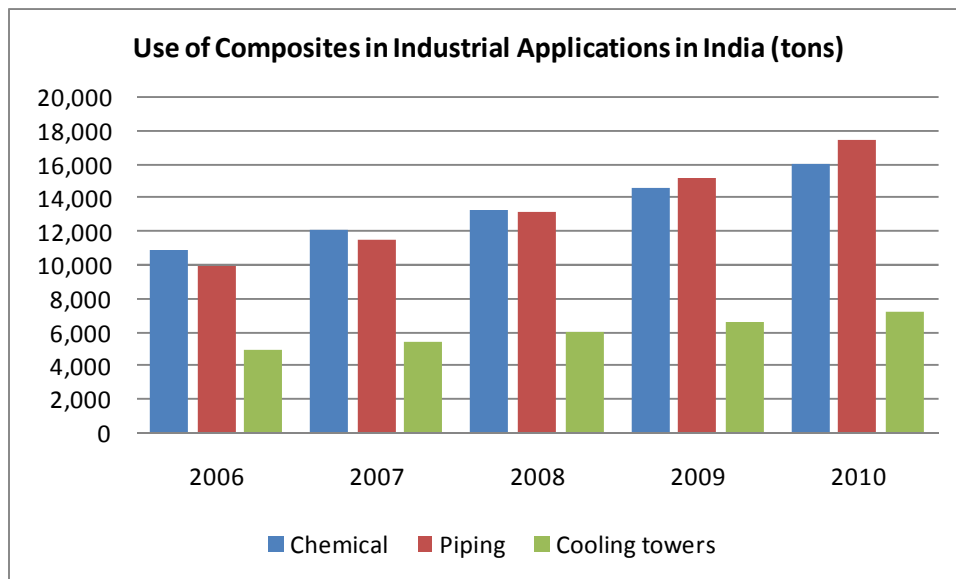


Indian Composite and Reinforced Plastic Products Market
Opportunities for US Companies

With a rapid growth in the manufacturing sector and heavy investments in infrastructure, the \$1.2 billion Indian composite industry is expected to grow at a rate of around 25% in the next 4-5 years. The key drivers of this growth will be transport, infrastructure, wind energy, and oil and gas industries in India. According to TIFAC, the total production of composites in India was about 75,000 tons in 2004-2005 and has risen to 110,000 tons in 2005-2006.

The Indian composite industry has a strong manufacturing base with automated processes combined with robust design and development skills. Global companies like Dupont, DSM, Sabic, Georgia Pacific, Fibergrate, Saertex, Hepworth, Beluga Tanks, and Enercon have entered in the Indian market and have established a strong base for export as well as local demand. Several US companies are investing in newer technologies to improve productivity and quality to meet increasing demands of this growth market.



There are significant opportunities for US Companies in the following industry segments in India:

Wind Energy: India has made significant progress in the wind power sector and the composite consumption has exceeded that of China and Japan. India is the fourth largest generator of wind power in the world and Indian company Suzlon Energy Ltd. has emerged as one of the leading suppliers of wind turbines in the global market. It is estimated that roughly 100,000 MW of power can be produced in India from only small wind turbines of 10-500 KW capacity.

Chemical Equipment: The major use of composites in India began with the chemical industry because of excellent corrosion resistance of composites. Applications in this sector include chemical equipment, piping and fire fighting breathing apparatus. Composite pipes find applications in sea-water intakes and effluent discharge in desalination plants, as ducts in the chemical industry, as cross-country water transmission pipelines, sewer pipelines etc. Composites are also being used for fabricating cooling tower units where the composite materials resist the corrosive effects of moisture.

Railways: Composites were identified as a potential material for application in the Indian Railways in the early 1980s for many passenger coach components such as louvre and glass shutters, window sills and frames, trays for battery boxes, ceilings, and flooring. The railways were working towards the complete elimination of timber and plywood in the coaches. The present consumption of composite materials by Indian Railways is estimated at about 8000 tons, with an annual growth rate of 20%.

Indian composites market by market sector (in million tones).

Sector	2006	2007	2008	2009	2010
Wind energy	15,790	20,270	25,960	33,200	42,460
Industrial	26,000	29,100	32,590	36,510	40,920
Railways	8,000	9,600	11,520	13,820	16,590
Automobile	20,690	22,670	24,900	26,300	28,100
Oil & Gas	1,500	1,600	1,700	1,800	1,900
Building and Construction	35,000	39,500	44,650	48,9200	55,400
Marine	1,000	1,400	1,800	2,300	3,000
Total	107,980	124,140	143,120	162,850	188,370

(Source: TIFAC report "Technology-linked Business Opportunities in Composites in India".)

