

Analysis of the Plastic Foam Industry in Thailand

Abstract

Thailand is one of the main plastic exporters in the ASEAN region. The plastic demand in Thailand is mainly driven by the medical industry and the plastic packaging. 87% of the plastic producers in Thailand are SMEs, and the market is dominated by less than 5 large enterprises. Even though the demand from the medical sector is expected to subside after the end of the pandemic, the demand for plastic packaging and construction sector is expected to rise with the global economic recovery. The main challenge for the industry arises from the environmental concern both from the government regulation and the consumer preference toward more environmentally friendly products. The enterprises in the industry should address this concern by developing toward sustainable production process and effective waste management.

Learning objective

- Investigates the factors that impact the demand for plastic and the production process through SWOT analysis, economic analysis, environmental analysis as well as the policy and regulation.
- Develop competitive strategy for the firm in the plastic foam industry

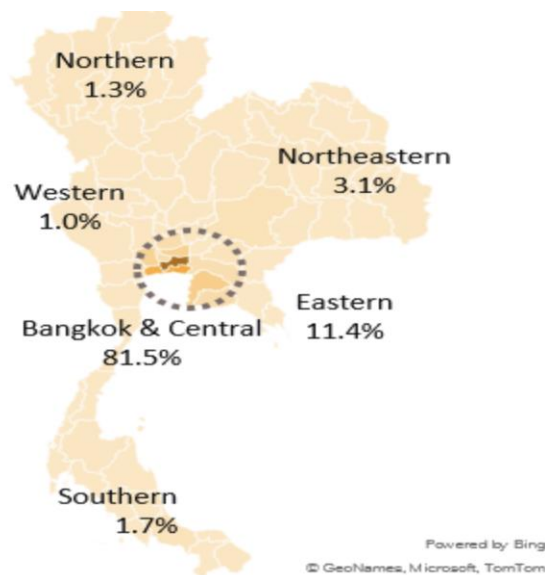
Introduction

Plastics are categorized as semi-synthetic or synthetic materials made of polymer, using variety of raw materials including cellulose, coal, natural gas, salt, and crude oil. Plastic market in Thailand is segmented into packaging, electrical and electronics, building and construction, automotive and transportation, furniture and bedding, and other applications.

In 2019, Thai manufacturers produced 9.0 million tonnes of plastics, while imports accounted for only 2.2 million tonnes. Around 56% of the output is exported, making Thailand the 11th largest global exporter of plastics and the second largest in the ASEAN region after Singapore. The remaining 44% is utilized for domestic industries, particularly in auto assembly, electronics and electrical appliances, and construction. Thai companies dominate the domestic market, accounting for 83.5% of the industry, followed by Japanese companies at 7.5% and Chinese companies at 1.2%.

Geographically, most plastic operations (81.5%) are concentrated in the central region, particularly in the Bangkok Metropolitan Region, Samut Prakan, and Samut Sakhon. The eastern region accounts for 11.4% of the operations, followed by the northeast with 3.1% as shown in figure 1

Figure 1: Location of Plastic Production in Thailand (2019)



Source: Krungsri Industry Outlook

<https://www.krungsri.com/en/research/industry/industry-outlook/petrochemicals/plastics/io/io-plastics-21>

SWOT Analysis

The strengths of Thai plastic market come from good geographical advantage, low labor costs and excellent infrastructure construction. The weaknesses arise from the unresolved sustainability

