

ELECTRICAL MACHINERY



AUGUST 2015

For updated information, please visit www.ibef.org

ELECTRICAL MACHINERY



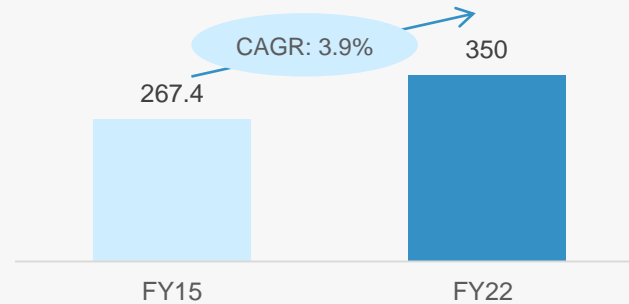
CONTENTS

❖ Executive Summary.....	3
❖ Advantage India.....	5
❖ Market Overview and Trends.....	7
❖ Porter Five Forces Analysis	19
❖ Strategies Adopted.....	21
❖ Growth Drivers.....	23
❖ Opportunities.....	34
❖ Success Stories.....	36
❖ Useful Information.....	43



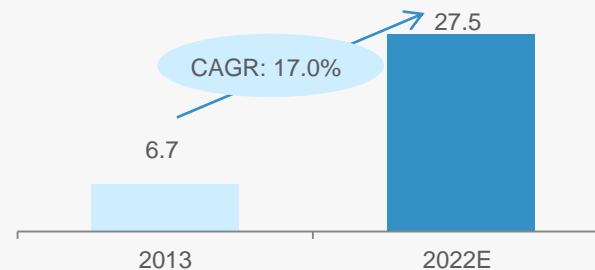
EXECUTIVE SUMMARY ... (1/2)

Installed capacity set to increase



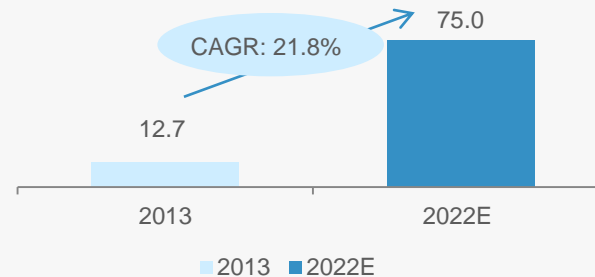
By 2022, installed power capacity in India is expected to reach 350 GW from 267.4 GW in 2015 due to increasing industrialisation and economic development

Demand for generation equipment on the rise



By 2022, India's generation equipment industry is expected to increase to USD27.5 billion from USD6.7 billion in 2013

Increasing power demand to drive T&D equipment market

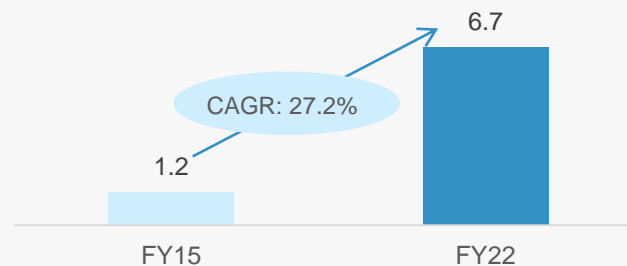


By 2022, the T&D equipment market in India is expected to expand to USD75 billion from USD12.7 billion in 2013

Source: Central Electrical Authority, Electrical Monitor, Government of India, Ministry of Heavy Industries, TechSci Research
Notes: T&D - Transmission & Distribution, E - Estimated

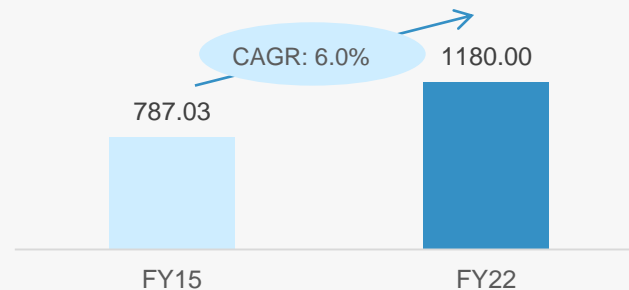
EXECUTIVE SUMMARY ... (2/2)

Power backup equipment to witness a 5-fold rise by 2022



Demand for generators is expected to increase to USD6.7 billion by 2022 from USD1.2 billion in FY15

Coal demand to remain high



Demand for coal is expected to increase to 1,180 million tonnes by 2022 from 787.03 million tonnes in FY2015

Source: Government of India, Ministry of Heavy Industries, CEA, TechSci Research
Note: E - Estimated

ELECTRICAL MACHINERY



ADVANTAGE INDIA

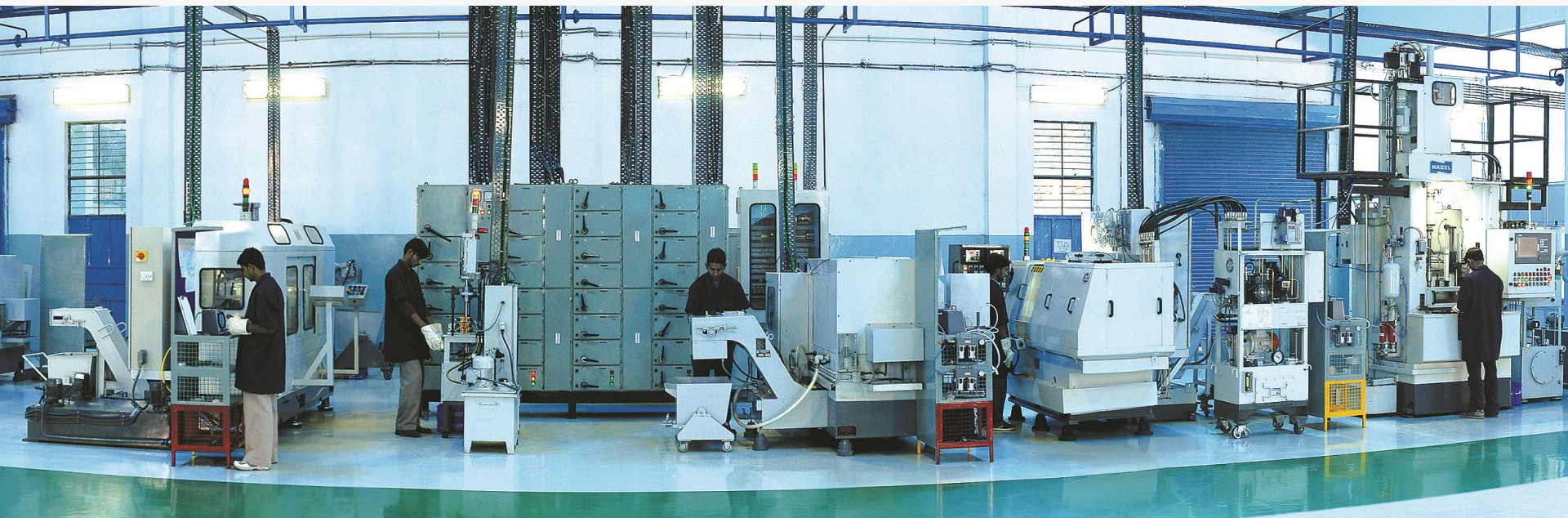
AUGUST 2015



Source: Government of India, Ministry of Heavy Industries, Ujwal Bharat, TechSci Research

Notes: FDI - Foreign Direct Investment, FY - Indian Financial Year (April - March), USD - US dollar, EPCG - Export Promotion Capital Goods Scheme, EHTP - Electronic Hardware Technology Park, SEZ - Special Economic Zone, CAGR - Compound Annual Growth Rate, E - Estimated

