

## 7. INDUSTRY OVERVIEW

SMITH ZANDER INTERNATIONAL SDN BHD 201301028298 (1058128-V)  
 15-01, Level 15, Menara MBBM, 1 Jalan Syed Putra, 58000 Kuala Lumpur, Malaysia  
 T : +603 2732 7537 W : www.smith-zander.com

# SMITH ZANDER

Date: **22 MAR 2024**

The Board of Directors

### Northeast Group Berhad

Suite 12-A, Level 12, Menara Northam  
 55 Jalan Sultan Ahmad Shah  
 10050 George Town  
 Pulau Pinang

Dear Sirs / Madams,

### Independent Market Research Report on the Precision Engineering Industry in Malaysia (“IMR Report”)

This IMR Report has been prepared by SMITH ZANDER INTERNATIONAL SDN BHD (“**SMITH ZANDER**”) for inclusion in the Prospectus in conjunction with the proposed initial public offering and listing of Northeast Group Berhad (“**Northeast**”) on the ACE Market of Bursa Malaysia Securities Berhad.

The objective of this IMR Report is to provide an independent view of the industry and market(s) in which Northeast and its subsidiaries (“**Northeast Group**”) operate and to offer a clear understanding of the industry and market dynamics. As Northeast Group is principally involved in the manufacturing of precision engineering components, the scope of work for this IMR Report will thus address the following areas:

- (i) Engineering support industry in Malaysia, being the broader industry in which Northeast Group operates in;
- (ii) Precision engineering industry in Malaysia, being the sub-segment of the engineering support industry in which Northeast Group operates in;
- (iii) Key industry drivers, risks and challenges of the precision engineering industry in Malaysia; and
- (iv) Competitive landscape of the precision engineering industry in Malaysia.

The research process for this study has been undertaken through secondary or desktop research, as well as detailed primary research when required, which involves discussing the status of the industry with leading industry participants and industry experts. Quantitative market information could be sourced from interviews by way of primary research and therefore, the information is subject to fluctuations due to possible changes in business, industry and economic conditions.

SMITH ZANDER has prepared this IMR Report in an independent and objective manner and has taken adequate care to ensure the accuracy and completeness of the report. We believe that this IMR Report presents a balanced view of the industry within the limitations of, among others, secondary statistics and primary research, and does not purport to be exhaustive. Our research has been conducted with an “overall industry” perspective and may not necessarily reflect the performance of individual companies in this IMR Report. SMITH ZANDER shall not be held responsible for the decisions and/or actions of the readers of this report. This report should also not be considered as a recommendation to buy or not to buy the shares of any company or companies mentioned in this report.

For and on behalf of SMITH ZANDER:



DENNIS TAN  
 MANAGING PARTNER

---

**7. INDUSTRY OVERVIEW (CONT'D)**


---



---

**SMITH ZANDER**


---

**COPYRIGHT NOTICE**

No part of this IMR Report may be given, lent, resold, or disclosed to non-customers or any other parties, in any format, either for commercial or non-commercial reasons, without express consent from SMITH ZANDER. Further, no part of this IMR Report may be extracted, reproduced, altered, abridged, adapted, modified, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, for purposes other than the listing of Northeast on the ACE Market of Bursa Malaysia Securities Berhad, without express consent from SMITH ZANDER.

Any part of this IMR Report used in third party publications, where the publication is based on the content, in whole or in part, of this IMR Report, or where the content of this IMR Report is combined with any other material, must be cited and sourced to SMITH ZANDER.

The research for this IMR Report was completed on 11 March 2024.

For further information, please contact:

**SMITH ZANDER INTERNATIONAL SDN BHD**

15-01, Level 15, Menara MBMR  
1, Jalan Syed Putra  
58000 Kuala Lumpur  
Malaysia  
Tel: + 603 2732 7537

[www.smith-zander.com](http://www.smith-zander.com)

© 2024, All rights reserved, **SMITH ZANDER INTERNATIONAL SDN BHD**

**About SMITH ZANDER INTERNATIONAL SDN BHD**

*SMITH ZANDER is a professional independent market research company based in Kuala Lumpur, Malaysia, offering market research, industry intelligence and strategy consulting solutions. SMITH ZANDER is involved in the preparation of independent market research reports for capital market exercises, including initial public offerings, reverse takeovers, mergers and acquisitions, and other fund-raising and corporate exercises.*

**Profile of the signing partner, Dennis Tan Tze Wen**

*Dennis Tan is the Managing Partner of SMITH ZANDER. Dennis Tan has over 26 years of experience in market research and strategy consulting, including over 21 years in independent market research and due diligence studies for capital markets throughout the Asia Pacific region. Dennis Tan has a Bachelor of Science (major in Computer Science and minor in Business Administration) from Memorial University of Newfoundland, Canada.*

