

Thailand's Glass Packaging Outlook

March 2018

Prepared by:

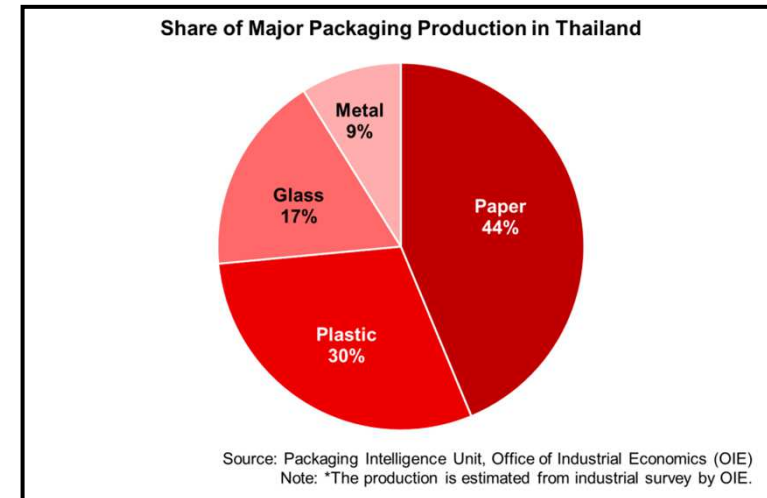
YBC & Spire (Thailand) Co., Ltd



Packaging Industry Overview & Trends

Thailand's Packaging Industry Overview

- Packaging industry in Thailand is dominated by paper and plastic packaging.
- The demand for paper packaging are boosted by the growth of the food and beverage industry and the rapid growth of e-commerce.
- The use of plastics in beverage packaging has continued to increase due to the low cost of materials and functional advantages over traditional materials such as glass and metal.
- Amid the trend towards replacing glass with plastic packaging, the advantages of glass, such as impermeable, no chemical interactions, and premiumisation, added to its popularity for certain sectors, such as alcoholic drinks, pharmaceuticals, and chemical products.



Thailand's Packaging Trends

In recent years, there has been an increasing demand for packaging, driven by several factors ranging from increased income, the change in lifestyles, etc.

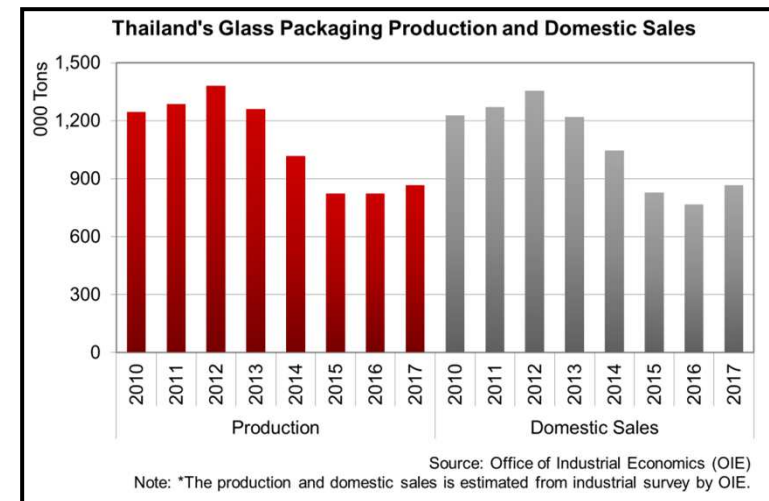
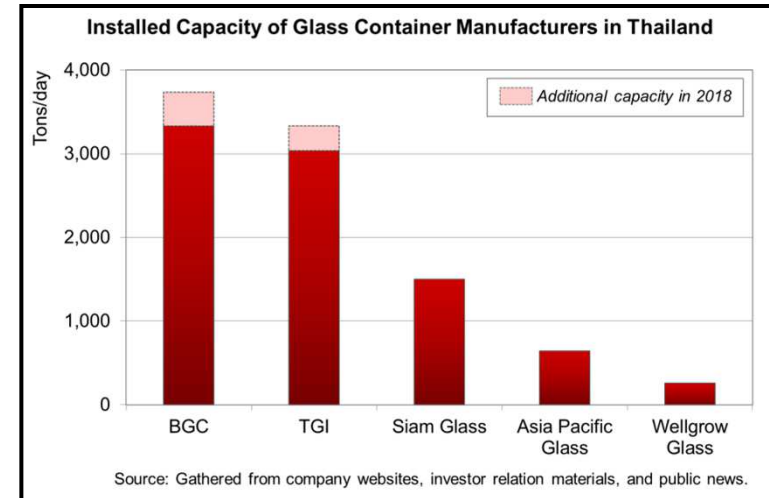
- The increasingly busy lifestyles have boosted the demand for packaged food. The food and beverage packaging which provides convenience for the consumer, i.e. open easily, resealable, and portable, have been growing.
- Smaller family size and single living result in smaller packaging needs such as resealable packaging and individual pack.
- The demographic shift towards population ageing will drive the trend towards lighter and easy-to-open packaging and larger and clearer print.