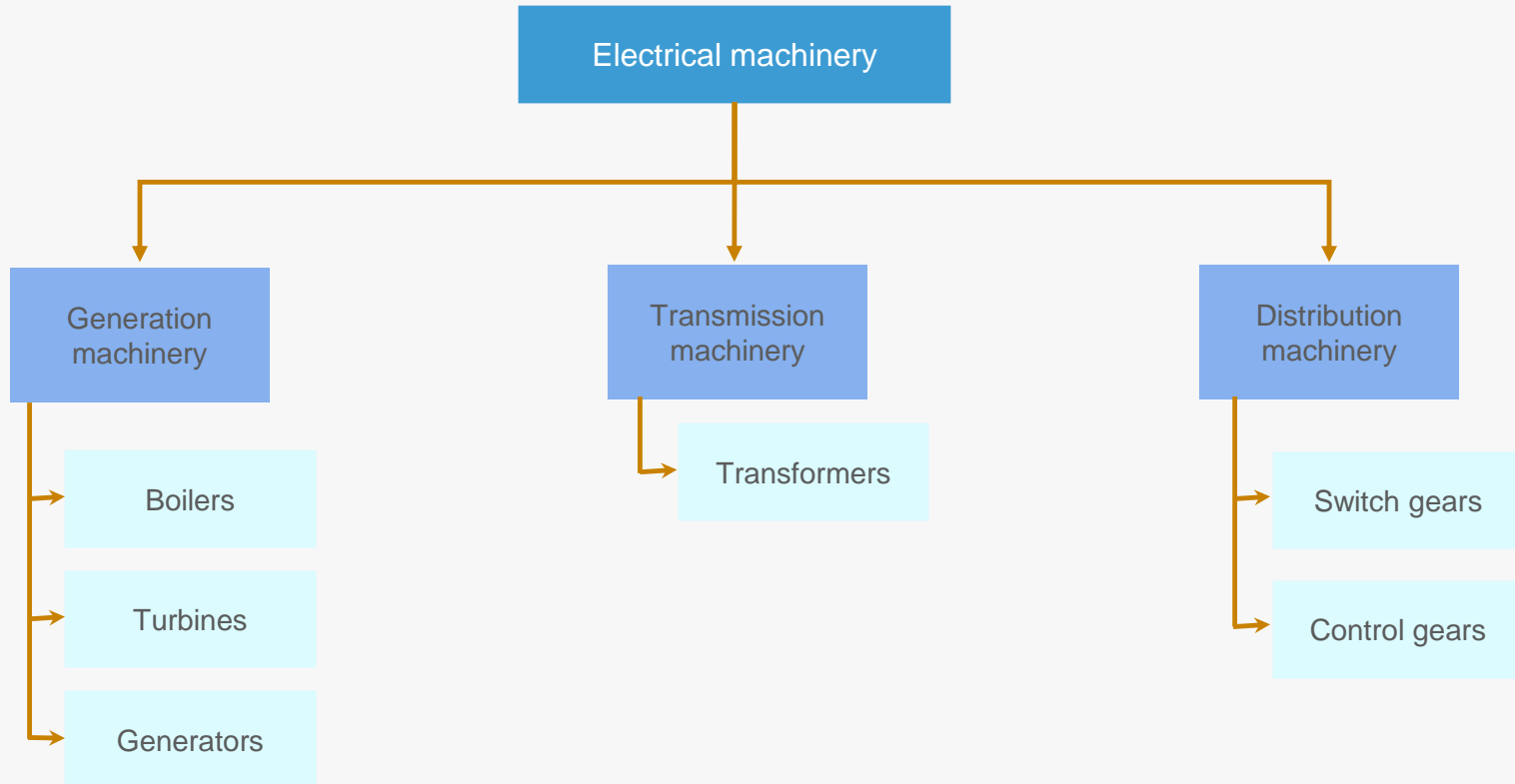
ELECTRICAL MACHINERY



MARKET OVERVIEW AND TRENDS

AUGUST 2015

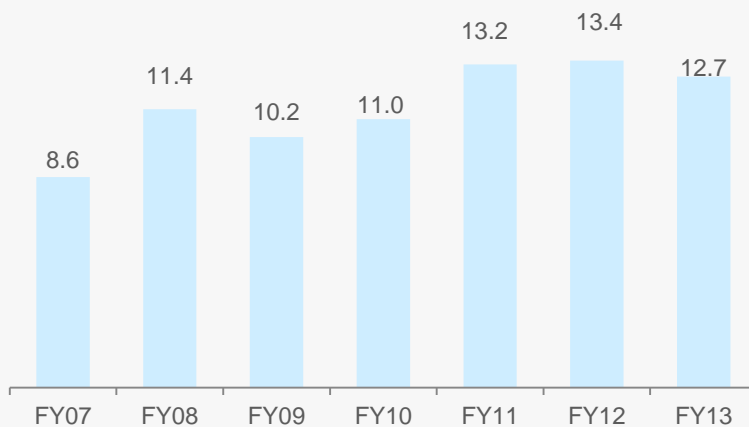
ELECTRICAL MACHINERY HAS THREE MAJOR SEGMENTS



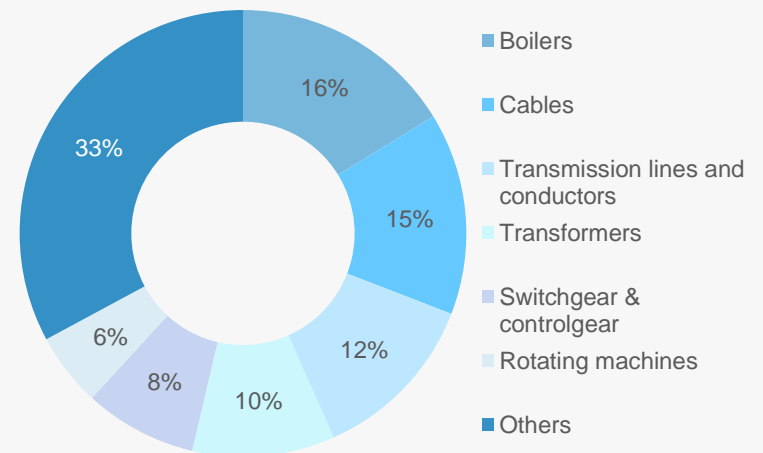
INDIAN ELECTRICAL MACHINERY

- * The T&D equipment industry was worth USD12.7 billion in FY13
- * The market expanded at a CAGR of 6.7 per cent over FY07–13
- * Boilers (16 per cent), cables (15 per cent) and transmission lines and conductors (12 per cent) account for a large chunk of the revenue
- * Indian Electrical Equipment Industry posts marginal 3.5 per cent growth in 2013-14, out of which capacitors and energy meters showed the maximum growth of 41.1 per cent and 10 per cent

India's T&D equipment industry (USD billion)



Share of major electrical equipment (FY12*)

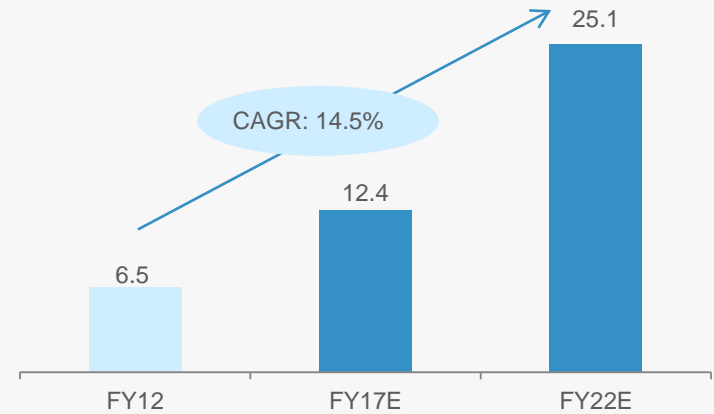


Source: Government of India, TechSci Research
 Note: CAGR - Compound Annual Growth Rate
 Note*-As per the Latest Available Data

BTG MARKET IS EXPERIENCING STRONG GROWTH IN THE COUNTRY ... (1/2)

- * The Generation Equipment market is expected to expand at a CAGR of 12.7 per cent over FY12–22

Market size of generation machinery (USD billion)

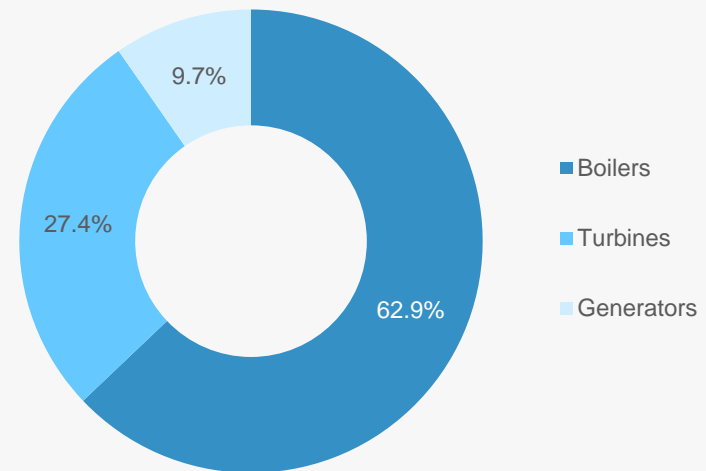


Source: Government of India, Ministry of Heavy Industries, Draft Indian Electrical Equipment Industry Mission Plan (2012-2022), TechSci Research
Note: CAGR - Compound Annual Growth Rate

BTG MARKET IS EXPERIENCING STRONG GROWTH IN THE COUNTRY ... (2/2)

- * Boilers is the major segment, accounting for 62.9 per cent of the total industry in FY12
- * Turbines accounted for 27.4 per cent, whereas generators made up the remaining 9.7 per cent

Generation machinery market break-up (FY12*)

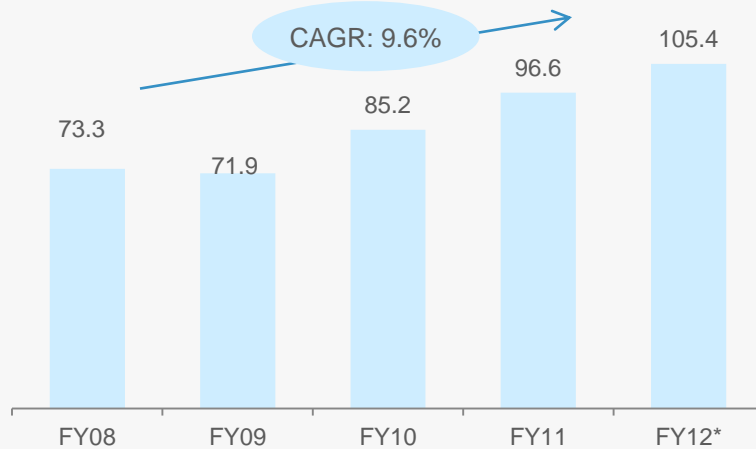


Source: Draft Indian Electrical Equipment Industry Mission Plan (2012-2022),
TechSci Research
Note*-As per the Latest Data Available

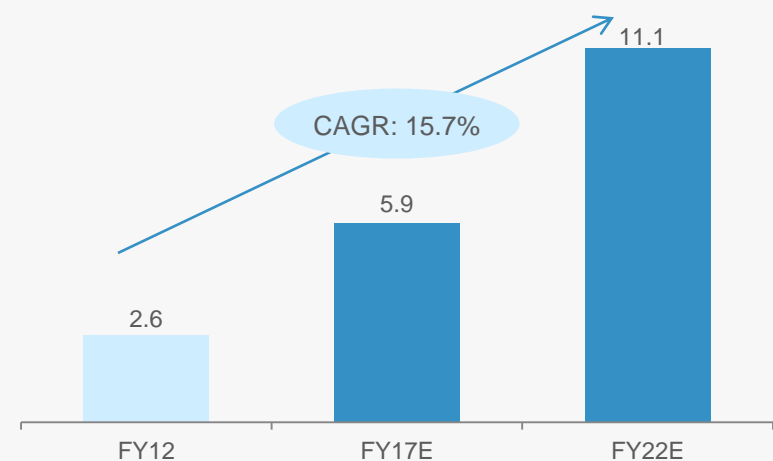
OTHER MAJOR SEGMENTS – TRANSMISSION AND DISTRIBUTION MACHINERY ... (1/2)

- * Manufacturing of transformers recorded a CAGR of 9.6 per cent during FY08–11
- * As per the latest data available during FY12–22, the size of transformers industry is expected to expand at a CAGR of 15.7 per cent to USD11.1 billion
- * Domestic transformer industry has the capability to manufacture the whole range of power and distribution transformers, including transformers used for HVDC transmission up to 500 KV

Production of transformers (million KVA)



Transformers market size (USD billion)



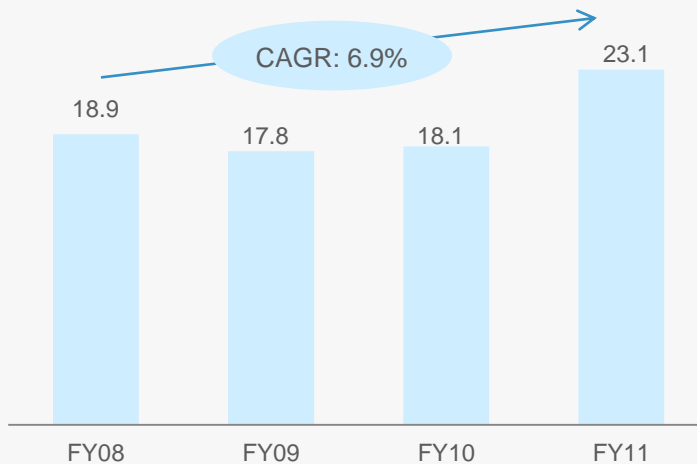
Source: Department of Heavy Industry Annual report 2011-12, Draft Indian Electrical Equipment Industry Mission Plan (2012-2022), SIA, TechSci Research

Notes: * Data for FY12 is up to Feb 2012, HVDC is High Voltage Direct Current, KVA - Kilo Volt Ampere

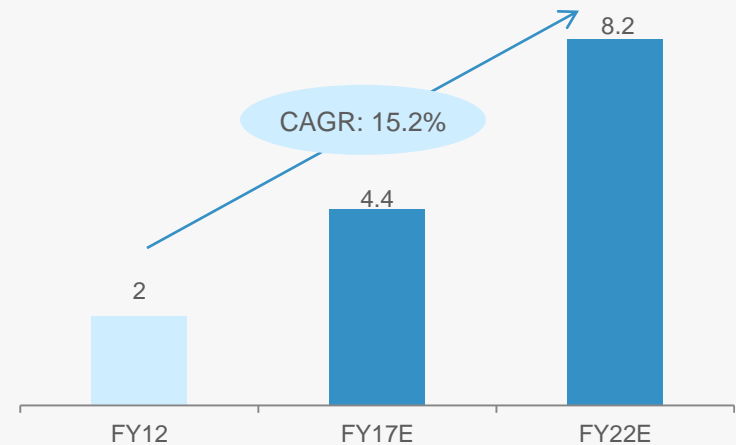
OTHER MAJOR SEGMENTS – TRANSMISSION AND DISTRIBUTION MACHINERY ... (2/2)