---

## 7. INDUSTRY OVERVIEW (CONT'D)

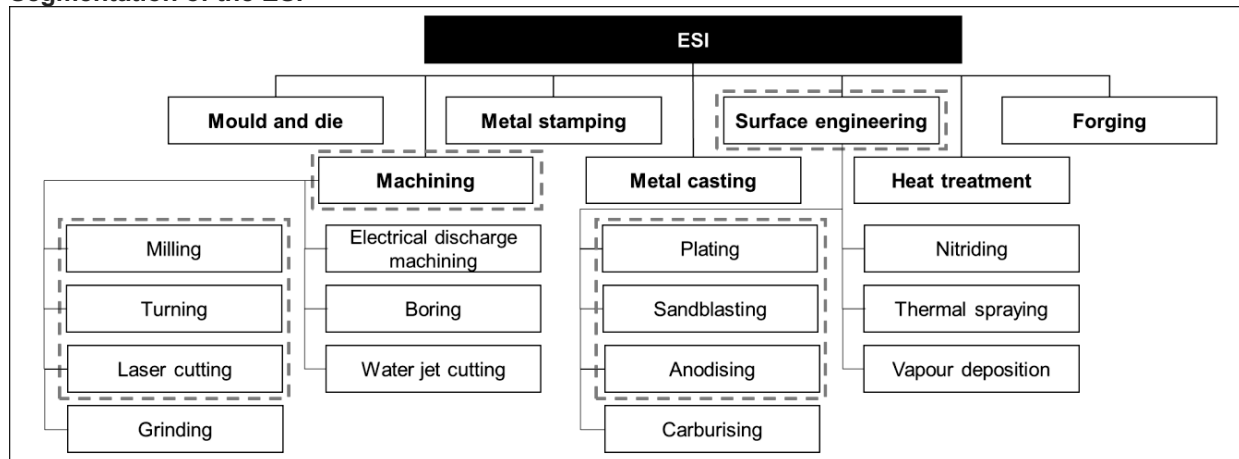
# SMITH ZANDER

## 1 THE ENGINEERING SUPPORT INDUSTRY (“ESI”) IN MALAYSIA

### Overview

ESI comprises industry players who are mainly engaged in the production of intermediate products which are used for the production or assembly into finished products for various industrial applications. According to the Malaysian Investment Development Authority (“MIDA”), the ESI is primarily divided into seven segments, namely mould and die, machining, metal stamping, metal casting, surface engineering, heat treatment and forging.

### Segmentation of the ESI



Notes:

- [---] denotes the segments in which Northeast Group is involved in.
- This list is not exhaustive.

Source: SMITH ZANDER

Details of the respective segments of the ESI are as follows:

- Mould and die** refer to tools used for the shaping of material into components. A mould is a hollow cavity of a desired geometrical shape in which liquid substance such as molten metal is poured into and allowed to cool to create a solidified component. On the other hand, a die is a solid or hollow metal of customised shape used for cutting or stamping material to a desired shape or profile. Moulds and dies can be reused and allow mass production of components through processes such as metal casting and metal stamping.
- Machining**, also known as precision machining, refers to the process of cutting, shaping or removing excess material from a workpiece (which is typically metal) to create **precision engineering components** with the desired shape and size. There are various types of machining techniques such as milling, turning, boring, grinding, electrical discharge machining, laser cutting and water jet cutting. Details of the various types of machining techniques are as follows:
  - Milling – involves the use of rotary cutting tools to remove material from a workpiece.
  - Turning – involves the use of a stationary cutting tool to remove material from the outer diameter of a rotating workpiece.
  - Boring – involves the use of a single-point cutting tool or boring head to enlarge an existing hole of a workpiece to a specific diameter.
  - Grinding – involves the use of a rotating wheel to remove material from the surface of a workpiece.
  - Electrical discharge machining – also known as spark eroding or wire erosion, is a process of material removal from the workpiece surface by means of applying a series of repeated electrical discharges to shape the workpiece to its desired shape.
  - Laser cutting – a non-contact, thermal-based process which uses laser beam to cut and etch a specific design on a material or workpiece.
  - Water jet cutting – a cold cutting process that uses ultra high-pressure water, mixed with or without an abrasive, to cut material into specific shapes and designs.

The abovementioned machining techniques can be performed using computer numerical controlled (“CNC”) machines, which are machines installed with computer software programmed by users with instructions to cut and shape a workpiece according to specifications with high precision.

## 7. INDUSTRY OVERVIEW (CONT'D)

# SMITH ZANDER

- (iii) **Metal stamping**, also known as metal pressing, refers to a cold forming process where stamping dies are used to transform a flat sheet metal (in either coil or blank form) into desired shape and size. Some stamping techniques include punching, blanking, embossing and bending.
- (iv) **Metal casting** refers to the process in which molten metal is poured into a mould of a desired geometrical shape and left to cool to create a solidified component. There are various types of metal casting methods which include die casting, investment casting, plaster casting and sand casting.
- (v) **Surface engineering**, also known as surface finishing, refers to the finishing process of modifying or coating the surface of metallic or non-metallic components for the purpose of, amongst others, enhancing corrosion and wear resistance, improving the aesthetic appearance, and/or enhancing the durability and performance of the components. There are various types of surface engineering techniques such as plating, sandblasting, anodising, carburising, nitriding, thermal spraying and vapour deposition. Details of the various types of surface engineering techniques are as follows:
  - (a) Plating – a coating process that involves the deposition of a thin layer of metal covering the surface of a component, generally to increase the surface resistance to corrosion and/or enhance aesthetic appearance.
  - (b) Sandblasting – a blasting process that involves the spraying of abrasive materials under high pressure on a surface, generally to smoothen a rough surface and/or remove excess/unwanted material on a surface.
  - (c) Anodising – an electrochemical process that forms a layer of oxide on a surface, generally to increase the surface resistance to corrosion and/or enhance aesthetic appearance.
  - (d) Carburising – a thermal-based process that involves the diffusion of carbon onto a surface, generally to increase the surface hardness.
  - (e) Nitriding – a thermal-based process that involves the diffusion of nitrogen onto a surface, generally to increase the surface hardness.
  - (f) Thermal spraying – a coating process that involves the spraying of heated or melted coating materials (e.g. metals, carbides and ceramics) onto a surface, generally to increase the surface resistance to corrosion and heat as well as to enhance aesthetic appearance.
  - (g) Vapour deposition – a coating process that involves the condensation of coating materials in vapour state to form a solid layer over a surface, generally to increase the surface resistance to corrosion.
- (vi) **Heat treatment** involves the heating of metal to a specific temperature and subsequently cooling the metal at a controlled rate to alter and/or achieve the desired physical and/or mechanical properties of the metal.
- (vii) **Forging** refers to a process of shaping metals into its desired shape using compressive force through hammering, pressing or rolling.

