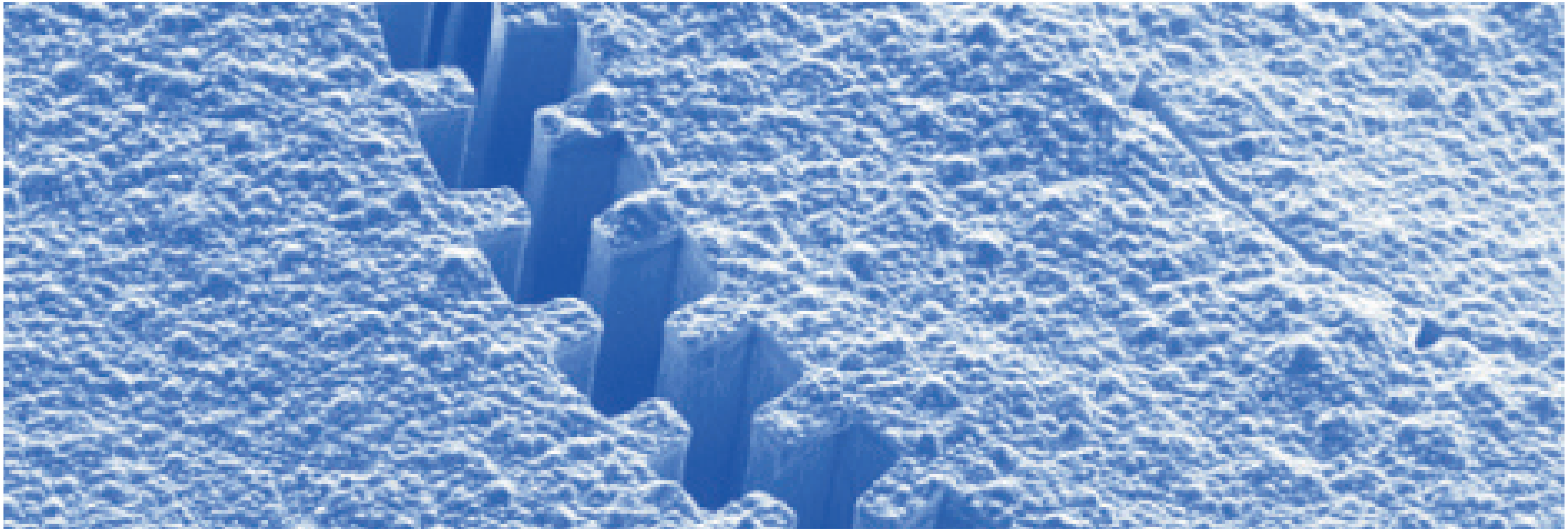

ENGINEERING

December 2008

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The Indian Engineering sector can be classified into two key categories

Heavy Engineering dominates the sector, accounting for nearly 80 per cent of the output

- Engineering Sector
  - Heavy Engineering
    - Transport Equipment
    - Capital Goods
    - Other Machinery/ Equipment
  - Light Engineering
    - Low-tech items like castings, forgings and fasteners
    - Highly sophisticated microprocessor-based process control equipment, diagnostic medical instruments

Players in the sector could also be classified as

- Equipment Manufacturers
- Execution Specialists
- Niche Players

Industry is largely dominated by the organized players as the sector demands a high level of capability and investment

Industry segment	No. of organized players
Heavy Engineering Industry	
Cement machinery	18
Sugar machinery	27
Rubber machinery	19
Metallurgical machinery	39
Machine tools	160
Material handling equipment	50
Mining machinery	32
Dairy machinery	16
Light Engineering industry	
Welded steel pipes & tubes	123
Process Control Instrument	26
Antifriction Roller Bearing	19
Plain paper copier	12