Glass Packaging Industry Performance

Thailand's Glass Packaging Industry

Thailand is the ASEAN's largest glass container producer with a total installed capacity of over 8,000 tons per day or over 2.5 million tons per year. The total value of the glass container industry were around 30-40 billion baht.⁽¹⁾

- Alcoholic, carbonated and energy beverages greatly influence Thailand's glass container market since majority of manufacturers distribute their products in glass bottles.
- Due to the high investment capital and continuous purchase order to allow profitable operation, there are very few glass container manufacturers in Thailand. Most of them are the related companies of the large beverage manufacturers.
- The leading alcoholic drink and energy drink manufacturers operate their glass bottle manufacturers to meet capacity needs and cost-competitive advantage.
- Since the last few years, there has been an increasing demand for glass container thanks to the growing energy drink and beer market in Thailand and its neighbouring countries. Accordingly, the glass container manufacturers have been expanding their production capacity to meet the increasing demand.
- However, the glass container market's recent growth is far below the last decade's development, around 12-13%⁽²⁾ due to the replacement of glass with plastic bottles for certain beverage products.
- One of the major factors that caused a decrease in the volume of glass container production and sales in Thailand is the gradual termination of Pepsi Co's glass bottle distribution and replacement with PET bottles and aluminium cans since 2013.

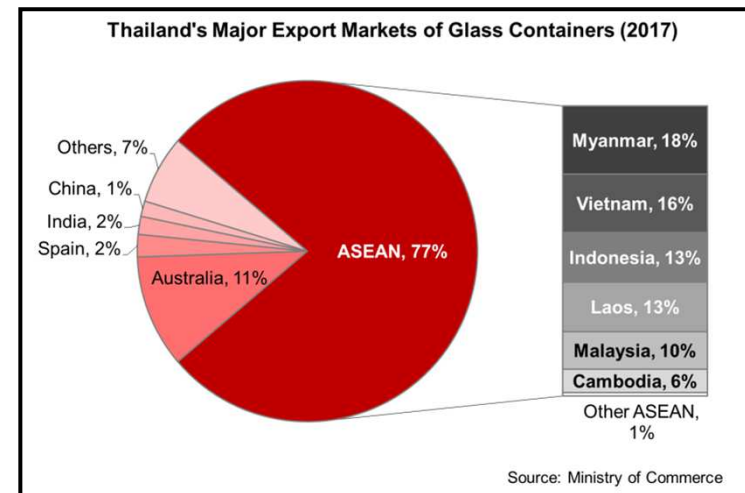


Note: (1) Various news agencies' interviews with the executive of Bangkok Glass Co., Ltd. (BGC)

(2) The Nations interviewed with Mr. Supasin Leelarit, Bangkok Glass executive vice president for the commercial group, which was published on June 15, 2017.

Glass Packaging Industry Performance

- According to the industrial survey by Office of Industrial Economics (OIE), most glass containers manufactured in Thailand are sold domestically, with only 2-3% of total sales are exported, according to the industrial survey by Office of Industrial Economics (OIE).
- The increased demand for the energy drink and alcoholic drink and the insufficient glass manufacturers in neighbouring countries boosts the glass container export.
- Thailand's export of glass containers relies heavily on ASEAN market (77% of total export volume in 2017), especially CLMV that contributed to more than half of glass container export.



