

Intellectual Property

Policy for fabs and ecosystem

India wants to take an increasing part in the Great Electron Revolution for the benefit of local commerce and population. A new government policy hopes to attract investment for up to three semiconductor manufacturing facilities and up to ten 'ecosystem' units.

In February 2007, the Government of India announced a Semiconductor Policy designed to encourage investments towards setting up semiconductor fabrication and other micro and nano-technology manufacturing industries in India. This followed in-principle Cabinet approval in January. The official notification was published in The Gazette of India (available at <http://www.mit.gov.in>) in March and an appraisal committee for submissions in April. Guidelines for the operation of the scheme by the committee were issued in September. (also at <http://www.mit.gov.in>)

The policy was welcomed by the Indian Semiconductor Association (ISA). The association's President, Poornima Shenoy, commented, "This is extremely positive. The policy will provide an impetus for the further growth of the sector, the electronics industry and the overall ecosystem. The domestic market for electronics goods is expected to reach \$363 billion by 2015 and the domestic demand for semiconductors alone will be \$36 billion. This policy will go a long way in making India an attractive destination for global semiconductor and hi-tech companies plus investors.

"We have a burgeoning market demand in the communication industry, automotives, security cards, defence, etc., and this will help in meeting the needs of the market."

ISA chairman Rajendra Kumar Khare added, "Cultivation of a robust and scalable semiconductor industry is the key to making the Great Electron Revolution happen within the country. Semiconductors form the heart of hardware and soul of software in any electronic system. It is clear that electronics manufacturing can succeed and be globally competitive only if there is an accompanying semiconductor manufacturing ecosystem and vice versa. ISA has been working with the various departments in government to make this policy happen and we are delighted to see our efforts bear fruit".

Package

The Special Incentive Package Scheme (SIPS) calls for support of up to three 'fab units' (semiconductor wafer fabrication facility) possibly linked up- or down-stream to investments in the manufacture of semiconductor grade silicon or wafers, chip design, assemble test mark and package (ATMP). Further, ten 'ecosystem' units (units other than fabs, for manufacture of semiconductors, displays including liquid crystal displays (LCD), organic light emitting diodes (OLED), plasma display panels (PDP), any other emerging displays; storage devices, solar cells, photovoltaics, other advanced micro and nano technology products; assembly and test of all the above products) are provided for. The ecosystem facilities may have downstream or upstream investments in the vertical chain.

All the proposed investments should be in state of the art facilities, for the definition of which, given the rapidly changing technology, the committee may approach experts.

The key measure for determining the level of extra support is 'net present value' (NPV). This is usually defined as the present value of an investment's future net cash flows minus the initial investment. The future net cash flows are best guesses of future profitability. The SIPS guide gives a scheme for calculating the NPV over ten years with a discount rate of 9%. In the semiconductor industry, one would expect negative net cash flows in the initial years, indicating investment and tool installation. Later, one hopes for positive net cash flow as sales flow into the venture. This usually peaks unless further investments are made to upgrade the facility to keep up with technology development.

The minimum NPV investment for fabs is given as Rs. 2,500 crore (Rs. 25 billion, currently around \$0.6 billion), while the ecosystem investment cut-off is Rs. 1,000 crore.

The amount of support available depends on whether the proposal is for facilities inside or outside of 'Special Economic Zones' (SEZs) set up in 2005, for which there are special financial incentives already in place. The amount of incentive for SEZ units is 20% and for non-SEZ units 25% plus exemption from countervailing duties (somewhat confusingly, for a semiconductor audience, abbreviated as CVD). Land investments are restricted to be less than 2% of the total.

The incentives may come in the form of capital subsidy or equity participation in any combination so long as equity in the project does not exceed 26%. Capital subsidies may be made as investment grants and interest subsidies. The entire equity contribution will be taken towards the value of incentive package. There shall be an exit option, to be exercised by the Government, at a suitable point of time in the future, after the project goes on stream.