



EMC LTD.

SPANNING POWER GLOBALLY

Since 1953



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VISION & MISSION



Our Vision

Setting the standard of excellence in modern power systems globally.

Our Mission

- **Provide end-to-end integrated power system solutions globally through Best-in-Class Technology, Quality and Safety.**
- **Continuous improvement of processes to ensure customer satisfaction.**
- **Create an environment for our people to pursue excellence through continuous learning.**



INTRODUCTION



Strong Foundation

- “EMC Ltd.” formerly known as Electrical Manufacturing Company Ltd.
- Established in 1953
- **More than 6 decades of experience** in the T&D sector.
- **Qualified for all segments** in the T&D sector.

A Leading Player

- **Offering complete turnkey solutions** in power transmission systems and associated sub-systems.
- In the **elite group of companies qualified to execute 765kV** transmission line projects and up to **765kV sub-stations** and industrial power systems.
- **Qualified to execute EHV Transmission Lines up to 400kV** in leading European and African Countries
- In-house manufacturing facilities: conductors and hardware along with towers & tower test bed.

Strong Execution Capabilities

- Built over **16,000 kms** of transmission lines of up to **765kV**.
- Delivered large, **complex projects** across **all voltage platforms** and in **challenging climatic and topographic conditions** that include deserts, snowfields, seas, mountainous regions and thick forests as well as in exigent socio-political conditions including war-torn regions.

High Margin Business

- Huge market opportunity in the **premium 400kV – 765kV segment**.
- High entry barriers and minimal competition, therefore revenue and **margins are high**.
- EMC among very **few players (6-7)** operating in this segment.

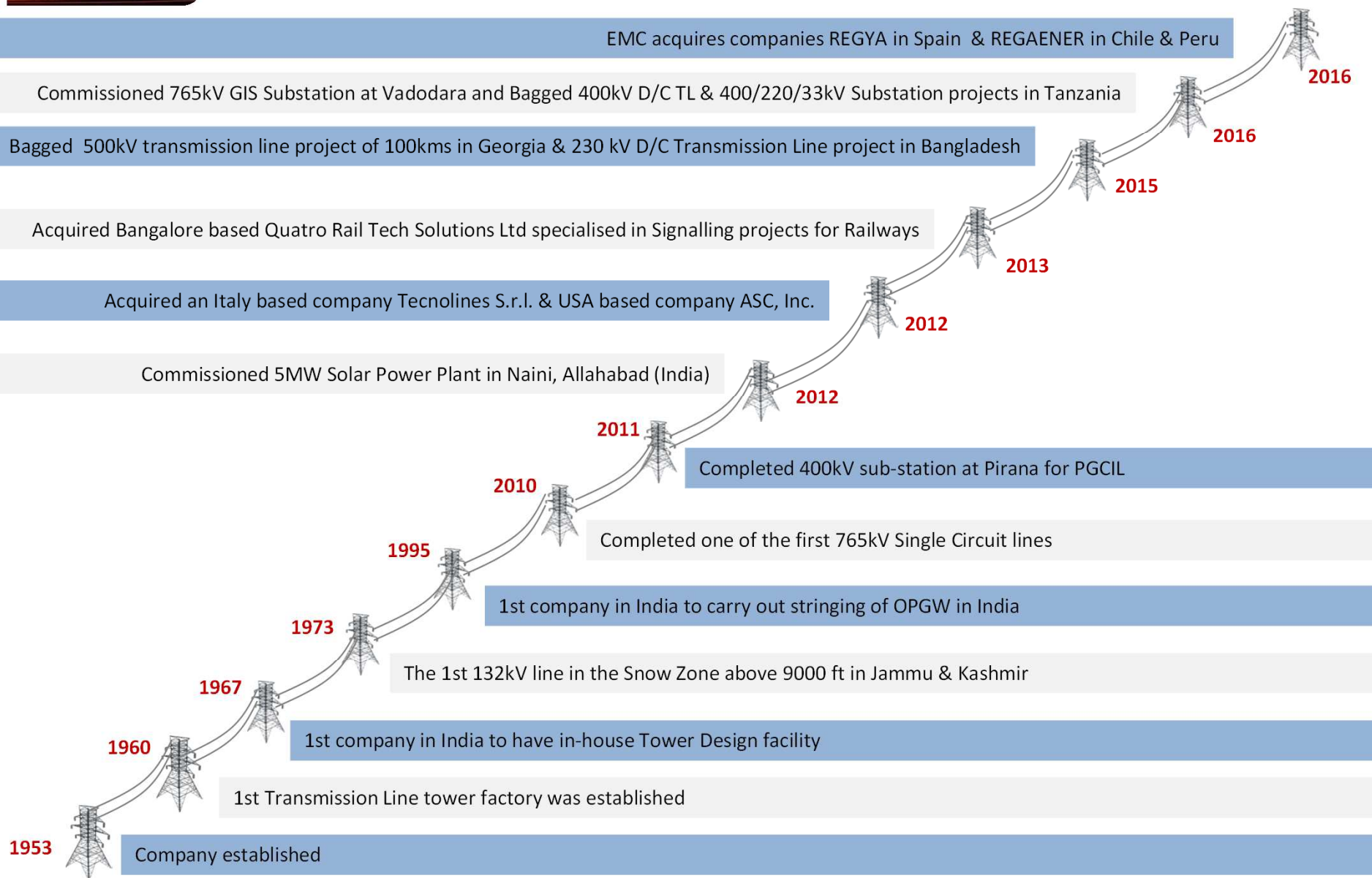
Talented Human Resource

- Highly experienced professionals from the EPC industry.
- It has a strong team of more than 150 talented engineers.
- Organisational strength of over 1500 employees in total.

Being an established player in the Power Systems industry with turnkey solutions, excellent project execution and skilled manpower, EMC has great advantage over the new entrants and other established players in the sector.



MILESTONES & ACHIEVEMENTS





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TRANSMISSION LINE PROJECTS





OPERATING SEGMENTS (1/6)



Transmission Line Projects

Turnkey solutions in transmission line projects up to 765kV and ready for 1,200kV projects

Activities

Supply Contracts:

- Transmission line towers including Bolts & Nuts and Tower Accessories, Line Hardware, Insulators and Earth-wire.

Construction Activities:

- Survey, detailed soil investigation, civil construction of foundations, erection of towers, stringing of conductors and testing & commissioning of line.

Key Projects Undertaken

- Supplied over 450,000 mt of Towers including 40,000 mt overseas.
- Built over 16,000 kms lines for many utilities in India and abroad including Power Grid, NTPC, DVC, various State Utilities etc. Presently executing 17 orders of 400kV & 765kV of over 150,000 mt of Towers and 2550 kms of lines.
- 765kV: Currently executing 6 contracts of over 1000 kms for PGCIL.
- 400kV: Completed over 4,000 kms and currently executing 11 lines of over 1,200 kms.
- Up to 220kV: Completed over 5,700 kms, of which approx 1,200 kms are outside India.
- Currently executing one 400kV transmission line project of 100kms in Georgia.

Features

- First ISO-9001 certified company in India in transmission line projects.
- Also has been accredited with ISO 14001 & OHSAS 18001 certification by KVQA.
- Qualified to execute 765kV transmission line projects.

One of the leading Indian EPC player qualified for overhead Extra High Voltage transmission line up to 765kV



EHV SUBSTATIONS / DISTRIBUTION SYSTEM / INDUSTRIAL POWER DISTRIBUTION SYSTEM



EHV Substations



Distribution System

Industrial Power Distribution System





OPERATING SEGMENTS - (2/6)



EHV Substations / Distribution System / Industrial Power Distribution System

Operating Segments	EHV Substations	Distribution System	Industrial Power Distribution System (IPDC)
Activities under each Segment	<ul style="list-style-type: none"> EHV Substation projects up to 400 and 765kV. Supply contracts for major equipments & Auxiliary Systems of substations. Construction activities including erection, testing & commissioning as EPC contractor. 	<ul style="list-style-type: none"> 33 / 11kV HT/LT Substation & Distribution line up to consumer metering. Supply of equipments. Construction including erection, testing & commissioning as EPC contractor. 	<ul style="list-style-type: none"> Load Distribution Centre (LDC). Underground tunneling & electrical cabling & cable bridge. PLCC & SCADA installation, Ventilation & A/C Systems Plant illumination, Electrification, Street Lighting.
Projects Undertaken	<ul style="list-style-type: none"> Supply of equipment & materials and construction of 2X 765kV GIS Substation with for PGCIL as EPC contractor. The work includes Civil construction / Control Room Building / Fire Fighting system etc. 	<ul style="list-style-type: none"> Rural electrification work in Bihar, (33 / 11kV) under RGGVY Scheme. Electrification work in Maharashtra & J&K (33 / 11kV) under RAPDRP. The work also includes consumer metering in over 1500 villages. 	<ul style="list-style-type: none"> Civil & electrical contract for IPDC project of SAIL - IISCO's steel plant at Burnpur in a JV with Areva (Areva scope limited to supply of their own equipments), 13 sub-stations, 10 LDCs and over 5 kms of underground concrete tunnels for cable laying and 2 kms of cable ridges, 27,000 cu.mtrs RCC work. SCADA & Automation.



MANUFACTURING ACTIVITIES



Towers



Hardware & Conductors



**Signalling & Safety
Products**



**Auto & Defence
Components**



OPERATING SEGMENTS (3/6)



Manufacturing Activities

Operating Segments

Towers/ Structures

Hardware

Conductors

Activities under each segment

- Manufacturing facilities located at Kolkata, Naini & Raipur in India and Tulsa, Oklahoma in USA have best in class plant and technology that includes CNC machines and galvanizing plant

- Manufacturing of hardware fittings, and accessories suitable for overhead power transmission lines.