## 2 THE PRECISION ENGINEERING INDUSTRY IN MALAYSIA

### Overview

Precision engineering is an engineering discipline involving the design, development and/or production of, amongst others, precision equipment, devices, components, systems, modules and processes, with emphasis on high accuracy and low tolerances. Precision engineering enables the creation of highly-precise and accurate components.

Northeast Group is principally involved in the manufacturing of metal precision engineering components with manufacturing capabilities in precision machining and surface finishing, which are two of the seven aforementioned segments of ESI under **Chapter 1 – The Engineering Support Industry in Malaysia** of this IMR Report. As such, for the purpose of this IMR Report, precision engineering refers to the manufacturing of precision engineering components, which are intermediate products used for various industrial applications.

Precision engineering components refer to highly precise machinery parts that are manufactured to the desired shape and size based on customers' requirements and exact specifications. The raw materials used in the manufacturing of precision engineering components include metal, plastic or ceramic.

Precision engineering components are intermediate products used for production and/or assembly into finished products for various industrial applications such as photonics, electrical and electronics (“**E&E**”), semiconductor, telecommunications, optoelectronics, aerospace, automotive, medical instruments and equipment as well as data storage industries.

**7. INDUSTRY OVERVIEW (CONT'D)**

# SMITH ZANDER

The following table shows some examples of precision engineering components used for the respective industrial applications:

**Applications of precision engineering components**

Industrial applications	Examples of precision engineering components
Photonics	Enclosures for laser amplifiers and laser housing for laser engraving machines
E&E	Heat sinks, casings and enclosures, sockets and connectors
Semiconductor	Electrostatic chucks, vacuum chambers and vacuum flanges
Telecommunications	Amplifier housings, antenna components and microwave tower parts
Optoelectronics	Photodiodes, phototransistors, photoresistors and cathode ray tubes (CRT)
Aerospace	Transducer parts, air foils, engine pistons and landing gear parts for aircraft
Automotive	Rotors, rollers, bearings, shafts and valve nozzles
Medical instruments and equipment	Implants, machined parts in magnetic resonance imaging (MRI) scanners and computed tomography (CT) scanners
Data storage	Actuators and hard disk drive covers

Note: This list is not exhaustive.

Source: SMITH ZANDER

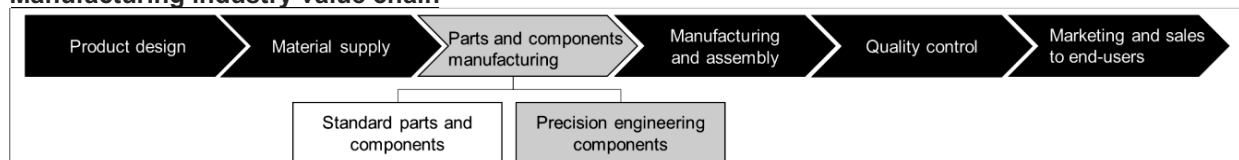
Precision engineering components are essential for various end-user industries as the finished products of the respective end-user industries rely on such components to function effectively and safely. For instance, in the photonics industry, accuracy is imperative in the manufacturing of photonic instrumentation components as components such as laser amplifiers consistently require miniature and precisely manufactured parts and components to sustain its efficient and reliable operations. As such, precision engineering components which are produced with high accuracy and to the exact specifications are required for the manufacturing of photonic instrumentation components to ensure that all the components manufactured can be fitted or assembled perfectly together and function accordingly.

Further, in the E&E industry, as consumer E&E products are becoming smaller to enhance portability, the parts and components to be assembled into finished E&E products are also getting smaller with tighter tolerances. Such parts and components can be produced with high precision through precision engineering.

Precision engineering components manufacturing is one of the key segments of the manufacturing industry value chain and is classified under the parts and components manufacturing segment together with standard parts and components manufacturing. Standard parts and components refer to commonly-used parts and components that are mass-produced based on internationally accepted standards in terms of structure, size and other aspects, which can be used for a wide variety of applications.

Some end-user industries such as the photonics, E&E, semiconductor, optoelectronics and telecommunications industries are heavily dependent on the parts and components manufacturing industry especially for precision engineering components to support their manufacturing activities. These end-user industry players typically outsource part or all of the precision engineering components manufacturing works to achieve quality, consistency and cost efficiency, instead of investing and maintaining a full range of manufacturing facilities required to manufacture their products. As such, the precision engineering industry plays a crucial role in offering support to end-user industries by supplying precision engineering components as intermediate products for the production and/or assembly of finished products.

**Manufacturing industry value chain**



Notes:

- denotes the segment in which Northeast Group is involved in.
- This list is not exhaustive.