- * The production of switch and control gears has expanded at a CAGR of 6.9 per cent during FY08–11
- * During FY12–22, the size of switch & control gears industry is expected to expand at a CAGR of 15.2 per cent to USD8.2 billion
- * The switch gear industry in India manufactures the entire voltage range from 240 KV to 800 KV
- * Significant advances have been made in control gears due to major developments in the field of technology

Production of switch & control gears (million units)



Market size of switch & control gears (USD billion)

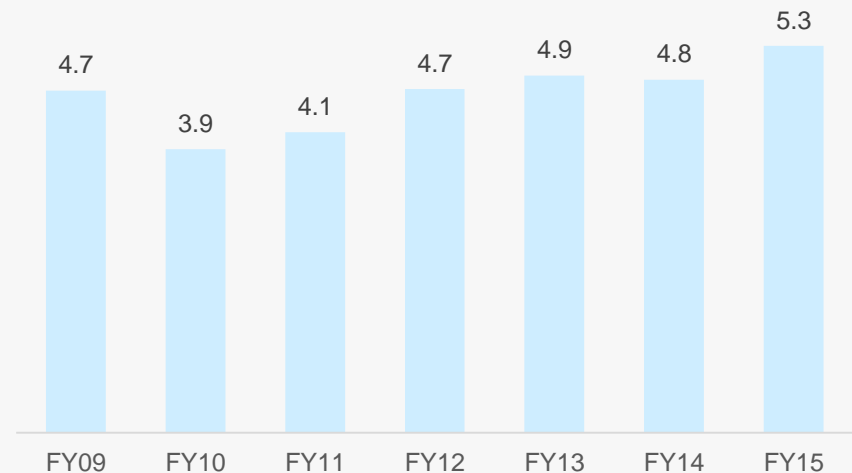


Source: Department of Heavy Industry Annual Report 2011-12, TechSci Research

ELECTRICAL MACHINERY EXPORTS ON A RISE ... (1/2)

- * Exports of electrical machinery rose to USD5.3 billion in FY15 from USD4.8 billion in FY14 with a CAGR 2.06 between 2009-15. As on May'15, total exports in electrical machinery stood at USD648.7 million.
- * Boilers & parts and electrical wires and cables were the primary drivers of the increase in exports
- * Indian manufacturers with capacity and advanced technology in industry export a wide array of equipment, including transformers and cables

Exports of electrical machinery (USD billion)

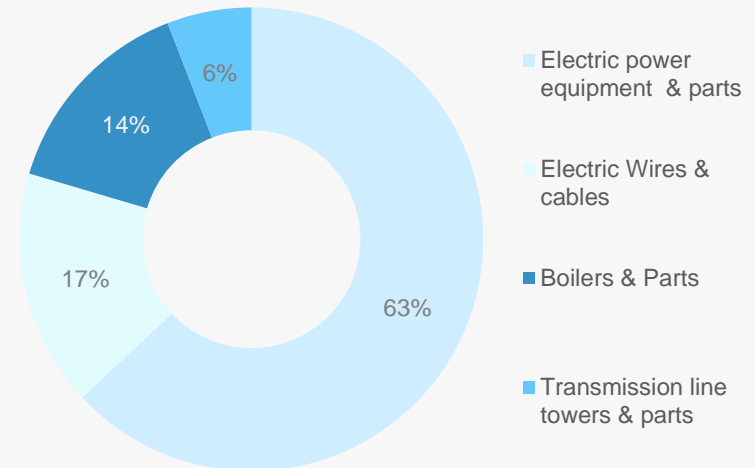


Source: Engineering Exports Promotion Council (EEPC) India
Note: Export data Includes - Boiler & Parts, Electric Power Equipments & Parts, Electric Wires & Cables and Transmission Line Towers & Parts

ELECTRICAL MACHINERY EXPORTS ON A RISE ... (2/2)

- * Exports of electrical power equipment & parts worth USD2.5 billion in FY14 accounted for the largest share of electrical machinery exports
- * Exports of electric wires & cables worth USD659.4 million accounted for 17.0 per cent of electrical machinery exports
- * Exports of boilers & parts and transmission line towers & parts were worth USD579.3 million and USD234.9 million, respectively

Break-up of exports of electrical machinery and related items by segment (FY14)



Source: Engineering Exports Promotion Council (EEPC) India, TechSci Research

NOTABLE TRENDS IN THE ELECTRICAL MACHINERY SECTOR

Upgrading technology

- Industry players are upgrading their transmission capacities to the next higher voltage system of 765 kilovolts (KV) and are gearing up to supply transformers and related equipment of this class

Increasing R&D expenditure

- Indian manufacturers are becoming more competitive with respect to their product designs, manufacturing and testing facilities
- Investments in Research & Development (R&D) in the electrical machinery industry are among the largest in India's corporate sector

Diversifying product portfolio






- Increasing competition in the industry and changing consumer demands have led to new versions of products being launched in the market
- Players are entering into strategic alliances and tie-ups with technology suppliers to upgrade capabilities

Adoption of super-critical technology

- The Government of India is encouraging the adoption of supercritical technology for thermal power plants due to its efficiency and reduced emissions
- During the 12th Five Year Plan, 60 per cent of the total additional power is expected to be generated using supercritical technology

Source: Department of Heavy Industries Annual Report 2008–09, TechSci Research

KEY PLAYERS

	Company	Revenues (FY15)	Products
	Larsen & Toubro	USD15.26 billion	Engineering & Construction, Cement, Electrical & Electronics
	Bharat Heavy Electricals Ltd	USD2.86 billion* USD6.37 billion (2014)	Power Generation, Transmission, Transportation
	Siemens India Ltd	USD0.8 billion** USD1.77 billion (2014)	Power Generation and Distribution equipment, Transportation Systems, Communication and Healthcare Products
	ABB India Ltd	USD0.30 billion***	Transformers, Switch Gears, Control Gears
	Crompton Greaves Ltd	USD1.3 billion	Power Generation and Transmission Equipment

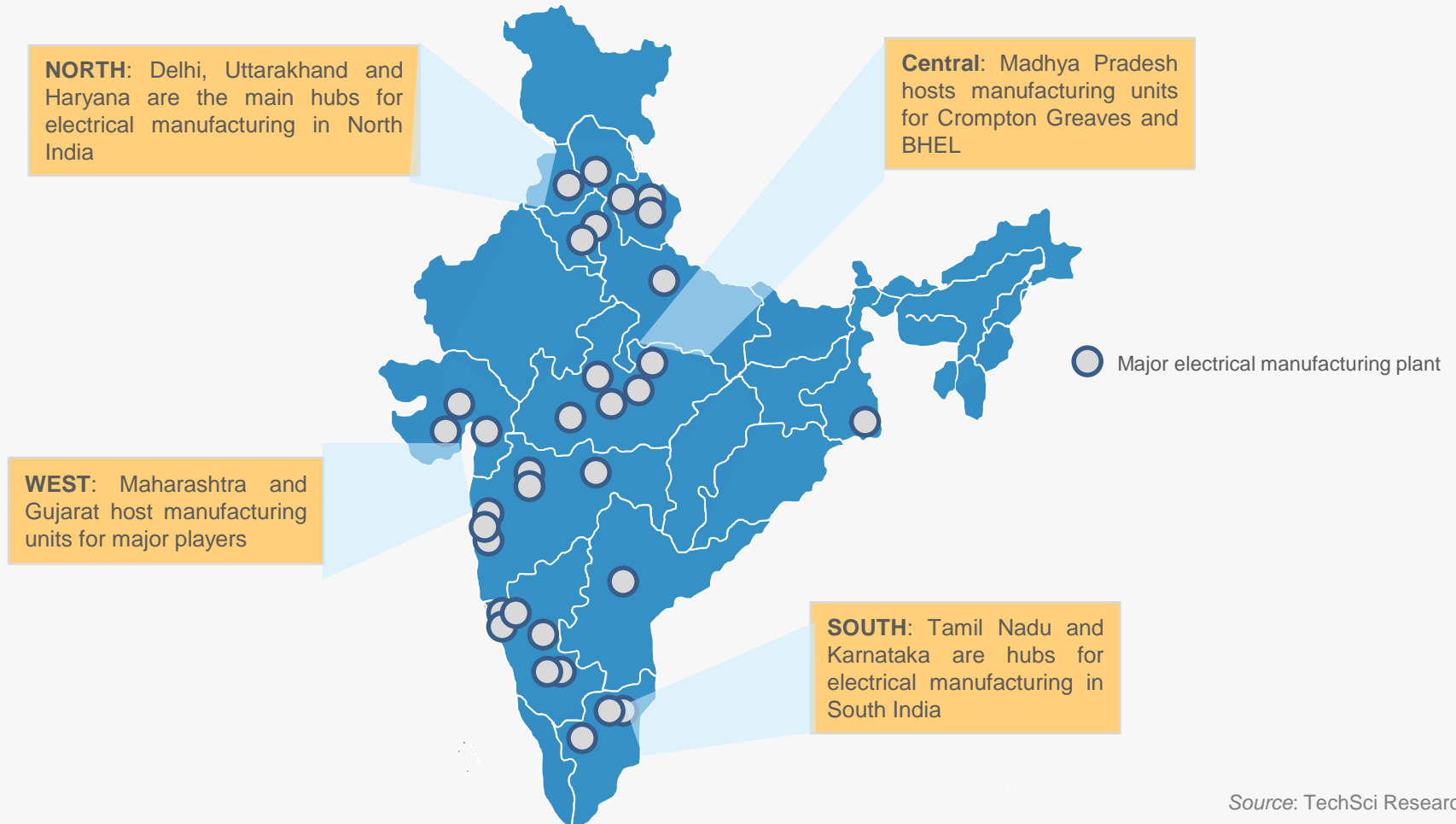
Source: Company Annual Reports, TechSci Research

Note: * Revenue for FY15 (9 months)