- Manufacturing of bare conductors and conductor accessories suitable for overhead power transmission lines.

Projects Undertaken

- Manufactured & supplied over 350,000 mt.
- Currently over 150,000 mt of orders in hand.

- Hardware Fittings & Accessories – 1st company in India to supply hardware fittings to NTPC.

- Conductors – manufactured & supplied over 30,000 kms including 7,000 kms of 61 strands ACSR “Moose”.



OPERATING SEGMENTS (3/6)



Manufacturing Activities

Operating Segments

Signaling & Safety Products

Alloy Forging & Machine Products

Activities under each segment

- Signaling Systems.
- Security & Surveillance Systems.
- Selective Telephone Systems.
- Intrusion Detection and Access Control.
- Anti Collision Device Systems.

- Manufacturing quality non-ferrous alloys, extrusions & forging and special aluminum alloy / copper components. Factory at Agarpara near Kolkata.

Projects Undertaken

- Remodelling of Chittagong station yard & Modification of Tongi Station and Block Interface between Tongi station in Bangladesh.
- New BG line from Surajpur Road, Pasla, Sonpur & Ramanujnagar station in SECR, Bilaspur and Salpura Station in WCR KOTA Division Electronic Interlocking system at Bhakarapet Station in SCR Guntakal

Under Execution

- Track side work & installation, testing & commissioning of Train Protection Warning System (TPWS) for Southern Railways, Chennai.

- Currently executing orders for Bajaj Auto, MACO Pvt. Ltd., LML Ltd.
- Ordnance Factories / Gun & Shell Factory, Rifle Factory, Small Arms Factory.
- Registration from prestigious ISRO, Bangalore for supply of Aluminum Alloy extrusion and forged items.



SOLAR POWER





SMART CITIES





OPERATING SEGMENTS (4/6)



Solar Power

Activities

- Committed to green power having commissioned a 5 MW Solar power plant at Naini, Allahabad.

Features

- Successfully commissioned on March 04, 2012 under GOI's Jawaharlal Nehru National Solar Mission (JNNSM).
- Has been selected against very tough competition among 400 participants and has already signed a Power Purchase Agreement (PPA) with NTPC Vidyut Vyapar Nigam Ltd. ensuring sale of power for the next 25 years.
- The plant is environment friendly and will provide sustainable & renewable energy.
- The first solar plant of its kind in the state of Uttar Pradesh, India.
- EMC also to gain the benefits of 'Carbon Credit' from this plant.



RAILWAY INFRASTRUCTURE



Railway Electrification



**Signaling, Telecommunication,
Safety & Security Systems**



SCADA



Civil & Infrastructure works



RAILWAYS – MARKET POTENTIAL (INDIA)



- Nearly 44,000 kms of existing lines need to be electrified. The potential value of these projects is approx \$3.1bn.
- 24,000 kms of rail electrification projects expected in the next 5 years.
- 6,000 kms of projects expected as part of the Dedicated Freight Corridor.
- Nearly 1,076 kms of Electrification, Signalling & telecom work valued at almost \$680mn for various Metro Rail projects across India.
- Metro Rail projects are expected across 29 cities in India over the next few years.
- Electrification, Signalling & Telecom, Track Laying including major and minor bridges enroute valued at almost \$660mn in the next 3 years under RVNL.
- In the next 5 years the business potential for Railway Electrification, Signalling & Telecom and other works is nearly \$2bn (excluding DFCC projects).
- Railway Projects Expected in India soon:

Project Type	Client	Value (\$ mn)
Ratlam – Kota, 348 RKM	CORE	19
Ahmedabad - Rajkot, Samakhiali – Mehsana, 525 RKM	CORE	47
Tiruchirapalli – Nagapatnam, 153 RKM	CORE	10
Gorakhpur - Kaptanganj – Valmikinagar, 96 RKM	CORE	6



RAILWAYS – MARKET POTENTIAL (INDIA)



Project Type	Client	Value (\$ mn)
Mansi-saharsa-Dauram Madhepura-Purnea-Katihar, 172 RKM	CORE	17
Samakhiyali-Gandhidam-Kandla Port- Mundra Port, 63 RKM	CORE	6
Manmad - Mudkhed – Dhone, 868 RKM	CORE	58
Hissar - Bhatinda – Suratgarh, 300 RKM	CORE	20
Jhansi - Manikpur, Khairar – Bhimsen, 409 RKM	CORE	27
Suratgarh – Phalodi, 336 RKM	CORE	22
Phalodi – Jodhpur, 148 RKM	CORE	10
Jodhpur – Bhildi, 300 RKM	CORE	20
Ankai – Parbhani, 275 RKM	CORE	18
Parbhani – Mulkhed, 81 RKM	CORE	5
Mudked – Medchel, 241 RKM	CORE	16
Umdanagar – Dhone, 269 RKM	CORE	18
Utretia - Rae Bareli - Amethi – Janghai, 254 RKM	RVNL	22
Hospet - Hubli - Vasco da Gama, 238 RKM	RVNL	21



RAILWAYS – MARKET POTENTIAL (INDIA)



Few Metro Projects Coming Up in India:

Client	Route Kms	Value (\$ mn)
MMRCL Line 2(Mumbai)	40	28
MMRCL Line 4(Mumbai)	32	22
JMRCL Phase II (Jaipur)	23	13
BMRCL Phase II (Bangalore)	72	23
CMRCL Phase II (Chennai)	104	26
Ahmedabad MEGA Phase II	30	15



OPERATING SEGMENTS (5/6)



Railway Electrification / Signaling

Operating Segments

Railway Electrification, Signaling, Telecommunication, Safety & Security Systems and Civil Works

Activities under each Segment

- Over Head Electrification (OHE), Traction Substation (TSS) & associated SCADA systems and General electrical work.
- Signaling, Telecommunication, Safety & Security System: design, engineering, installation, testing, commissioning, maintenance and development of technologies.
- Automatic Fare Collection Systems.
- Construct bridges, buildings (at stations & yards), platforms, etc.

Projects Won / Bid

- Under execution of Turnkey Basis 25 kV, 50 Hz, Single Phase OHE including TSS, SCADA & Electric General Works for prestigious client, CORE, Allahabad in 1) Vizianagaram - Singapur Road for 138.84 RKM / 369 TKMs 2) Kumedpur—Old Malda & Old Malda – Singhabad for 79 RKM/168 TKMs 3) Garwa Road(excl.) –Chopan—Singrauli—Shakti nagar for 257RKM(397TKM) and 4) Rewari-Phulera for 214 RKM (264TKM).
- Through its Subsidiary, EMC has successfully executed Signaling & Telecommunication turnkey jobs in India and overseas and currently executing Train Protection Warning System(TPWS) for Southern Railways, Chennai.

Partnerships

- Company would soon formalise partnerships through binding agreements with leading global companies on future cooperation for Railway infra projects.



OPERATING SEGMENTS (5/6)



Quatro Rail Tech Solutions Ltd, Bangalore (India)

Quatro Rail Tech Solutions Ltd (QRTS) provides Signalling, Telecommunication, Safety, Security and Train Diagnostic solutions for the Railways and Transportation domain in general.

▪ **EMC is the majority shareholder (60%) of (QRTS)**

- Company provides
- Design, engineering, supply, installation, testing, commissioning, maintenance, trading, innovation and development of technologies in the areas of Signalling, Telecommunication, Safety and security systems in the domain of Railways and Metro systems;
- Automatic Fare Collection Systems(AFCS), OHE and other Railway and Metro related systems;
- The Company provides consultancy in Signalling & Telecommunication.
- Have successfully executed & commissioned turnkey S&T projects as below :
 - 4 indoor stations of signalling solutions to Indoor systems of four stations of Adani's Sarguja Rail Corridor, and 1 station each of Salpura station & Bhakarapet stations
 - Turnkey S&T projects at Chittagong and Tongi stations in Bangladesh
 - Train Protection Warning System (TPWS) for S Rly for Thales
 - OHE job Rewari- Phulera section 264 TKM of CORE in association with EMC.



