

FEATURED ARTICLES:

Promising Manufacturing Investment Inflows of RM7.1 Billion in 1Q2020 | Why Penang: Foreign Investors' View on Choosing Penang as Their Preferred Investment Location | Bosch Group to Power Up Automotive Electronics in Penang | DexCom, Inc.'s Entry Strengthens Penang's Position as a Leading Medtech Hub | UCT to Enrich Penang's Front-End Semiconductor Capital Equipment Ecosystem | On the Ground: InvestPenang's Regular Engagement with Stakeholders

About **INVEST** penang

InvestPenang is the Penang State Government's principal agency for promotion of investment. Its objectives are to develop and sustain Penang's economy by enhancing and continuously injecting business activities in the State through foreign and local investments, including the spawning of viable new growth centres. To support the realization of its objectives, InvestPenang also runs initiatives like SMART Centre (to assist SMEs), Penang CAT Centre (to assist talents) and @CAT Penang (to assist start-ups).



ATTRACTION, DEVELOPMENT & RETENTION OF TALENTS

- > Resource centre and point-of-contact for employers and talents
- > Policy advocacy on addressing talent gap
- > Secretariat for Penang Future Foundation (PFF)

TALENT ATTRACTION & RETENTION

- > Awarding scholarships to outstanding and deserving students from the field of Science, Technology, Engineering, Mathematics, Accounting & Finance
- > Upon graduation, recipients will become part of the diverse talent pipelines in Penang's workforce



ASSISTING SME TO MOVE UP THE VALUE CHAIN

- > Advisory for market intelligence and financial resources from state & national agencies
- > Assist in creating new business opportunities and capacity building initiatives to develop SMEs' value proposition

START-UP DEVELOPMENT

- > One-stop centre for tech entrepreneurial activities in Penang
- > Launch pad of Penang's tech-startup community & innovation labs
- > Unique & flexible co-working space, tech events, accelerator & mentorship programme in George Town UNESCO World Heritage Site

FUNDING EARLY STAGE TECH START-UPS

- > Assist high potential tech start-ups with innovative technology products & services to attain commercialization.
- > Enhance local tech start-up ecosystem, encapsulating 'Powered in Penang' capabilities.

INspire - The Team

Writers: Yeoh Bit Kun / Lee Siu Ming*
bitkun@investpenang.gov.my

Graphic Design & Layout: Ooi Phei Wen / Hiou Yian Ling
pheiwen@investpenang.gov.my / yianling@investpenang.gov.my

* Mr Lee is no longer with InvestPenang. We appreciate his contributions towards this newsletter.

About **INspire**

INspire is a quarterly newsletter produced by InvestPenang. This publication aims to give our stakeholders an update on the industry landscape and emerging opportunities in Penang, along with the State's initiatives to support industries. For more information, visit investpenang.gov.my or contact us via email at enquiry@investpenang.gov.my or call us +604-646 8833.

Contents

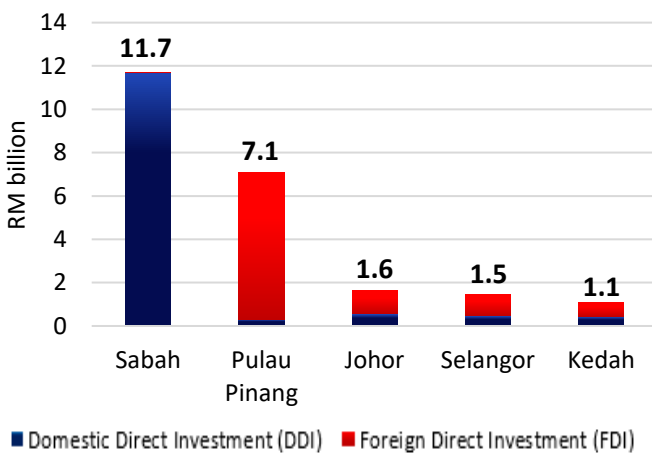
- 2 PROMISING MANUFACTURING INVESTMENT INFLOWS OF RM7.1 BILLION IN 1Q2020
- 4 WHY PENANG: FOREIGN INVESTORS' VIEW ON CHOOSING PENANG AS THEIR PREFERRED INVESTMENT LOCATION
- 8 BOSCH GROUP TO POWER UP AUTOMOTIVE ELECTRONICS IN PENANG
- 10 DEXCOM, INC.'S ENTRY STRENGTHENS PENANG'S POSITION AS A LEADING MEDTECH HUB
- 13 UCT TO ENRICH PENANG'S FRONT-END SEMICONDUCTOR CAPITAL EQUIPMENT ECOSYSTEM
- 16 ON THE GROUND: INVESTPENANG'S REGULAR ENGAGEMENT WITH STAKEHOLDERS

Penang Records Encouraging Manufacturing Investment Inflows in 1Q2020

Penang recorded approved manufacturing investments of RM7.1 billion during the first quarter of 2020 (1Q2020), despite the challenging global macroeconomic backdrop. The encouraging performance is a 97% increase against 4Q2019, but is 19% lower from a year earlier. 1Q2020's inflow is equivalent to 42% of total approved manufacturing investments recorded in 2019.