Source: SMITH ZANDER

7. INDUSTRY OVERVIEW (CONT'D)

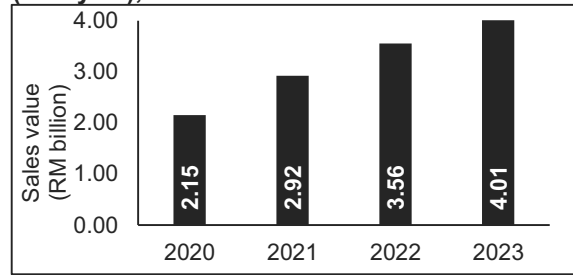


**Industry Performance, Size and Growth**

As Northeast Group is principally involved in the manufacturing of precision engineering components using metal materials through two types of manufacturing processes, namely precision machining and surface finishing, the industry size of precision engineering in this report is measured based on the manufacturing sales value of machining, treatment and coating of metals which includes milling and turning of metalwork pieces, and plating and anodising of metal.

The precision engineering industry in Malaysia increased from RM2.15 billion in 2020 to RM3.56 billion in 2022 at a compounded annual growth rate (“CAGR”) of 28.68%, despite the outbreak of the Coronavirus disease 2019 (“COVID-19”) pandemic. In 2023, the precision engineering industry in Malaysia further increased by 12.64% to RM4.01 billion. The growth of the precision engineering industry in Malaysia from 2020 to 2023, was supported by the demand for precision engineering components from end-user industries globally, with further details set out in **Chapter 3 – Key Industry Drivers, Risks and Challenges** of this IMR Report.

**Industry size of precision engineering (Malaysia), 2020 – 2023**



Source: Department of Statistics Malaysia (“DOSM”)

**3 KEY INDUSTRY DRIVERS, RISKS AND CHALLENGES**

**Key Industry Drivers**

► **Growth in end-user industries drives the demand for precision engineering components**

Precision engineering components are used for industrial applications in numerous end-user industries. As a supporting industry to the end-user industries, the demand for precision engineering components is driven by, and generally correlates to, the growth of these end-user industries. Revenue from the photonics, E&E, semiconductor and telecommunications industries are the major contributors to Northeast Group’s revenue. Further, Northeast Group supplies to customers in Malaysia and various overseas customers. As such, the following will focus on the global performance and outlook of these end-user industries:

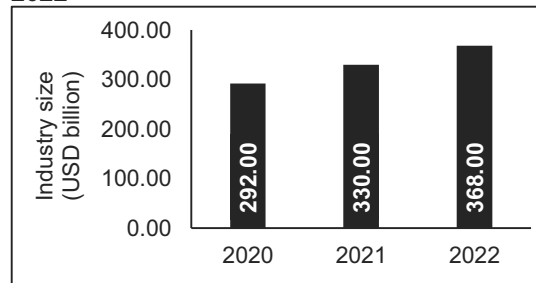
• **Photonics industry**

Photonics refers to the science of generating, detecting, manipulating, transmitting and amplifying full electromagnetic spectrum (e.g. gamma rays, x-rays, ultraviolet and infrared light) through various devices, mediums and technologies. Some examples of photonic devices and equipment include solar and photovoltaic cells, sensors and detectors, laser diodes, light-emitting diodes (LEDs) and optical fibres. The application of photonics devices and equipment spreads across numerous sectors such as data communications, manufacturing, healthcare and renewable energy.

The global photonics industry, represented by the revenue from global photonics components production, grew at a CAGR of 12.26% from USD292.00 billion (RM1.23 trillion<sup>1</sup>) in 2020 to USD368.00 billion (RM1.62 trillion<sup>1</sup>) in 2022. SMITH ZANDER estimates the global photonics industry to have grown by 1.49% to USD373.50 billion (RM1.71 trillion<sup>1</sup>) in 2023.

Moving forward, the demand for photonic devices and equipment is expected to continue increasing, as photonic devices and equipment play a vital role in Industry 4.0 to support quantum communication, industrial internet of things, 5G communications and 3-dimensional (3D) printing.

**Photonics industry size (Global), 2020 – 2022**



Sources: The International Society for Optics and Photonics (“SPIE”), SMITH ZANDER

<sup>1</sup> Exchange rate from USD to RM was converted based on average annual exchange rates of the respective years, extracted from published information from Bank Negara Malaysia (“BNM”).

2020	USD1=RM4.2016
------	---------------

2022	USD1=RM4.4005
------	---------------

2023	USD1=RM4.5653
------	---------------

7. INDUSTRY OVERVIEW (CONT'D)

# SMITH ZANDER

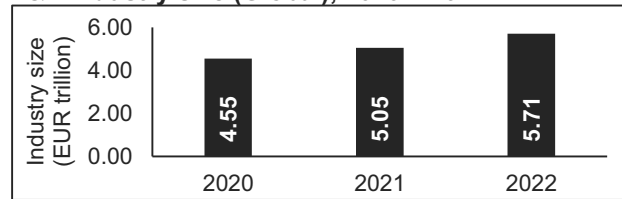
Furthermore, as photonic devices and equipment become increasingly complex and require higher speed and power efficiency while reducing in size and weight, it requires highly precise engineering components to ensure that these devices and equipment will function efficiently, thus driving the growth and demand for precision engineering components.