OPERATING SEGMENTS (5/6)



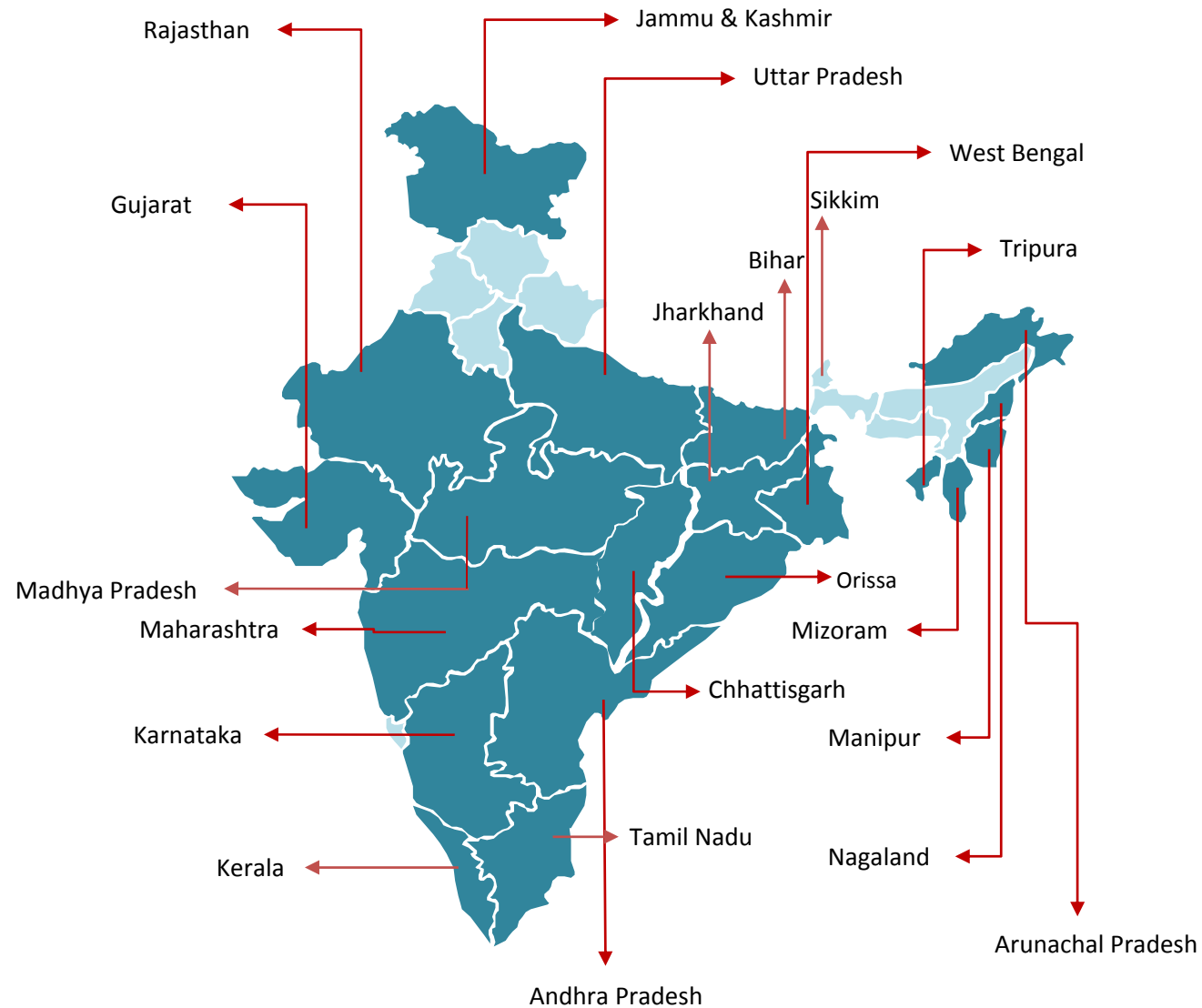
Railway Infrastructure Projects

Current Status of EMC in Railway Business.

SN	Tender details	State/ Region	Client	Status
1	Design, Supply, Erection, Testing & Commissioning of 25 kV, 50 Hz, Single Phase OHE including TSS, SCADA & Electric General Works on turnkey basis between Vizianagaram - Singapur Road for 369 TKMs	Andhra Pradesh	CORE Allahabad	Under execution.
2	Design, Supply, Erection, Testing & Commissioning of 25 kV, 50 Hz, Single Phase OHE including TSS, SCADA & Electric General Works on turnkey basis between Kumedpur–Old Malda & Old Malda – Singhabad for 168 TKMs	West Bengal	CORE Allahabad	Under execution.
3	Design, Supply, Erection, Testing & Commissioning of 25 kV, 50 Hz, Single Phase OHE including TSS, SCADA & Electric General Works on turnkey basis between Garwa Road-Chopan-Singrauli and Shaktinagar, Dhanbad Division, for 469 TKMs	Jharkhand	CORE Allahabad	Under execution.
4	Design, Supply, Erection, Testing & Commissioning of 25 kV, 50 Hz, Single Phase OHE including TSS, SCADA & Electric General Works on turnkey basis between Rewari-Phulera for 214 RKM (264TKM)	Haryana & Rajasthan	CORE Allahabad	Under execution.



PROJECT PRESENCE - INDIA





INTERNATIONAL BUSINESS





OPERATING SEGMENTS (6/6)



International Business- NORTH AMERICA



ASC, Inc., Tulsa, Oklahoma, USA

Since **1970**, ASC Inc. (Formerly, Advanced Steel & Crane Inc.) has provided Substation steel structures and components to major Electrical Utilities as well as many Rural Electric Cooperatives across the **United States** and **Canada**.

Today this company serves electric utilities by supplying transmission and sub-station structures and components. They also cater to general fabrication and metal processing needs.

▪ Facilities:

6 Buildings of total square footage of **28,117 sq. ft.** on approximately **4 acres** of property including 2 fabrication areas.

▪ Several Galvanizing facilities exist nearby.

▪ Product line:

○ **Utility Substation Steel Structures-** Structural Distribution/Transmission Steel & Lattice Products, square, round, folded plate or aluminum, with shop assembly if needed.

○ **Anchor Bolts and Cage**

▪ Customers: More than 70 customers, mainly utilities across North America.



OPERATING SEGMENTS (6/6)



International Business - EUROPE



TECNOLINES S.r.l., Italy

- Established in **1928**, Tecnolines S.r.l ("Company") specialises in executing EHV Transmission Line projects on a turnkey basis.
- **EMC** is the **majority shareholder** (90%) of Tecnolines. The balance is held by RDF Group (Italy).
- Tecnolines specializes in providing **EPC** services for Transmission lines ranging from **110-400kV**.
- Tecnolines has certified manpower , and sufficient equipment with centralized workshop at Pordenone (near Venice), Italy.
- Tecnolines is **pre-qualified** in all **Utilities** across Europe (including Scandinavian Countries) and Africa.
- Tecnolines in association with its partners is currently executing one **400kV transmission line project in Finland** and two **DC transmission projects (300kV and 400kV) in Sweden**.



OPERATING SEGMENTS (6/6)



International Business - EUROPE



REYGA, Spain

- Founded in 1992, Revilla y García, S.L. specializes in the development of a wide variety of electrical projects:
 - Transmission lines
 - Distribution lines
 - Substations, transformation centres, isolation and control
 - Wind farms
 - Solar facilities
 - Industrial electrical facilities: logistical centres, ports and combined cycles, among others
 - Maintenance - preventive and corrective, 24/7 service
- It has strong international presence, with various complex and significant projects completed in Portugal, France, Italy, Poland.



OPERATING SEGMENTS (6/6)



International Business – SOUTH AMERICA



REGAENER, Peru & Chile

- Regaener specializes in the development of a wide variety of electrical projects:
 - Transmission lines
 - Distribution lines
 - Substations, transformation centres, switching and control
 - Wind farms
 - Solar facilities
 - Industrial electrical facilities
- The company consists of personnel extensive experience in the sector and it is already Regaener
- It's has strong international presence, with various projects completed in Chile, Argentina, Brazil, Peru and Panama.