; ** Revenue till Q2 FY15

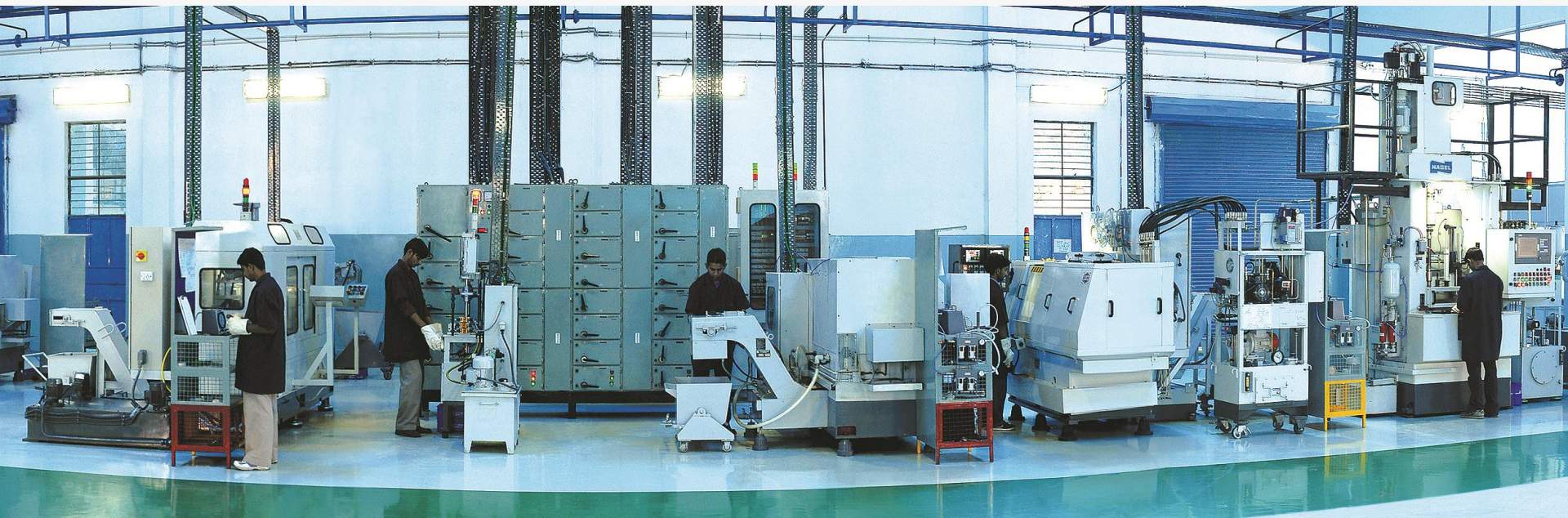
*** Revenue till Q1 FY15

KEY ELECTRICAL MANUFACTURING PLANTS ACROSS INDIA



Source: TechSci Research

ELECTRICAL MACHINERY



PORTER FIVE FORCES ANALYSIS

AUGUST 2015

PORTER FIVE FORCES ANALYSIS

Competitive Rivalry

- With a small number of firms in the high-end equipment market, competition is moderate in the sector
- Large players provide complete solutions
- Government plans to increase investment in power, rivalry is expected to increase

Threat of New Entrants

- Threat is low, because of the capital intensive nature of the industry
- Presence of big players, blocks entry of new players

Substitute Products

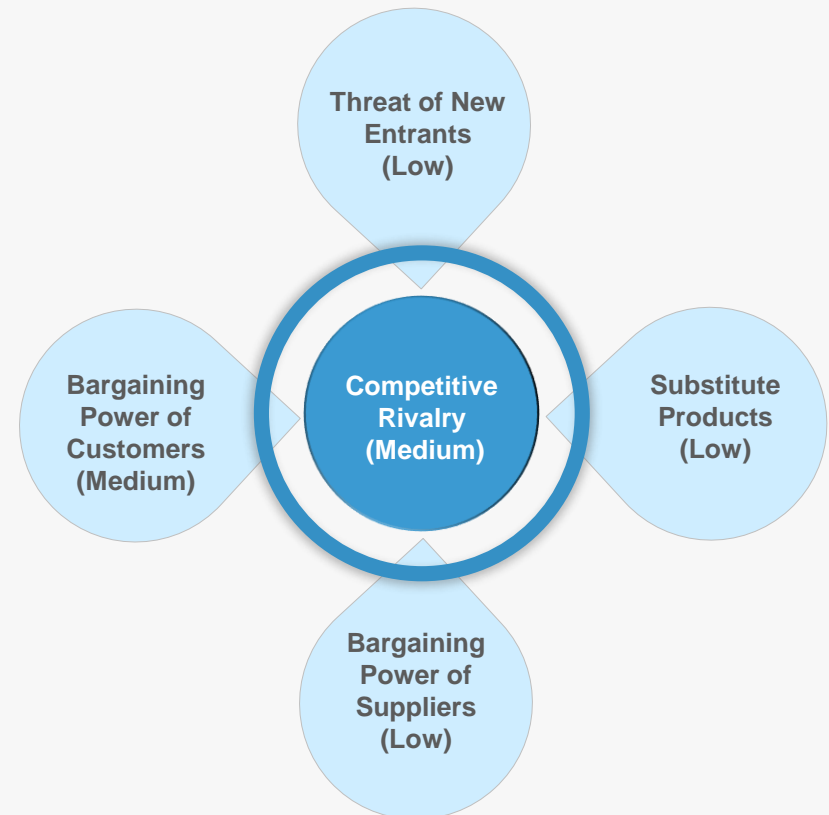
- Threat from substitutes is low
- Other substitutes such as solar and wind plants are less developed compared to electrical transformers

Bargaining Power of Suppliers

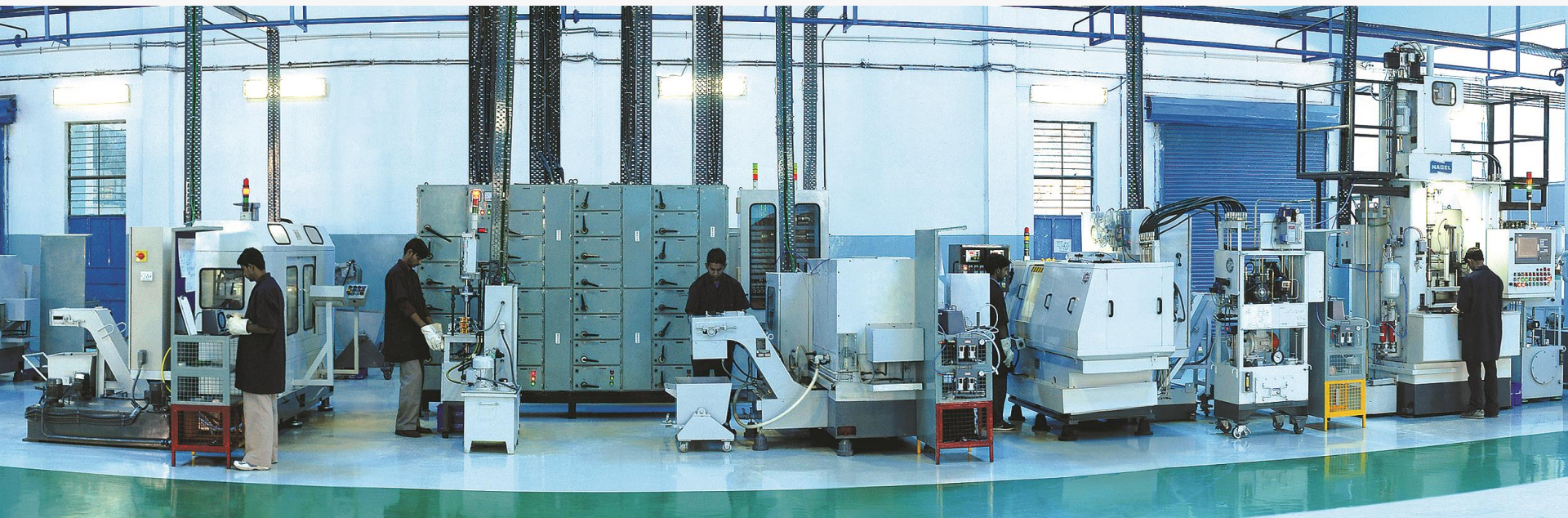
- Bargaining power of suppliers is low
- Suppliers (steel, aluminium) tend to have longer term contracts with the companies

Bargaining Power of Customers

- Bargaining power is medium, following high price sensitivity
- Buyers are limited and majorly government agencies, which lend higher negotiating power



ELECTRICAL MACHINERY



STRATEGIES ADOPTED

AUGUST 2015

STRATEGIES ADOPTED

New technologies

- High voltage technology is being developed in the electrical equipment industry, for economical power transmission
- Firms are diversifying into nuclear reactor business, as government wants to increase its nuclear power base

Capacity addition

- India plans to increase investment in infrastructure (including electricity), as it lags behind other countries
- With more capacity addition in power sector, demand for electrical machinery would rise, prompting the companies to increase their production capacity

Promotion of R&D

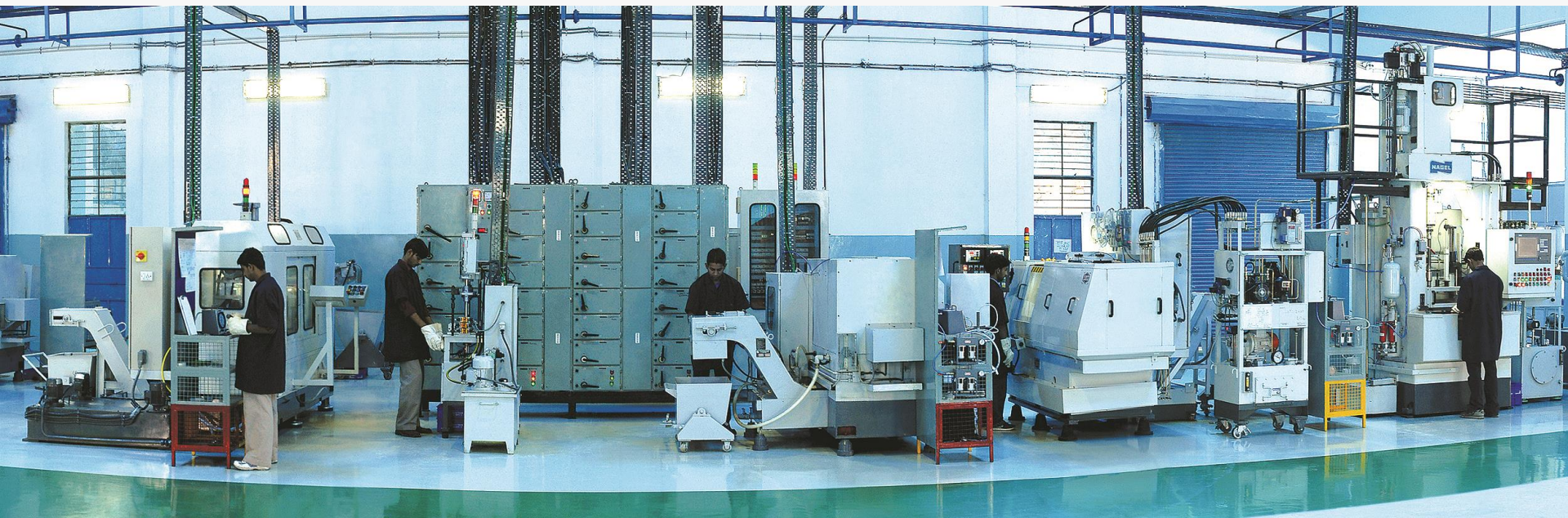
- Government is helping companies enhance the level of research to match the best in the world
- Government has relieved custom duties on some equipment
- Companies, too, are enhancing their R&D departments to take advantage of the situation

Skill upgradation & incentives

- Skill upgradation is necessary as firms need to have the desired talent pool
- The government plans to set up the Electrical Equipment Skill Development Council (EESDC) which would focus on identifying critical manufacturing skills required for the electrical machinery industry
- It is enhancing export incentives by removing export barriers