Glass Container Manufacturers in Thailand (1)

Manufacturers	Capacity (tons/day)	Company's business description and key movements																				
<p>1. Bangkok Glass Plc. (BGC)</p> <ul style="list-style-type: none"> • Ayuthaya Glass Industry Co., Ltd. • Khon Kaen Glass Industry Co., Ltd. • Pathumthani Glass Industry Co., Ltd. • Rayong Glass Industry Co., Ltd. • Prachinburi Glass Industry Co., Ltd. • Ratchaburi Glass Industry Co., Ltd. 	<p>3,335 (+400 in 2018Q3)</p>	<p>Major shareholders:</p> <ul style="list-style-type: none"> ➢ Boon Rawd Group, the “Singha” beer manufacturer, holds the majority share in the company. ➢ Other shareholders are Green Spot, Sermasuk, Thai Namthip, and TCP Group, which are the leading carbonated and energy drinks manufacturers in Thailand. <p>Sales channels of glass container:</p> <div style="display: flex; justify-content: space-around;"> <div> <p><u>By Industry</u></p> <table border="1"> <caption>By Industry</caption> <tr><th>Industry</th><th>Percentage</th></tr> <tr><td>beverage</td><td>70%</td></tr> <tr><td>food</td><td>20%</td></tr> <tr><td>others</td><td>10%</td></tr> </table> </div> <div> <p><u>By Customer Type</u></p> <table border="1"> <caption>By Customer Type</caption> <tr><th>Customer Type</th><th>Percentage</th></tr> <tr><td>Group company</td><td>50%</td></tr> <tr><td>Outside</td><td>50%</td></tr> </table> </div> <div> <p><u>By Market</u></p> <table border="1"> <caption>By Market</caption> <tr><th>Market</th><th>Percentage</th></tr> <tr><td>Domestic</td><td>90%</td></tr> <tr><td>Export</td><td>10%</td></tr> </table> </div> </div> <p>Company's other businesses:</p> <p>Glass container manufacturing is the company's main business, with a share of around 75-80% of the company's revenue. Other businesses include:</p> <ul style="list-style-type: none"> ➢ Other types of packaging (crown caps, plastic closures, PET bottles, crate containers, and corrugated cartons) ➢ Float glass (the company plans to expand to other construction materials) ➢ Renewable energy (solar rooftops and wind farms) ➢ Sports <p>Recent Strategies & Plans:</p> <ul style="list-style-type: none"> ➢ Aims to expand in the ASEAN market by using Thailand as a manufacturing base to export to other countries. ➢ Plans to list on SET by 2018Q3 to raise fund for future business expansion. 	Industry	Percentage	beverage	70%	food	20%	others	10%	Customer Type	Percentage	Group company	50%	Outside	50%	Market	Percentage	Domestic	90%	Export	10%
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Source: Gathered from company websites, investor relation materials, public news

Glass Container Manufacturers in Thailand (2)

