



# SCALING UP THE VALUE TOWER

World class Transmission Tower  
Solutions from Skipper

# **WHO WE ARE**

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Skipper Limited is India's largest and world's most competitive integrated Transmission Tower manufacturing company

# 5 Things you need to know about US

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## Ethos

### VISION:

- To produce world-class quality products, ensuring robust national infrastructure development and making India the preferred sourcing hub for global infrastructure needs.



## Legacy

- Skipper was established in 1981 and subsequently entered into the power transmission and distribution business.  
**The company is now a global T&D sector giant.**  
Nearly four decades of sector experience have made Skipper a prominent player.



## Presence

Skipper's T&D sector footprint lies in India and **65+ countries** (South America, Europe, Africa, Australia, South and South-East Asia)



## Advantage

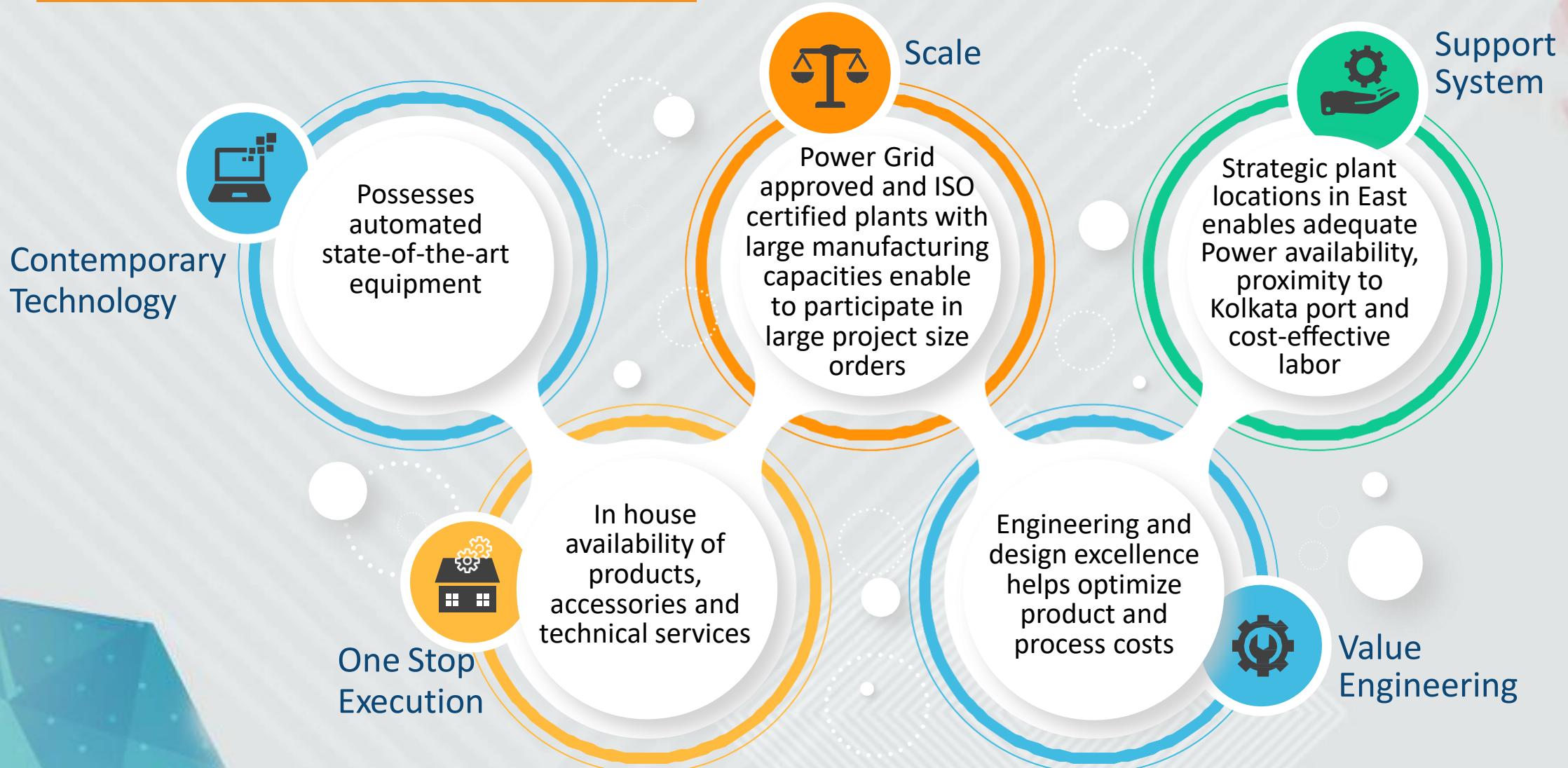
Skipper is one of the **world's largest integrated Power T&D Structures** manufacturing companies (angle rolling, tower, accessories and fastener manufacturing , tower load testing and EPC line construction)



## Capacity

Skipper's manufacturing capacity is **300000 MTPA**, the largest capacity in India and **among the 05 largest globally**. Skipper boasts of 4 state of the art Power grid approved Plants

# Core Competencies



# Capacities

At Skipper Limited, we extend beyond mere manufacture to providing a service. Absorbing the latest technology, expansions and modernizations and de-bottlenecking of plants on an ongoing basis. The company has 4 state-of-the-art manufacturing facilities, 1 in Uluberia, 2 in Junglepore, near Kolkata (West Bengal) and 1 in Guwahati ( Assam).

Location	Engineering Products (MTPA)
ULUBERIA - Kolkata (WB)	165000
JUNGLEPORE - Kolkata (WB)	69000
BCTL - Kolkata (WB)	36000
GUWAHATI - Assam	30000
<b>TOTAL CAPACITY</b>	<b>300000</b>



# Facility Highlights

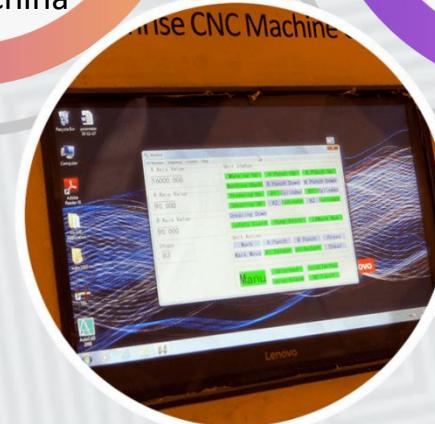
4 Power grid approved Transmission tower & poles manufacturing plants with a combined Capacity of 300000 MTPA. In-house Designing & pre engineering Dept.