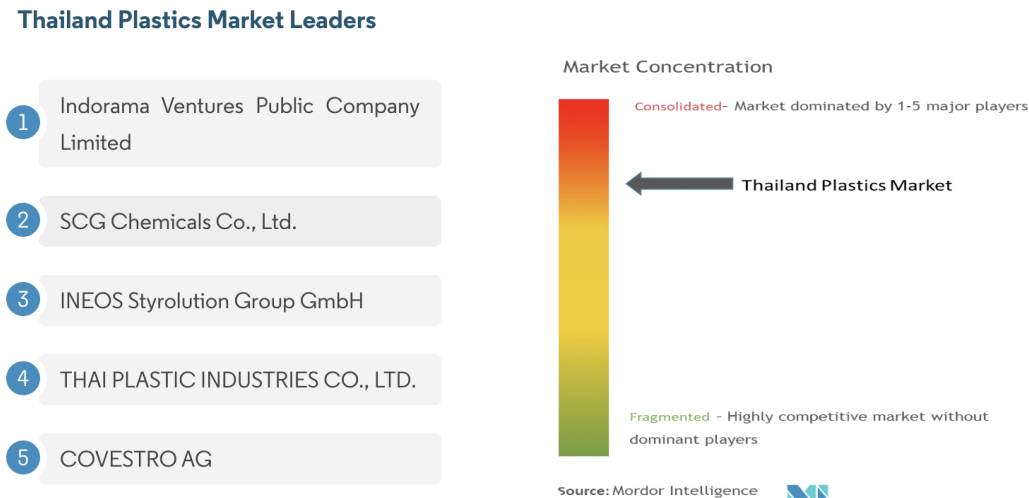
issues of foam, especially waste management issues and limited recycling options. The global inflation can push up the raw material costs such as crude oil and polyols, and the supply chain disruptions could also impact the operation and logistic.

The opportunities in the Thai plastic market arise from the rising demand for protective packaging such as polyurethane packaging foam (PPF) in the Asia-Pacific region. Furthermore, the demand in the construction industry is also recovering. The threats are brought about by new sustainable-oriented foam products from technological progress that could disrupt traditional foam manufacturers.

Market Competition of Plastic Industry in Thailand

Thailand plastics industry comprises over 2,800 converters, with 87% being small and medium-sized enterprises (SMEs) and 13% being large players. The low entry barriers and relatively low investment costs attract a large number of SMEs to the market. Production primarily focuses on low to mid-level technology, resulting in the production of commodity-grade products. Consequently, competition is intense, and profit margins are slim. The major companies include SCG Chemicals Co. Ltd., Indorama Ventures Public Company Limited, INEOS Styrolution Group GmbH, COVESTRO AG, and THAI PLASTIC INDUSTRIES CO. LTD, among others (not in any particular order).

Figure 2: Leading Companies and Market Concentration in Thailand Plastic Market



Source: Mordor Intelligence

<https://www.mordorintelligence.com/industry-reports/thailand-plastics-market>

Economic Analysis

According to technavio's forecast and analysis of Plastic Market in Thailand, the plastic market share in Thailand is expected to increase by USD 8.63 billion from 2021 to 2026, at a CAGR of 4.72%. Plastic production decreased due to global supply chain disruptions during Covid-19

pandemic. However, the industry has been recovering well since Covid-19 restrictions were lifted. Rising levels of industrial activity and rapid recovery of tourism are likely to have a positive impact on the studied market.

Over the short term, increasing usage of plastics in building and construction, and rising demand for food and beverage packaging, are some factors driving the market growth. On the flip side, stringent government regulations resulting in the plastic ban are expected to hinder market growth during the forecast period.

Key Plastic Market Driver in Thailand

The increasing demand for packaging materials is the key growth driver for plastic market in Thailand comes from the healthcare sector and plastic packaging. The flexible plastic packaging from hospitals, drug manufacturers and personal protective equipment manufacturers in the healthcare industry is not expected to grow significantly after 2023 as the Covid-19 pandemic came to an end. However, after the end of the pandemic, it is expected that the plastic demand from automotive industry, industrial Electricity, consumer goods, food and beverage consumption will increase steadily thanks to the global production and consumption environment will recover with the boost from the government stimulation of the pent-up demand from tourism industry.

Key Plastic Market Trend in Thailand

One key plastic market trend in Thailand is sustainability and environmental concerns. In recent years, there has been a growing awareness about the negative impact of plastic waste on the environment, particularly on marine ecosystems. This has led to a shift in consumer preferences and government regulations, encouraging the adoption of more sustainable practices in the plastic industry.

Thai government has introduced policies to reduce plastic waste, such as banning single-use plastic bags in major retail stores and promoting the use of reusable bags. There are also the establishment of recycling programs and facilities across the country. Companies in the plastic industry are also responding to the sustainability trend. Many are investing in research and development to create more environmentally friendly materials, such as biodegradable or compostable plastics. They are also exploring alternative packaging solutions and promoting recycling initiatives. Other forces arise from a growing demand for eco-friendly products from consumers and businesses. This has led to the emergence of new market segments and opportunities for companies that offer sustainable plastic alternatives. Manufacturers are increasingly incorporating recycled plastics into their products, and there is a rising demand for recycled plastic materials.