Manufacturers	Capacity (tons/day)	Company's business description and key movements						
<p>2. Thai Glass Industries (TGI)</p> <ul style="list-style-type: none"> Thai Glass Industries Plc. Thai Malaya Glass Co., Ltd. 	<p>3,035 (+300 in 2018Q3)</p>	<p>Major Shareholders:</p> <ul style="list-style-type: none"> Thai Glass Industries and Thai Malaya Glass are the wholly-owned subsidiaries of Berli Jucker Plc. (BJC), the large trading, manufacturing and servicing company in Thailand. (In addition to two companies in Thailand, BJC has JV in glass container manufacturing in Malaysia and Vietnam.) <p>Sales channels of glass container:</p> <ul style="list-style-type: none"> Thai Glass Industries and Thai Malaya Glass supply 50% of their combined glass container output to "Thai Beverage Plc.", which is under the same group of company (TCC Group). The remaining half are supplied to outside customers, i.e. soya milk manufacture (Vitamilk), energy drink manufacture (Red Bull), flavored syrup (Hale's Blue Boy). <p>Recent Strategies & Plans:</p> <ul style="list-style-type: none"> The latest furnace with a capacity of 300 tons/ day has just commenced operation in 2017Q4. The other furnace with the same capacity is scheduled to open in 2018Q3. BJC aims to be the ASEAN's fully integrated packaging manufacturer by expanding into other packaging businesses and seek opportunities to build glass container manufacturing plants in Malaysia and CLMV. <div> <p>By Customer Type</p> <table border="1"> <caption>By Customer Type</caption> <tr> <th>Customer Type</th> <th>Percentage</th> </tr> <tr> <td>Group company</td> <td>50%</td> </tr> <tr> <td>Outside</td> <td>50%</td> </tr> </table> </div>	Customer Type	Percentage	Group company	50%	Outside	50%
Customer Type	Percentage							
Group company	50%							
Outside	50%							
<p>3. Siam Glass Industry</p> <ul style="list-style-type: none"> Siam Glass Industry Co., Ltd. Siam Glass Ayutthaya Co., Ltd. 	<p>1,500</p>	<p>Major Shareholders:</p> <ul style="list-style-type: none"> Osotspa Co., Ltd., the leading energy drink manufacturer in Thailand, holds 100% shares in Siam Glass Industry and Siam Glass Ayutthaya. <p>Sales channels of glass container:</p> <ul style="list-style-type: none"> 80% of the combined output of both companies are supplied to Osotspa group. Only 20% are sold to external customers and export. <p>Key Movements & Plans:</p> <ul style="list-style-type: none"> Plans to open new plant with 310 tons/ day capacity in 2019. <div> <p>By Customer Type</p> <table border="1"> <caption>By Customer Type</caption> <tr> <th>Customer Type</th> <th>Percentage</th> </tr> <tr> <td>Group company</td> <td>80%</td> </tr> <tr> <td>Outside</td> <td>20%</td> </tr> </table> </div>	Customer Type	Percentage	Group company	80%	Outside	20%
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Source: Gathered from company websites, investor relation materials, public news

Glass Container Manufacturers in Thailand (3)

Manufacturers	Capacity (tons/day)	Company's business description and key movements
4. Asia Pacific Glass Co., Ltd. (APG)	650	<p>Major Shareholders: APG is the wholly-owned subsidiary of Carabao Group Plc., the “Carabao Daeng” energy drink manufacturer.</p> <p>Sales Channels of Glass Container: 100% of its glass bottle are supplied to Carabao Group.</p> <p>Key Movements & Plans:</p> <ul style="list-style-type: none"> ➤ APG started with a glass furnace capacity of 310 tons/ day in 2013 to supply the glass bottle for the “Carabao Daeng” energy drink. ➤ At the end of 2017, the company opened the 2nd furnace with the capacity of 330 tons/ day to serve an accelerated growth of its energy drink sales. ➤ Carabao Group also establishes a joint venture with Showa Denko Group to manufacture aluminium cans with a capacity of 1 billion cans per year. The aluminium can factory was scheduled to commence operation by 2018Q3.
5. Wellgrow Glass Industry Co., Ltd.	260	<p>Major Shareholders: Shareholders are Thai individuals, who do not engage in other businesses related to glass bottle.</p> <p>Sales channels of glass container:</p> <ul style="list-style-type: none"> ➤ The company mainly supplies high quality glass containers to the food and beverage, pharmaceutical and cosmetic companies. ➤ Major customers are Unilever, Beierdorf, and British Dispensary. <p>Key Movements & Plans:</p> <ul style="list-style-type: none"> ➤ Wellgrow plans to expand its furnace capacity by an additional 30 tons/ day by 2019.

Source: Gathered from company websites, investor relation materials, public news

Concluding Remarks

The continued capacity expansion and the increased usage of alternative materials added intense competition to the glass packaging industry. Despite plastic replacing glass as bottles for some products, the demand for glass bottles continuously increases over the recent years due to the growing energy drink and beer market.

In addition to the capacity expansion, the glass container manufacturers have been adopting various strategies to maintain their competitiveness, as follows:

- New technologies for lower energy consumption to retain cost competitiveness
- Developing lightweight glass container to beat the alternative packaging
- Diversifying to other glass products, i.e. glass construction materials
- Expanding the customer base, i.e. export market

The rising demand in ASEAN and glass's favourable properties will bring ample business opportunities. However, the industry's investment needs to align with beverage manufacturer's strategies to ensure sufficient demand for continuous operation.