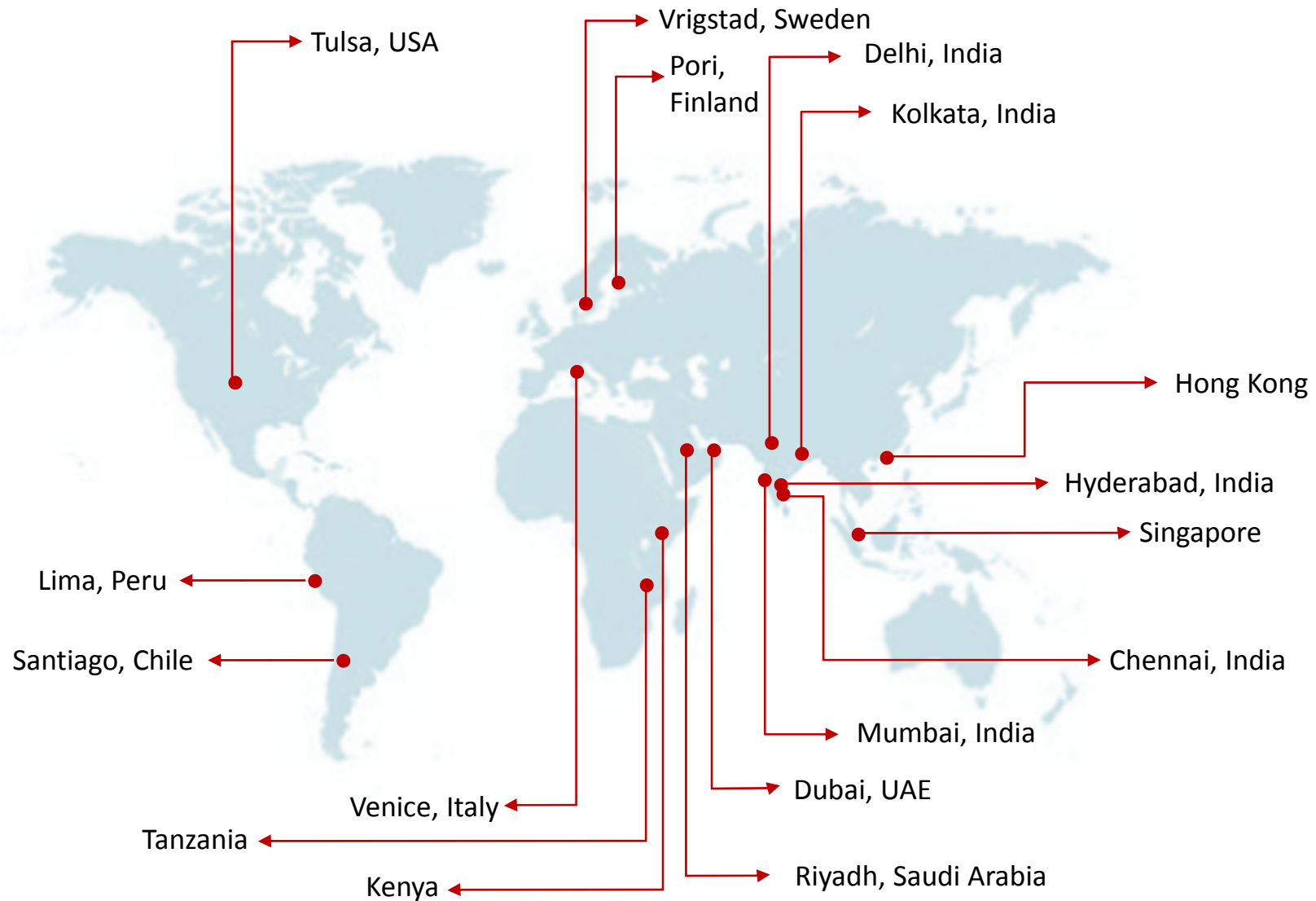


PROJECT PRESENCE - OVERSEAS





INDIAN & GLOBAL OFFICES





EMC GROUP STRUCTURE



EMC LIMITED

Subsidiary Companies

Tecnolines S.r.l., Italy

ASC, Inc., USA

EMC West Asia DMCC, Dubai

REGAENER, Peru & Chile

REYGA, Spain

EMC East Asia Ltd, Hong Kong

Tecnolines Pte Ltd, Singapore

Quatro Rail Tech Solutions Ltd.

EMC Solar Ltd.

EMC Academy Ltd.

EMC Logistics Ltd.

EMC Overseas Ltd.

Offices

India

Kolkata, HQ

Delhi

Mumbai

Hyderabad

Chennai

Overseas

Venice, Italy

Tulsa, USA

Dubai

Pori, Finland

Vrigstad, Sweden

Nairobi, Kenya

Dares Salaam,
Tanzania

Hong Kong

Singapore

Lima, Peru

Santiago, Chile

Manufacturing Units

Beliaghata
Kolkata, West
Bengal

Agarpara
Works Kolkata,
West Bengal

Naini Works
Allahabad,
Uttar Pradesh

Solar Power
Plant, Naini,
Uttar Pradesh

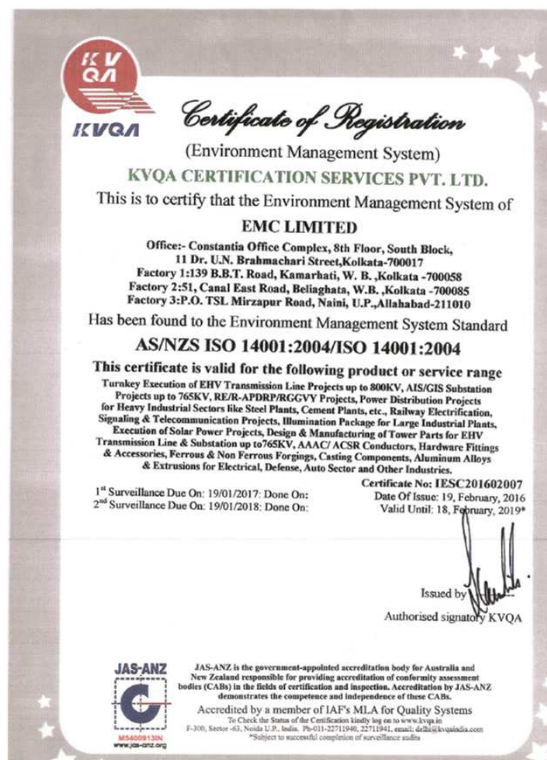
Raipur Works,
Chhattisgarh



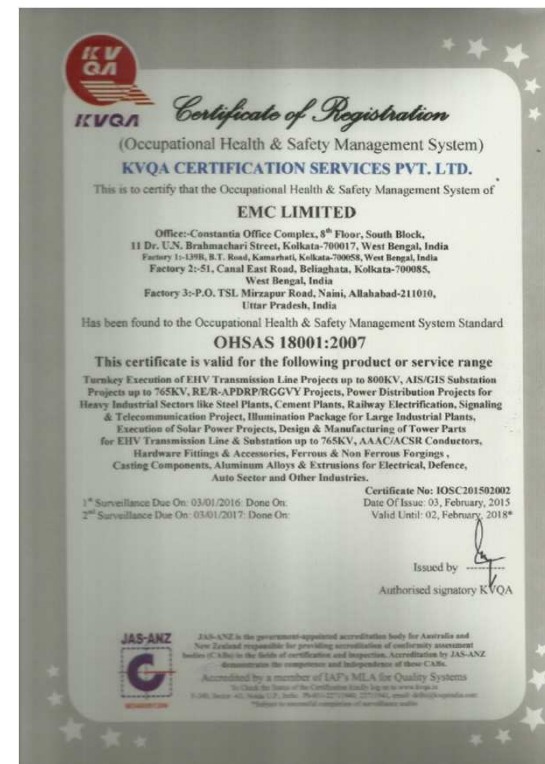
QUALITY CERTIFICATIONS



ISO 9001



ISO 14001



OHSAS 18001



TOP CLIENTS



**Power Grid Corporation
of India Ltd.**



**Transmission Corporation
of
Andhra Pradesh**



**West Bengal State
Electricity Transmission
Company Ltd.**



**Maharashtra State
Electricity Transmission
Co. Ltd.**



**Jammu & Kashmir Power
Development
Department**



**Central Organisation for
Railway Electrification**



**Maharashtra State
Electricity Distribution
Co. Ltd.**



**West Bengal State
Electricity Distribution
Company Ltd.**



**Tanzania Electric Supply
Co. Ltd.**

AMEREN CORP

**Ameren Corporation,
USA**



Fingrid Oyj, Finland



Svenska Kraftnat, Sweden



Terna S.p.A, Italy



**Power Grid Company of
Bangladesh Ltd.,
Bangladesh**



**JSC Georgian State
Electrosystem, Georgia**



ONE-STOP SHOP FOR TURNKEY SOLUTIONS AND SYNONYMOUS WITH TIMELY EXECUTION



EMC Advantage

EMC offers total turnkey solutions, complete with design, engineering, electrical, mechanical & civil works and associated auxiliary systems for:

Transmission

- Transmission lines up to 765/800 kV
- Sub-stations up to 765 kV including GIS

Distribution

- HT/LT distribution in the industrial sector
- LT distribution in rural areas and rural electrification up to consumer metering

Balance of the plant (BOP)

- Both EHV sub-station and plant electrification for integrated steel & power plants
- Illumination packages for area and production units

Railway Infrastructure

- Overhead Electrification
- Signaling & Telecom
- Traction Substations
- Track Laying
- General Electrification

Solar Projects

Smart Cities

Our Sectors

- Power Transmission Sectors
- Industrial Sectors
- Defense Automobiles
- Railways

Product Lines

- Transmission Line Towers
- Conductors
- Insulator Hardware Fittings and Accessories
- Performed Line Products
- Non-ferrous Extrusion, Forgings and Die Casting



WHAT IS THE EMC ADVANTAGE?



- Over 6 decades of professional experience
- Leading turnkey power solutions provider
- One of few companies in India capable of undertaking and successfully executing extra high voltage projects
- One of the few companies globally capable of helicopter based Tower Erection & Stringing
- One of the few companies capable of Installation of High Voltage Cables
- Offers comprehensive turnkey solutions with design engineering, erection, testing and commissioning, including all auxiliary systems such as lighting & illumination and fire protection systems
- One of few Indian EPC players qualified and executing Gas Insulated Sub-stations (GIS) projects on turnkey basis
- In-house facilities to design and manufacture:
 - Towers
 - Conductors suitable for power transmission and distribution
 - Insulator hardware fittings and accessories
 - Non-ferrous extrusion, forgings and die castings
- Design and Testing of Towers for Destruction Tests and having in-house Test Bed
- Constructed over 16,000 kilometers of transmission lines of up to 765 kV
- Consistently exhibited strong time-bound execution capabilities both domestically and abroad
- One of few Indian EPC players qualified in 765 kV transmission lines & now poised to enter 1200 kV segment
- EMC through its subsidiary is qualified to execute EHV Transmission Lines of upto 400kV in leading European and African Countries
- Foray in to Railways business in the following areas: Projects of Indian Railways (all zones and divisions) on turnkey basis, Metro Rail Projects including Mono Rail & Dedicated Freight Corridor.



CORPORATE SOCIAL RESPONSIBILITY



The Company's CSR activities involve:



Environment

Working in "Clean Energy" in the industrial area of Naini near Allahabad by setting up a Solar Power plant.



Education

EMC Academy has been set up in Kolkata to create a large pool of supervisory talent & for imparting technical education in the field of power systems.



Rural development

In its projects, EMC adopts the villages wherein they provide:-

- Bore wells
- Free Health Checks



Local Area Responsibility

Beautification of the surrounding area near the factory, including plantation of trees.