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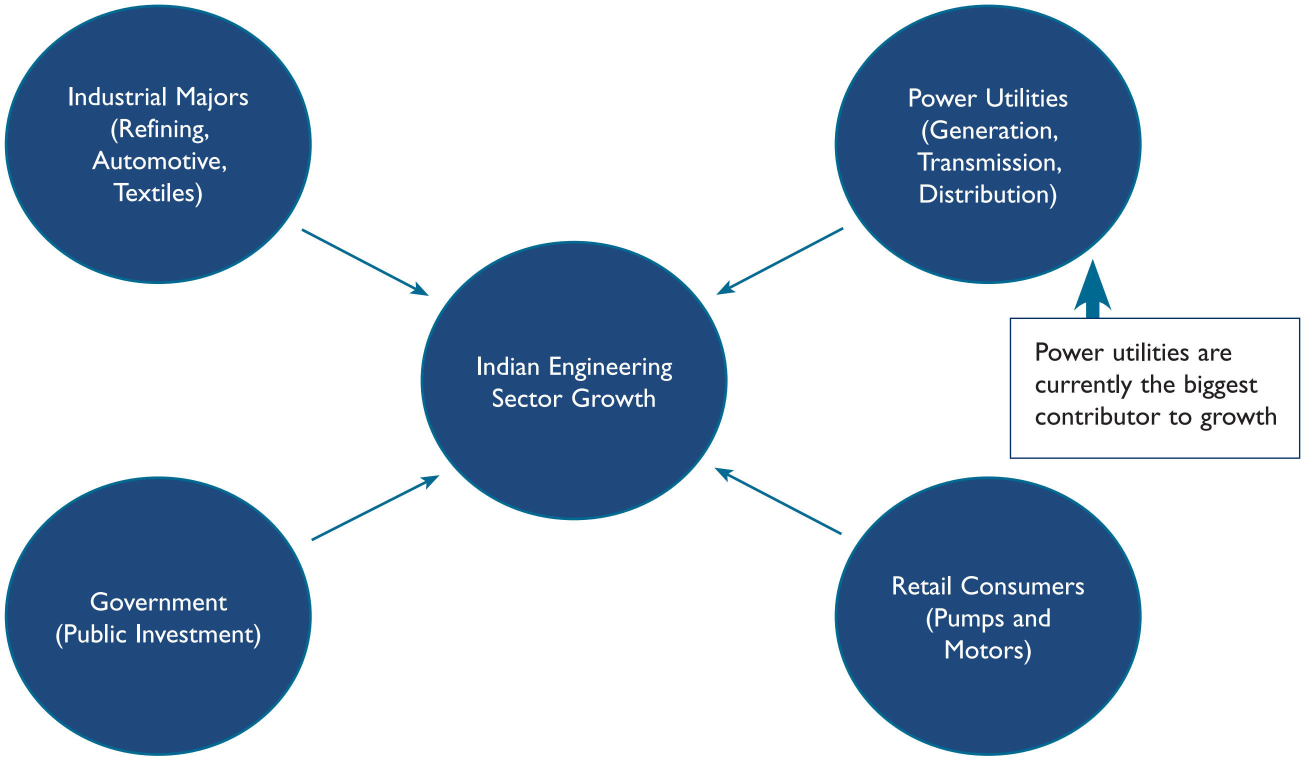
Growth in the sector is driven by key user industries which, in turn depend on other key growth factors



Growth in the sector is driven by key user industries which, in turn depend on other key growth factors

- Well developed Demand conditions
- Consolidation of factor conditions including human resources, raw materials, etc
- Conducive and stable regulatory mechanisms
- Promotion of Special Economic Zones
- Government's emphasis on power and construction sector for the past few years
- India gaining preference level among global manufacturing companies as an outsourcing destination

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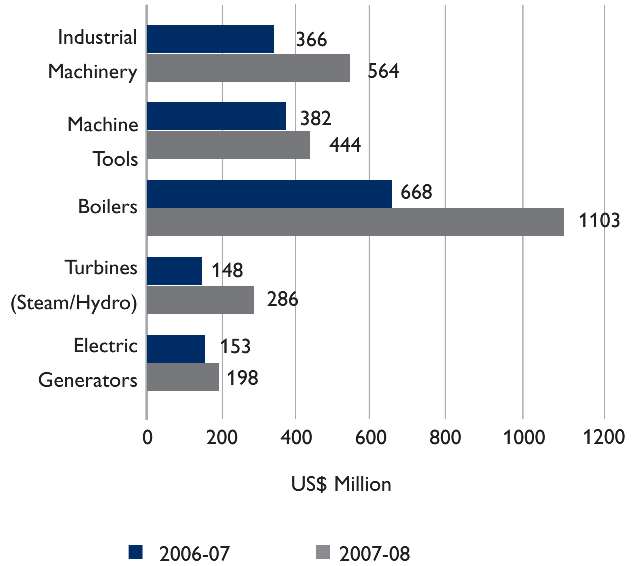
Several key segments have been experiencing strong growth

- Boilers & Turbines appear the most attractive segments from a size and growth perspective Given the focus on development of Power infrastructure, growth in these segments is expected to sustain

Size of key segments



Source: Annual Report 2007-08, Ministry of Heavy Industries and Public Enterprises, GoI

(Data pertains to period April-Nov for both financial years

Exchange Rate: 2006-07 – 1US$ = 45.28 INR, 2007-08 – 1 US$ = 40.26 INR (Source: Ministry of Commerce, GoI)