Overall, the key plastic market trend in Thailand is the shift towards sustainability, driven by both government regulations and changing consumer preferences. This trend is leading to innovations in the industry and a greater focus on reducing plastic waste and promoting a circular economy.

Key Plastic Market Challenge in Thailand

The key challenges in the plastic market in Thailand is the management and reduction of plastic waste. Despite efforts to promote sustainability and environmental awareness, Thailand still faces significant issues related to plastic waste generation and disposal.

The high consumption of single-use plastics is the main cause of plastic waste. Thailand has been a significant contributor to plastic waste in Southeast Asia, and the country has struggled with managing the vast amounts of plastic waste generated. Even with the implementation of regulations to reduce the use of single-use plastics, such as the ban on plastic bags in major retail stores, there is still a need for stronger enforcement and greater consumer behavior change.

In addition, Thailand lacks comprehensive waste management infrastructure. Proper collection, sorting, and recycling facilities are essential for effective plastic waste management. However, Thailand faces limitations in terms of infrastructure and resources for waste management, particularly in rural areas. This can result in improper disposal methods, such as open burning or dumping of plastic waste, which can have detrimental effects on the environment and human health.

Furthermore, the complexity of plastic packaging and the presence of various types of plastic materials pose challenges for recycling processes. Some plastics are more difficult to recycle or require specialized technologies, which may not be widely available. This can hinder the development of a robust recycling industry and limit the ability to achieve high plastic waste recycling rates.

Environmental Analysis

The Pollution Control Department of Thailand estimated that plastic waste constituted nearly 12% of the total waste generated in Thailand, resulting in an annual production of nearly 2 million tons of plastic waste, as reported by Enviance Asia. In addition, a report of plastic waste material flow analysis reviewed that despite the municipal solid waste collection rate of 88.8%, there was still an approximate of 428,000 tons per year of plastic waste that were not properly disposed of (World Bank Group, 2022).

Plastic pollution is harmful to the natural land and sea environment, which in turn threatens the lives of animals and the health of human beings. In fact, The World Bank report as mentioned above also found that the plastic waste in the rural regions potentially had a 70% chance of infiltrating the marine ecosystem. In the past, several deaths of marine life such as whale, turtle and dugong were reported on the coastlines of Thailand. Statistically, a marine biologist from Kasetsart University estimated that roughly 300 marine animals perish every year in Thailand due to the consumption of plastic (The ASEAN Post, 2019).

The usual ways of recycling would begin by crushing scraps and rebounding them by adding pressure or chemicals to form new foam products such as seat cushions, acoustic sound panels and mattresses, which are generally something with higher density. The finished products are usually marked with recycle logos or with the term “bio” to notify the biodegradable nature of that specific material, which encourages recycling activities. The water used in cooling facilities can be recycled for equipment cleaning in the coatings processes. To alleviate water pollution, a Thai foam company has also organized training that aims at averting the incidence of spills of unprocessed substances, and it also keeps track of the quality of both ground and drainage water.

At present, only 27% of plastic waste was recycled (Singh & Sharma, 2016). The rest were then discarded in landfills or sent to incineration. 80% of plastic waste was deemed to be polluted and

the cost of cleaning was relatively high. However, the recycling process may cause air pollution such as an acrid smell that leads to headaches and skin irritation in human and harmful to the animals nearby (Bloomberg news by Campbell, 2022). The negative externalities from disposal and improper treatment of plastic waste are challenges for the sustainable growth of the Thai plastic foam industry.

There are also other measures to cope with plastic foam waste. Some foam companies in Thailand also provide training on environmental management for employees to nurture their environmental awareness. For more formal practices, some companies set up environmental key performance indexes with specific targets and people in charge of aspects such as reduction in energy consumption and zero incidents of chemical spills. These reflected their effort in mitigating pollution from production and conserving the natural environment.

On the whole, the plastic foam industry in Thailand faces challenges due to the high volume of plastic waste generated and its negative environmental impact. There are hence a number of sustainable measures such as recycling and training on environmental management being implemented by the industry to control plastic pollution. However, more can still be done to reduce the volume of plastic waste and to ensure that it is disposed of properly. The role of the Thai government is also essential as it can for example enforce environmental regulations to help build the sustainable growth of the plastic foam industry.