EMC ACADEMY



Genesis

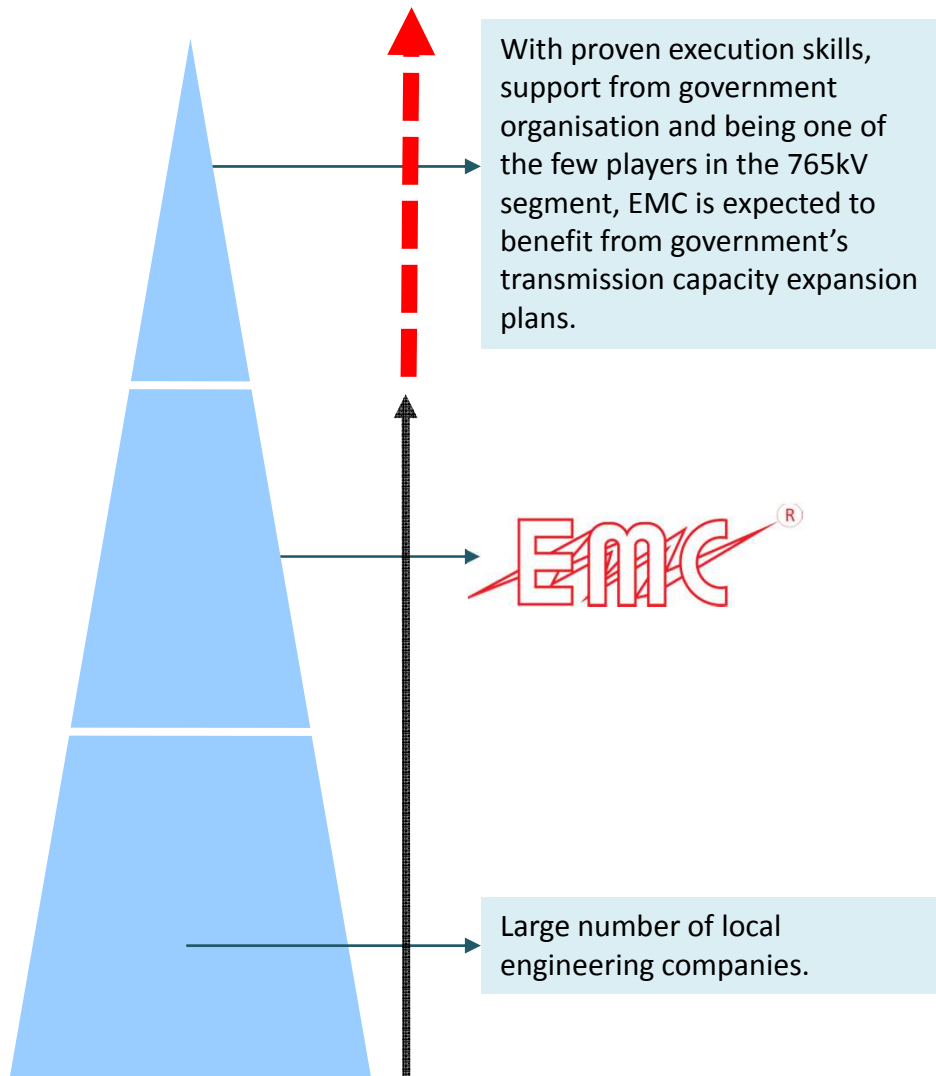
- The EMC Academy is an endeavour to establish a unique institution dealing for professional development of Engineers, Supervisors & workforce it meet growing need of Trained Manpower in power sector.

Features

- Established in June 2011 is dedicated towards bridging skilled manpower shortage in the Transmission and distribution (T&D) sector.
- Well equipped with all modern audio visual aids and has a capacity to train 1,600 students per annum.
- Imparts training in different discipline like Environment Management, Civil Design and Quality Control, Planning of Power Systems, Quality Management, Safety Management, Behavioural Management extending to the students, industries and Government agencies.
- Has already conducted various training programs for its employees.
- We believe this initiative will meet the ever-growing business needs of our company and create the industry leaders of tomorrow.



EMC'S STRATEGY IN BIG LEAGUE



1200kV T&D Projects

- Poised to enter 1200kV segment

400kV / 765kV T&D segment

- Major focus by government on development.
- Premium Segment.
- High Margin Business.
- Required Established Track Record.
- Only 6-7 Leading Players.
- Kalpataru, KEC/RPG, Jyoti, etc.
- One of the few players capable of executing both AIS & GIS based Substations

200kV / 230kV Transmission Line Projects

- Relatively new companies.



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NEED POWER FOR SUSTAINED ECONOMIC GROWTH

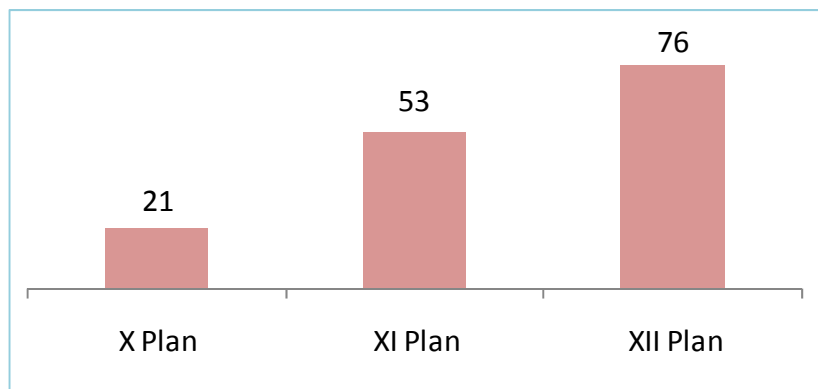


Need Power for Sustained Economic Growth

Driving the Demand for T&D for Evacuation

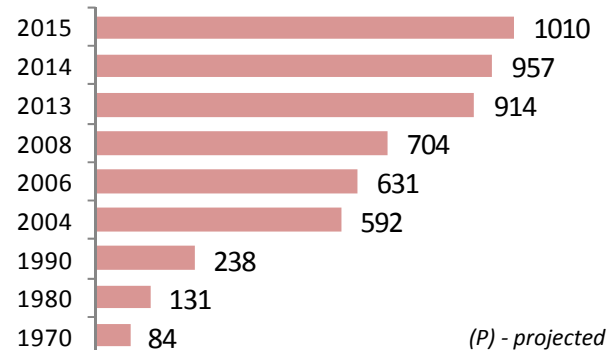
Opportunity for EMC

Generation Capacity Addition (GW)



Source: CEA. *Working Group Report on Power for XIIth Plan

Trend in Per Capita Consumption (KWh) in India

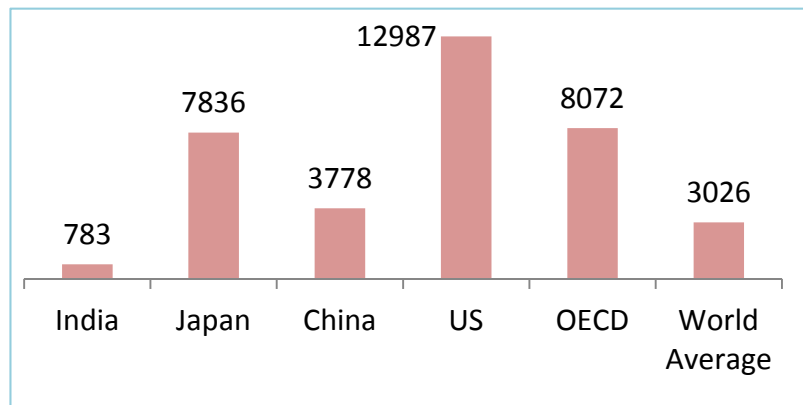


(P) - projected

Source: IBEF Report & CEA

- Current per capita consumption of electricity in India is at 1010KWh (FY2014-15) vis-à-vis world average of approximately 3026 KWh
- Annual GDP growth rate of 8% necessitates a 9-10% growth rate in the power sector.

Per Capita Consumption (KWh) across the world



Source: Key World Energy Statistics (IEA)



DRIVING THE DEMAND FOR T&D FOR EVACUATION



Need Power for Sustained Economic Growth

Driving the Demand for T&D for Evacuation

Opportunity for EMC

Status of Transmission Lines in Circuit Kilometers (cKms)

Transmission Lines	At the end of 10 th plan	11 th Plan additions (FY08-12)	12 th Plan addition Estimates (FY13-17)
765kV	2,184	3,546	27,000
HVDC +/-500kV	5,872	3,560	9,440*
400kV	75,722	37,645	38,000
230/220kV	114,629	25,535	35,000
Total Trans. Line	198,407	70,286	109,440

*Includes HVDC +/- 800kV

Source: CEA, Working Group Report on Power for XIIth Plan

Drivers of T&D sector

- Government's mission "Power For All"
 - Requires large scale addition of regional and inter - regional transmission lines for evacuation.
- The present investment in Generation and T&D Sector is 1:0.5 as against the desired ratio of 1:1.
- GOI's RGGVY scheme has targeted electrification of 100,000 villages providing electricity to more than 23.4 mn BPL families.
- T&D losses on the higher side. (~35% avg)
- GOI's RAPDRP scheme has targeted to reduce these T&D losses from ~35% to 15%

- Anticipated requirement of transmission lines in EHV segment (above 400kV) will be 75,000 cKms in the 12th Plan.
- Large investments expected in the T&D sector development in order to match the power generation capacity.
- The sector has registered growth of 5.5% in 2011-12.