Source: Draft Indian Electrical Equipment Industry Mission Plan (2012-2022), TechSci Research

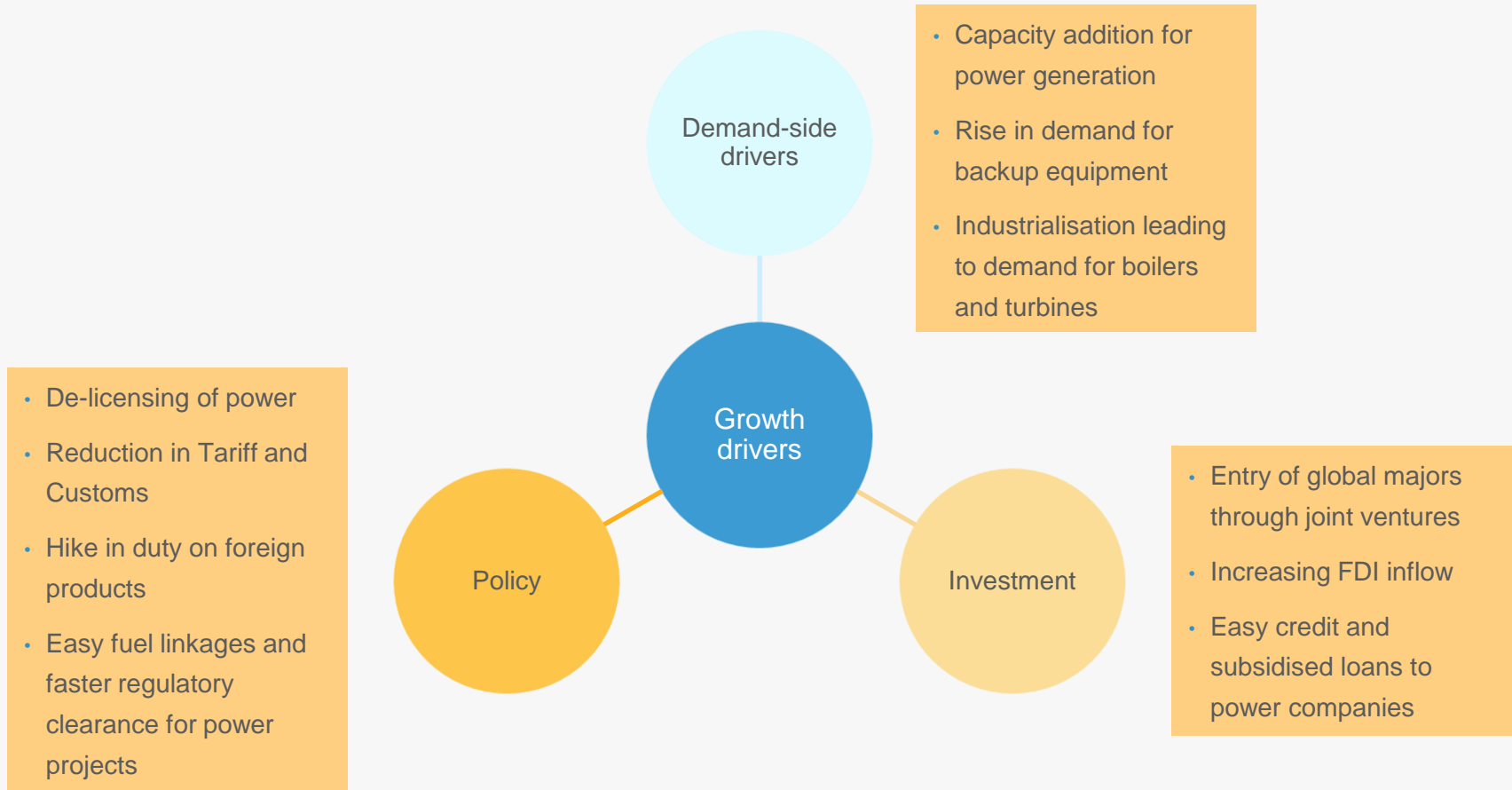
ELECTRICAL MACHINERY



GROWTH DRIVERS

AUGUST 2015

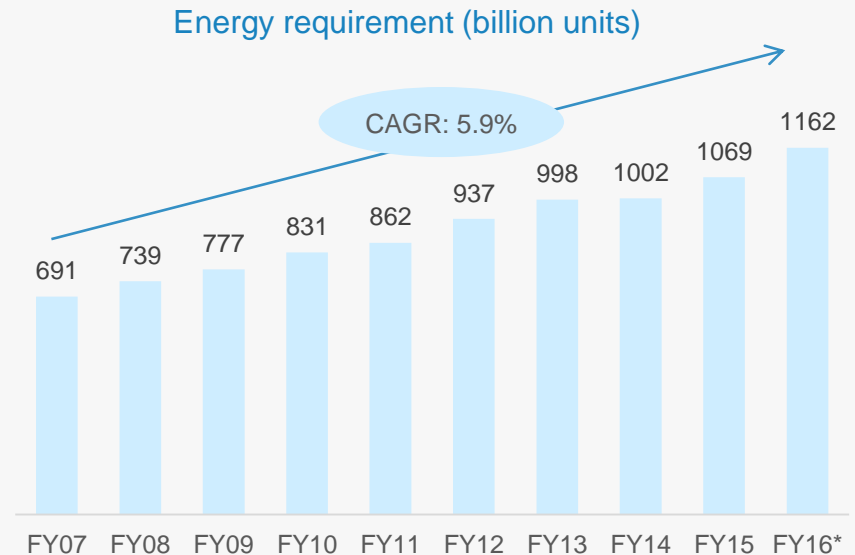
GROWTH DRIVERS OF ELECTRICAL MACHINERY SECTOR



Source: TechSci Research

INCREASING POWER DEMAND LEADING TO CAPACITY AUGMENTATION

- * India's energy requirement expanded at a CAGR of 5.9 per cent over FY07–16 to 1,162 billion units
- * The rising demand for energy has led to increasing capacity addition for power generation

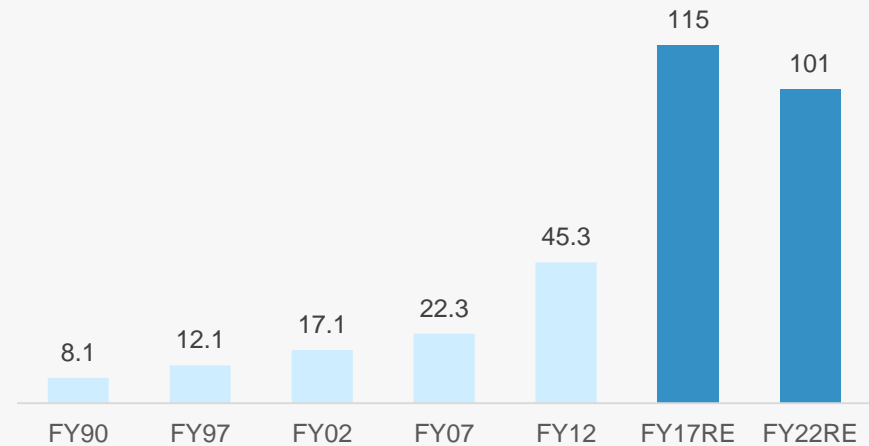


Source: CEA, TechSci Research
Note: CEA - Central Electrical Authority
* FY16- Expected

CAPACITY AUGMENTATION RESULTING IN INCREASING DEMAND FOR ELECTRICAL MACHINERY

- * Increasing investments in capacity has resulted in rising demand for power generation and transmission equipment
- * UPA government has planned to add 118536 MW, of this 51,795 MW was added in first two years, while the remaining 66,740 MW was planned to add by 2017. Moreover, the current government hopes to double this capacity by 2017. In that, current government achieved 46,450 MW capacity addition as on May'15.
- * The increase in capacity during the 11th Five-Year Plan (FY07–12) stood at 45,300 MW by the end of 11th Five-Year Plan
- * The figure is more than five times the corresponding one in 1990 (8.1 MW)
- * Total capacity addition in 2014–15 was 22,566.31 MW which was exceeding the target of 17830.8 MW.
- * As on May;15, around 46.5 MW of power generation has been achieved. In addition around 1100 new census villages were connected through the grid.

Capacity addition for power generation in the recent Five-Year Plans ('000 MW)



Source: Ministry of Power, TechSci Research, Central Electricity Authority
Note: RE – Revised Estimates

FAVOURABLE POLICIES HAVE AIDED THE SECTOR

De-licensing

- The electrical machinery industry has been de-licensed; 100 per cent FDI is allowed in the sector
- This has facilitated the entry of global majors into the electrical machinery industry in India

Tariffs & custom duties

- Government has removed tariff protection on capital goods
- Government has lowered custom duties on a range of equipments
- Relatively lower custom duties; 5.0 per cent for power generation equipment and 7.5 per cent for T&D

Initiatives to increase power generation

- Planned capacity addition of 115 GW in the 12th Five-Year Plan. The government is targeting to provide 24/7 power by 2022.
- Through the Accelerated Power Development Reform Programme, the government plans to provide reliable, affordable and high-quality power to all

National Electricity Policy (NEP)

- The government aims to achieve per capita electricity consumption of 1,000 kWh through its “Power for all by 2012” mission under NEP

SEZ

- The government has cleared significant number of SEZs for the engineering sector across the country; electrical machinery is a part of the sector
- Delhi Mumbai Industrial Corridor being developed across seven states could boost the engineering sector

Source: Ministry of Power, TechSci Research

VISION 2022 FOR INDIAN ELECTRICAL EQUIPMENT INDUSTRY

Vision statement

- To make India the country of choice for the production of electrical equipment and reach an output of USD100 billion by balancing exports and imports

Focus on industry competitiveness

- To focus on technology and R&D and bring it on par with global benchmark, the government has lowered customs duties on a range of equipment

Identify skills to support industry's requirement

- The government plans to set up the Electrical Equipment Skill Development Council (EESDC) which would focus on identifying critical manufacturing skills required for the electrical machinery industry

Develop and strengthen support infrastructure

- The government plans to establish electrical equipment industry clusters
- It plans to take steps to enhance product-testing infrastructure in the country

Increase share in export market

- The government plans to provide credit support to economically less-developed export markets
- It aims to create a dedicated fund for EXIM bank to support exporters in the electrical machinery industry

Source: Ministry of Power, TechSci Research

SPECIAL ECONOMIC ZONES (SEZs) WILL PROMOTE EXPORTS ... (1/2)

Developer	Location	Products
M/s Essar Hazira SEZ	Hazira, Gujarat	Engineering
Gujarat Industrial Development Corporation Ltd (GIDC)	Gandhinagar, Gujarat	Electronic products
N.G. Realty Pvt Ltd	Ahmedabad, Gujarat	Engineering
E. Complex Pvt Ltd	Amreli, Gujarat	Engineering
Dishman Infrastructure Ltd	Ahmedabad, Gujarat	Engineering
Ansal Properties and Infrastructure Ltd	Sonepat, Haryana	Engineering
Raheja Haryana SEZ Developers Pvt Ltd	Gurgaon, Haryana	Engineering
Ansal Kamdhenu Engineering SEZ Ltd	Sonepat, Haryana	Engineering
Karnataka Industrial Areas Development Board	Shimoga, Karnataka	Engineering
Suzlon Infrastructure Ltd	Mangalore, Karnataka	Port-based for high-tech engineering products
Maharashtra Industrial Development Corporation (MIDC)	Satara, Maharashtra	Engineering
Township Developers India Pvt Ltd	Pune, Maharashtra	Engineering
Vividha Infrastructure Pvt Ltd	Patiala, Punjab	Engineering