• **E&E industry**

E&E are products designed to perform specific functions through the use of electrical energy or the control of flow of electrons. E&E products developed today play essential roles in various industries such as manufacturing and telecommunications, as well as in consumers' daily lives.

The global E&E industry grew at a CAGR of 12.02% from EUR4.55 trillion (RM21.82 trillion<sup>2</sup>) in 2020 to EUR5.71 trillion (RM26.44 trillion<sup>2</sup>) in 2022. According to ZVEI – German Electrical and Electronic Manufacturers' Association, the global E&E industry is expected to have grown by 8.93% to EUR6.22 trillion (RM30.70 trillion<sup>2</sup>) in 2023, demonstrating continuing demand for E&E products.

**E&E industry size (Global), 2020 – 2022**



Sources: ZVEI – German Electrical and Electronic Manufacturers' Association, SMITH ZANDER

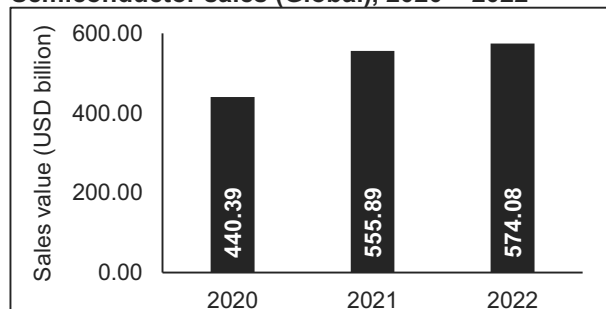
• **Semiconductor industry**

A semiconductor is a substance which possesses specific electrical properties. Semiconductors are integral components in many products including E&E products, automobiles and medical equipment to perform certain functions such as operational control, data transmission and processing, sensing, wireless connectivity and power management.

The global semiconductor industry is represented by global semiconductor sales. Global semiconductor sales increased at a CAGR of 14.17% from USD440.39 billion (RM1.85 trillion) in 2020 to USD574.08 billion (RM2.53 trillion) in 2022.

However, the WSTS estimated that global semiconductor sales decreased by 9.40% to USD520.13 billion (RM2.37 trillion) in 2023, in response to rising inflation rates and normalisation of demand for consumer electronics after the COVID-19 pandemic induced spike in 2021.

**Semiconductor sales (Global), 2020 – 2022**



Sources: World Semiconductor Trade Statistics ("WSTS"), SMITH ZANDER

Notwithstanding this, the WSTS projects global semiconductor sales to increase by 13.12% to USD588.36 (RM2.69 trillion<sup>3</sup>) in 2024, thus continuing to spur the growth of the semiconductor equipment industry, which will in turn drive the demand for precision engineering components.

• **Telecommunications industry**

Telecommunications refer to the exchange of information over long distances by electrical and electromagnetic technologies via voice, data and video transmissions. Some examples of telecommunications infrastructure, devices and equipment that facilitate transmission of information include telecommunications towers, fibre-optic cables, routers, roof antenna, satellite dishes and mobile phones.

<sup>2</sup> Exchange rate from EUR to RM was converted based on average annual exchange rates of the respective years, extracted from published information from BNM.

2020	EUR1=RM4.7955
------	---------------

2022	EUR1=RM4.6300
------	---------------

2023	EUR1=RM 4.9359
------	----------------

<sup>3</sup> Exchange rate from USD to RM in 2024 was converted based on average annual exchange rates in 2023 extracted from published information from BNM at USD1 = RM 4.5653.

## 7. INDUSTRY OVERVIEW (CONT'D)

# SMITH ZANDER

The global telecommunications industry is represented by global mobile operators' revenue and investment. The global telecommunications industry, increased at a CAGR of 1.43% from USD1.04 trillion (RM4.37 trillion) in 2020 to USD1.07 trillion (RM4.71 trillion) in 2022.

Additionally, the GSMA stated that the global telecommunications industry in 2023 increased by 3.74% to USD1.11 trillion (RM5.07 trillion) and estimates that the industry will increase to USD1.25 trillion (RM5.71 trillion<sup>4</sup>) by 2030, indicating stable positive growth for the period.

According to the United Nations ("UN") Secretary-General's Roadmap for Digital Corporation on universal connectivity, the UN targets that by 2030, every individual globally will have access to the internet and is covered by the latest mobile network technology. Furthermore, following the development of 5G mobile technology, there will be an increasing demand to upgrade existing and/or develop telecommunications infrastructure, device and equipment. All of these will continue to drive the demand for telecommunications related precision engineering components.

### ► Increase in outsourcing manufacturing works to engineering support companies including precision engineering industry players to achieve cost-effectiveness

End-user industries have either reduced or completely ceased the manufacturing of intermediate products (e.g. precision engineering components) since the emergence of engineering support companies, coupled with the increasing design and quality requirements of these intermediate products. With continuous technological advancements in products developed in end-user industries, the precision engineering components required for the manufacturing of end-user products are more complex and require higher precision. To manufacture these complex and highly-precise components in an efficient and cost-effective manner, it is crucial for the manufacturers to be equipped with relevant machinery, human resources, engineering capabilities and industry experience.

Thus, instead of allocating resources to manufacture precision engineering components in-house, end-user industry players are more focused on developing and designing new end-user products while leaving the manufacturing of precision engineering components to precision engineering industry players that are equipped with the relevant expertise and resources.