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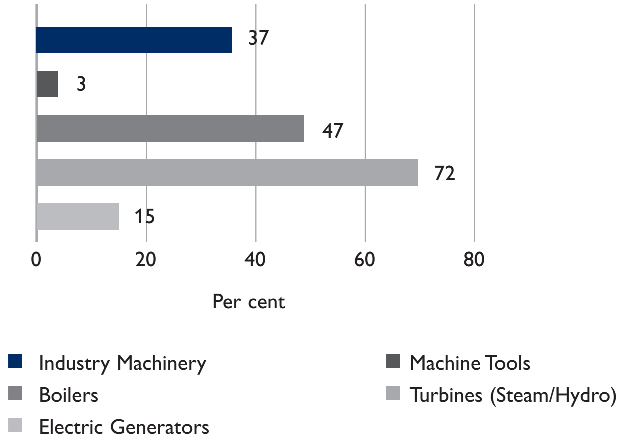
Several key segments have been experiencing strong growth

Growth of key segments
(2007-08 over 2006-07)



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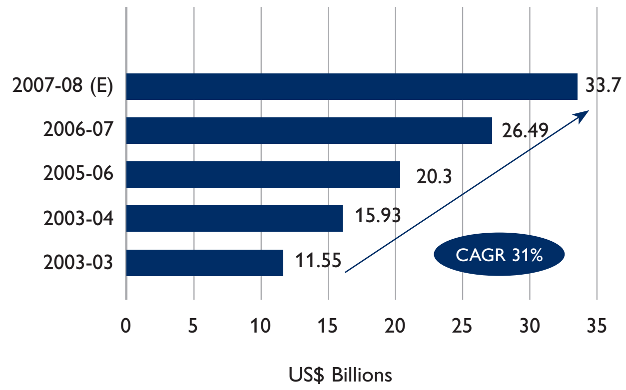
Exports of Engineering goods from India have also been growing rapidly

- 40 per cent of Exports are from Small and Medium Enterprises (SMEs)
- Capital Goods account for 27 per cent of exports in the sector
- Exports to technologically advanced countries such as USA, UK and Germany have been increasing

Engineering Exports from India



Source: Engineering Exports Promotion Council

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Exports of Engineering goods from India have also been growing rapidly

Key factors enabling exports growth:

- India's labour cost advantage
- Growing capabilities of Indian engineering firms
- Availability of raw materials, supplier base and labour pool

Government support:

- SEZ policy
- Infrastructure development
- Delicensing, removal of tariff protection

The sector is competitive, and investors need to have the right approach and focus to succeed

Threat of New Entrants

- Requires significant investment and long term outlook
- MNCs looking to expand / re-locate would find India as an attractive destination

Supplier Power

- Well established supplier base with adequate capabilities
- Raw material availability

HIGH	
MEDIUM	
LOW	

The sector is competitive, and likely to see increased investment from global players

Competitive Rivalry

- Large number of domestic and global players
- Highly fragmented
- High level of competition among organised players

Customer Power

- Demanding customers who are themselves significant players
- High growth in demand across segments

Threat of Substitutes

- No substitutes currently for products in the sector

HIGH
MEDIUM
LOW

Source: KPMG Analysis

Successful MNCs have leveraged India's advantages in different ways

R&D Hub

- Has set up a Global Corporate R&D Centre in Bangalore, which focuses on Industrial IT development and deployment
- Supports a range of software intensive products and partners with ABB R&D centres globally as well as business areas within the group
- First such centre to be established outside US and Europe

Sourcing Hub

- The Indian subsidiary is a global hub for high voltage 72.5 KV circuit breakers, medium voltage outdoor circuit breakers and magnetic actuators

Successful MNCs have leveraged India's advantages in different ways

R&D Hub

- R&D centre in Pune - Cummins Research & Technology India Pvt. Ltd.
- Offers engineering design and analysis for the company's' technical centres worldwide

Sourcing Hub

- India is the single worldwide source of K-38 power-generation engines and V-28 engines
- Also sourcing 50 litre power-generation engines (K-50) exclusively from India
- Looking at opportunities in the area of components as well

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With significant potential for future growth, the sector provides ample opportunities for investment

Attractive Areas for Investment

- Key segments for investment have been assessed based on the following factors
  - Segment size
  - Projected growth in domestic and exports markets
  - Presence of supply base and supporting industries
  - Readiness of the market to accept global products and services
- Based on the above, the following segments appear attractive
  - Electrical Generation/Transmission Equipment
  - Earthmoving Machinery
  - Thermal Equipment - primarily Boilers, Furnaces

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There are several attractive states and locations that can be considered

- Key States for investment have been assessed based on the following factors
  - Engineering / Multi-product SEZs being developed
  - Conducive factor and demand conditions
  - Presence of industry players and supporting institutions
  - Proximity to ports
- Based on the above, the following states appear attractive
  - Maharashtra
  - Gujarat
  - Tamil Nadu