MS & HT angle rolling (upto 250x250x35) ensuring all time availability of raw materials



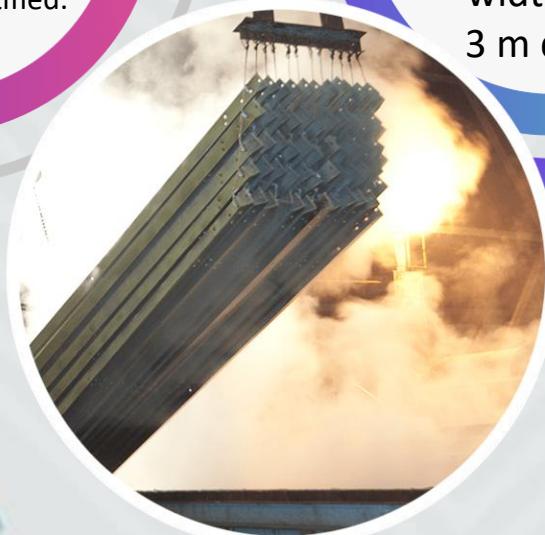
More than 57 Angle & Plate CNC lines operated production lines imported from Germany, Italy & China



Health and safety is the priority areas at Skipper. We are QMS (ISO 9001) EHS (ISO 14001) and OHSAS (ISO 45001) certified.

# Facility Highlights

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7 in-house galvanizing plants up to 12 m length, 2.5 m width and 3 m depth

In-house Engineering and Drawing department to provide Optimized Design solutions

Abides to international norms of packaging like Proper lashing, choking and fumigation

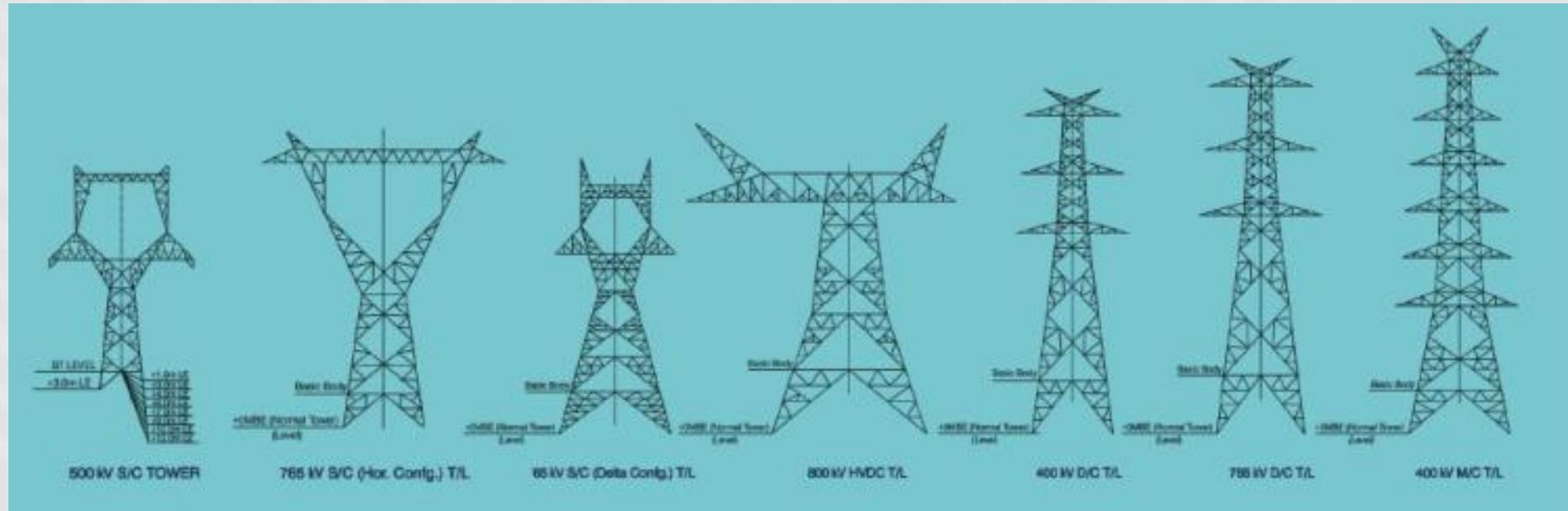


# Product

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## Range of Towers

We offer our customers a diverse product basket ranging from 66kV to 800kV Towers (Single Circuit, Double Circuit, Multi-Circuit Towers suitable for Twin, Quad and Hex Conductor configurations).



# Geometrical Features: Joint Type



**SLIP TYPE JOINT**

SLIP TYPE JOINT IS VERY COMMON AND CAN BE ADAPTED/USED FOR ALL LOCATIONS BARRING AREAS WHERE WE MIGHT HAVE LOGISTICS, TRANSPORTATION OR ERECTION ISSUES



**FLANGE TYPE JOINT**

FLANGE TYPE JOINT IS USED WHERE LOWER SECTION LENGTHS ARE REQUIRED AND THERE IS NO SPACE TO MOBILIZE HEAVY CRANES. IT IS RECOMMENDED ESPECIALLY IN HILLY/VALLEY REGIONS



**BUTT WELDED TYPE JOINT**

CURRENTLY, MOST OF THE UTILITIES DO NOT RECOMMEND THIS TYPE OF JOINT.