Source: SEZ India, TechSci Research

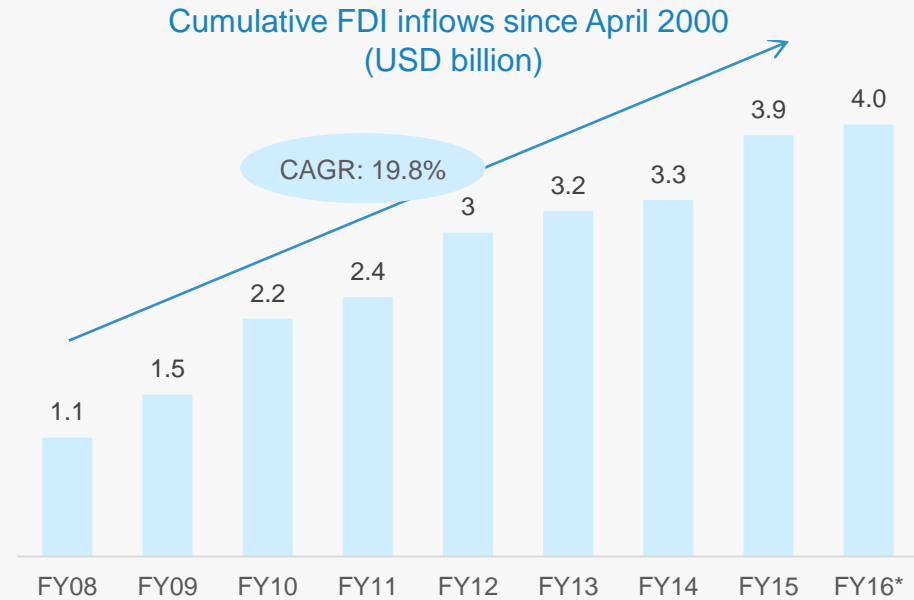
SPECIAL ECONOMIC ZONES (SEZs) WILL PROMOTE EXPORTS ... (2/2)

Developer	Location	Products
New Chennai Township Pvt Ltd	Kanchipuram, Tamil Nadu	Engineering
Perundurai Engineering SEZ by SIPCOT	Erode, Tamil Nadu	Engineering
Uttar Pradesh State Industrial Development Corporation (UPSIDC)	Kanpur, Uttar Pradesh	Engineering

Source: SEZ India, TechSci Research

FOREIGN INVESTMENTS FLOWING IN; RISE IN FDI INFLOWS

- * Cumulative FDI inflows during April 2000 to May 2015 stood at USD4.0 billion
- * Electrical machinery contributes around 1.56 per cent of the total FDI inflow in India as on May'15



Source: Department of Industrial Policy & Promotion, TechSci Research
Note: FY08 - Cumulative from April 2000 to March 2008 and so on
*FY16- As on May'15

RISE IN M&A ACTIVITY

- * Companies seek inorganic growth by targeting foreign and domestic players
- * Crompton Greaves acquired the smart grid automation company ZIV Group for EUR150 million
- * In 2011, Schneider Electric bought 74 per cent stake in Luminous Power Technologies Pvt Ltd for USD290 million
- * In 2010, Legrand acquired the switch gear business of Indo Asian Fusegear for USD127.6 million

Major M&A deals

Target	Acquirer	Type	Year
AEG Power Solutions India	Toshiba Mitsubishi-Electric	Acquisition	2014
RS Infosystems Pvt Ltd	Advance Metering Technology	Acquisition	2013
Maruti Weld Pvt Ltd	Voestalpine Bohler Welding	Acquisition	2013
Henikwon Corporation	Larsen & Toubro	Acquisition	2012
ZIV Group	Crompton Greaves	Acquisition	2012
Schneider Electric Infra Ltd	Energy Grid Automation Ltd	Acquisition	2012
Alstom T&D India Ltd	Grid Equipments Ltd	Acquisition	2012

Source: Thomson Banker, Edelweiss Research, Assorted News articles, TechSci Research

BRIGHT PROSPECTS LURE GLOBAL MAJORS

Global majors entering through JV

Joint Venture	Indian partner	Foreign partner
L&T - MHI	51%	49%
BGR - Hitachi	70/74%	30/26%
Thermax - Babcock	51%	49%
Bharat Forge - Alstom	51%	49%
Toshiba - JSW	25%	75%
GB Engineering - Ansaldo	15%	85%

Boiler capacities planned through JV

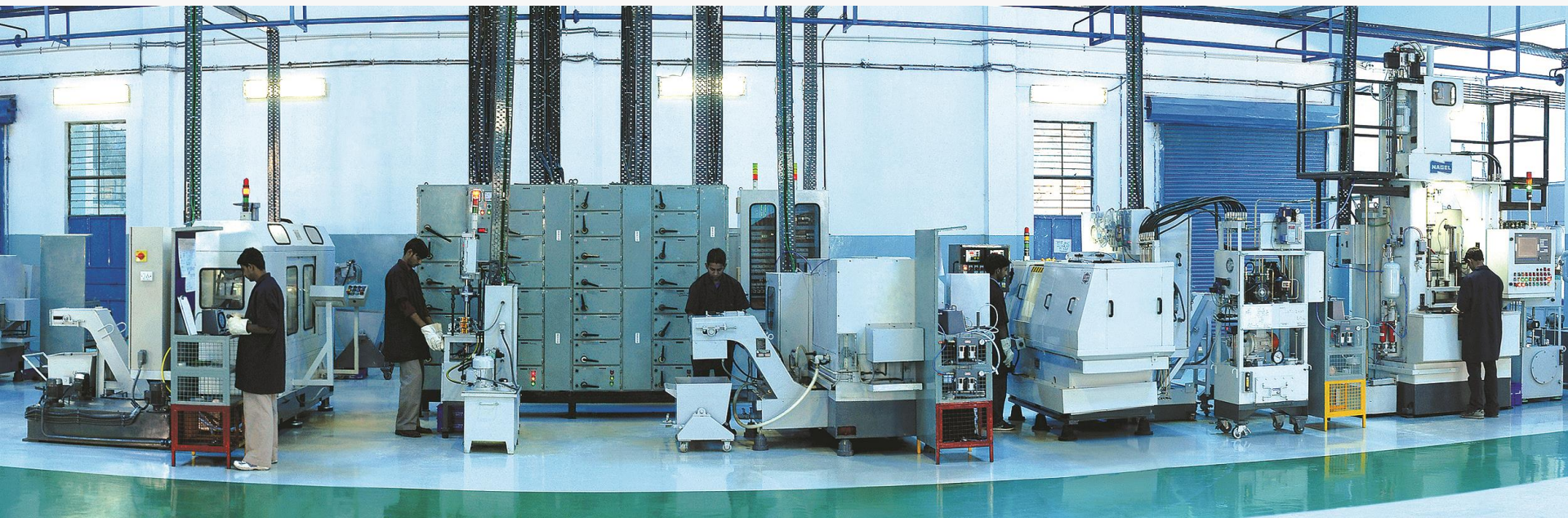
Companies in JV	Capacity (MW)
L&T – MHI	4,000
BGR – Hitachi	4,000
Thermax- Babcock	3,000
Bharat Forge - Alstom	2,000

Turbine capacities planned through JV

Companies in JV	Capacity (MW)
Toshiba – JSW	5,000
GB Engineering Ansaldo	3,000
L&T – MHI	4,000
BGR – Hitachi	4,000

Source: Edelweiss Research, TechSci Research
Notes: JV – Joint Venture, MHI – Mitsubishi Heavy Industries

ELECTRICAL MACHINERY



OPPORTUNITIES

AUGUST 2015

GROWTH OPPORTUNITIES IN ELECTRICAL MACHINERY INDUSTRY

Nuclear power generation

- India currently operates 20 atomic reactors which produce 4,780 MW of electricity and has set an ambitious target of generating 63,000 MW nuclear power by 2032
- Generated 36,102 GWh of power during FY2015, up from 34,228 GWh in FY2014
- Capacity factor of these reactors increased to 83 per cent in FY2014 from 63 per cent in FY2007
- With many bilateral nuclear agreements in place, India is expected to become a major hub for manufacturing nuclear reactors and associated components

Power capacity addition

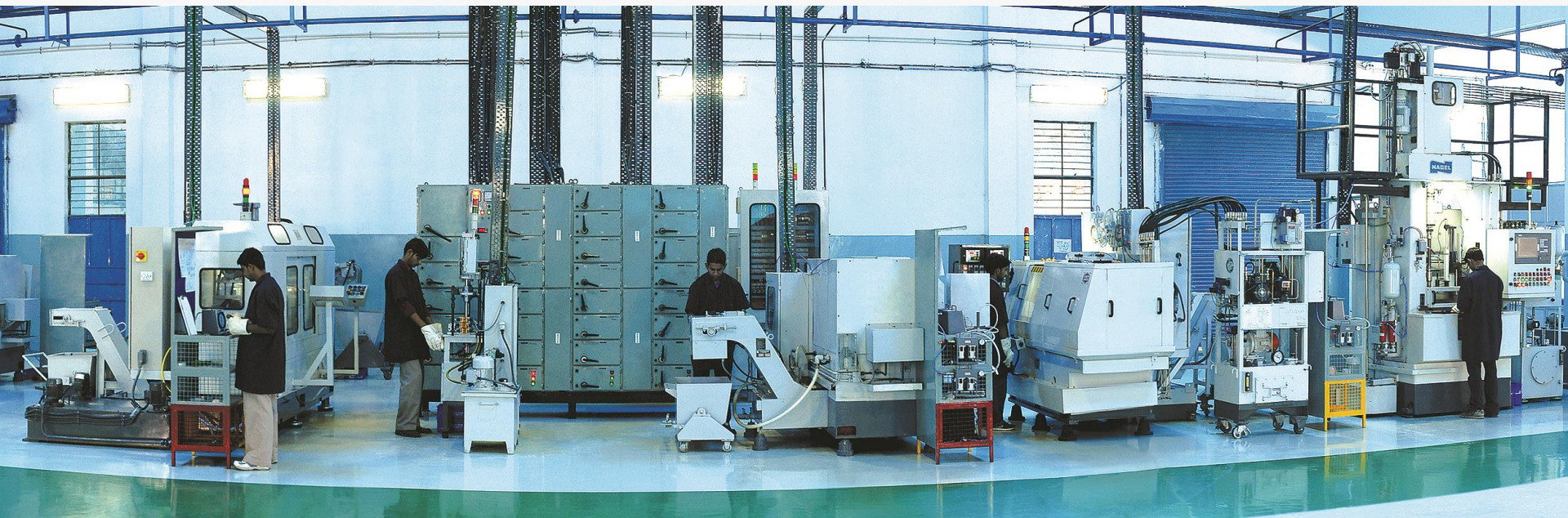
- Market-oriented reforms, such as the target of 'Power For All' by 2012 and plans to add 115 GW of capacity by 2017 and 101 GW by 2022, provide high incentives for capacity addition in power generation, which would increase the demand for electrical machinery
- Foreign participation in the development and financing of generation and transmission assets, engineering services, equipment supply and technology collaboration in nuclear and clean coal technologies is expected to increase

