

Intellectual Property

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Creating a world-class hub for semi manufacturing

'Fab City' near Hyderabad, in the Indian state of Andhra Pradesh, is planned to be a world-class hub for advanced semiconductor and electronics manufacturing.



Figure 1. Relation of Fab City to new airport and in India.

Among the areas (Figure 1) vying for a chunk of the India semiconductor investment surge is Fab City, a planned development being promoted by the government of Andhra Pradesh (GoAP). The state government won the development over two other states shortlisted – Karnataka and Tamil Nadu. Hyderabad was selected because of its weather, roads, electricity, water and proximity to an international airport. Availability of a semi-skilled work force was also an important factor. Unlike information technology (IT) industries, where the need for skilled work is estimated at around 80%, semiconductor manufacturing needs only about 20%. The Fab City project was launched in February 2006.

GoAP has tasked the Andhra Pradesh Industrial Infrastructure Corporation (APIIC) to oversee progress and establish public-private partnerships with developers. It is anticipated that Fab City will create 5000 jobs by 2009 and up to 1.4 million jobs by 2016 in more than 200 ancillary industries.

The project is being developed on a plot of almost 5km² (1200 acres) by a consortium of investors including the

government. Fab City will be given Special Economic Zone (SEZ) status.

The site is 40km from Hyderabad city centre and 7km from Hyderabad International Airport due to open by March 2008. The airport was designed for an initial capacity for 5 million passengers a year, but the pace of developments has forced this to be increased to 7 million.

The central government of India has directed the state authorities to launch work on an eight-lane outer-ring-road. The 162-km road, at an estimated cost of Rs.30 billion (~\$800 million), will be developed through Hyderabad's satellite townships. The state authorities have also offered to supply up to 50 million gallons (~200 million litres) of water a day and build a dedicated 600MW power project for Fab City. A metro-rail transport system is also being built to cover Hyderabad.

SemIndia and its technology partner Advanced Micro Devices (AMD) are the first companies to commit to developing in Fab City. SemIndia is a US-based consortium of non-resident Indian entrepreneurs, technocrats and investors. SemIndia has been given 100

acres of Fab City land on an 88 years lease at a nominal rate of Rs.1 per acre per year. GoAP has also offered other concessions including subsidised electricity and water supply. SemIndia will also get tax breaks – the actual amount of value added tax (VAT) paid by SemIndia on sales of products will be fully reimbursed for the first eight years and for the seven years after that 50% will be refunded.

The \$3-billion proposed SemIndia investment will consist of \$1.5 billion in debt, raised against capital equipment, and the balance (\$1.5 billion) will be invested by SemIndia founders, partners like AMD, strategic customers, venture capitalists, state and central governments. The proposed facility would have a capacity to produce about 30,000 wafers a month. Each wafer will consist of 100–1000 chips. Two Singapore-based firms – Jurong and Serbana – will be master planners for the project.

The SemIndia project will be realised over a number of years in three phases: Phase 1 (2007/08): Investment of \$1 billion, the assembly and testing phase; estimated employment 2000 jobs.

Phase 2 (2008/10): Investment of \$2 billion, the construction of the actual chip manufacturing facility and leading to the production of semiconductor chips; estimated employment 1000 jobs.

Phase 3 (2010/15–17): Establishment of advanced semiconductor plant; estimated employment 5000 jobs.

SemIndia's SemIndia Systems subsidiary will undertake design-related work for chips that may be manufactured at Fab City. SemIndia has further bought a stake in the Bangalore-based chip design firm Xalted.

Besides the chip manufacturing facility, Fab City will provide facilities to the more than 200 companies that supply the equipment, servicing and materials needed to make semiconductors.