# Geometrical Features

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## BASE PLATE TYPE POLE

- Base plated type poles can be used for any height/rating/span as long as its is within manufacturing capability
- Easy to assemble and install



Base plate pole on median



132 kV single sided cross-arm



220 kV M/C pole with aux cross-arms

# ° Geometrical Features

## DUAL, TRIPLE OR FOUR POLE STRUCTURES

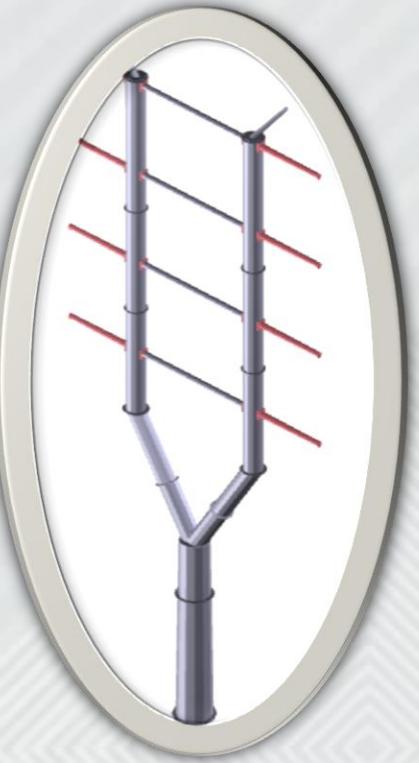
Sometimes one pole configuration may not be sufficient as per customer/site requirement due to manufacturing limitations, so we suggest dual-pole or multi-pole structure in order to cater to the requirement



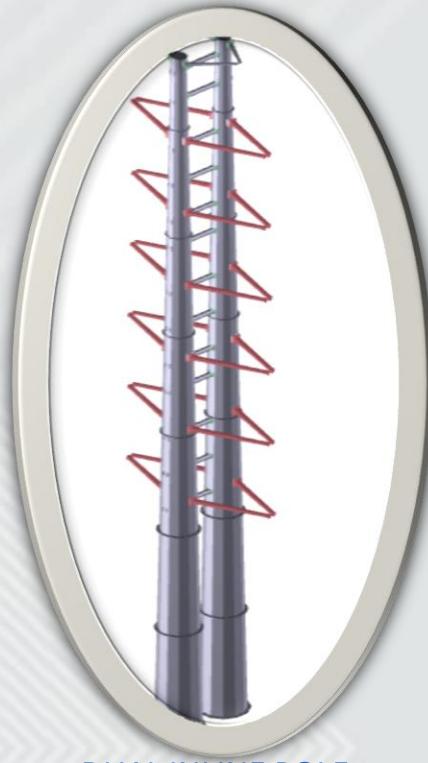
DUAL H-POLE 400 kV



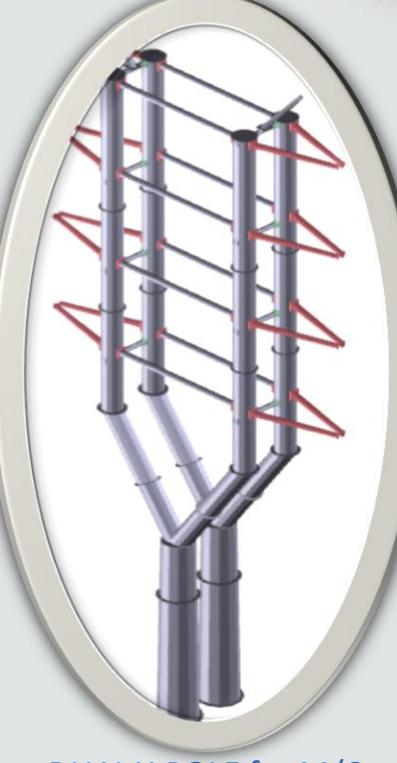
DUAL H-POLE 66 kV



Y-POLE for M/C



DUAL INLINE POLE



DUAL Y-POLE for M/C

# Strength / Capabilities

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- In-house design capabilities: strong dedicated qualified design / detailing team who support on custom designs as per customer requirements
- They use latest computer software as listed

PLS POLE

PLS CADLITE

STAAD PRO

CAISSON

AUTOCAD



- Highly experienced /qualified production / planning / quality / logistics team
- In-house testing facility helps us reduce lead time considerably
- Experienced large EPC team for installation / erection / stringing / commissioning