High-voltage technology

- Power transmission in India, which is currently carried out largely in the 220 KV and 400 KV range, is expected to move up to a higher range of 765 KV and high-voltage direct current
- This presents a significant opportunity to manufacturers with capabilities in high-voltage (HV) to develop technology that can handle the need of such high voltages in the country

Source: TechSci Research
Notes: KV - Kilo Volts, MU - Million Units

ELECTRICAL MACHINERY



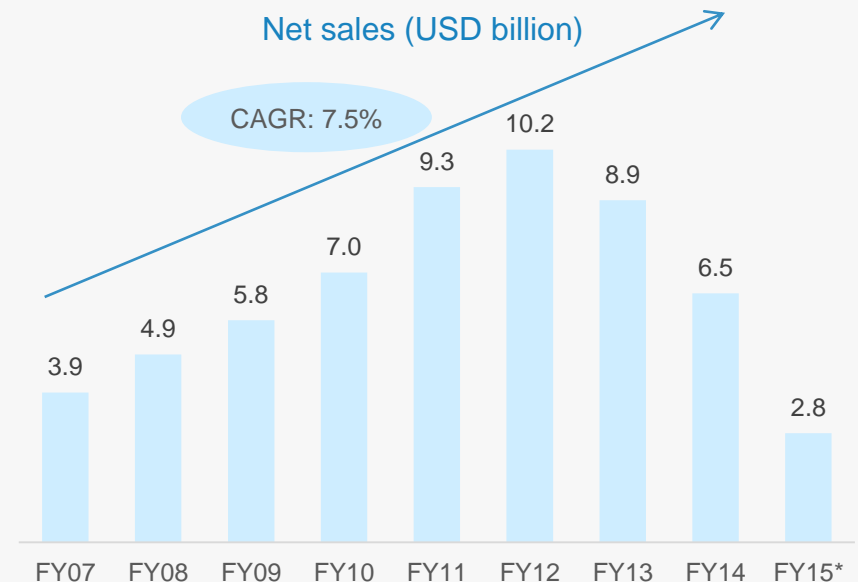
SUCCESS STORIES

AUGUST 2015

BHEL – MAINSTAY OF THE ELECTRICAL MACHINERY INDUSTRY ... (1/2)

Salient features

- One of the largest engineering and manufacturing companies with 'Maharatna' status
- One of the major Integrated Power Plant Equipment (IPPE) manufacturers in the world with operations in over 75 countries
- Profit-making since 1971–72
- Installed base of more than 124,064 MW
- 17 manufacturing units, two subsidiaries, five joint ventures, and over 150 project sites
- Accounted for over 57 per cent of India's total installed generating capacity in FY14
- Net sales increased over FY07–14 at a CAGR of 7.5 per cent
- Net sales of USD6.5 billion in FY14

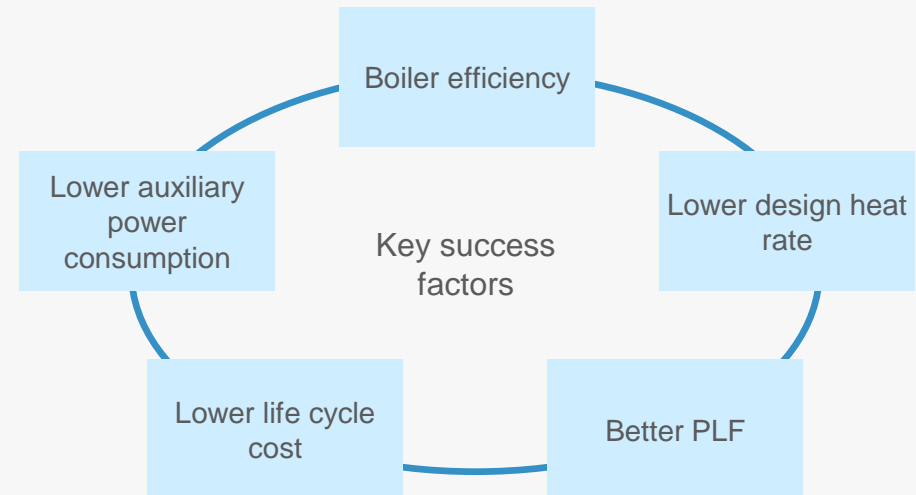


Source: Company Reports, TechSci Research
Note: Maharatna is the title given to nine Public Sector Enterprises by the Government of India having comparative advantages
* FY15- 9 months data (Till December'14)

BHEL – MAINSTAY OF THE ELECTRICAL MACHINERY INDUSTRY ... (2/2)

Recent Awards and Recognitions

- Cumulative power projects installed worldwide crossed 1,50,000 MW by FY14
- First 800 MW Boiler synchronized for APPDCL at Krishnapatnam in 2014
- Received PSE Excellence award 2014 for R&D and Technology development
- ICAI National award (2013) for excellence in Cost Management for ninth consecutive year
- Conferred the PSE Excellence Award by Indian Chamber of Commerce (ICC) in 2013
- Conferred the ICAI National Award for Excellence in Cost Management in 2012
- Awarded “Maharatna” status by the Indian government (2013)
- Golden Peacock Award 2011 for Occupational Health and Safety (2011)
- SCOPE Meritorious Award 2010–11 for Best Practices in Human Resource Management
- Intellectual Property Award from the Government of India (2011)
- DSIJ Gentle Giant Award from the Government of India (2011)
- CII-Thompson Reuters Innovation Award (2010)



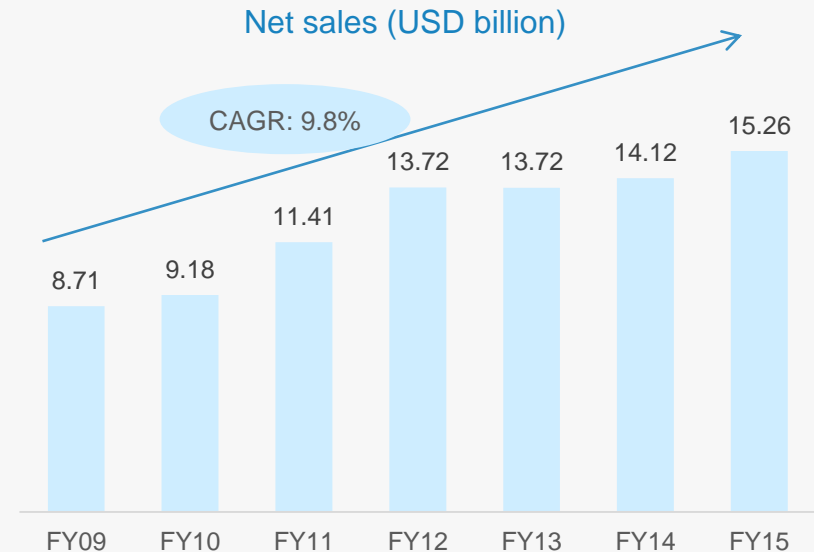
Notes: PLF - Plant Load Factor,
'Navratna' is one of the designations given to public sector enterprises based on their profitability and there by granted certain autonomy

L&T – ONE OF INDIA’S LEADING PLAYERS IN THE SECTOR ... (1/2)

Salient features

- India’s largest E&C company with interests in projects, infrastructure development, manufacturing, IT & financial services
- Enjoys AAA rating with stable outlook from CRISIL and LAAA from ICRA
- Turnover increased at a CAGR of 9.8 per cent to USD15.26 billion over FY09–15
- FY15 net sales increased to USD15.26 billion from USD14.12 billion in FY14

Note: E&C – Engineering & Construction



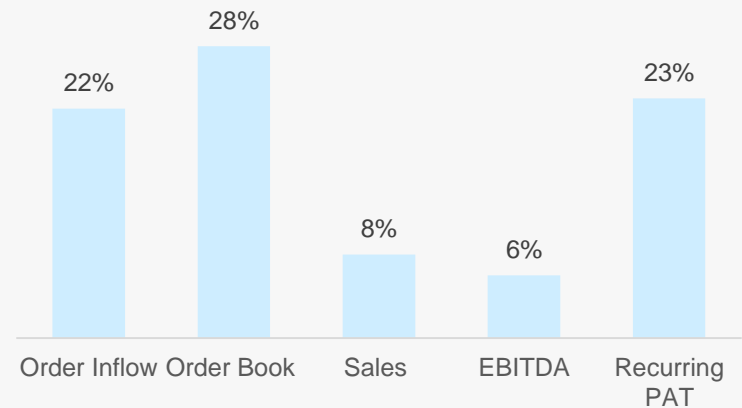
Source: Company reports, TechSci Research

L&T – ONE OF INDIA’S LEADING PLAYERS IN THE SECTOR ... (2/2)

Recent Awards and Recognitions

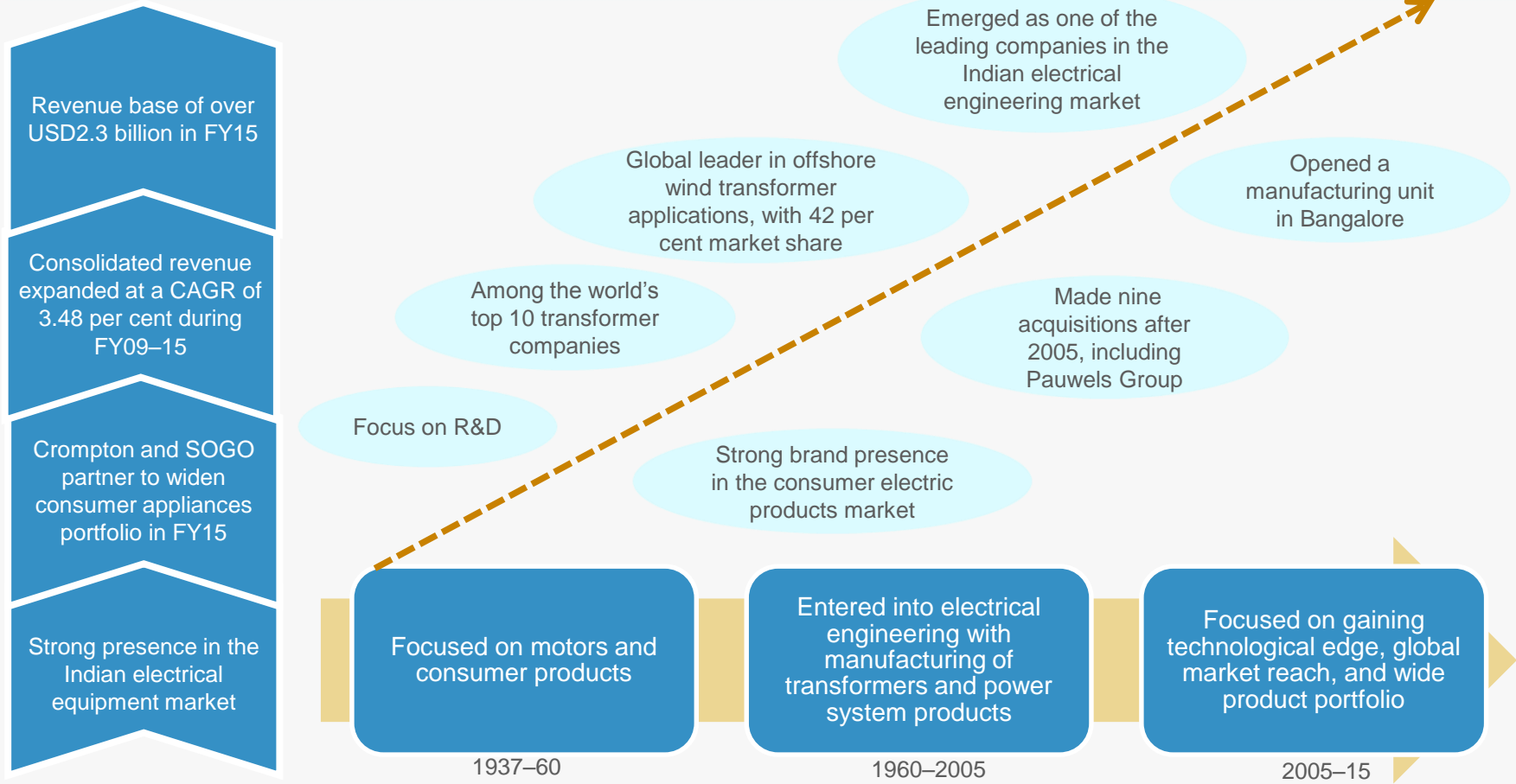
- Won award for “Best Attractive Employer” in the infrastructure sector
- Won Best Sustainability Award by World CSR Congress in 2014
- Won NDTV Profit Business Leadership Award in 2013
- Won CNBC TV18’s Infrastructure Leader of the Year Award 2013
- CNBC TV18’s Infrastructure Excellence Award 2012
- National Award for Export Excellence (2012)
- ICC’s Corporate Governance and Sustainability Vision Award 2012
- Green Business Leadership Award (2011)
- Thought Leader Brands in India (2011)
- Golden Peacock Award for CSR (2011)
- ‘India’s Most Respected Company’ in Infrastructure (2011)
- ‘India Shining Star CSR Award’ (Wockhardt Foundation, 2011)