DRIVING THE DEMAND FOR T&D FOR EVACUATION



Need Power for Sustained Economic Growth

Driving the Demand for T&D for Evacuation

Opportunity for EMC

India's Expected Spending (\$ bn) – T&D Sector

Particulars	10 th Plan	11 th Plan	12 th Plan
Power Grid Corporation India Ltd.	3.03	9.17	20.00
Private Utilities	0.33	3.34	3.34
Other Central Utilities & State Utilities	4.83	10.84	16.67
Total Spend for Transmission Line	8.20	23.33	40.00
RGVVY	1.61	2.71	5.00
APDRP	2.83	8.60	5.00
Total Domestic Spending	12.65	34.65	50.00

1\$=Rs. 60

Source: Crisil & Company Research

Transmission Utilities Business Scenario

Power Grid (CTU) Business Scenario

- Network presently carries over 45% of the total power generated in India; this is expected to increase to 60% by 2012.
- Total 50 GW inter-regional power transfer capacity of 220kV & above targeted by the end of 12th Plan from existing 28 GW.
- Adopted transmission system with higher voltages to cut losses.

State Transmission Utilities (STU) Business Scenario

- Revamping and upgrade of existing transmission systems.
- The majority of new projects are 400kV voltage ratings.
- Unbundling of SEBs have occurred in 15 states.
- Setting up high capacity intra-state power transmission systems to address rapid industrialisation and growing power needs.

- Expected spending of \$50 bn in the T&D Sector under the 12th Plan.
- In the 12th plan PGCIL to spend \$20 bn for enhancing the capacity of the interregional transmission grid and building a [High Capacity Transmission Corridor \(HCTC\)](#).
- Huge plans for the inter-regional and intra-state power transfer capacity.



OPPORTUNITY FOR EMC



Need Power for Sustained
Economic Growth

Driving the Demand for T&D for
Evacuation

Opportunity for EMC

An annual GDP growth rate of about 7-8%

Large scale addition of power generation capacity

Large scale addition of transmission capacity, at high voltage up to 1200kV, to minimize T&D Loss

Private companies entering into power generation

Demand for upgrade of existing transmission lines

Requires a 9-10% growth rate in the Indian power sector

Would necessitate large scale addition of power transmission capacity

Being a turnkey solution provider and **one of the top 6-7 players qualified for high voltage projects** provides EMC an immense growth opportunity

Will require specialised players like EMC for setting up transmission lines up to 1200kV for evacuation

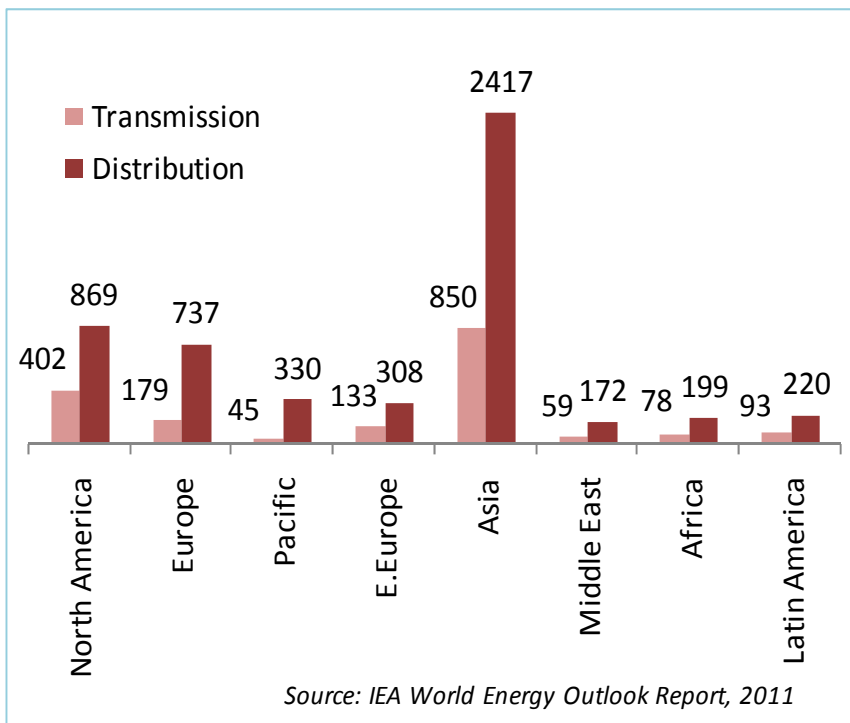
A new market for EMC



OPPORTUNITIES IN THE GLOBAL TRANSMISSION SECTOR



T&D Investments Globally Over 2011-35E (US\$ bn)



Opportunities in the International Market

- International market growth drivers:
 - Interconnection projects and transmission projects for new generation capacities.
 - Replacement demand in the next 5-7 years.
- International Energy Association (IEA) - World electricity demand to grow to 34,352 TWh from 17,217 TWh at 2.7% CAGR over 2009-35.
- IEA - approximately 42% of investments would be made in power T&D projects over 2010-35.
- Key international markets will be: South Asia, the Middle East, Africa and North America, which are at different thresholds of power capacity addition.

To support this massive electricity demand, global generation capacity is expected to reach 9,000 GW by 2035 from 5134 GW in 2010, which would require US\$ 7.1 tn investments in the T&D sector over 2010-35.



INTERNATIONAL MARKETS



Focus Regions	Expected Market (\$ bn)*
Europe	182
North America	160
South America	200
Asia & Middle East	300
Africa	150
Total (Approx)	1,000

**Expected till 2020-22*



EUROPE



- In Europe, approx €140bn (\$182bn) is required for the development of High Voltage Transmission Systems, Storage & Smart Grid applications by 2020.
- Despite the negativity in Euro Zone's investment climate, many countries have plans to lay new lines or upgrade its existing infrastructure.
- As countries switch from coal and nuclear power to cleaner and renewable energy, new plants would demand new lines to evacuate power to consumers.



EUROPE



- EMC's Strategic Focus in Europe:

Project Type	Country	kV Rating	Value (\$ bn)
New Power Network (2025)	Sweden	Various	9.3
450km Transmission Line	Norway	--	9.3
New Transmission Lines	Italy	132-380kV	9.1
Strengthen Transmission System	Spain	Various	1.8
Development & Renewal of Network	France	400kV	1.7
Lines & Substations (New & Upgrades)	Poland	220-400kV	0.6 per year
New Lines (4,000 kms approx)	Germany	400kV	--



NORTH AMERICA



- NERC 2017 report indicates 10% growth in new transmission lines in US and 7.5% growth in Canada.
- Various networks in the US and Canada are up for renewal.
- Upgrades include increasing voltage of transmission lines to new tower packages.
- Also the continent is seeing increasing use of renewable energy power plants in its bid to switch to cleaner sources of fuel.
- Shift to renewable energy and the increasing importance of Shale Gas as an energy substitute will demand an increase in new lines from new power plants.
- \$160bn of investments are expected in the North American T&D space.



NORTH AMERICA



- New and Renewal Interstate Transmission Projects in United States with an estimated value of \$26.5bn (16,000 kms) are expected by 2026.
- EMC's Strategic Focus in United States:

Project Type	Voltage Rating	Value (\$ bn)
Northeast Energy Link	Various (HVDC)	2.0
RITE Line	765kV	1.6
Susquehanna – Roseland Project	500kV	1.3
Grand Rivers Project	345kV	1.3



NORTH AMERICA



Project Type	kV Rating	Value (\$ bn)
Upgrade of Transmission N/W (2017)	Various	9.0
Upgrade of Transmission N/W (2018)	Various	0.7
Utility Infrastructure Improvement	Various	0.6
Network Strengthening in Montana, Virginia and Connecticut	Various	0.5
Northern Pass Transmission Project	345kV	1.1
Great Northern Transmission Line	345 – 500kV	1.0



SOUTH AMERICA



- South America's electricity consumption is expected to grow 2.9% p.a. to 2,500TWh by 2035, double from current level.
- Brazil's Electricity Market is the largest in South America. As the majority of power generation in the country is hydro-based, there is need for new power plants of various fuels to ensure uninterrupted power supply.
- This requirement necessitates new power transmission lines.
- Peru is expected to spend \$470mn as part of its 2013-18 Binding Plan for new and existing repowering power lines.
- Countries like Argentina, Chile, Colombia and Ecuador too have planned various new lines and upgradation of its existing lines.



SOUTH AMERICA



- EMC's Strategic Focus in South America :

Project Type	Country	kV Rating	Value (\$ bn)
7,000 km of Lines & Substations	Brazil	500kV	2.8
600 km Lines / 8 Substations	Ecuador	500kV	0.9
New and Existing Line Upgrades	Peru	220kV	0.5
Peru-Ecuador Interconnection Upgrade	Peru	500kV	--
High Voltage Grid Expansion	Chile	--	0.2
Double-Circuit Line Projects	Colombia	500kV	--



AFRICA



- Africa's electricity consumption is expected to grow 5.7% p.a. to 3,188TWh by 2040.
- **Eastern African Power Pool (EAPP)** was established by the countries in East Africa to promote power supply in the region, develop the electricity market, reduce costs, and increase investments in the region.
- Countries participating in EAPP include the Nile Equatorial Lake Countries (*Democratic Republic of Congo (DRC), Burundi, Kenya, Uganda, Rwanda*), *Egypt, Ethiopia, Sudan, Tanzania, & Djibouti*.
- A number of interconnection projects have been planned as part of the EAPP constituting 10,500 km of lines with voltage range of 220-600kV (including 500kV and 600kV HVDC Bipoles).
- The financing for the Eastern Electricity Highway Project connecting the grids of Kenya and Sudan (part of EAPP) has commenced. The total project cost is \$1.3bn.