# Strength / Capabilities

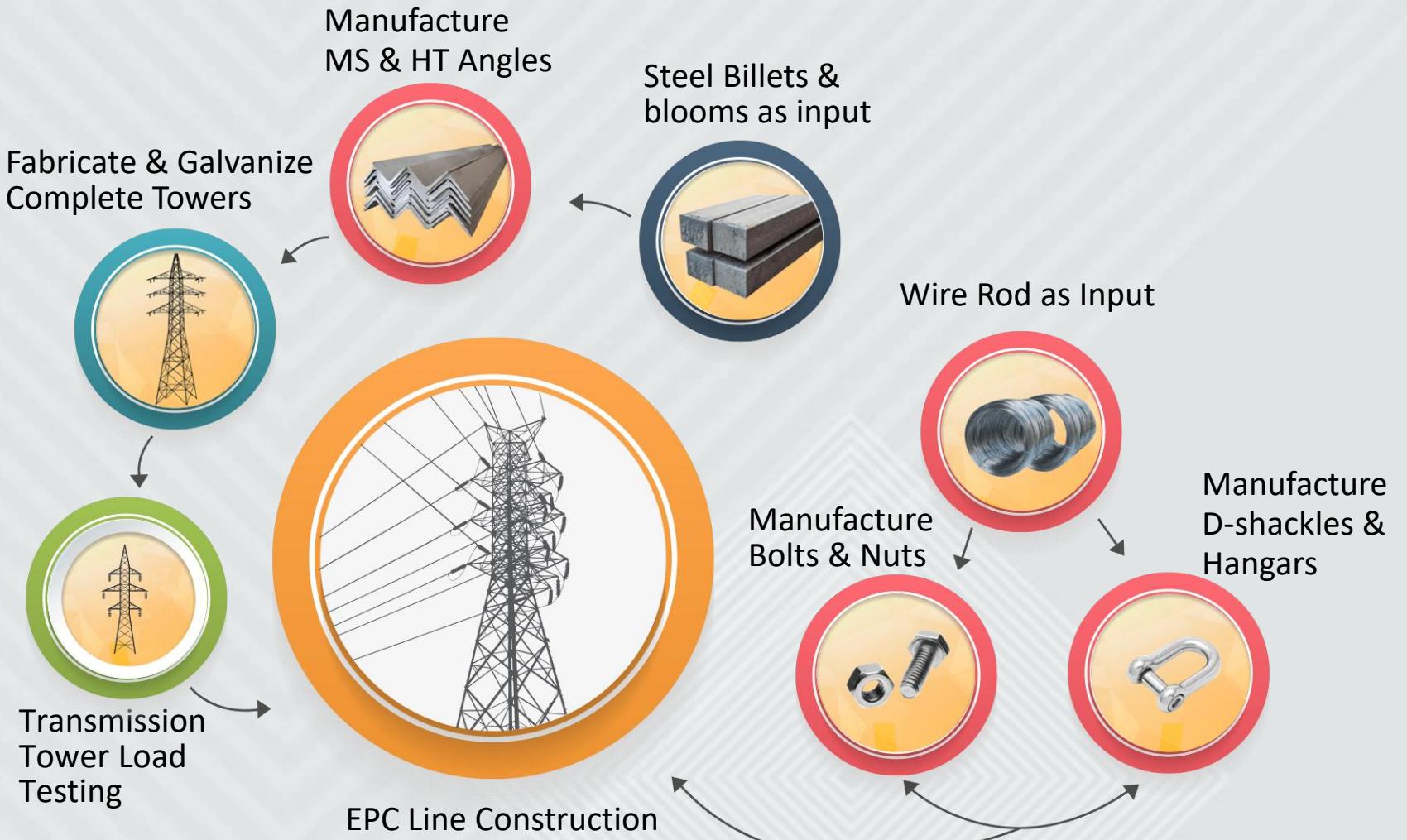


CENTRAL POWER RESEARCH INSTITUTE, BENGALURU  
SKIPPER LIMITED, R&D CENTER, KOLKATA

***SKIPPER BECOMES THE ONLY COMPANY IN INDIA TO  
HAVE SUCCESSFULLY TESTED 400 kV D/C QUAD-MOOSE  
and 765 kV S/C HEXA ZEBRA POLES***



# Our Value Chain



# Backward Integration

## Bringing the good together

We believe that all good things should integrate together to create something exceptional.

Hence, when it comes to Power T&D Structures manufacturing, Skipper undertakes each and every activity in the entire value chain from Angle Rolling to Fabrication & Galvanizing, Proto Assembly, Load Testing and even EPC line construction.

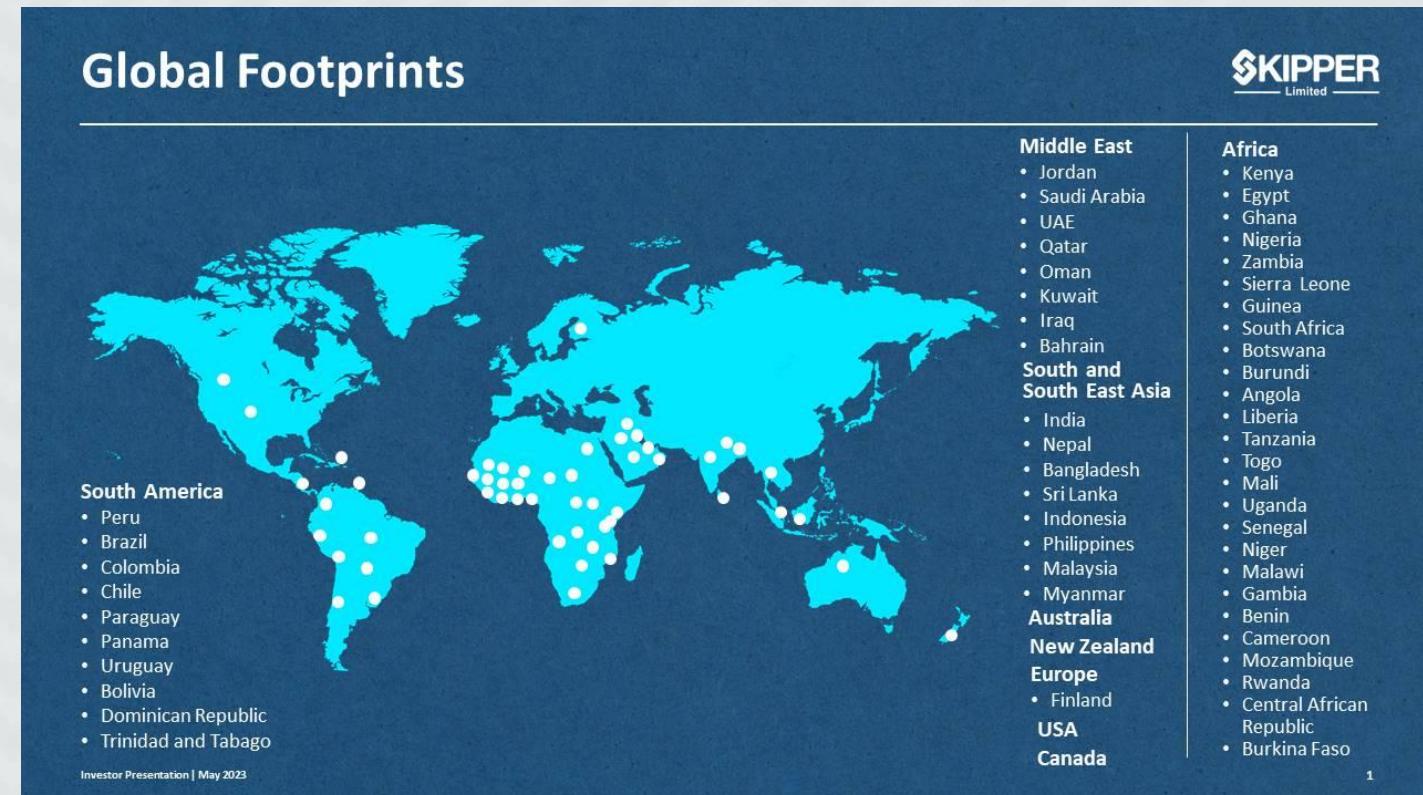
Skipper's backward integration enables cost optimization, swifter time-to-market, high quality control, timely dispatch, superior customer service, and a much lower exposure to commodity price fluctuations...



# Presence

Decades of thriving national & global spread of business to 65+ Countries

Establishing the template of a true entrepreneurial journey, Skipper Limited has grown from strength to strength in the last three-&-half decades as one of the leading & largest Indian companies in the Power Transmission & Distribution-segment with extensive global footprints.



# Few Photos Of Skipper Erected Towers



Uruguay

Oman

Paraguay

Colombia

# Our Domestic Clients

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Bajaj Electricals Ltd.

