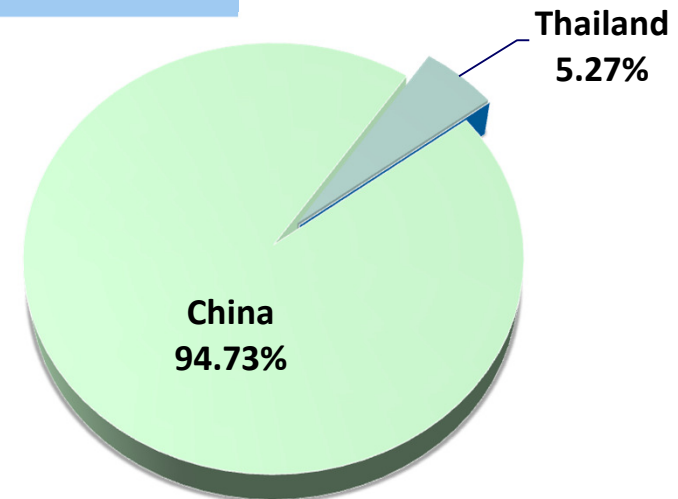
## 4.3 Market Sales Analysis - Solid Wood



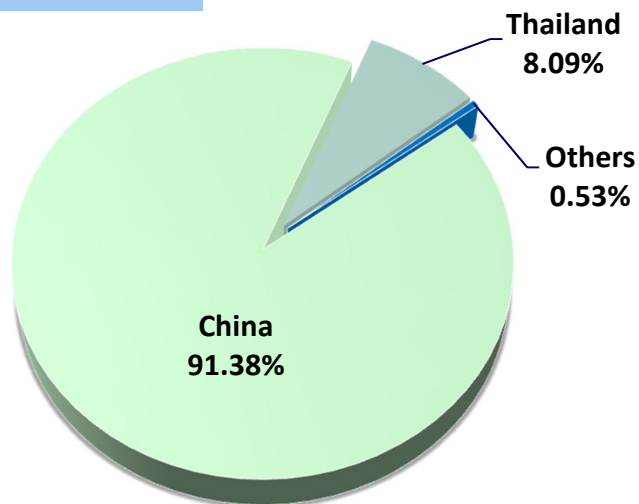
3Q-2017



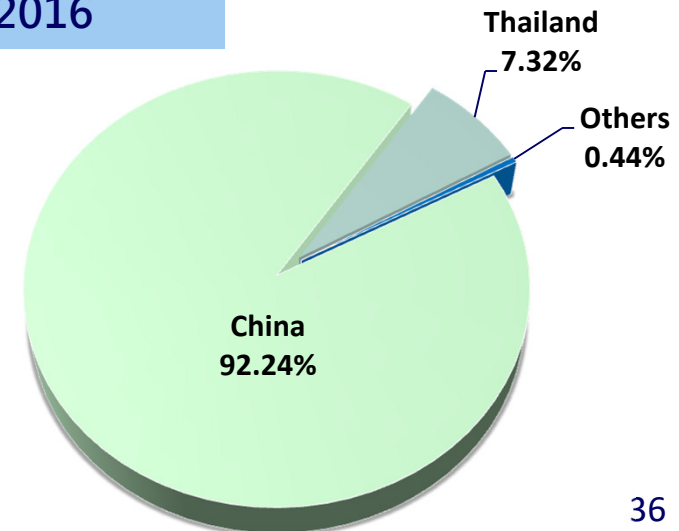
Q3-2017



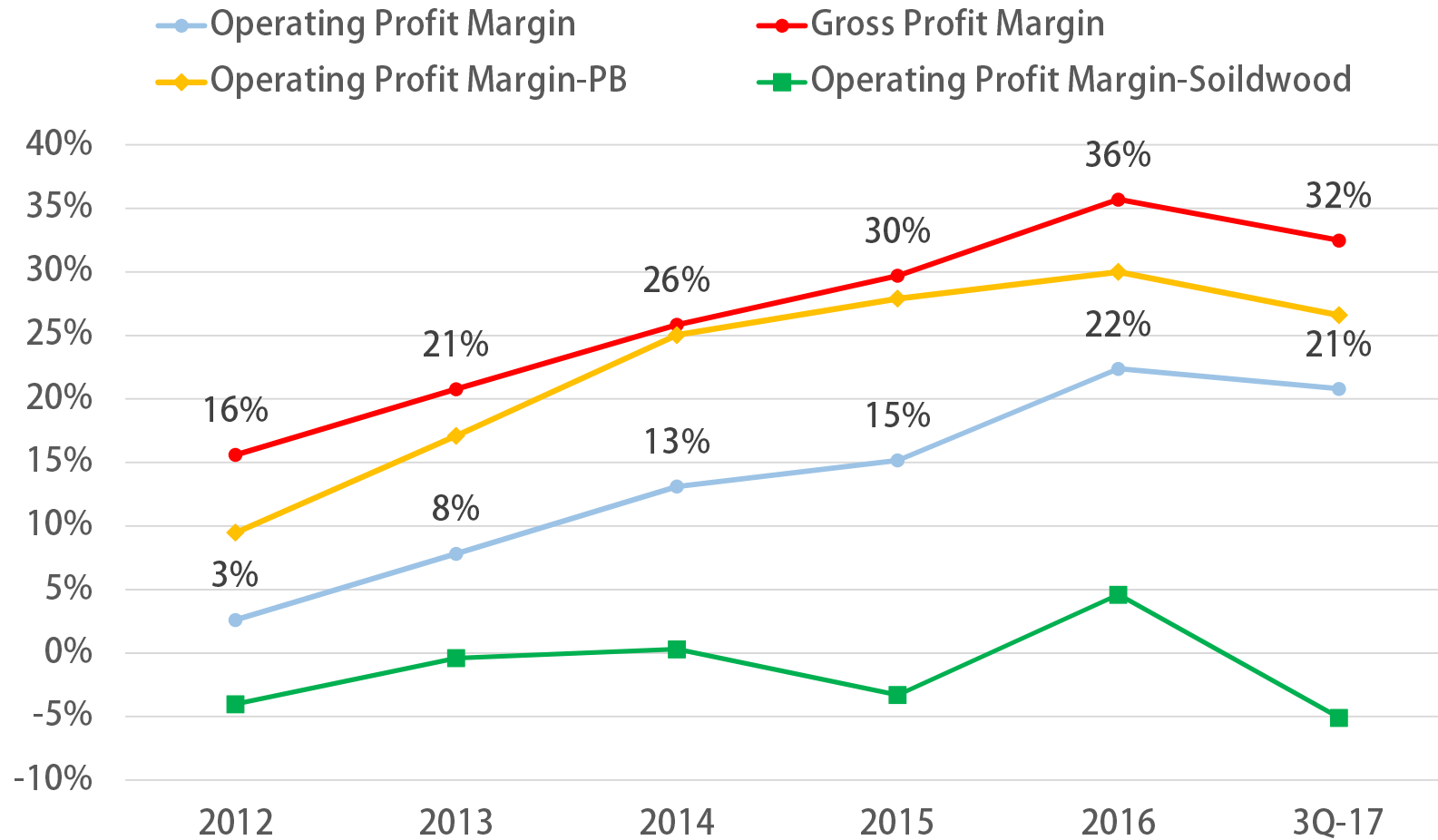
1H-2017



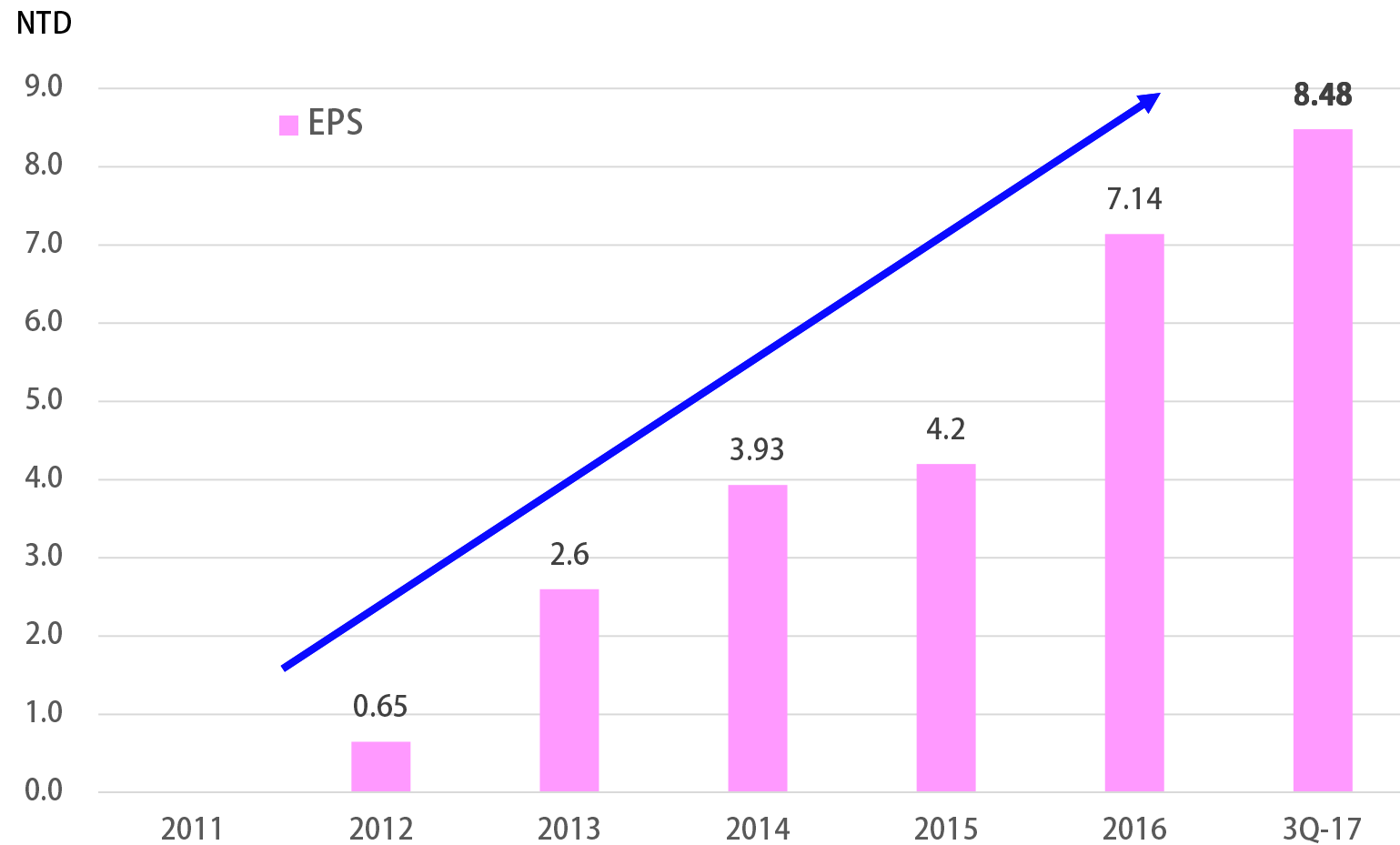
2016



## 4.4 Annual Margins



## 4.5 Annual EPS after Tax



## 4.6 Operational Efficiency



Item	FY14	FY 15	FY 16	1H17
Cash and cash equivalents	633,896	405,065	703,964	3,792,973
Trade receivables, net	93,189	97,340	143,998	208,134
Trade receivables turnover	19	18	16	18