AFRICA



Notable Projects of EAPP	kV Rating	Length (km)	Capacity (MW)
Ethiopia – Kenya	500 HVDC	1,120	2,000
Egypt – Sudan	600 HVDC	1,665	2,000
Ethiopia – Sudan	500	570	3,200
Uganda – Kenya	220	254	300

- On a similar note, the **West African Power Pool (WAPP)** & **South African Power Pool (SAPP)** have been envisioned to connect energy sources to countries in these respective regions.
- Countries part of this project include *Democratic Republic of the Congo, Angola, Namibia, Botswana, South Africa, Malawi, Mozambique, Zambia, and Zimbabwe* will also be brought under this project soon.
- WAPP entails 3,000 kms of lines of 400kV HVAC lines and is estimated to cost **\$6.5bn**. SAPP is expected to cost **\$5.6bn**.



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FINANCIAL HIGHLIGHTS



Financials (FY 2012 - FY 2016): *INR Crore*

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
Net Sales	2027.4	3224.6	3582.7	4121.1	4631.62
EBITDA	189.0	300.2	343.0	430.8	483.51
EBITDA Margin (%)	9.3	9.3	9.6	10.5	10.44

In USD



FINANCIAL HIGHLIGHTS



Financials (FY 2012 - FY 2016): *USD mn*

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
Net Sales	307.2	488.6	542.8	624.4	714.62
EBITDA	28.6	45.5	52.0	65.3	74.60
EBITDA Margin (%)	9.3	9.3	9.6	10.5	10.44



*1\$=Rs. 64.8125



STRONG ORDER BOOK



Some of the Recent Notable Orders:

Transmission Lines:

- 765 kV D/C Dharamjaygarh – Jabalpur Transmission Line, 308 Kms from PGCIL.
- 765 kV D/C Bikaner-Moga Transmission Line , total 283 Kms from PGCIL.
- 220/132 kV D/C - S/C Transmission Lines (Pkg-I) of 290 kms and (Pkg-II) of 429 kms from UPPTCL.
- 765 kV D/C Banaskantha - Chittorgarh TL (Part-I) & 400 kV D/C Banaskantha - Sankhari TL of 97 kms from PGCIL.
- 765 kV D/C Bhadla – Bikaner (Part-II) 88 Kms from PGCIL.

Sub-Stations:

- 765kV GIS Substation in Vemagiri (JV with NHVS Ltd.) from PGCIL.

(Cont...)



STRONG ORDER BOOK



Railways:

- Tiruchchirappalli – Nagapattinam – Karaikal port: RKM – 153 and TKM – 240.
- Ratlam – Nimach – Chanderiya – Kota: RKM – 348 and TKM – 484.
- Gorakhpur – Kaptanganj – Valmikinagar RKM – 66.

Overseas:

- 230 kV D/C Transmission Line on turnkey basis in Bangladesh from Power Grid Company of Bangladesh.
- 400 kV Transmission Line project of 100 kms in Georgia.
- 400 kV Transmission Line Project from Arusha – Namanga (Kenya – Tanzania Interconnection Project) of 114 kms.
- 400/220/33kV, 2 X 250 MVA & 2X 125 MVA Substation at Arusha & extension of existing 220/33 kV substation at Singida.



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AWARDS & APPRECIATIONS



Trophy received from Shri I S Jha, Chairman & Managing Director of Power Grid Corporation of India Limited during the Interactive Session on 12/05/2017 at Gurugram, New Delhi for Transmission Line Performance - Volume of Work-II during the F.Y. 2016-17.



Trophy received from Shri I S Jha, Chairman & Managing Director of Power Grid Corporation of India Limited during the Interactive Session on 12/05/2017 at Gurugram, New Delhi for Substation Performance - (765kV) during the F.Y. 2016-17.



AWARDS & APPRECIATIONS



Trophy received from Shri I S Jha, Chairman & Managing Director of Power Grid Corporation of India Limited during the Interactive Session on 12/05/2017 at Gurugram, New Delhi for Support for Critical Targets (Transmission Line) during the F.Y. 2016-17.



AWARDS & APPRECIATIONS



Trophy being awarded by CMD of POWERGRID on 29/04/2016 for the Maximum Volume of work during F.Y. 2015-16.



Trophy being awarded by Director (Operations & Project) of POWERGRID on 29/04/2016 for the Maximum Capitalization during F.Y. 2015-16.



AWARDS & APPRECIATIONS



Trophy being awarded by CMD of POWERGRID on 24/04/2015 for the Special Performance during 2014.



Trophy being awarded by CMD of POWERGRID on 11/04/2014 for the Extraordinary Achievement in completion of Transmission Lines during the year 2013.



AWARDS & APPRECIATIONS



Ref.VTRE/EL/Gr.166/PAC-2 | 920

Date: 17.02.2017

PROVISIONAL ACCEPTANCE CERTIFICATE

Contract for the Design, Supply, Erection & Commissioning of 25 KV, 50 Hz, Single Phase Over Head Equipment including TSS, Scada & Electric General Works on Turnkey Basis in Vizianagaram (excl) - Singapur Road (Incl) Section, Gr.166 of Waltair Division of East Coast Railway under RE Project Bhutaneshwar, Total 138.84 RKM/369 TKMs of CORE/ALD with M/s BCPL-EMC (JV), 51 Canal East Road, Beliaghata, Kolkata - 700085, vide letter of Acceptance No. ELCORE/T/OHE/Gr. 166/103/Part-I, Dtd.01.12.2012.

In continuation to sub sections energized earlier and PAC issued vide No. VTRE/EL/Gr.166/PAC-1, Dt.10.11.2015, it is certified that the section under all sub-groups from Parvatipuram (Excl) to Singapur Road (Incl.) was energized & commissioned as under:-

Name of Section with Location & Km/Chainage	Energized on	COMMISSIONED ON
OHE Parvatipuram(Excl.)-Singapur Road(Incl.) section Up line:387/31 Ch.387/820.50 to 327/5 Ch.327/89.70 Dn Line: 387/32 Ch.387/820.50 to 327/6 Ch.327/89.70 RKM:60.70 TKM:146.60	22/03/2016	26/03/2016
Raygada TSS	03.01.2017	03.01.2017
Gajapatnagar SSP, Bobbili SP, Sitanagar SSP	28.10.2015	31.10.2015
Gotlam SP	19.01.2015	05.02.2015
Kuneru SP, Ladda SSP & Gurnada SSP	22.03.2016	26.03.2016
Singapur Road SSP	19.10.2016	19.10.2016

The Overhead equipment (OHE), Switching Stations (SP/SSP) and Traction Sub Station (TSS) as mentioned above is accepted provisionally. This Certificate is issued under clause 1.2.46 of the Tender Paper No. ELCORE/OHE/Gr.166 without prejudice to the obligations enjoyed on the contractors in terms contract with special reference to clause 1.2.47, 1.2.48 & 1.2.49 of the general conditions of the contract.

This is the approval of CPD/RE/BBS.

S. Kumar Bhowmick
(Sail Kumar Bhowmick)
(Authorized Signatory)
M/s. BCPL-EMC (JV)

Place: Bhubaneswar

U.N. Mukut
(U.N. Mukut)
Dy. Chief Elect. Engineer-I
RE/Bhubaneswar



RAILWAY ELECTRIFICATION, DANAPUR

(Near Jagjeevan Stadium) P.O.-Khagaul,

Dist. Patna(Bihar) Pin-801105.

Ph/Fax:06115-232228/232234, www.core.indianrailways.gov.in

No:-RE/DNR/Gr176/Appreciation

Date:- 23.04.2015

☒ M/s EMC-BCPL-Subir Joint Venture
51, Canal East Road, Beliaghata,
Kolkata-700085.

Dear Sir,

The Electrification work of Gr.176 i.e Garhwa Road(Excl.)-Chopan-Singrali/Mahadia including Karaila Road-ShaktiNagar, was awarded to M/s EMC-BCPL-Subir(JV).

The Firm's contribution in achieving 80 RKM of 2.2 KV energization in FY 2014-15, despite having law & order problem and difficult terrain of the section, is highly appreciated.

Sunil Kumar
(Sunil Kumar)

Chief Project Manager,
Railway Electrification,
Danapur



पञ्चम कार्यालय :
केन्द्रीय रेल विद्युतीकरण संगठन
इलाहाबाद - 211001
Central Organisation For
Railway Electrification
Allahabad - 211001

No. CORE/G/1

Dated: March 31, 2014

M/s EMC - BCPL Joint Venture
51 Canal East Road, Beliaghata
Kolkata 700085

Dear Sir,

The electrification works in Group 171 Kumedpur-Malda Town (Incl.)-Old Malda Singhabad section was awarded to M/s EMC-BCPL (JV). It is gathered from the New Jalpaigudi Project that in this group CORE will be achieving the energisation of 40 RKM approximately by exceeding the original and enhanced revised target of 20 RKM and 25 RKM respectively.

Firm's contribution in not only achieving but exceeding the target set by railways for the section is highly appreciated.

Thanking you,

Yours faithfully,
Jagdev Kalia
(Jagdev Kalia)
General Manager

Phone: BSNL - (0532) 2407551, Rly - 55001, e-mail: gm@core.railnet.gov.in

Provisional Acceptance Certificate from CORE for Gr.166 under RE Project.

Appreciation Letter to EMC JV from Chief Project Manager Railway electrification, Danapur for Railway Electrification work in difficult Terrain.

Appreciation Letter to EMC JV from GM CORE for exceeding target set for Railway Electrification work.