**TATA PROJECTS**  
Simplify.Create

**PLR**  
PROJECTS

**TBEA**  
Always Reliable

**KSA**



**meil**  
MEHRA ENGINEERING & INFRASTRUCTURES LIMITED

**shyama**  
power

**पावरग्रिड**

**SIMPLEX**  
REINFORCED CABLES



**Jio**

**///Sterlite Power**



**KETAN CONSTRUCTION LIMITED**



UTTAR PRADESH POWER CORPORATION LTD.

**TEEMS INDIA**  
Towerlines Private Limited



**KSEB**

# Our International Clients

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Angelique International Limited  
PROJECT ENGINEERING, PROCUREMENT AND CONSTRUCTION COMPANY



BLACK & VEATCH

# Our International Clients

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# Our International Clients

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**First Balfour**

**TEYMA**

**VINCI**  
ENERGIES

**EUROLAITE**  
— A PART OF ADDTECH GROUP

**gc<sup>3</sup>**  
GIZA CABLE INDUSTRIES  
الجيزة لصناعة الكابلات  
TELEPHONE CABLES, POWER CABLES & ISOLATED WIRES

**secureenergy**

**OMEXOM**

**saceem**

**J.E. JAIMES**  
INGENIEROS

**Alemar**  
Contracting Engineers & Construction Management



**GREAT SOUTHWESTERN  
CONSTRUCTION, INC.**

شركة ندى الياسمين  
Nada Alyasimen  
Contracting Company



**ATCO**™

 **Grupo  
Energía  
Bogotá**





# R&D Center

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## Fully Integrated In-House Research & Development Center:

Skipper's In House Research & Development Center located in Howrah, West Bengal is approved and recognized by Dept. of Scientific and Industrial Research (DSIR), Govt. Of India. The R&D Unit will not only facilitate in house load testing and proto type testing but will also help improve and customize the tower design resulting in customer satisfaction.



# Transmission Line Tower Testing Station

Skipper boasts of the largest Tower & Monopole Load Testing Station in India, which is also one of the largest in the world.

The state of art Transmission Line Tower Testing Station is spread across 14acres of land in Howrah , WB

NABL Accredited Testing Laboratory (Certificate No. TC-9011)

One of the largest Testing facilities of India and first of its kind in Eastern India

Capable of Full scale load testing, a reliable tool for validating the structural design

The facility is designed to Test all kinds of Lattice Towers, Monopoles & Guyed Towers with World Class Technical Parameters

Ultimate Destination for OHTL Contractors and Manufacturers for Prototype Testing

# Transmission Line Tower Testing Station



## Test Bed Key Features

- Maximum Test Tower Base Width - 35M x 35M
- **Maximum Test Tower Height** - **130M**
- **Max. Compression/Uplift Per Leg is** - **1200T**
- **Allowable Overturning Moment** - **60,000T-M**
- Maximum Cross Arm Spread - 70M
- Maximum Transverse Wire Load - 120T per point
- Maximum Longitudinal Wire Load - 80T per point
- Maximum Vertical Wire Load - 60T per point
- Load Application on System - 60 Nos. 5T & 10T capacity  
Electrically Operated Winches
- Load Measurement System - Stain Gauge Type Load Cell
- Material Testing and Calibration - 60t digital UTM
- Tower Erection on through - 10t Tower Crane

# Transmission Line Tower Testing Station



FEW IMAGES OF OUR TOWER TEST STATION

# Tower Testing Station

200

Towers tested in 3 years

12

Towers tested in 1 month



500kV Tension Tower Type  
'EDT300' (0 to 30) deg for  
National Grid Corporation  
of Philippines (NGCP).



765 kV S/C Monopole type  
"PD/PE+OM Ext (0-60d)/DE" for  
Powergrid Corpora on of India  
Limited (PGCIL)



220kV Tower type "22AR1"  
for Chile (CTDE)



Largest utility pole to be manufactured  
and tested in India. A 400 kV D/C Quad  
Moose Monopole of height 38.633 M  
and weight 55 MT with base moment  
of over 41609 kNm

# Design & Engineering

Skipper has a state of art in-house design facility with a strong team of Design Engineers and Draughtsmen who continuously develop innovative, construction friendly and cost effective designs. The company is equipped with the latest software like PLS Tower, PLS Pole, Tower- Cad & Auto - Cad and is equipped to provide computerized engineering solutions, 3D analysis and design. The company has also designed various types of towers ranging from 33 KV to 500 KV HVDC and various types of monopoles.

Few Towers designed and tested successfully are:

VOLTAGE RANGE	COUNTRY NAME
400kV D/C	Oman
132kV M/C	Srilanka
220kV D/C	Chile (South America)
66KV D/C	Chile (South America)
132kV D/C	Nepal
132kV D/C	Nepal
132kV D/C	Nigeria
330kV D/C	Nigeria
240kV S/C	Canada
500kV D/C	Malaysia
500kV D/C	Philippines
230kV S/C & D/C	Philippines

# Quality Certifications

At Skipper Limited, quality is a way of life. We test and certify all that we manufacture so that our customers can be completely assured in the knowledge that they are being delivered the most genuine product.

Process	Indian Standards (IS)	British Standards with European Norms (BSEN)	American Standards(ASTM)	Australian/New Zealand Standard (AS/NZS)	German & ISO Standards
Rolling & Cutting Tolerance (Hot Rolled Steel Products)	IS 1852 & IS 808	BSEN 10056-1 & 2	ASTM A6	AS/NZS 3679.1	
Fabrication	IS 802 Part-II & IS 7215	BSEN 1090-2		AS/NZS 5131	
Mild Steel (Tower Material)	IS 2062, E250A	BSEN 10025-2, S275JR/J0	ASTM A36/A36M		
High Tensile Steel (Tower Material)	IS 2062, E350A	BSEN 10025-2, S355JR/J0	ASTM A572, Gr. 50, 60 & 65		
Galvanizing	IS 2629, IS 3633, IS 4759, IS 6745	BS 729 & BSEN 1461	ASTM A123, ASTM 153 & ASTM A143	AS/ NZS 4680	
Fasteners (Grades 4.6/5, 5.6/5, 5.8/5, 6.8/6, 8.8/8 & 10.9/10)	IS 1367 (Part-3 & 6), IS 12427, IS 14394 &	EN ISO 898-1 & 2 EN ISO 4016, EN ISO 4018, EN ISO 4032 &	ASTM A394, ASTM F3125 ASME B 18.2.1 & B 18.2.2	AS/NZS 4291-1 & 2 AS/NZS 1559	DIN 267 Part-4 & 5 (ISO 898-1 & 2)
Type 0, Type-1 & A325	IS 10238	EN ISO 4034	ASME B 18.2.6M		DIN 7990, DIN 934, ISO 4032, ISO 4034