According to the Malaysian Investment Development Authority (MIDA), Penang successfully secured 32 manufacturing projects during 1Q2020, which once implemented, will collectively create an estimated 4,035 new job opportunities in the State.

1Q2020 Manufacturing Projects Approved in Malaysia (Top 5 States)

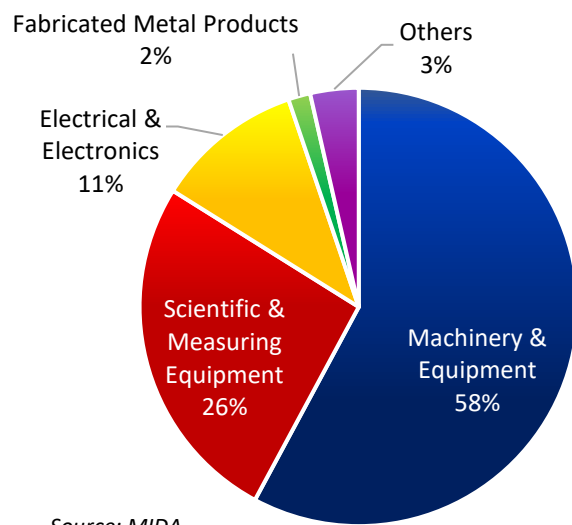


Source: MIDA

The stronger-than-expected performance was driven by FDI, which amounted to RM6.8 billion or 96% of approved manufacturing investments in the quarter, while the remaining RM321 million or 4% were DDI. Penang's FDI accounted for 64% of Malaysia's total FDI in 1Q2020, underscoring the State's role in driving the country's participation in the global supply chain, as well as MNCs' continued confidence in the State as a conducive and sustainable investment destination. Switzerland, the United States and Singapore were the main sources of the State's FDI, with notable projects involving DexCom Inc. and LEM Holding SA inked during the quarter.

The investment inflows were focused on the State's key promoted industries, with 95% of approved manufacturing investments in 1Q2020 being channeled into the Machinery & Equipment, Scientific & Measuring Equipment (including medical devices) and Electrical & Electronics industries.

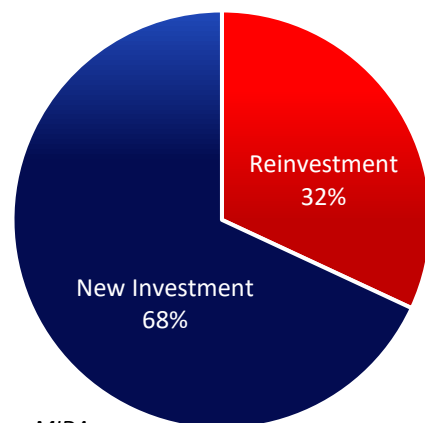
1Q2020 Approved Manufacturing Investments (by Industry)



Source: MIDA

In a press conference dated 22nd July 2020, the Chief Minister of Penang, Rt. Hon. Mr. Chow Kon Yeow, noted that the encouraging investment performance in the first quarter of 2020 had exceeded expectations, underpinned by both new investments and re-investments.

1Q2020 Approved Manufacturing Investments (by Status)



Source: MIDA

“Being a business-friendly state that emphasises sustainability, the Penang State Government strongly believes that fostering long-term relationships with industries is crucial to the economic development of the State. Existing companies’ additional investments toward upgrading the technical capabilities and capacity expansion in Penang translates into talent upskilling, better job prospects and prosperity for local residents. Meanwhile, the State’s ability to attract new investors is made possible by its resilient ecosystem and comprehensive supply chain, in which every stakeholder in the industry plays a role.”