Increase in Operational performance Parameters of FY15 as compared to FY14



Notes: CRISIL - Credit Rating and Information Services of India Ltd,
ICRA - Investment information and credit rating agency of India
CSR - Corporate Social Responsibility, Company website

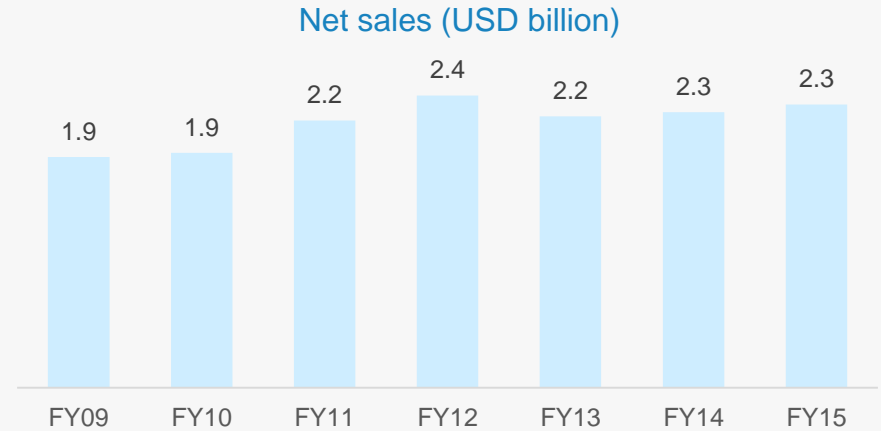
CROMPTON GREAVES: GAINING GLOBALLY ... (1/2)



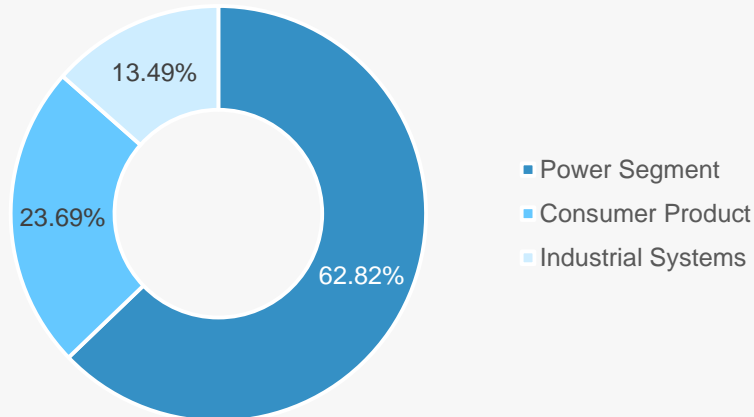
Source: Crompton Greaves website; TechSci Research

CROMPTON GREAVES: GAINING GLOBALLY ... (2/2)

- * Crompton Greaves established its international manufacturing footprint in 2005 by acquiring Belgium-based Pauwels Group
- * The company's successful acquisitions include Ganz, Hungary, in 2006; Microsol, Ireland, in 2007; Sonomatra, France; MSE, USA, in 2008; and PTS, UK, in 2011.
- * Overseas market accounts for about 50 per cent of revenues

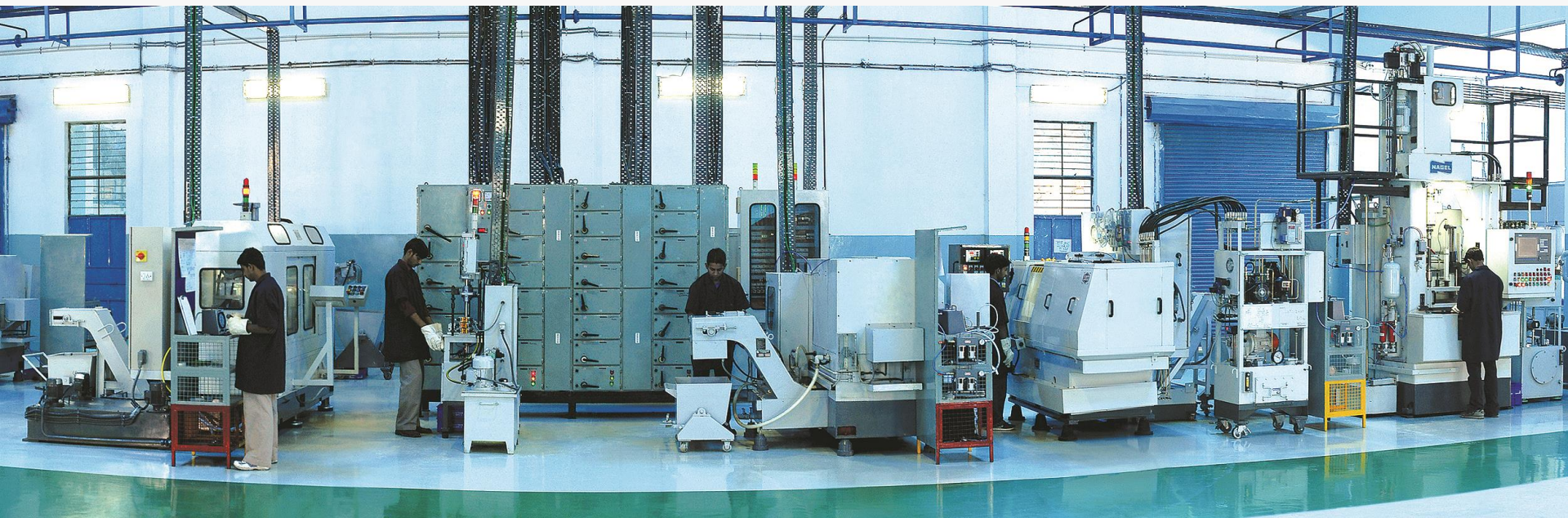


Segmental revenue (FY15)



Source: Company reports, Company website, TechSci Research

ELECTRICAL MACHINERY



USEFUL INFORMATION

AUGUST 2015

Indian Electrical & Electronics Manufacturer's Association (IEEMA)

501, Kakad Chambers, 132,
Dr Annie Besant. Road,
Worli, Mumbai 400018.
Tel: +91-22-2493 0532, +91-22-2493 0532 / 6528 / 6529
Fax: +91-22-2493 2705
mumbai@ieema.org

Engineering Export Promotion Council (EEPC)

'Vanijya Bhawan', 1st Floor
International Trade Facilitation Centre,
1/1, Wood Street,
Kolkata, West Bengal-700016.
Phone: 91-33-22890651, 22890652
Fax: 91-33-22890654
E-mail: eepec@eepecindia.org

- * **BTG:** Boilers, Turbines, Generators
- * **BHEL:** Bharat Heavy Electricals Limited
- * **CAGR:** Compounded Annual Growth Rate
- * **CEA:** Central Electrical Authority
- * **DHI:** Department of Heavy Industries
- * **E&C:** Engineering & Construction
- * **EEPC:** Engineering Export Promotion Council
- * **FDI:** Foreign Direct Investment
- * **FY:** Indian Financial Year (April to March)
- * **GW:** Giga Watt
- * **HVDC:** High Voltage Direct Current
- * **KV:** Kilo Volts

- * **KVA:** Kilo Volt Ampere
- * **L&T:** Larsen and Toubro
- * **MHI:** Mitsubishi Heavy Industries
- * **PLF:** Plant Load Factor
- * **SEZ:** Special Economic Zone
- * **USD:** US Dollar
- * Wherever applicable, numbers have been rounded off to one decimal

EXCHANGE RATES

Exchange rates (Fiscal Year)

Year	INR equivalent of one USD
2004-05	44.81
2005-06	44.14
2006-07	45.14
2007-08	40.27
2008-09	46.14
2009-10	47.42
2010-11	45.62
2011-12	46.88
2012-13	54.31
2013-14	60.28
2014-15(Expected)	60.28

Exchange rates (Calendar Year)

Year	INR equivalent of one USD
2005	43.98
2006	45.18
2007	41.34
2008	43.62
2009	48.42
2010	45.72
2011	46.85
2012	53.46
2013	58.44
2014	61.03
2015(Expected)	61.03

Average for the year

DISCLAIMER

India Brand Equity Foundation (“IBEF”) engaged TechSci to prepare this presentation and the same has been prepared by TechSci in consultation with IBEF.

All rights reserved. All copyright in this presentation and related works is solely and exclusively owned by IBEF. The same may not be reproduced, wholly or in part in any material form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this presentation), modified or in any manner communicated to any third party except with the written approval of IBEF.

This presentation is for information purposes only. While due care has been taken during the compilation of this presentation to ensure that the information is accurate to the best of TechSci and IBEF’s knowledge and belief, the content is not to be construed in any manner whatsoever as a substitute for professional advice.

TechSci and IBEF neither recommend nor endorse any specific products or services that may have been mentioned in this presentation and nor do they assume any liability or responsibility for the outcome of decisions taken as a result of any reliance placed on this presentation.

Neither TechSci nor IBEF shall be liable for any direct or indirect damages that may arise due to any act or omission on the part of the user due to any reliance placed or guidance taken from any portion of this presentation.