Inventories	78,812	101,709	148,910	189,275
Inventories turnover	19	24	25	26
Note and Trade payables	63,995	90,058	138,296	181,763
Note and Trade payables turnover	16	21	23	25



## 4.7 Financial Ratios & Dividends Distribution



	2014	2015	2016	3Q 2017
Debt Ratio	47%	49%	51%	66%
ROE	17%	14%	23%	31%*
EPS	3.93	4.20	7.14	8.48
Dividend-Cash	2.00	2.20	3.1	-
Dividend-Stock	-	-	0.1	-
Payout Ratio	51%	52%	45%	-

\*ROE is calculated on an annualised basis



# **Competitiveness and Prospects**

# 5.1 Competitiveness



- ◆ Highly-automatic production line
- ◆ Production efficiency is better than other companies because of using the new equipment from German.

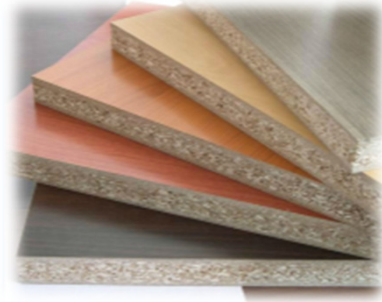


## 5.2 Competitiveness



### Core technologies

- ◆ Production criteria are controlled precisely, such as formaldehyde emission, dimensional stability, thickness swelling rate of water absorption and profile density...etc.
- ◆ Self-developing glue formula to reduce the costs.
- ◆ Particle Board have been adopted by the EU E1 and E2 grade quality certification, USA CARB Phase2 quality certification and ISO9001:2008 quality certification.