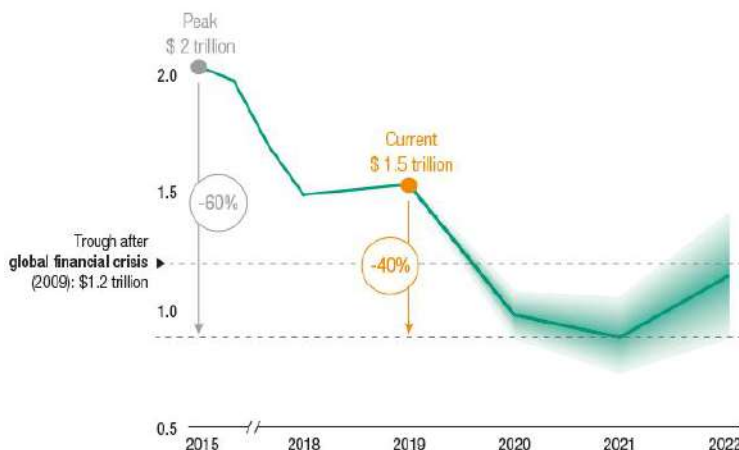
-- Rt. Hon. Mr. Chow Kon Yeow, Chief Minister of Penang --

Cautiously Optimistic for the Second Half of 2020

Notwithstanding the satisfactory performance in the first quarter and the healthy pipeline of potential strategic investments that MIDA and InvestPenang are working to secure, the State estimates that 2020’s investment inflow into Penang will be lower against 2019’s all-time-high of RM16.9 billion. This is premised on expectations that global FDI flows will remain bearish at least until 2021, and that public health challenges will persist in the near future.

That said, there are still opportunities for Penang, particularly arising from the reconfiguration of the global supply chain and the emerging industries that will play increasingly important roles in the post COVID-19 era. The State government will continue to focus its efforts in pursuing and attracting investments in targeted industries.

Global FDI Outlook



Source: UNCTAD

Commitment to Ensure Successful Implementation on the Ground

For the approved manufacturing investments, the State government, through InvestPenang, Penang Development Corporation and other relevant agencies, remains committed to assist investors and facilitate the implementation of projects on the ground. Ripple effects from the successful implementation of these projects will benefit the local economy in terms of supply chain localisation opportunities, uplifting the skillset of the local technical workforce, and have significant economic spill-over and multiplier effects.



Press conference on approved manufacturing investments in Penang on 22nd July 2020

Chow conveyed the State government’s deepest appreciation to the investors for their confidence in Penang, as well as to MIDA for a conducive and fruitful collaboration with InvestPenang in attracting high-quality investments into the State.

Why Penang?

Foreign Investors' Views on Choosing Penang as Their Preferred Investment Location



With almost half a century of industrial experience, Penang has successfully cultivated a strong industrial ecosystem and is now home to more than 300 MNCs.

Penang's industrialization journey began in earnest in 1972, with the establishment of Bayan Lepas Industrial Zone. From its beginnings of relatively low-value electrical and electronics (E&E) manufacturing and assembly activities, the State has progressively moved up the value chain, attracting strategic investments that have led to its transformation into the Silicon Valley of the East. Its strategy of nurturing industrial expertise in electronics engineering and manufacturing, alongside the availability of related ancillary services, complements the needs of equipment manufacturers and medical technology players, and has resulted in rising investments in these two segments in tandem with that of the E&E industry.

Penang's strong and rigorously-enforced intellectual property climate has helped create a sustainable environment conducive for advanced manufacturing, R&D and other knowledge-intensive Global Business Services (GBS) activities for innovation and invention, such as software development, Internet of Things (IoT) and Big Data Analytics (BDA). Its robust ecosystem has the capacity and capability to support the needs of MNCs' next generation technologies, products and long-term growth strategies. These, alongside the availability of high-tech industrial zones and infrastructure, facilitation of project implementation through the Penang State government's machinery, as well as Federal level incentives, are among the key factors that have made the State an attractive destination for strategic investments. The State Government continues to work closely with its investors and relevant parties to ensure the continued progressive development of industries in Penang, and has won positive reviews from MNCs investing in the State.

Investors' reviews on investing in Penang





“The new facility in Penang will not only enable us to get physically closer to many of our customers in the region but also provide **greater business continuity...**”

~March 2020~



“... Staffed by a **proven team of highly competent Malaysians**, the **Global Test Centre in Penang** will further ensure that patients everywhere will continue to receive medical devices of the highest global standards.”

~June 2020~



“AVX’s ceramic capacitor manufacturing facility in Penang has been operational for **more than 20 years** and is an established part of the local community...The new site expansion demonstrates an **ongoing commitment to supporting the local economy** and developing competitive, cutting-edge component solutions with a special focus on advanced automotive applications.”