In addition to above, we have some international certificates viz: ISO 9001, ISO 14001, ISO 45001, ISO 17025, EN-1090-1, EN-1090-2, ISO 3834, SONCAP, RETIE, Canadian Welding Bureau (CWB)

# Registrations & Approvals

- |                                 |   |
|---------------------------------|---|
| 1. EDL – Lebanon                | 18. TANESCO – Tanzania  |
| 2. TRANSGRID – Australia        | 19. UTE – Uruguay   |
| 3. LADWP – USA                  | 20. ANDE – Paraguay   |
| 4. INMETRO – Brazil             | 21. ETASA – Panama  |
| 5. ISA CTEEP – Brazil           | 22. ENDE – Bolivia  |
| 6. GEB – Colombia               | 23. CEB – Sri Lanka   |
| 7. ISA – Colombia               | 24. EETC – Egypt  |
| 8. OETC – Oman                  | 25. TC Energy – Canada  |
| 9. MOE – Iraq                   | 26. Celsia – Colombia   |
| 10. NGCP – Philippines          | 27. EDP – Brazil  |
| 11. ABOITIZ POWER – Philippines | 28. Transpower – New Zealand  |
| 12. TCN – Nigeria               | 29. TNB – Malaysia  |
| 13. KETRACO – Kenya             | 30. Sarawak Energy Bhd. (SEB) – Malaysia                                      |
| 14. KPLC – Kenya                | 31. Gulf Cooperation Council Interconnection Authority (GCCIA) – Saudi Arabia |
| 15. NEA – Nepal                 | 32. Department of Power Transmission & System Control (DPTSC) - Myanmar       |
| 16. PGCB – Bangladesh           |   |
| 17. BREB – Bangladesh           |   |



# Packaging

At Skipper, containerization is the manifestation of the company's ethos to care till the last mile for its valuable customers. Utmost care is taken to ensure all tower parts reach the end customer in sturdy sea-worthy packing for ease of handling during transportation from factory to installation site. All our plants are geared up to do single-tower bundling and factory-stuffing of containers for ensuring safe delivery to site.

Proper lashing, choking and fumigation are done to ensure international norms of packaging. Services of professional logistic enables best of shipping lines and fast delivery to our international customers. A dedicated fleet of transporters are engaged for transportation of towers to our domestic customers.



# Bar Coding

Skipper has introduced barcoding facility for towers supply for the first time in India. Our ultimate goal is to minimize the pain points of customer pertaining to material management and planning at all locations, which ensures 100% receipt of materials as delivered.



# Bar Coding

- Real time information sharing on materials
- Consolidated information sharing on materials
- Easy access to information pertaining to materials
- On line information sharing
- No hardware or software requirement at site
- Hassle free joint verification can be carried out

## Benefits to Customer

- 1 Ensuring "Zero shortage" of materials supplied and received at site
- 2 Efficient materials management (sorting, bundling and storage) at site
- 3 Ensuring correct & efficient material handling and tracking from delivery to Erection of towers
- 4 Hassel free joint verification can be carried out
- 5 Minimal time required as compare to physical joint verification

# Awards



**AWARD:**  
THE LARGEST TOWER SUPPLIER  
FOR 3rd CONSECUTIVE YEAR  
**GIVEN BY:**  
POWER GRID CORPORATION OF  
INDIA LTD. (PGCIL)



**AWARD:**  
EMERGING POWER EPC PLAYER  
**GIVEN BY:** EPC WORLD



**AWARD:**  
GLOBAL HR EXCELLENCE  
**GIVEN BY:**  
WORLD HRD CONGRESS



**AWARD:**  
BEST BRAND AWARD  
**GIVEN BY:**  
WORLD MARKETING  
CONGRESS



**AWARD:**  
MOST VALUABLE  
CONTRIBUTION TO POWER  
INDUSTRY  
**GIVEN BY:** ET EDGE



**AWARD:**  
STAR PERFORMER AWARD FOR  
THE YEAR 2015-16  
**GIVEN BY:** EEPCL INDIA



**AWARD:**  
THE BEST POLYMER BRAND  
**GIVEN BY:**  
CONSTRUCTION TIMES



**AWARD:**  
MOST ETHICAL COMPANY  
**GIVEN BY:**  
WORLD CSR DAY

# Testimonials



"Over the past six years, Skipper has supplied 400 KV and 765 KV Transmission Towers to 7 of EMC's transmission projects. Their quality and commitment is quite good and we wish to take them as our preferred supplier in future also." -RK Shah, President, EMC Ltd.]

## RAMBOLL

"Skipper has been a Ramboll manufacturing partner for more than 6 years and we have found them to be a fair and transparent Organization. We wish them all the best in their future endeavours." -Trond M. Bredesen, COO – Ramboll Towers India & Global Production Director



"Congratulations Skipper for successfully executing supplies for the difficult Multi-Circuit Towers (average tower weight more than 60 MT) to our Gaya-Kodarma T/L Project. We've found Skipper to be a reliable and quality-conscious manufacturer and look forward to working with them again." -Santosh Thakur, Director – Shyama Power India Ltd.



"Skipper is one of our most dependable Tower partners and we look forward to our association growing from strength to strength." -SC Jha – SBU Head & VP, Tata Projects Ltd.

## Ranjit Singh & Co.

"We are happy to have Skipper as a JV partner in 4 major Transmission Projects. Their product quality is excellent and their approach is highly professional and ethical." -BS Gill, Managing Partner, Ranjit Singh & Co.

# Other Products



## Monopole

A pioneer, Skipper Limited is the largest Monopole designing and manufacturing facility in India, armed with global expertise and intellectual capital. It has an application of up to 400 kV in Transmission Towers and for heights of up to 40 metres for Telecom Towers.



