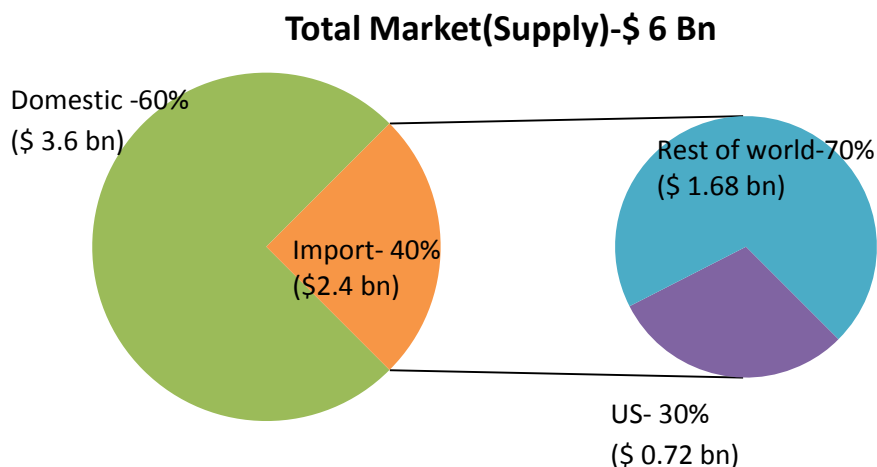


Indian market for Pollution Control Equipment
Opportunities for US companies

India is one of the largest and one of the fastest growing producers of greenhouse gases. It is estimated that 30-40 percent of India’s industrial units produce sizeable quantities of pollutants. There are about 3 million small-scale units in the country and most of these are not using any pollution control equipment.

India’s pollution control equipment industry is growing at 10-12 % annually, largely because of government initiatives and a proactive judiciary. Local production is mainly into standard, low-tech equipment. 40% of market demand is met by imports. Germany, UK, Japan, Canada, Australia, Netherlands, and Italy are among the major suppliers. The United States is the market leader for imports, having over 30% of market share.



Primary sub-sectors include:

- Water Supply & Waste Water Treatment
- Solid Waste Management
- Air & Noise Pollution
- Environmental Goods & Services
- Renewable Energy
- Clean Development Mechanism and Carbon abatement technologies

Competitive Landscape

The total market size is estimated to be over \$ 6 billion, with Renewable and Energy Efficiency Sectors capturing over 50% of the market share. Indian pollution control equipment industry is highly unorganized and dominated by small-scale industrial firms lacking the resources to invest in research and development. There are a few medium and large Indian engineering companies offering services and equipment as part of turnkey consulting services. The Ministry of Environment and Forest governs

this sub sector and it has allocated a budget of over \$300 million for pollution abatement. However, the market is not restricted to the government sector. The private sector has been investing substantially in environmentally friendly production processes and accounts for nearly 40 % of demand in this segment. Poor enforcement of environmental laws is a key reason for the low market potential compared to developed countries.

Imports constitute nearly 40 percent of the total market share due to two main factors:

1. Unlike other sectors, multi-lateral and bi-lateral agreements on ecology and the environment play a major role in this sector. This results in an increased demand for imported pollution control equipment, because donor-led investments normally require international quality equipment that is not manufactured in India.
2. Multinational corporations with manufacturing facilities in India insist on the replication of technology for pollution control. This almost always requires imports.

The United States has traditionally enjoyed a dominant position in the market, with over 30 % of market share. In some segments such as air pollution control equipment, imports from the United States constitute almost 40 % of total imports. Industry sources believe that the import market will continue to increase and the domestic market share will decline due to increasing demand for improved and innovative technologies that cannot be met by domestic suppliers. Currently it is estimated about 40% of total market demand (\$ 6 billion) is met by imports.

Key areas for US companies

Private sector demand is growing for increased energy efficiency and renewable energy, vehicular and industrial air pollution control, bio-medical waste disposal, and water-recycling technologies. India has a large potential in renewable energy (RE) segment. In addition, there is a huge potential market for generating power, and thermal applications using solar, wind and biomass energy. Exploitation of geothermal energy, tidal energy and bio-fuels for automotive applications is also envisioned. Strict enforcement and implementation of even a fraction of the suggested measures in the National Environment Policy of 2004 would create a huge opportunity for international players in this sector. In addition, major investments will be required by the automobile industry of comply with Euro IV norms in India’s 11 largest cities, where vehicular population is worsening (Euro III norms will become mandatory across India by 2010).