~July 2019~

“The final testing facility in Penang will be the first of its kind for Bosch in Southeast Asia...there is a **high level of semiconductor knowledge** in the region. The proximity to business partners is another advantage. Malaysia and especially Penang have **the ability to manufacture economically, even under cost pressure.**”



BOSCH

~June 2020~



“...Penang is an ideal location for building a Global Business Center. The city offers us **access to a great global business center landscape with good infrastructure and connectivity, along with an impressive talent pool.**”

~July 2020~



“In the semiconductor industry, few things count more than speed – and especially in Asia, the world’s fastest-growing market region. This is perhaps nowhere more palpable than in Penang, Malaysia, the industry’s manufacturing hotspot. Our customers expect us to be able to react to shifts in demand at very short notice. The new manufacturing site in Penang enables us to do exactly that – **rapidly, scalably, flexibly and competitively.**”

~May 2020~



“Penang was chosen because it has a **long electronics manufacturing history**, a **good technical foundation**, an **availability in human resources**, a close proximity to Hong Kong, and **appropriate language skills** that are important criteria which match the needs of Computime.”

~December 2019~

Dexcom®

“After vetting numerous potential locations, we determined this site in Malaysia (Penang) **a great fit for our future manufacturing needs.**

This new site is supplemental to our existing manufacturing facilities and will help Dexcom meet the needs of global demand for CGM for years to come.”

~June 2020~

Dialight

“As a thriving industry hub, we believe Penang is strategically located in one of the region’s **most successful free industrial zones** which presents Dialight with excellent manufacturing capabilities and logistical infrastructure...”

~February 2020~

“...**highly-skilled, multi-lingual labour force** and the **efficiency of the electronics supply chain** made Penang the Silicon Valley of South East Asia... the **government policies which ensure an efficient, responsible and probusiness environment** was undoubtedly the first choice to establish Hotayi’s new state-of-the-art facility.”

HOTAYI

~August 2019~



“We are excited to partner with Penang... This facility is additive to Lam’s global operations and enables us to provide additional capacity, **ensure business continuity for critical activities**, and most importantly, **improve our speed to solutions** by being closer to customers and suppliers in the region.”

~February 2020~

“DURING the first two weeks after joining Micron, I had my first meeting with the government agencies. Within three months we were able to close the deal... **The level of transparency and collaboration they have is awesome.** They (MIDA & InvestPenang) are our one-stop shop to really engage with the various government agencies.”



~August 2019~



MOTOROLA SOLUTIONS

“Motorola Solutions continues to evolve its mission-critical ecosystem of technologies across voice, video security, software and managed services. Our **highly skilled teams in Malaysia** play a significant role in developing these technologies and accelerating their adoption all over the world. We are proud to have **extended our journey to 45 years** and look forward to continuing to take Malaysian innovation to the world.”

~June 2019~

“Our growing operations in Malaysia speaks loudly of the **quality of the talent** we have in Penang. We are very pleased with the success here and today marks another important milestone in our journey.”



~November 2019~



“The Penang team was a **core backbone** delivering the project with Software Architect’s and Project Managers playing a role... The Penang team can **speak at least three languages** and that is another key advantage for us as they are able to **fully interact and understand customers issues**, right from the management to the plant floor leaders and operators.”

~July 2019~

Penang provides **a great balance of manufacturing expertise, stable economy, established infrastructure, long history of foreign direct investment and established supply chain.**



Investing in Malaysia gives us a new presence close to our highest growth markets and enables Smith+Nephew to be part of a growing medical device centre of excellence.”

~November 2019~



“...This **state-of-the-art facility** will ensure business continuity, enable us to better serve and bring value to our local and global customer base, and allow us to capitalize on longer-term growth opportunities.”

~July 2020~



“...Malaysia has a dynamic ecosystem with **world-class resources in Penang**, making it the perfect center to expand our work and create cutting edge technologies and solutions.”

~January 2020~



“The company looked at the different regions in Southeast Asia and Asia back in 2010 and 2011. In the end, it was positive for Penang because of its **talent pool**. Penang has the **infrastructure**, and the **highly-skilled people** whom we can work with.”

~September 2019~



“...Penang has an excellent talent pool, and is **a natural talent magnet** for the northern region of Malaysia... The talent we were able to attract, their **adaptability**, made us decide that this is the place to grow our footprint.”

~November 2019~

Bosch Group to Power Up Automotive Electronics in Penang

Germany's Bosch Group is poised to further grow its presence in Penang, with its latest investment being Bosch Automotive Electronics' (Bosch AE) upcoming manufacturing facility in Batu Kawan. Bosch Group, a Global Fortune 500 company, is a leading global supplier of technology and IoT provider, generating over EUR77.7 billion in sales revenue in 2019. The Group has four key business sectors: Mobility Solutions, Industrial Technology, Consumer Goods and Energy Building Technology. Bosch AE is a division within the Mobility Solutions unit, which is the Group's largest business sector.