Policies and Regulations

While the plastic and foam industry has provided various benefits, its impacts on the environment, resource consumption, carbon emissions, and human health are significant and concerning. Particularly, in recent years, the issue of carbon emissions and their impact on climate change has gained significant global attention. As a responsible member of the international community, Thailand has taken proactive steps to address carbon emissions and implement policies and regulations aimed at mitigating climate change.

Thailand's dedication to decreasing carbon emissions is evident in its National Climate Change Policy Framework. This all-encompassing framework outlines the nation's enduring plan, which encompasses initiatives to diminish greenhouse gas (GHG) emissions, bolster adaptability to climate change, and shift towards an economy with minimal carbon impact. The primary policy framework for addressing climate change in Thailand presently is the Climate Change Master Plan 2558-2593 B.E. (2015-2050). This plan intends to establish a long-term roadmap that various agencies and sectors can utilize to shape their action plans in their respective domains (UNFCCC, 2021).

Thailand's Climate Change Master Plan for the period 2015-2050 (ONEP, 2015) is designed to support the country's sustainable development goals, promote low-carbon growth, and enhance climate change resilience. The master plan comprises three key strategies aimed at addressing the challenges posed by climate change and guiding Thailand towards a more sustainable future. The strategies include Climate Change Adaptation, Mitigation and Low Carbon Development, and Enabling the Environment for Climate Change Management.

Recommendations

The plastic foam industry should adopt the "green energy saving" and "green emission reduction" practice. For example, companies can strengthen their green recycling capabilities and increase the utilization rate of materials within the enterprise to solve the dilemma of imported raw materials and break through the bottleneck of scale expansion. It is necessary to establish a professional and efficient green division of labor and cooperation system to drive the upstream and downstream industries to jointly apply new green technologies, realize the green governance model integrating "supply-production-sales", and improve the overall greenness of the industry. Governance capabilities, reduce production costs, and achieve a win-win situation for environmental protection and economy.

The solid waste in the production process can be used for production by burning renewable energy to improve energy utilization and reduce the energy consumption per unit of foam. Update green production equipment, further treat wastewater, improve the recycling rate of production water, reduce water consumption per unit of product, and minimize wastewater discharge. The government should further improve the environmental information disclosure system and encourage enterprises to innovate and invest in environmental protection. In addition, the government should also provide policy support in terms of enterprise innovation and environmental protection such as tax incentives for enterprises environmental protection expenditures or subsidies to R&D investment. This will create a good business environment that encourages innovation and environmental protection.

Conclusion

This paper analyzes the Thai foam industry through SWOT model analysis and industry, economy, environment, and market analysis, and predicts the development trend of the Thai foam industry. The plastic foam industry in Thailand faced supply chain disruptions and transportation restrictions during the Covid-19 pandemic. Some of the customers, mainly the automotive and construction industries have experienced a drop in demand during the pandemic as people reduce their propensity to buy large consumer durables or construction projects are delayed. On the other hand, industries such as medical and packaging experienced increased demand, especially for products related to protection and packaging.

The SWOT analysis showed that the strength of this industry came from supply chain management, diversified offerings, and prioritized employee development. However, weaknesses include a lack of innovative solutions for waste management and cost control. Opportunities lie in the growing demand for protective packaging and the use of foam in the building and construction industry. Threats include supply chain disruptions, sustainability concerns, and the emergence of plant-based substitutes for foam materials.

Thailand has a good geographical advantage, low labor costs and excellent infrastructure construction but the country should find the efficient waste management solutions in a long term. There are opportunities from the rising demand for protective packaging such as polyurethane

packaging foam (PPF) in the Asia-Pacific region, and the recovering demand in the construction industry. However, it could be threatened by a new sustainable-oriented foam product.

Thailand's plastic enterprises are mainly small and medium-sized enterprises, with fierce competition and meager profit margins. However, with the recovery of tourism and industry, and the improvement of demand in the medical industry, the market for the foam plastic industry is still expanding. Although Thailand has issued a plastic restriction order, Thailand is still one of the largest producers of plastic waste in Southeast Asia, which has led to the deterioration of Thailand's marine resources. Future development trends focus on the improvement of sustainability and the development of environmentally friendly companies. develop.

Thailand has actively responded to the call for carbon emission reduction and has established relevant laws and regulations and national policies, as the country moves toward the low-carbon sustainable development.