

**TECHNOLOGY**

## Taiwan seals \$200m investment by top US chip industry supplier

Entegris CEO seeks 'predictability' from Biden administration amid China tensions



U.S. chip material maker Entegris says it will invest \$200 million in Taiwan and hire 200 employees, adding to its current local headcount of 300. (Photo courtesy of Entegris)

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**TAIPEI --** A leading U.S. maker of chip materials is to build a \$200 million plant in Taiwan in another big win for the island's flagship semiconductor industry.

Entegris, which counts Taiwan Semiconductor Manufacturing Co., the world's biggest contract chipmaker, as its top customer, is set to start construction early next year and aims to start production by the end of 2021, Bertrand Loy, the company's president and CEO, told Nikkei Asia.

"This is the largest investment ... in the history of this company," Loy said in an interview. "I would expect Taiwan to become the largest manufacturing site in Asia [for Entegris] in four or five years from now."

The factory in the southern city of Kaohsiung will make materials for the world's most advanced semiconductors, such as 5-nanometer and 3-nanometer chips, Loy said.

Entegris will supply TSMC, the first chipmaker in the world to get into large-scale production of such chips, but will later supply chipmakers worldwide if needed, Loy said.



Entegris President and CEO Bertrand Loy

Entegris is the world's top supplier of high-end filters, which are vital to ensure the purity of chemicals and liquids used in making chips and displays. Such materials are increasingly crucial as semiconductor manufacturing grows more complex, with less room to tolerate defects.

The Billerica, Massachusetts-based company also supplies all the world's top chip leaders including Intel, Samsung, Kioxia, and SK Hynix.

The investment is significant for Taiwan, a democratic self-ruled island with the world's second-largest chip economy by revenue after the U.S.

Taiwan hopes to lure more leading chip equipment and material makers to produce locally, a senior official told Nikkei Asia. Taiwan wants to defend its industry position at a time when China -- which views the island as part of its territory -- is ratcheting up efforts to expand its own semiconductor industry.

The U.S.'s dominance of chip development, tools and supplies has become an important weapon in its bid to curb China's tech ambition. On Friday, the Trump administration formally placed China's top chipmaker Semiconductor Manufacturing International Co., another Entegris client, on the so-called Entity List to restrict its access to American technologies, escalating the tech conflict between the world's two biggest economies.

Loy said that as a U.S.-based company, Entegris hopes to continue to be a partner of Chinese customers but will fully comply with export control regulations.

The Chinese market, including foreign and local companies, accounted for a little less than 15% of the Entegris' revenue, with Chinese homegrown players contributing around half of this amount after growing "very strongly" recently, Loy said.

Entegris opened a China Technology Center for research in 2019 and acquired a small Chinese filtration company, Hangzhou Anow Microfiltration, the same year to address demand locally.

"The U.S.-China relation has been evolving constantly and has been frankly the part that has made it difficult for everyone," said Loy. "The rules were not very clear, not very specific."

Loy, who is also the board chairman of SEMI, a global chip industry association, said he hopes the administration of incoming U.S. President Joe Biden will "consult the industry" before formulating new policies.

"My hope is that the new administration will have a little bit more transparency, a little bit more consistency. ... What has been lacking [in the current administration] is the predictability," he said. "I think the new administration seems to be more willing to consult with the industry, which is something that the previous administration didn't do."

Around 60% of Entegris' production remains in the U.S., but the company is looking to continue diversifying in Asia, where it sees the most growth.

As part of its expansion in Taiwan, the company expects to recruit more than 200 employees, to add to its local headcount of approximately 300. Entegris currently has around 5,300 employees worldwide.

The company already has manufacturing sites in Japan, South Korea and Malaysia and a smaller production presence in Taiwan and China.

"Taiwan and South Korea will definitely be two places we will continue to invest in both technology development and manufacturing," said Loy. The company is also actively looking for acquisitions in Asia to grow its presence in the area, Loy said, which reflects growing regional demand from leading global chip manufacturers.

According to IC Insights' Global Wafer Capacity report in 2020 nearly 22% of global semiconductor wafer fab capacity is in Taiwan.

ASML, Europe's largest chip-production equipment maker, has recently opened a training center in the Taiwanese city of Tainan. Two Japanese chip material makers, Hitachi Chemical and Mitsubishi Chemical, also recently expanded their facilities in Taiwan.

Entegris' planned expansion will help Taiwan broaden its innovation capacity in semiconductor equipment manufacturing, said Wang Mei-Hua, Taiwan's minister of economic affairs.