Bosch AE's upcoming facility, located on a 100,000 sq m plot in Batu Kawan Industrial Park, will focus on the final testing of components manufactured at Bosch AE's facility in Dresden, Germany. The Batu Kawan plant will also house research and development and training facilities. Construction of the plant is scheduled to begin in 2021, with first production expected in 2023. Bosch AE's entry into Penang will elevate the State's participation in the cutting-edge automotive technology segment.



Epochal Change in the Automotive Industry Unleashes Long-Term Opportunities



According to a recent analysis from IHS Markit, global light vehicle sales are forecasted to drop 22% to 69.6 million units in 2020, aggravated in the wake of the Covid-19 pandemic. Despite the near-term challenges, the global automotive industry is accelerating its electronic technology revolution in tandem with the clean energy ecosystem. Rapid advances in e-mobility, autonomous driving, connected cars, and automotive electronics that consumers marvel at today, are poised to become essential features in vehicles of the near future. This will drive up the semiconductor content of cars and further fuel the long-term growth prospects of automotive semiconductors, particularly since 80% of all innovations in the automotive industry today are either directly or indirectly enabled by electronics¹.



Against this backdrop, the global automotive electronics market is forecast to grow at a compounded average annual rate of 9.3% to reach US\$615 billion in 2030, from \$236 billion in 2019². The healthy growth projection is not inconceivable - considering that electronic components made up just 5% of the total cost of automobiles in 1970, against projections that they would account for as much as 50% of vehicle costs by 2030. This is attributed to technological advancements, increasing electronic applications in vehicles, as well as heightened consumer sophistication, and expectations.

Penang - A Preferred Location for Global E&E Leaders

With a robust ecosystem of supporting industries, Penang has established itself as a prominent hub for global semiconductor leaders, with many MNCs such as Bosch Group deepening their roots in the State over the decades. The company's existing facilities in Penang having grown from producing car multimedia systems, to automotive steering components, power tools and soon, automotive electronics testing. Bosch AE joins a diverse array of MNCs in the State with automotive industry-related portfolios such as OSRAM, Panasonic, Analog Devices, ASE Group, Clarion, Continental, FCA, Infineon, Kontron, Luxoft, Malaysian Automotive Lighting, Premium Sound Solutions, Renesas, and Valeo. Bosch's entry to Penang, following the recent addition of wafer fabrication equipment player Lam Research, also reinforces the State's semiconductor hub status, alongside the established presence of prominent names like Broadcom, Intel, Micron, TF AMD, and Western Digital.

As the Silicon Island of Asia, Penang's E&E value chain has continued to grow in depth and sophistication over the past five decades. The State continues to successfully attract new investments, commanding 39% and 54% of Malaysia's total approved manufacturing investments in the E&E and machinery and equipment (M&E) sectors respectively in 2019. This brought the cumulative approved manufacturing investments in the E&E and M&E industries in the state to RM35 billion over 2014-2019, representing 38% of the country's total approved investments in these two industries over the period.

Bosch AE's strategic investment in Penang amid the extraordinary prevailing environment underscores the company's unwavering confidence in its technology for the future, as well as the resilience and ability of Penang's industrial ecosystem and leadership to support its industrial needs.

Notes:

¹ Mordor Intelligence estimates

² P&S Intelligence

DexCom, Inc.'s Entry Strengthens Penang's Position as a Leading Medtech Hub



DexCom's investment announcement on 24th June 2020. From right to left: Rt. Hon. Mr. Chow Kon Yeow, Chief Minister of Penang, Dato' Ahmad Zakiyuddin Abdul Rahman, Deputy Chief Minister I, Dato' Loo Lee Lian, CEO of InvestPenang, Dato' Haji Abdul Halim Hussain, Penang EXCO, Mr Aziz Bakar, Penang Development Corporation (PDC) deputy general manager and Dato' Seri Lee Kah Choon, Special Investment Advisor to the Chief Minister of Penang.

Penang continues to attract and welcome international medical technology (medtech) leaders, with DexCom, Inc., a global leader in Continuous Glucose Monitoring (CGM) technology, being the latest to establish a facility here.

With a revenue of US\$1.5 billion in 2019, Dexcom is a fast-growing, innovative medical device cum data-driven company. The S&P 500 constituent is a CGM pioneer that is reshaping the industry landscape, bringing a profound positive impact to people living with diabetes.