## Telecom Towers

Skipper has state of the art facility for production of all types of ground based telecom towers and monopoles. With the advent of newer technologies skipper is also currently supplying various kinds of camouflaged towers which are basically monopoles made to look like palm tree, pine tree etc. We are already supplying tubular/Angular/ Hybrid towers to various clients.

# Other Products



## Distribution & Lighting Poles

Skipper's strength as a pole manufacturer and distributor ensures that its products find use in Power Transmission, Distribution and Lighting projects across India as well as in Gulf and African countries. Products manufactured include Tubular Swaged Poles, High Mast Poles, Octagonal Poles and Monopoles.



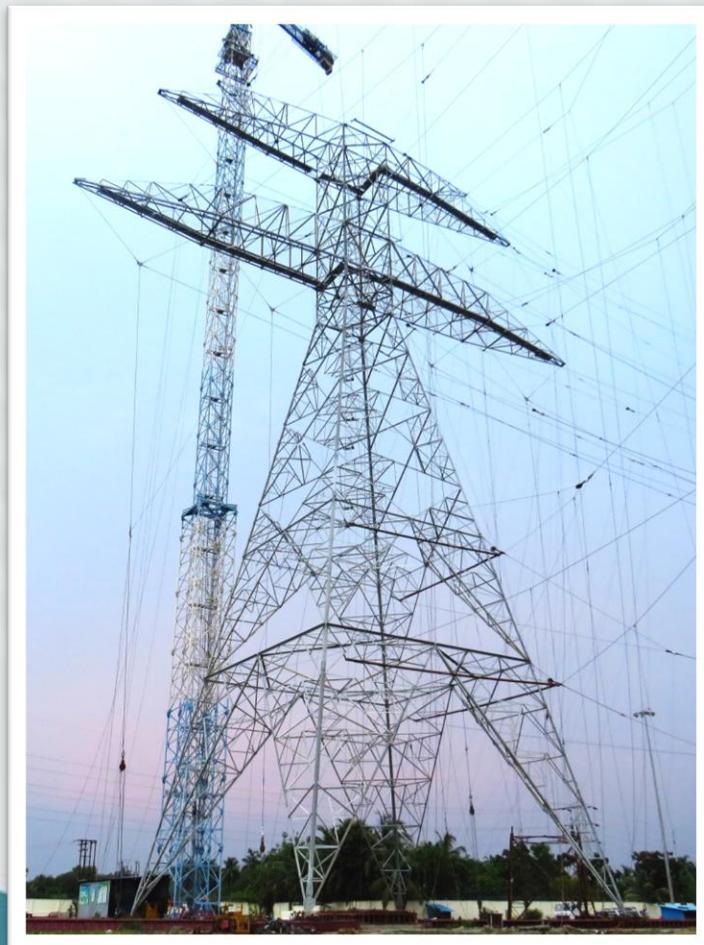
## Railway Electrification

The company is gearing up to sharpen its focus on Railway electrification and intends to increasingly start bidding for such projects in strategic alliance with local private players initially. The company is in the process of adding more manpower and building capacities to handle all future railways related projects

# Project Energy Connect (PEC) for Transgrid

- ▶ Size of project and scope of Skipper – **42133 Tons** ; Structural development of RTU Towers, Design revalidation of RTU and RTV Towers, Proto Assembly of 6, 330kV Towers, Load Testing of **5 Towers 330kV** and Proto & Load Testing of **3 Towers 500kV** manufacturing and Supply
- ▶ Skipper conducted design validation of 2 Towers – **RTU and RTV Towers of 330kV**
- ▶ Number of Towers tested – **6 Towers 330kV** (Completed) and **03 Towers 500kV** .
- ▶ Status – Supply quantity : **28,741 Tons has been delivered** ; balance planned in next 06 to 08 months.

