

Industrial gas sector charged up on semiconductor boom

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India's semiconductor industry had a size of around \$27 billion in 2022, with almost all the requirements met through imports.

With the government's push for domestic manufacturing, the sector is likely to see fresh investments over the next few years.

With players like Foxconn, Micron and Vedanta planning to move aggressively on their semiconductor plans, India's industrial gas sector, too, is upbeat.

This is because high purity gases represent the biggest material expenditure after silicon for a typical fab unit. The components industry is now seeking government help for technology transfer, land allotment and electricity and capital subsidy, as a lot of new gases will have to be manufactured in India. And, this requires upfront capital investment.

Industry experts said that if there is a semiconductor boom, Indian manufacturers are ready to supply the most commonly used bulk gases in semiconductor manufacturing. These include nitrogen, helium, hydrogen

and argon, in addition to speciality and electronic gases that need to be imported.

The companies with significant presence in the industrial gas segment include Inox Air Products, Linde India, Air Liquide India, Praxair India and Taiyo Nippon Sanso K-Air India, among others.

According to experts, all the industry players are seeing the semiconductor sector as a major sunrise industry.

"If solar cells and mobile phones need about five-seven different kinds of gases, semiconductors need 50 types of gases," said

Siddharth Jain, managing director (MD) and promoter, Inox Air Products.

Jain added that as soon as the investment cycle in semiconductors begins, the industry will have to supply several new gases. Majority of these gases are not produced in India and need government support.

At present, the metals segment, including steel, stainless steel and others, consumes around 40-50 per cent of the demand for industry gases.

And, around 10 per cent is in the case of the health care segment while the remaining

is split between various other industries.

"We are extremely happy as an industrial gas company. Our largest customers were the steel industry, metal fabrication, health care, oil and gas. All of a sudden, we have this new sunrise sector of electronics and semiconductors. This is super exciting," Jain said.

In addition to the major gases, a host of other gases such as ammonia, disilane, germane, carbon dioxide, nitrous oxide, nitrogen trifluoride, hydrogen chloride and tungsten hexafluoride are in use in semiconductor manufacturing.