Dexcom strategically picked a 28-acre site in Batu Kawan Industrial Park, Penang, for its third and newest facility, which will also be its first outside of the US. Construction of the facility is expected to begin in the second half of 2020. The facility will be dedicated to manufacturing sensors and applicators for Dexcom CGM systems, and for the next ten years, it is expected to create high-value jobs in manufacturing, facilities management, as well as manufacturing-related research and development.

CGM Systems Transform Lives of People Living with Diabetes

CGM systems measure patients' glucose levels in interstitial fluid, and transmit the information to a receiver/monitor to display the results. They help contribute to better diabetes management by providing users the ability to proactively manage glucose levels and gain insight into the impact of meals, exercise, and other lifestyle factors on glycemic health. This, in turn, reduces the risk of diabetes-related complications, and ultimately improves patients' health and lowers healthcare costs.

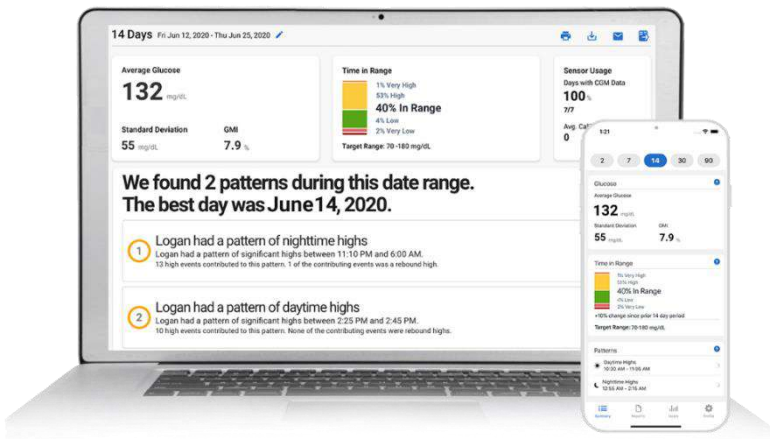
Dexcom CGM systems transmit real-time glucose readings every five minutes to a compatible display device such as a mobile medical app, and trigger an alarm when the patient's blood sugar level breaches pre-set parameters. When integrated with an automated insulin delivery system, the CGM device can communicate wirelessly with the insulin pump to regulate insulin delivery based on the user's blood glucose levels.

Technological Advances are Transforming Medical Practices

Rapid advances in medical technology have transformed the way doctors and patients participate and interact with each other. Medical devices with remote data tracking capabilities, coupled with telemedicine and virtual connectivity, are enabling an efficient platform that connects clinicians, patients and medtech companies. This ability to obtain real-time information, track past health records, identify potential health issues and devise treatment plans with minimal face-to-face interaction is driving a gradual shift from “traditional” medical practices, toward increasing adoption of tech-driven, smart medical devices and technologies, including CGM systems.



Based on a study by Allied Research, the CGM market was valued at **US\$1.8 billion** in 2019, and is projected to grow at a CAGR of 22% to **reach US\$8.8 billion by 2027**.



Rising incidences of diabetes around the world, the growing advantages of CGM over Point-of-Care glucometers, and greater awareness of CGM technologies in developing countries are the key drivers of growth for CGM systems. CGM technology has tremendous potential to support diabetic patients amid the increasing adoption of telemedicine, particularly with the prevailing need for social distancing.

In fact, Dexcom has obtained U.S. FDA approval to supply CGM systems to hospitals during the COVID-19 pandemic, allowing healthcare practitioners to monitor patients remotely with minimal face-to-face interaction.

Penang's Medtech Industry Continues to Grow in Strength

Malaysia's exports of medical devices grew at a 4-year CAGR of 12% to reach an all-time high of RM24 billion in 2019, with the Malaysian Investment Development Authority (MIDA) approving investments amounting to RM11 billion into the sector over 2016-2019.

“Penang has one of the highest concentrations of medtech companies in Malaysia and Southeast Asia, with over 50 medical device companies present in the State.”

Currently, Penang has over 50 medical device companies (including companies that are involved in manufacturing parts or components of medical devices). These include some of the world's biggest medical device companies such as Abbott Laboratories, B. Braun, Boston Scientific, Canon Medical Systems, Pentax Medical and Smith & Nephew*, along with other prominent names such as Ambu, Bactiguard, CCB Medical Devices, Haemonetics, Integer Holdings, Japan Lifeline, Straits Orthopaedics, Tecomet and Visco Technology.