## 5.3 Competitiveness

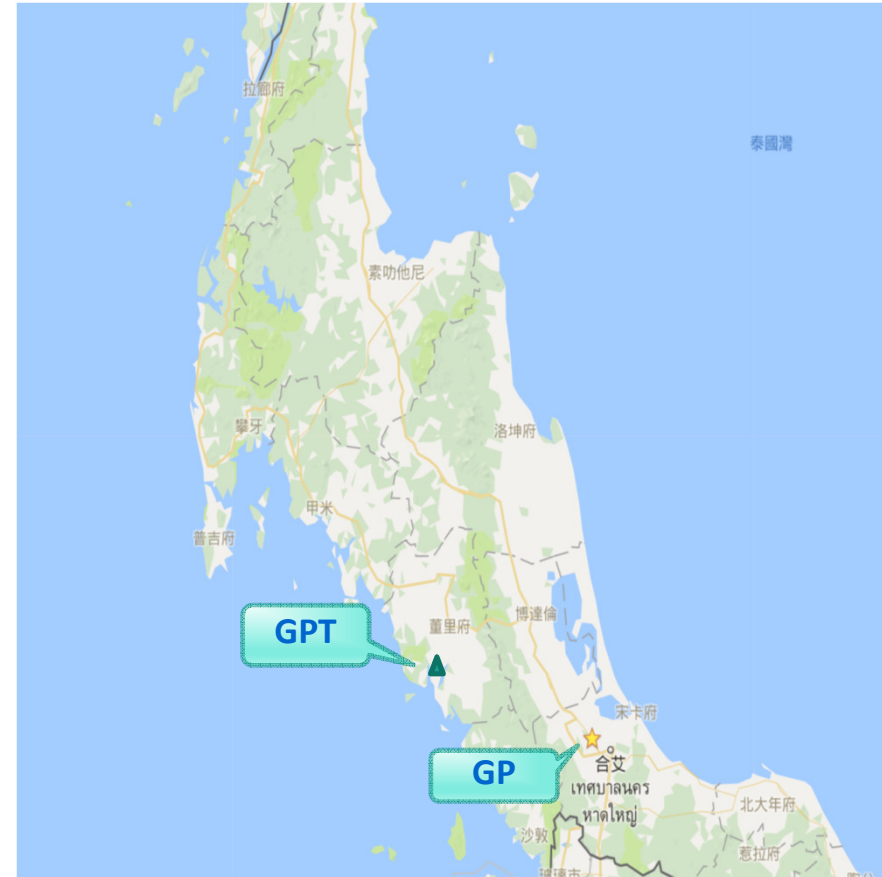


### Expanding production scale

- ◆ New Particle board line (GPT)
  - To be established in Trang province.
  - 500,000 m<sup>3</sup> per year
  - Largest capacity in Thailand
  - Located in rubber plantation area
  - Close to sea port for export.
  - Machinery to European Standard
- ◆ Upgrading existing PB line
  - PB Line 2 has been **upgraded** in June 2017, increasing capacity 30%.

Higher volume achieves:

- Economies of scale
- Greater marketing power



Location of GP 1 & 2 in Songkhla and GPT in Trang.



## 5.4 Competitiveness



## 5.5 Business Prospect



### Short-term strategy

- Enlarging capacity by horizontal expansion.
- Reducing cost by investing in own resin plant.

### Long-term strategy

- Expanding sales market from Northeast Asia to Middle East.
- Horizontal expansion by increase in product portfolios.
- Expansion through merging & acquisition, enhancing competitiveness.



# Q & A





**Thank You**

# Disclaimer



- This presentation contains forward-looking statements based on a number of factors such as economic conditions and industry environment which subject to significant risks and uncertainties.
- The actual operating results, financial condition and the business prospects may be different from those forecast due to various reasons beyond the company' s control.
- The forward-looking statements in this release reflect the current belief of the company as of the date of this release. We accept no obligation to update these forward-looking statements with new information, future events, or other unforeseen circumstances.