AWARDS & APPRECIATIONS



Crystal Star Award 2017 to ASC, Inc., USA



AWARDS & APPRECIATIONS



Governor's Manufacturing Leadership Award 2015 to ASC, Inc., USA



AWARDS & APPRECIATIONS



TO WHOM IT MAY CONCERN

This is to certify that the project South-West Link 400kV AC FL31 S1-4 Hallsberg - Östansjö - Barkeryd, Package 3, has been awarded to and has been fully implemented by the Joint Venture SIRTl-TECNOLINES (composed by the Firms Tecnolines Srl, Pordenone, Italy and Sirti SpA, Milano, Italy) under contract n° RFT 2012/1380.

The total contractual value was **SEK 186.087.000,00** VAT excluded (**EUR 24.680.955,00** VAT excluded).

The following works have been executed exclusively by the Firm TECNOLINES Srl:

- i) Complete dismantling of the existing 220 kV line, length **40,5 km**
- ii) Assembly and erection of all steel supports, 132 nos, total tonnage **1.765 tons**
- iii) Stringing and sagging of single circuit, twin-bundled, 910 sq.mm. phase conductors plus 1 Dotterel earthwire plus 1 OPGW equivalent to Dotterel, total length **40 km**

The said works began in November 2013 and have been completed in November 2014, to our good satisfaction.

The Project Manager of TECNOLINES Srl was Stefano Grando (born February 23, 1964 in Conegliano, Italy).

The Site Manager of TECNOLINES Srl was Gianni Salvador (born September 11, 1950 in Treviso, Italy).

This certification has been issued upon the request of TECNOLINES Srl, for all lawful purposes.

Signed on 30/11/2015 by:

Guy Mondzo – Project Manager – Svenska Kraftnät

SVENSKA KRAFTNÄT

BOX 1200
172 24 SUNDYBERG
STUREGATAN 1

WWW.SVK.SE
REGISTRATOR@SVK.SE

TEL 08 475 80 00
FAX 08 475 39 50

1/1



TO WHOM IT MAY CONCERN

This is to certify that the project SL11/SL21 300 kV DC Nässjö – Värnamo has been awarded to and has been fully implemented by the Joint Venture SIRTl-TECNOLINES (composed by the Firms Tecnolines Srl, Pordenone, Italy and Sirti SpA, Milano, Italy) under contract N° 1231/1509.

The total contractual value was **SEK 274.273.285,00** VAT excluded (**EUR 36.993.969,00** (VAT excluded).

The following activities have been executed exclusively by the Firm TECNOLINES Srl:

- i) Complete dismantling of the existing 220 kV line, length **63 km**
- ii) Assembly and erection of all steel supports, 221 nos, total tonnage **2.890 tons**
- iii) Stringing and sagging of Double Circuit, twin-bundled, 910 sq.mm. phase conductors plus 1 Dotterel earthwire plus 1 OPGW equivalent to Dotterel, total length **60 km**

The said works began in January 2013 and have been completed in April 2014, to our good satisfaction.

The Project Manager of TECNOLINES Srl was Stefano Grando (born February 23, 1964 in Conegliano, Italy).

The Site Manager of TECNOLINES Srl was Gianni Salvador (born September 11, 1950 in Treviso, Italy).

This certification has been issued upon the request of TECNOLINES Srl, for all lawful purposes.

Signed on 26/11/2015 by:

Roger Lyxell – Project Manager – Svenska Kraftnät

SVENSKA KRAFTNÄT

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FAX 08 475 39 50

1/1

Appreciation Letters from Svenska Kraftnat, Sweden.



AWARDS & APPRECIATIONS



Reference letter

1 (1)

Transmission line projects

30 November 2015

To whom it may concern

This is to certify that project 1935-P1-8 - 400 kV + 110 kV OHTL Ulvila-Levasjoki was implemented by the Consortium DTS (composed by the Firms Destia OY, Vantaa, Finland, **Tecnolines Srl, Pordenone, Italy** and Sirti SpA, Milan, Italy).

The contract value was € 10.621.000 (VAT excluded).

The following works have been executed exclusively by the Firm **Tecnolines Srl** :

- i) Complete dismantling and recovering of materials of an existing 110 kV line (**approximately 40 km**) and of an existing 220 kV line (**approximately 38 km**)
- ii) Complete erection of all 400 kV and 110 kV guyed towers (166 nos, 826 tons)
- iii) Complete erection of all 400 kV and 110 kV self-supporting towers (19 nos, 411 tons)
- iv) Complete erection of all 400 kV self-supporting special field towers (7 nos, 122 tons)
- v) Complete stringing of 400 kV OHTLs from Ulvila S/Stn to Levasjoki and modifications to the existing 400 kV network at Ulvila S/Stn, single circuit, 3x3-Finch phase conductors, 1xSustrong earthwire, 1xOPGW (**41,5 km**)
- vi) Complete stringing of 110 kV OHTLs from Ulvila to Levasjoki, single circuit, 3x2-Duck phase conductors, 1xSustrong earthwire, 1xOPGW (**40,3 km**)
- vii) Installation of temporary 110 kV connections at Levasjoki S/Stn and Ulvila S/Stn using a special-purpose 72,5/150 kV XLPE cable.

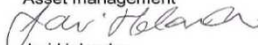
The above works began in November 2012 and have been completed in November 2013. The works have been completed with good satisfaction.

The Project Manager of Tecnolines was Mr. Stefano Grando, born February 23, 1964 in Conegliano, Italy. The Site Manager was Mr. Bruno Benedetti, born June 27, 1950, in Scansano, Italy.

This certification has been issued on the request of the interested Firm and for the uses allowed by the Law.

Sincerely Yours,

Fingrid Oyj
Asset management


Jari Helander
Manager, Regional operation

more information: Keijo Valimaa, construction manager, telephone: +358 30 3955281, mob. +358 40 519 5081, e-mail keijo.valimaa@fingrid.fi

Fingrid Oyj

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Phone

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Fax

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Business Identity Code
FI0726943, VAT reg.
forename.surname@fingrid.fi
www.fingrid.fi



Reference letter

1 (1)

Grid investments

29 January 2014

To whom it may concern

This is to certify that project 1935-P1-8 - 400/110 kV OHTL Ulvila-Levasjoki was implemented by the Consortium DTS (composed by the Firms Destia OY, Vantaa, Finland, **Tecnolines Srl, Pordenone, Italy** and Sirti SpA, Milan, Italy).

The contract value was € 10.621.000 (VAT excluded).

The following works have been executed exclusively by the Firm **Tecnolines Srl** :

- i) Complete dismantling and recovering of materials of an existing 110 kV line (**approximately 40 km**) and of an existing 220 kV line (**approximately 38 km**)
- ii) Complete erection of all 400 kV and 110 kV guyed towers (166 nos, 826 tons)
- iii) Complete erection of all 400 kV and 110 kV self-supporting towers (19 nos, 411 tons)
- iv) Complete erection of all 400 kV self-supporting special field towers (7 nos, 122 tons)
- v) Complete stringing of 400 kV OHTLs from Ulvila S/Stn to Levasjoki and modifications to the existing 400 kV network at Ulvila S/Stn, single circuit, 3x3-Finch phase conductors, 1xSustrong earthwire, 1xOPGW (**41,5 km**)
- vi) Complete stringing of 110 kV OHTLs from Ulvila to Levasjoki, single circuit, 3x2-Duck phase conductors, 1xSustrong earthwire, 1xOPGW (**40,3 km**)
- vii) Installation of temporary 110 kV connections at Levasjoki S/Stn and Ulvila S/Stn using a special-purpose 72,5/150 kV XLPE cable.

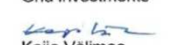
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This certification has been issued on the request of the interested Firm and for the uses allowed by the Law.

Sincerely Yours,

Fingrid Oyj
Grid investments


Keijo Valimaa
Construction manager

more information: Keijo Valimaa, construction manager, telephone: +358 30 3955281, mob. +358 40 519 5081, e-mail keijo.valimaa@fingrid.fi

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Appreciation Letters from Fingrid, Finland.



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FUTURE ROADMAP



FUTURE ROADMAP



- Focus on EHV space (i.e 400kV and above) in T&D sector, with huge potential and few competitors.
- Expand focus on the other verticals i.e.
 - EHV Substations (AIS & GIS)
 - RGGVY Distribution projects
 - Industrial Power Distribution Systems.

Diversify Business segment :

- Railway Electrification
- Solar EPC

Diversify Clients:

- Reduce Share of PGCIL
- Focus on SEBs with funded projects

Diversify Geographically:

- Africa, Europe, Middle East and US are **Target Markets**.



- Increase manufacturing strength by setting up a Greenfield factories
- EMC Academy Ltd. set up to overcome challenge of trained manpower in the industry
- Bidding for projects with focus on profitability, efficient manufacturing and trained workforce to help improve margins in the long run.

- Looking at acquisitions or Strategic Tie-ups in **Target Markets**
- Main criteria for choosing a partner is to get access to technology, customer base or project qualifications
- Company is also looking at partners for expanding Railways business in India.



SUMMARY



- Differentiator – focus
- One of the fastest growing company in the Power T&D EPC business
- Promising future for the T&D industry
- Focusing on high margin EHV transmission segment
- Increasing presence in new sectors – Substation, Railways, etc.
- Diversifying into new geographies and clients
- Efficient Working Capital Management (Negative Working Capital)
- Robust Order Book
- Pursuing organic and inorganic growth to expand the company



THANK YOU