With half a century of industrial experience, Penang has built a strong industrial ecosystem, which complements the needs of medtech players. Dexcom CGM systems require expertise and support in electronics engineering and manufacturing and related ancillary services, which are already well-established in Penang. The continuous investment inflows from leading global medtech players is testament to the ability of the State's industrial ecosystem to meet the stringent quality standards required of the medtech supply chain. The medtech industry continues to be one of the State's promoted industries, and the State government will continue to support the development of the industry to create more high-skilled jobs as well as supply chain localization opportunities that will benefit local companies.

Notes:

** Smith & Nephew held a ground-breaking ceremony of its upcoming plant at Batu Kawan Industrial Park on 28 February 2020. First shipment is expected by the fourth quarter of 2021.*



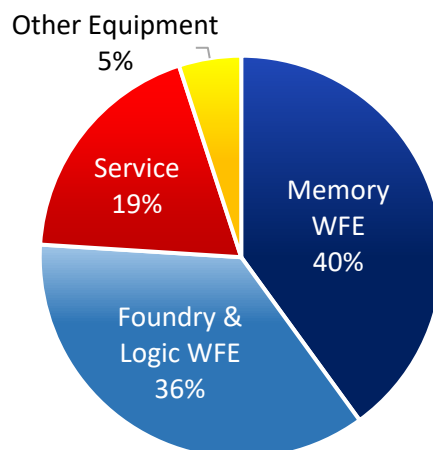
UCT to Enrich Penang’s Front-End Semiconductor Capital Equipment Ecosystem

Ultra Clean Holdings (UCT), one of the world’s biggest suppliers of critical subsystems for the semiconductor and related manufacturing industries, announced the establishment of its maiden manufacturing facility in Penang.

The 340,000 sq. ft. plant, which will be located in Batu Kawan Industrial Park, will focus on manufacturing semiconductor special equipment for system integration and gas delivery systems. Construction of the plant is scheduled to begin by end-2020, with first shipment slated for the second quarter of 2021. Once operational, the plant is expected to create some 650 high-value jobs over the next five years, including roles in manufacturing, engineering, research & development and quality management.

NASDAQ-listed UCT is a major player in fluid & gas delivery critical subsystems, and a solution provider for mechatronics, module integration as well as ultra-high purity cleaning and analytical services. The company’s revenues topped US\$1.1 billion in 2019, growing at a remarkable compounded average rate of 23% per annum since 2016. The Batu Kawan facility will complement UCT’s global footprint, which includes manufacturing facilities in the US, Singapore, China, the Czech Republic and the Philippines, and a strong customer base that mainly comprises wafer fabrication equipment (WFE) Original Equipment Manufacturers (OEMs). The WFE segment is UCT’s biggest in terms of revenue, accounting for 76% of total revenue in 2019 with its largest client being Fortune 500 company and WFE heavyweight Lam Research, which contributed 45% to UCT’s total revenue last year¹.

UCT Revenue by Segment



Source: UCT Website

According to VLSI Research, UCT is among the top ten suppliers of critical subsystems to the semiconductor and related manufacturing industries in 2019 – a segment with an estimated market value of US\$11 billion.

The company’s presence in Penang will enhance the State’s electrical and electronics (E&E) ecosystem, particularly in the front-end semiconductor capital equipment segment.



Rt. Hon. Mr. Chow Kon Yeow, Chief Minister of Penang (middle) showed the site where UCT's new plant would be located in Batu Kawan. With him are (from left) State Domestic and International Trade Committee chairman Datuk Abdul Halim Hussain, Deputy Chief Minister II Dr P. Ramasamy, InvestPenang CEO Dato' Loo Lee Lian and Penang Development Corporation Senior Deputy General Manager, Dato' Yeoh Lean Huat



Global Semiconductor Manufacturing Equipment Sales to Hit All-Time-High of US\$70 Billion in 2021, Serving as A Catalyst to Critical Subsystem Players

SEMI, the global industry association that represents electronics manufacturing and design supply chain players, estimates that global semiconductor equipment sales by OEMs will grow 6% to US\$63 billion in 2020, and a further 11% to reach a record US\$70 billion in 2021. Within the WFE segment, global sales are expected to rise 5% in 2020 and 13% in 2021, driven mainly by a recovery and continued growth in memory spending. Foundry and logic spending, which accounts for about half of total global WFE sales, will see single-digit growth in 2020 and 2021, while spending on DRAM and NAND in 2020 will surpass 2019's levels and is projected to grow by over 20% in 2021. This positive outlook for the WFE segment, in turn, is expected to drive the growth in demand for critical subsystems, which include fluid delivery, vacuum, process control, power delivery and robotics.

SEMI estimates that global semiconductor equipment sales by OEMs will grow 6% to US\$63 billion in 2020, and a further 11% to reach a record US\$70 billion in 2021.