Most promising sub-sectors in pollution control equipment include (for the next 3-5 years):

Sub Sector	Estimated Market Size	Growth
Energy Efficiency And Renewable Energy	51%	12%
Water and Wastewater Management	26%	6%
Air pollution control	20%	8%

About IMaCS Virtus Global Partners

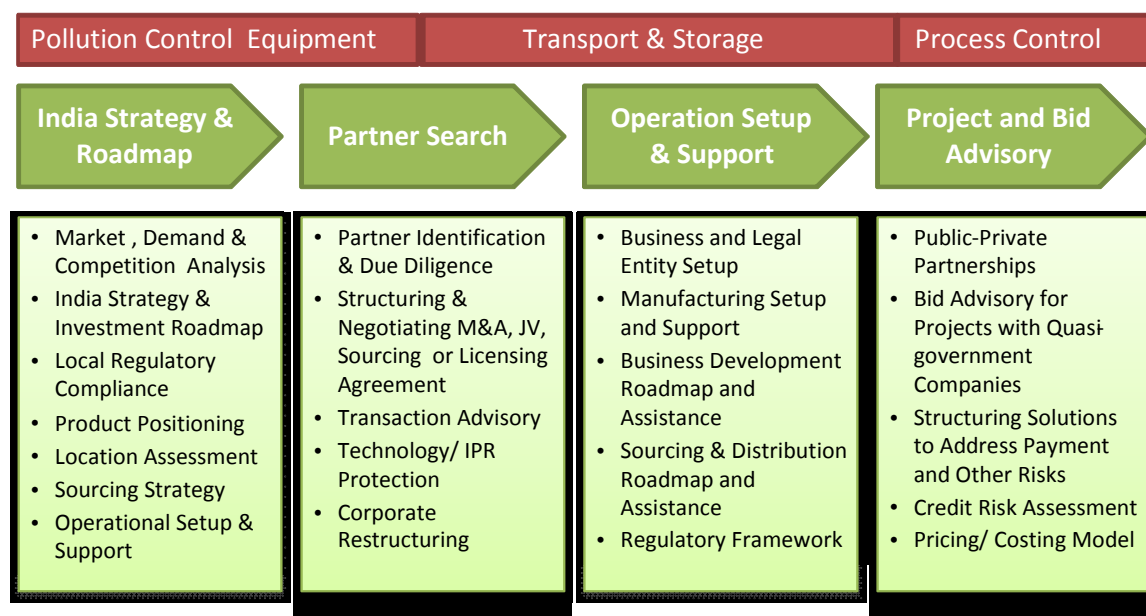
IMaCS Virtus Global Partners, Inc. (IVG Partners) offers advisory services to North American companies and private equity funds seeking India related growth, investment and sourcing opportunities. Our mission is to enable our clients to transform their business by adding India as a key part of their 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 water related engagements in India, for our North American, European and Indian clientele:

<ul style="list-style-type: none">  Conversion of intermittent water to continuous (24x7) water and increased access to clean water for urban poor in Pune, India for Environment Cooperation of Asia (ECO-ASIA)  State Water and Sanitation Mission support for UNICEF to ensure that the State Communication and Capacity Development Unit and State Water and Sanitation Mission have the requisite systems and capacity for effective planning, implementation, and monitoring of hygiene behavior change communications activities  Institutional reforms and capacity building for Central Public Works Department with a focus on creating and maintaining public assets, project management, and maintenance management  Process improvement study for Delhi Development Authority with a focus on project planning, project execution, costing/ pricing, marketing & sales, after sales, and enforcement  Mid-term evaluation of the \$220 million Kolkata Environmental Improvement Project (KEIP) funded by the Asian Development Bank based on the CBP strategy and the KEIP-CBP LogFrame  Study of urban investment climate issues for Government of West Bengal with an analysis of incentives offered to industries, land market issues, and labor market issues  Private sector assessment and strategy study in India for Asian Development Bank to identify sectors and areas where ADB Private Sector Operations could evaluate options for direct interventions  Assessment and configuration of the national level cold chain infrastructure for exporting agricultural and processed food products for Ministry of Commerce & Industry.

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