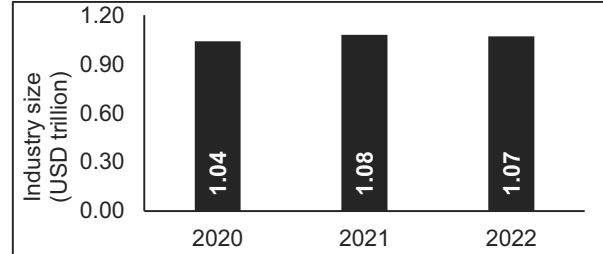
This outsourcing trend has, and is expected to continue to, support the growth of the precision engineering industry in Malaysia.

### ► Government initiatives in supporting the precision engineering industry

According to MIDA, Malaysia is internationally-recognised for its capabilities in engineering activities and quality production. In this regard, in order to remain competitive, precision engineering industry players are improving workplace health and safety, keeping abreast with the latest technologies to meet customers' requirements as well as continuously upgrading their manufacturing facilities. This includes the adoption of smart manufacturing technologies to transform their manufacturing processes, which is in-line with the Government's initiative towards Industry 4.0 which encourages the adoption of Industry 4.0 technologies and processes and to boost the attractiveness of Malaysia as a preferred manufacturing location.

According to MIDA, total investments amounting to RM968.00 million were approved in 2022 for 26 projects in the machining segment, which formed the most significant share of investments among the ESI segments, making up 71.70% of total investments in the ESI (RM1.35 billion). Further, total investments amounting to RM81.50 million were approved in 2022 for 6 projects in the surface finishing segment.

### Telecommunications industry (Global) 2020 – 2022



Sources: Global System for Mobile Communications ("GSMA"), SMITH ZANDER

<sup>4</sup> Exchange rate from USD to RM in 2030 was converted based on average annual exchange rates in 2023 extracted from published information from BNM at USD1 = RM 4.5653.



## 7. INDUSTRY OVERVIEW (CONT'D)

# SMITH ZANDER

### ► Continuous innovation in product development in end-user industries drives the demand for precision engineering components manufacturing services

In view of rapid technological advancements and changing consumer needs, end-user industry players are constantly undertaking product innovation to enhance their products to remain competitive in their respective industries. End-user products have been trending towards smaller size and/or greater complexity to incorporate more functions and/or enhance the efficiency and quality of products to meet consumer needs. Consequently, components used for these end-user products are also increasingly smaller in size and greater in complexity to the point such end-user industry players may not have the capability or resources to manufacture such components in-house effectively. Hence, these industry players engage precision engineering industry players who are better-equipped with the relevant expertise and resources to manufacture such components with higher precision.

### Key Industry Risks and Challenges

#### ► Reliance on foreign workers

The issue of labour shortages is common in the manufacturing industry (including the precision engineering industry) in Malaysia where Malaysia is dependent on foreign workers as a result of limited supply of local workers for manufacturing-related operations. Any quota restrictions or suspensions in the hiring of foreign workers may cause difficulties in employing sufficient labour. Further, any increase in the levy rate for foreign workers or minimum wages for employees will increase the cost of labour.

If a suspension or similar policy issues were to cause a suspension or cessation of future intake of foreign workers, the precision engineering component manufacturers may have to source for local workers which may come at higher cost. Precision engineering component manufacturers who are unable to pass on the increase in labour costs to their customers may experience material impact on their profitability. Further, any delays in hiring sufficient number of local workers may result in operational disruptions which would subsequently affect production schedules and cause delays in production and delivery schedules as well as potential order cancellations from customers. Consequently, this may affect the precision engineering component manufacturers' business and financial performance.

#### ► Exposure to global aluminium and copper price fluctuations

Metal is a key raw material used in the manufacturing of precision engineering components. Aluminium and copper are two of the main types of metal being used for the manufacturing of precision engineering components. The prices of aluminium and copper in Malaysia are driven by their respective global prices.

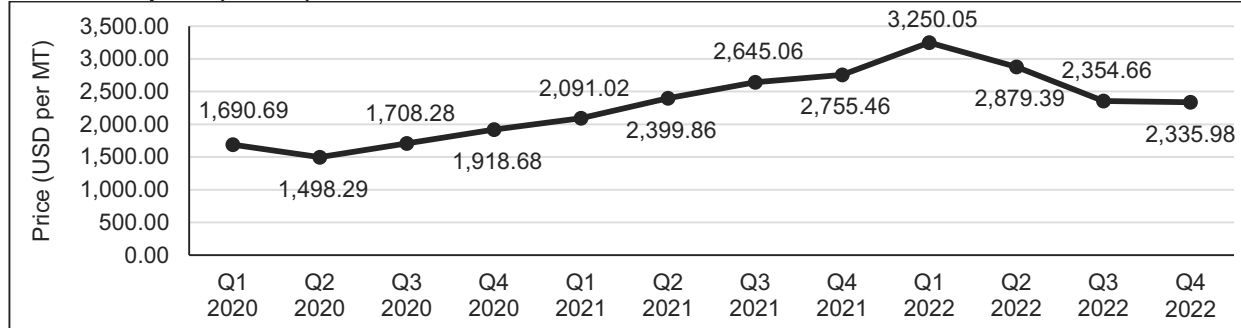
Aluminium is susceptible to price fluctuations as a result of demand and supply conditions, prices of raw materials for the production of aluminium such as bauxite, and prevailing energy costs. In the second quarter ("Q2") of 2020, the quarterly average global aluminium price ("**Global Aluminium Price**") decreased to USD1,498.29 per metric ton ("**MT**") mainly due to weak global vehicle demand which was impacted by the outbreak of the COVID-19 pandemic in early 2020. Nonetheless, the global aluminium market observed a gradual increase in price starting from the third quarter ("**Q3**") of 2020 up until the first quarter ("**Q1**") of 2022. The increase in Global Aluminium Price in the second half of 2020 was primarily supported by strong demand for aluminium in China. Subsequently, the Global Aluminium Price increased in 2021 due to factors such as surging demand for vehicles and other manufactured goods, aluminium supply reduction in China, higher import costs and energy supply shortages. As for the increase in Global Aluminium Price for Q1 2022 which reached USD3,250.05 per MT, it was mainly due to production curtailments (especially European smelters) in view of high energy costs, depleted global inventories and disruptions to the supply of alumina. The Global Aluminium Price then declined to USD2,335.98 per MT in fourth quarter ("**Q4**") 2022, following the increase in interest rates by the Federal Reserve which reduced the demand for industrial commodities including aluminium and the increase in aluminium output in China.