Penang is Gaining Momentum in Attracting Investments from the Front-End of the Semiconductor Equipment Supply Chain

Early this year, Penang had announced a strategic investment by Lam Research, setting up a manufacturing facility in Batu Kawan Industrial Park. With extensive technology that spans numerous high-tech disciplines, Lam Research's presence in Penang will have far-reaching implications on Penang's E&E ecosystem. Lam Research's entry will invariably attract strategic vendors to follow suit, and provide supply chain localization opportunities. Lam Research's and UCT's respective strategic investments are testament that Penang is gaining momentum in attracting investments from leading front-end equipment global supply chain players.

In fact, Penang is already home to two other Top 10 suppliers of critical subsystems², namely, Switzerland's VAT Group (a manufacturer of high-performance high-end vacuum valves) and US-headquartered Advanced Energy (a manufacturer of highly-engineered precision power, measurement and control solutions). Both of these companies had been expanding in Penang over the past 2 years.

These new and re-investments mark a milestone in Penang's industrial evolution, and demonstrate how key strategic investments can shape and influence the development of the local industrial ecosystem and economy.

With Penang's robust ecosystem in back-end equipment, automation and semiconductor testing and assembly, the development of the front-end equipment supply chain will power Penang further to serve the industry's end-to-end needs.

In 2019, Penang generated RM105 billion of total trade surplus, representing 77% of the nationwide total trade surplus. From 2010 to March 2020, the State secured RM58.5 billion in approved manufacturing investments in the E&E and M&E industries.

E&E industry is irrefutably a key pillar to Malaysia's external trade, contributing 93% of the country's RM137 billion total trade surplus in 2019. Particularly, as the Silicon Island of Asia, Penang plays a critical role in driving the country's external trade. Penang generated RM105 billion of total trade surplus in 2019, representing 77% of the nationwide total trade surplus. Penang's contribution to the country's E&E sector (which is largely exported by air) is also evidenced by Penang airport's position as Malaysia's largest air cargo gateway, accounting for RM229 billion or 75% of the country's exports by air in 2019. In terms of investments, the State secured RM58.5 billion in approved manufacturing investments in the E&E and machinery & equipment (M&E) industries during the period from 2010 to March 2020, representing 39% of Malaysia's total approved investment in these two industries for the same period.

While E&E products remain the backbone of Penang's industry, M&E as well as medical devices are fast-growing focus industries in which Penang has established competitive advantages. The State government, through InvestPenang, will continue to ensure the progressive and sustainable development of such target industries for the betterment of the State's economy and people.

Notes:

¹ <https://www.uct.com/English/investors/events-and-presentations/default.aspx>

² https://www.vlsiresearch.com/public/cms_pdf_upload/press_200409/Top-10-Critical-Subsystems-Suppliers-of-2019.htm

On the Ground

InvestPenang's Regular Engagement with Stakeholders

Walk the Floor

Regular visits to engage and keep abreast with our stakeholders' operations.



CEO Speaks

Creating the avenue for industry leaders and experts to impart knowledge and sharing of insights.



THE CEO SPEAKS:
SOLOMON LORTHU, MOTOROLA SOLUTIONS MALAYSIA
 Title: Motorola Solutions Malaysia: COVID-19, Embracing The New Norm

14 JULY 2020 | 3.00PM-4.00PM

Solomon Lorthu
 MD of Penang Operations, Motorola Solutions



Stay Connected

Engaging and sharing of current business and industry landscape with our stakeholders.



Workshops for SMEs and Start-ups

In collaboration with SME bank and Malaysia Debt Ventures (MDV), workshops were organized for SMEs and start-ups on the availability of financing assistance and relief facility to cope with COVID-19.

Co-organized by
 INVEST SM-RT | SME BANK

July 28 2020
 Tuesday
 Webinar Platform
 10:00AM-11:30AM

Let's Engage! Financing Assistance by SME BANK

Exploring the Financing Solutions for SMEs
 Working Capital | Asset Financing

Pn Norazliza Abd Razak
 Branch Manager at SME Bank Penang



MDV | **INVEST penang**

WEBINAR :
 Technology Start-ups Funding Relief Facility

13 May 2020 | 2.30 PM



Note:

InvestPenang's industry engagements are not limited to the pictures showcased above.



INVEST penang



Invest-in-Penang Berhad
PSDC Building, 1, Jalan Sultan Azlan Shah,
11900 Bayan Lepas, Penang, MALAYSIA.
Tel: 04-646 8833
Email: enquiries@investpenang.gov.my