Automotive: There is a tremendous potential for use of composites in the Indian automobile industry, especially for catering to the transportation needs of the growing middle-class population. There would be a good market for hoods, cabs, frames, and cargo containers that could be used as part of these locally-built vehicles.

Other opportunities for the Indian composites industry include refrigerated freight containers, pressure vessels, fishing boats, walkways and piles for building foundations, and air intake manifolds. Composite materials are used in passenger cars, scooters and helmets.

Oil and Gas: Potential applications for composites in the oil and gas sector in India are primarily in high-pressure pipes and pipe fittings in the next years. Current offshore structural applications of composites include low-pressure pipe, gratings, handrails, equipment covers or enclosures and ladders. Because of their low weight, corrosion resistance, improved life-cycle costs and enhanced safety, it is predicted that composite materials can capture 50% of this market in the oil and gas sector in the next 5-6 years.

About IMaCS Virtus Global Partners

IMaCS Virtus Global Partners, Inc. (IVG Partners) offers advisory services to North American companies and private equity funds seeking India related growth, investment and sourcing opportunities. Our mission is to enable our clients to transform their business by adding India as a key part of their global footprint. Our clients benefit from our local presence, strong relationships, knowledge of local business practice, experience and financial expertise.

We provide India related Strategy & Roadmap Consulting, Partner/ Target Search, Operation Setup & Support, Cross-border M&A Advisory, Project/ Bid Advisory and Transaction Advisory services.

Our team possesses a deep understanding of the business environment both in the US and India and is well connected with companies, financial institutions, governmental agencies, and private equity firms in both markets.

We have an established track record of over 15 years and 900 engagements providing advisory services to a diversified client base across manufacturing, infrastructure, energy, technology, industrial commodities, and retail. We also work with multilateral and bilateral government agencies, banks & financial institutions, and regulators. We are headquartered in New York with eight offices in India.

Our Services



Our Representative Experience

Below is a partial list of our engagements in the composites and manufacturing sector in India for our global clientele:

- ✚ Diversification and growth strategy in India for a leading plastic products manufacturer including identification of new business opportunities. As part of the ongoing mandate, we scanned over 20 sub-sectors to identify profitable opportunities with long-term growth potential based on relative attractiveness of the sector, industry dynamics, strategic fit with client’s business model
- ✚ Domestic and export market potential assessment of pre-coated sheets for a leading coatings company
- ✚ Evaluation of a copper cathode manufacturing project for a large manufacturing entity in India
- ✚ Viability study of a polyester manufacturing unit for a leading national bank in India
- ✚ Feasibility of establishing an engineering design centre for a global manufacturing company
- ✚ Market assessment for CNG engines for a large engine manufacturer
- ✚ Evaluation of options for corporate restructuring for a large engineering conglomerate
- ✚ Business planning for and valuation of a fabrication and foundry unit identified for acquisitions
- ✚ Valuation of an aluminium billet manufacturing unit for a multinational corporation
- ✚ Assessment of rehabilitation package for an engineering company
- ✚ Study of cash management system and investment policy for an aeronautical company
- ✚ Market feasibility for medical diagnostic centers in Eastern India
- ✚ Techno-economic feasibility study for a processed can manufacturer
- ✚ Study of automotive markets in the ASEAN countries and developing strategies for Indian companies to access the same
- ✚ Assessment and Due Diligence of joint venture partner for a global power project investor
- ✚ Financial strategy and roadmap for a rights issue for a manufacturer of material handling equipment, such as cranes and forklifts.

Our Offices

<u>New York (HQ)</u> 501 Fifth Avenue, Suite 302 New York, NY 10017 Tel: (646) 807-9290	<u>New Delhi</u> Buildingo. 8, 2nd Floor, Twr A DLF Cyber City, Phase-II Gurgaon 122002	<u>Mumbai</u> Electric Mansion, FL 4, Appasaheb Marathe Marg, Prabhadevi Mumbai 400 025	<u>Bangalore</u> Vayudooth Chambers, Fl 2, Trinity Circle 15-16 MG Road, Bangalore 560 001
<u>Kolkata</u> FMC Fortuna, A-10, FL 3, 234/3A AJC Bose Road Kolkata 700 020	<u>Chennai</u> Karumuttu Centre, 5th Floor 634 Anna Salai, Nandanam Chennai 600 035	<u>Pune</u> 5A, 5th Floor, Range Hills Road, Shivaji Nagar, Pune 411 020	<u>Hyderabad</u> 301, Concourse Fl 3 No 7-1-58, Ameerpet Hyderabad 500 016

For further information, please contact Robin Hughes at rhughes@ivgpartners.com.