[The rest of this page is intentionally left blank]

7. INDUSTRY OVERVIEW (CONT'D)

SMITH ZANDER

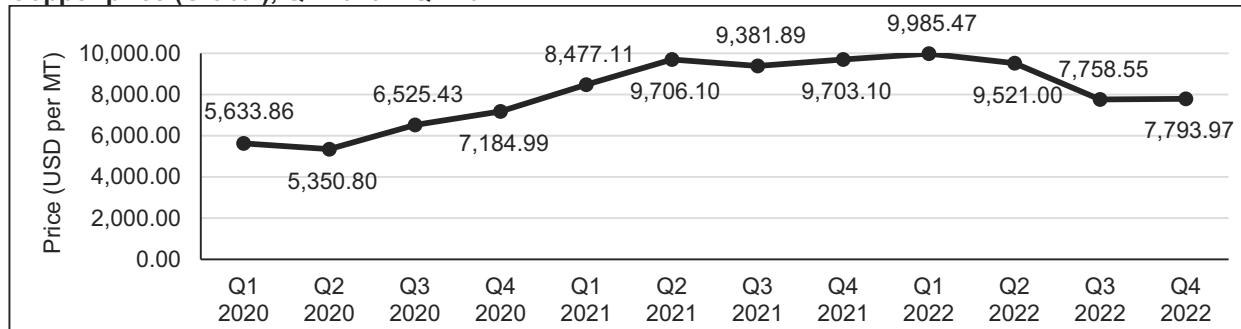
Aluminium price (Global), Q1 2020 – Q4 2022



Sources: World Bank, SMITH ZANDER

Meanwhile, copper is also susceptible to price fluctuations as a result of demand and supply conditions of copper in the global market. The quarterly average global copper price (“Global Copper Price”) declined by 5.02% to USD5,350.80 per MT in Q2 of 2020 due to the economic impact caused by the COVID-19 pandemic. Subsequently, the Global Copper Price increased by 81.40% to USD9,706.10 per MT in Q2 2021 as global economic activities rebounded along with an increase in the demand for electric vehicles where copper is one of the main raw materials used in the manufacturing of components for electric vehicles. The Global Copper Price then declined by 3.34% to USD9,381.89 per MT in Q3 2021 and increased by 6.43% to USD9,985.47 per MT in Q1 2022. Following that, the Global Copper Price declined by 21.95% to USD7,793.97 per MT in Q4 2022 due to the increase in interest rates by the Federal Reserve.

Copper price (Global), Q1 2020 – Q4 2022



Sources: World Bank, SMITH ZANDER

Any material increases in the price of aluminium and/or copper may lead to a rise in cost of production for precision engineering industry players, as well as carrying cost for maintaining inventories. If the precision engineering industry players are unable to pass on the increased material cost to their customers, they may have to bear the increased costs which could materially impact their financial performance.

► **Adverse economic conditions may adversely impact sales of precision engineering components manufacturing services**

The performance of certain end-user industries such as E&E, which are customers of the precision engineering industry is, to a certain extent, dependent on the state of the economy. A growing economy will contribute to increasing disposable income and purchasing power of consumers as well as spending budgets of businesses, which will spur demand for end-user products from various industries. However, a decline in the economy may conversely cause a reduction in the demand for end-user products, which may negatively impact the overall financial performance of the end-user industry players as well as precision engineering industry players.

In view of the outbreak of the Russia-Ukraine war and aftermath effect of the COVID-19 pandemic, global economic growth is projected to slow down from 3.50% in 2022 to 3.00% in 2023 and 2.90% in 2024. This may disrupt the demand for precision engineering components as the end-user industries may experience a slowdown due to a reduction in demand for end-user products. In addition, should there be any other incidents which may lead to adverse economic conditions or financial crisis in the future, this may negatively impact the end-user industries and subsequently have an adverse impact on the precision engineering components industry players’ financial performance.

## 7. INDUSTRY OVERVIEW (CONT'D)

# SMITH ZANDER

## 4 COMPETITIVE LANDSCAPE OF THE PRECISION ENGINEERING INDUSTRY IN MALAYSIA

### Overview

This section focuses on the precision engineering industry players in Malaysia as Northeast Group is principally involved in the manufacturing of precision engineering components in Malaysia.

