

Intel's new investments reinforce commitment to Penang and Malaysia

BY SREEREMA BANOO

Intel Malaysia's announcement in 2021 of its US\$7 billion investment in new manufacturing facilities marks the next phase of its growth in the country, reinforcing its long-term commitment to Malaysia and Penang. Vice-president of manufacturing, supply chain and operations, and managing director of Intel Malaysia, A K Chong, believes the impact of this expansion does not only enable the organisation to scale up on the volume of production but also to move up the value chain of technology transfer and capacity building.

With the investment, Intel Malaysia is building an advanced packaging facility in Penang and a new assembly and test plant in Kulim, Kedah. "Intel's new state-of-the-art advanced packaging facility in Penang, when completed, is going to be Intel's largest cleanroom at more than 700,000 sq ft and Intel's first multilevel and multifunction factory. In addition to the new factories, we have also made some significant investments in our existing plants in Malaysia. This includes our Penang assembly and test factory, which increased its square footage by 50% in 2022, thereby creating expanded capacity," Chong says.

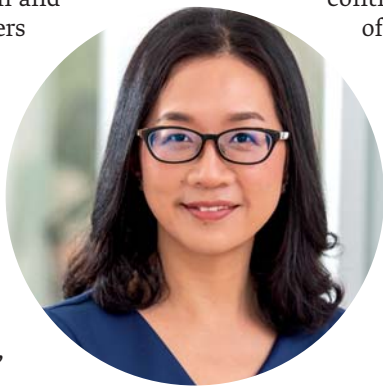
She points out that the factors that originally drew the company to Penang more than five decades ago are very much the same factors that led to its more recent investments. "Obviously, since we first invested in the state, Malaysia has successfully attracted and built many more E&E (electrical and electronics) businesses, which in turn has led to the development of a robust supply chain ecosystem as well as an extremely well-developed talent pool, both of which are very important for businesses like ours.

"Supply chain and infrastructure capabilities are also vital to our new facilities. Advanced semiconductor manufacturing processes demand much higher levels of waste management. And we need assurance of reliable utilities such as stable water and power supplies. The relatively high level of education in Malaysia is also an important factor because it ensures a ready supply of qualified and trainable workers. Malaysia's fluency in English is critical for communication and collaboration internationally."

One of the eight pioneer companies in the country's E&E industry, Intel Malaysia began operations in Penang in 1972 with just 100 employees assembling memory chips — Intel's first products at the time. Over the years, its operations here have grown and evolved, expanding in both size and capability. "In 1991, Intel Malaysia started up a design team, starting with designing 8-bit microcontrollers. Now, our design and development function has 6,000 engineers working on Intel's latest products, from IP design and validation to product development.

"Another very big milestone for us was our expansion into Kulim in 1996, where we now operate factories, among many other functions. We now have about 15,000 employees across all functions and business units. Our teams work seamlessly between the Penang and Kulim campuses, and they're involved in designing and manufacturing the products, sales and marketing, and global support services such as IT, HR, finance and supply chain," says Chong.

The company's biggest priority today is to successfully enable its expansions. "This will be a continuous effort as we start up, stabilise and grow our competencies in wafer-level assembly," she says, adding that Malaysia's role in supporting the group's IDM2.0 strategy — an evolu-



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CHONG



Clockwise from top left: Quality control factory line. When the Penang plant opened, the workforce consisted of 100 batik-clad employees — the batik was created specifically for the Intel workers; (from left): Keith Thomson, then Intel vice-president and Oregon site manager, Tun Dr Lim Chong Eu, former chief minister of Penang, Andy Grove, who later became president and CEO of Intel, and Lou Ross who served as CEO of Intel Malaysia, at a meeting in Penang in 1972; construction site of the first Intel building in Penang; factory technicians performing die-attach operations (year unknown)

tion of Intel's integrated device manufacturing model for manufacturing, innovation and product leadership — is an important one. "We will need to build new skills and continue to engage with academia to grow talent with these new competencies as well. Malaysia does a lot more than just manufacture. We have design and development teams that work with other engineering teams globally who are working on our current and future generations of products."

The availability of talent and a skilled workforce remains a key consideration for Intel and, to that end, the company has a variety of initiatives, both internal and external, to attract, develop and retain talent. "We contribute not just by putting a great deal of investment in our own employees but also by partnering with Malaysian government agencies and departments on programmes to encourage and develop STEM (science, technology, engineering and mathematics) education for children through partnering with universities and relevant agencies and spurring research and development. This will help build a robust talent ecosystem in Malaysia that supports technology innovation."

It has collaborated with the Malaysian government on educational programmes such as AI for Youth, AI for Universities, Systems Cloud for Universities and the Intel Elite internship programme, to name a few, to help advance digital-readiness knowledge, awareness and skills among Malaysians of various age groups. The collaboration with the Malaysian government also extends to talent building

and the development of an Industry 4.0 ecosystem, says Chong, pointing to a recent partnership with the Malaysian Industrial Development Authority and the Malaysia Productivity Corp to launch an artificial intelligence (AI) programme for 100 local small and medium enterprises to help them jump-start their AI and Industry 4.0 journey.

"We also put great emphasis on strengthening Malaysian talent through our Digital Readiness programme such as AI for Citizens and AI for Future Workforce that we are developing in collaboration with Malaysian authorities and institutions to roll out soon," she adds.

On the environment, social and governance (ESG) front, pillars that are core to its values include inclusion and diversity. "In 2021, Intel Malaysia was recognised at the UN Women WEPs Awards for our achievements in creating a gender-inclusive workplace. We are intensifying our efforts to achieve 40% representation of women in technical roles and doubling the number of women in leadership," she says, adding that women currently make up 38% of technical roles and there is a thriving community of inclusion advocates through the Women at Intel Network.

"We also have robust programmes to engage our suppliers that support our global manufacturing operations to ensure our supply chain is resilient, responsible and respectful of human rights," she says.

With regard to sustainability, one of the company's goals is to be completely powered by renewable energy. "Intel Malaysia has been on 100% renewable energy since 2020. We also have the largest solar farm among all Intel sites outside of the US and we continue to find ways to expand that," says Chong. Other sustainability goals include achieving net positive water by 2030 (84% in 2022) and having reclaimed more than 110 million gallons of water from its manufacturing operations for reuse. Intel has also funded a water restoration project at 100 Penang schools, estimated to restore 160 million litres annually.