Profiles of Domestic and Overseas Players

Name of the company	Parent company	Output	Products/divisions/ sectors served	Plants
BHEL	Public sector enterprise. India's largest engineering and manufacturing enterprise	Sales turnover – US$ 4.65 billion in 2007-08	Caters to power generation and transmission, transportation (especially railways), telecom, renewable energy and industry at large.	14 manufacturing divisions, four power sector centres, over 100 project sites, 8 service centres and 18 regional offices.
Hindustan Aeronautics Ltd	Public sector enterprise	Sales – US$ 2.14 billion in 2007-08.	Supplies / services are mainly to Indian Defense Services, Coast Guard and Border Security Force. Transport aircraft and Helicopters have also been supplied to Airlines as well as State Governments of India.	Facilities are located throughout India including Nasik, Korwa, Kanpur, Koraput, Lucknow, and Hyderabad.
Crompton Greaves	Part of the Avantha Group	Sales – US$ 1.04 billion in 2007-08	largest private sector enterprise in the business of electrical engineering	Bhind, Mumbai, Nashik, Hosur, Goa

Sources: Annual Report 2007-08, Ministry of Heavy Industries and Public Enterprises, GoI and www.cglonline.com

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Profiles of Domestic and Overseas Players

Name of the company	Parent company	Output	Products/divisions/ sectors served	Plants
Larsen & Toubro Ltd (L&T)	Part of L&T group. India's largest engineering and construction conglomerate.	Sales – US$ 6.17 billion in 2007-08	Four segments namely Engineering and Construction (E&C), Cement, Electrical and Electronics and Diversified business. It also has 19 subsidiaries	Coimbatore in Tamil Nadu, Kurnool District in Andhra Pradesh and Hassan in Karnataka.
Thermax Ltd	Originally incorporated as Thermo-Dynamics Pvt., Ltd on 30th June, 1980. On 1st July, 1980 Wanson (India) Ltd. along with Thermax India (Pvt) Ltd. was amalgamated with the Company and subsequently the name was changed to Thermax Pvt.	Sales – US$ 0.81 billion in 2007-08	Six Core businesses - Boilers and Heaters, Absorption Cooling, Water & Waste Solutions, Chemicals for Energy and Environment Applications, Captive Power and Cogeneration systems, Air Pollution and Purification	Five manufacturing facilities, 12 sales and service offices and a widespread franchisee and dealer network
Cummins India Limited	Part of Cummins Inc., world's largest designer and manufacturer of diesel engines	Sales – US$ 0.5 billion in 2007-08	Power generation, construction & mining, compressors, locomotives, marine, oilfields, fire pumps & cranes, automotive and special applications.	Nashik, Bardez, Sholapur, Pune, Bharuch

Profiles of Domestic and Overseas Players

Name of the company	Parent company	Output	Products/divisions/ sectors served	Plants
Alfa Laval (India) Ltd	Subsidiary of Alfa Laval AB, Swedish Multinational engineering company. The company has approximately 9,000 employees	Net sales – US$ 0.2 billion in 2007	Alfa Laval India has two divisions namely Equipment division and Process Technology division	Manufacturing facilities in Pune, Sarole and Satara.
Asea Brown Boveri Ltd (ABB)	Subsidiary of ABB Ltd -Zurich which is a leader in Power and Automation technologies. The Company operates in around 100 countries and employs about 120000 people.	Net sales – US$ 1.49 billion in 2007	ABB India caters to power and industry sectors.	Vast installed base, extensive local manufacturing at 8 units and a nationwide marketing and service presence. ABB has also set up a global R&D centre in Bangalore
Siemens Ltd	Flagship of the Siemens Group in India. Siemens AG, the parent company holds 54.63 per cent in Siemens Ltd.	Sales – US$ 1.92 billion in 2007-08	Power generation and distribution equipment, industrial projects and equipment, transportation systems, communication and healthcare products.	Aurangabad, Nashik, Goa, Thane and Parganas North

Source: www.cglonline.com

Apex Contact Agency for the sector

Apex Contact Agency	Address
Engineering Export Promotion Council (EEPC)	Vanijya Bhavan (1st Floor), International Trade Facilitation Centre, 1/1 Wood Street Kolkata 700016 Ph: 91-33-22890651/52 Email : eepcho@eth.net Website: http://www.eepc.gov.in
Federation of Engineering Industries of India	B-30 Sagar Apartment, 6, Tilak Marg, New Delhi- 110001 Ph: 91-11-2381895 / 2388665
Indian Machine Tools Manufacturer Association (IMTMA)	Plot 249 F, Phase IV, Udyog Vihar, Sector 18 Gurgaon 122 015 Haryana Ph: 91-124-5014101/02/03/04 Email: imtma@del2.vsnl.net.in Website: http://www.imtma.org

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