The precision engineering industry players generally compete in terms of technical capabilities, pricing, quality of products and services, delivery timing and manufacturing capacities. Precision engineering industry players are also required to have strong understanding of the required specifications of the precision engineering components as well as the precision machining techniques. Industry players who have strong technical expertise in understanding their customers' specifications have competitive advantage as they are able to enhance, modify and adapt their manufacturing processes in order to ensure that the precision engineering components manufactured are of high quality and accuracy in accordance to customers' requirements and exact specifications.

The precision engineering industry is competitive with substantial barriers of entry as new entrants require high initial capital for the purchase of automated machinery and equipment, as well as high operating cost for the maintenance of machinery and equipment. Further, industry players have to constantly keep abreast with the latest technologies to continuously improve their manufacturing process to remain competitive in the industry. Additionally, industry players are required to go through product qualification processes with their customers which could be time-consuming, whereby customers will assess the industry players in terms of manufacturing capacity, capability and consistency in product quality. Due to the time-consuming qualification process, once a customer approves and appoints an industry player to manufacture their precision engineering components, the customer is likely to continue engaging the industry player over the long term to ensure consistency in product quality.

### Key Industry Players

The basis for selection of the key industry players in the precision engineering industry in Malaysia is as follows:

- Companies involved in the manufacturing of precision engineering components with manufacturing capabilities in precision machining. These companies may or may not be involved in surface finishing; and
- Companies which recorded more than RM50.00 million but less than RM300.00 million in revenue based on their respective latest available financial years.

The identified key industry players include all industry players that were identified by SMITH ZANDER based on sources available, such as the internet, published documents and industry directories. However, there may be companies that have no online and/or published media presence, or are operating with minimal public advertisement, and hence SMITH ZANDER is unable to state conclusively that the list of industry players is exhaustive.

Company name	Business activities	Latest available financial year	Revenue <sup>(1)</sup> (RM million)	Gross profit/(loss) margin (%)	Profit/(loss) after tax margin (%)
UWC Berhad	Provision of precision metal fabrication and value-added assembly services, fabrication of precision machined components, and contract manufacturing of automated test equipment.	31 July 2023	271.74	N/A <sup>(2)</sup>	19.81
Syntum (M) Sdn Bhd	Provision of manufacturing and assembly of precision machine parts and components, used in the printing and imaging, automotive, industrial and power tools as well as consumer appliances and lifestyles industries.	30 June 2023	219.23	12.66	8.32
Grand Venture Technology Sdn Bhd	Manufacturing of precision machining and sheet metal components and modules for the semiconductor, analytical life sciences, electronics, aerospace, medical and other industries.	31 December 2022	182.56	28.89	13.59

## 7. INDUSTRY OVERVIEW (CONT'D)

# SMITH ZANDER

Company name	Business activities	Latest available financial year	Revenue <sup>(1)</sup> (RM million)	Gross profit/ (loss) margin (%)	Profit/ (loss) after tax margin (%)
Eng Teknologi Sdn Bhd	Manufacturing of precision engineering components for industrial products and data storage products.	31 December 2022	152.48	23.88	14.38
CPE Technology Berhad	Provision of precision machining services for precision-machined parts and components used in the semiconductor, life science and medical, sport equipment, sensor equipment, security, opto-mechanical, aerospace, instrumentation, automotive, general engineering as well as oil and gas industries.	30 June 2023	145.28	35.45	20.85
Coraza Integrated Technology Berhad	Provision of fabrication services for intermediate metal products, ranging from metal piece parts to precision machined components.	31 December 2022	143.35	26.11	10.26
Northeast Group	Manufacturing of precision engineering components used in the photonics, E&E, semiconductor, telecommunications and optoelectronics industries.	30 September 2023	93.34	37.98	19.67
YBS International Berhad	Provision of high precision mould design and fabrication, plastic injection moulding, metal stamping and CNC turning, electronic manufacturing services and connector solution.	31 March 2023	88.87	17.03	3.56
SFP Tech Holdings Berhad	Provision of sheet metal fabrication, CNC machining, mechanical assembly and automated equipment solutions provider.	31 December 2022	85.78	50.08	37.28
AT Systematization Berhad	Design and manufacturing of industrial automation systems and machinery, provision of customised machining and toolings and jigs and fixtures, manufacturing and sale of gloves, as well as operation and production of renewable energy.	31 March 2023	60.80	(12.51)	(136.10)
Prodelcon Sdn Bhd	Manufacturing and assembly of high precision tooling and component parts used in the photonics, radio frequency microwave and medical industries.	30 June 2023	57.19	32.74	15.77
Wong Engineering Corporation Berhad	Manufacturing of high precision component parts and provision of sheet metal fabrication, surface treatment and finishing as well as semi-modular and final assembly services.	31 October 2023	52.70	6.93	(14.39)

**Notes:**

- Latest available as at 11 March 2024.

(1) Company may be involved in other businesses besides the manufacturing of precision engineering components and as such, revenue is presented on a total revenue basis and may include revenue from other business segments.

(2) Not available – information not available in the latest annual reports.

Sources: Northeast Group, various company websites, Companies Commission of Malaysia, SMITH ZANDER

### Industry Share

In 2023, the precision engineering industry in Malaysia, as represented by manufacturing sales value of machining, treatment and coating of metals, was recorded at RM4.01 billion. For the financial year ended 30 September 2023, revenue recorded by Northeast Group stood at RM93.34 million and thereby Northeast Group captured an industry share of 2.33% in Malaysia.

[The rest of this page is intentionally left blank]