# SEJV Towers Tested



500kV VSQ



330kV RSF

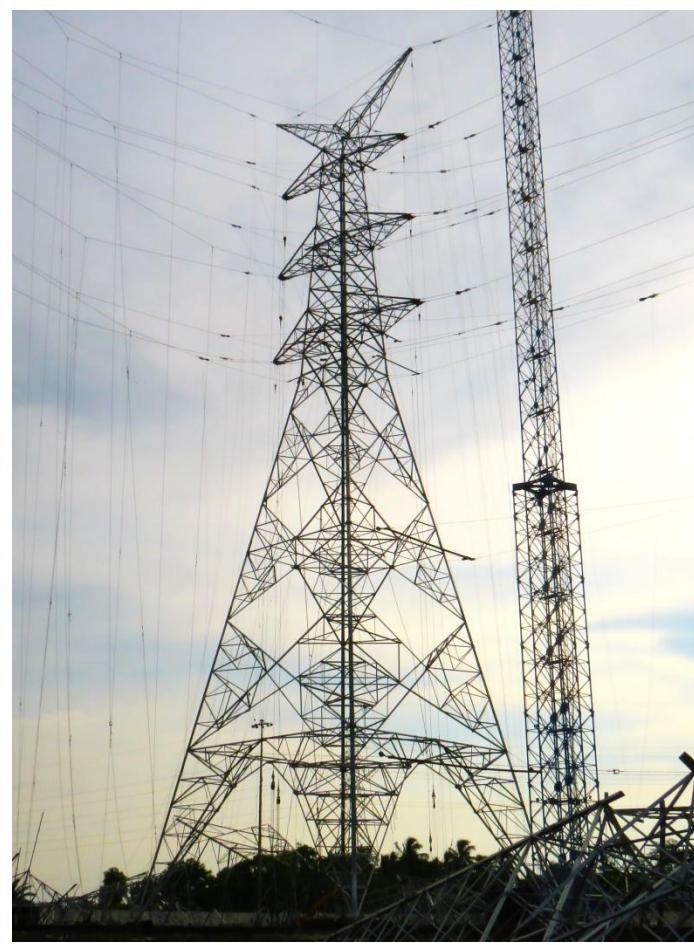


330kV RSG

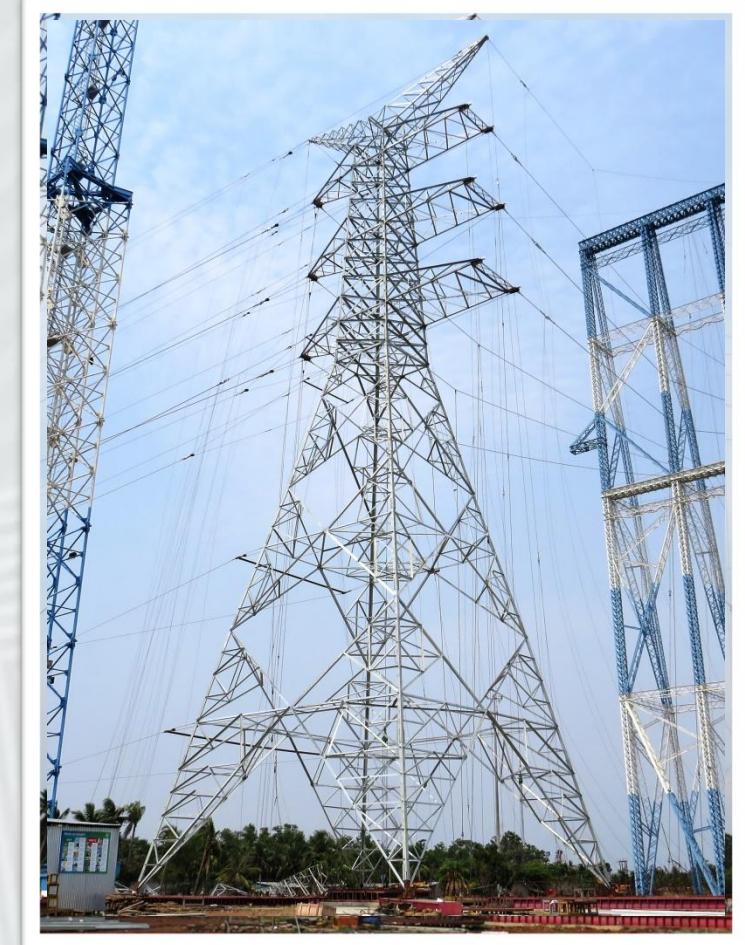
# SEJV Towers Tested



330kV RTU

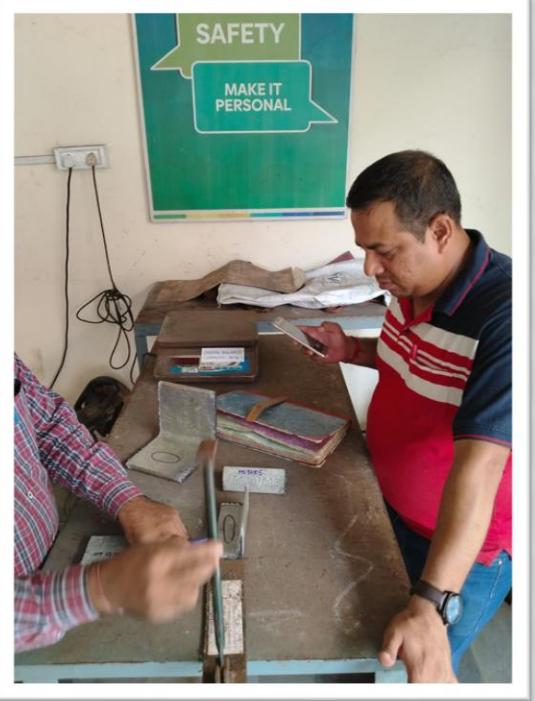


330kV RTT



330kV RSG

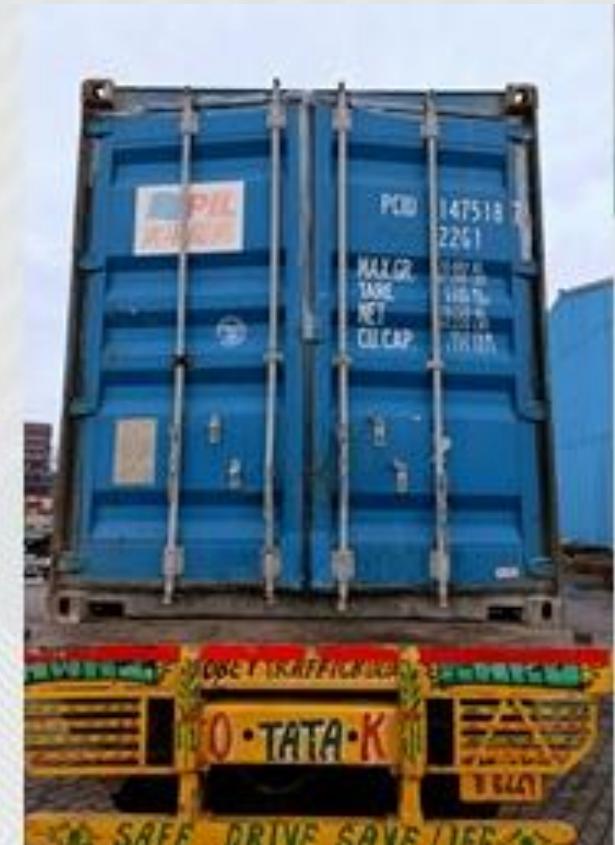
# PROCESS



# PROCESS



# IMAGES OF CONTAINER LOADING



# WHY SKIPPER ?

- 1) One of the **largest capacities** globally with strong experience supplying to Large Transmission projects
- 2) In-house **Design** and optimization facility
- 3) Sourcing from **Prime Steel producers** located strategically close to our plants
- 4) In -house **Rolling mills** ensuring 100% Traceability and adherence to Global standards
- 5) In-house **Load Testing Station** to reduce testing lead times
- 6) Capable of meeting **environmental** and sustainability norms
- 7) Close proximity to **Sea Ports** reducing lead time for container shipment
- 8) Capable of meeting all **packaging** and fumigation requirements
- 9) Innovative **Bar Coding** System for easy identification and inventory
- 10) Capable of meeting local **insurance** requirements
- 11) Planned for 25% capacity enhancement in next 01 year .
- 12) one more test bed is going to be commissioned in next 01 year .

# Thanks

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Together we can make success a truly shared journey

Together, we can fly into future, transform the global transmission-landscape and make success a truly shared journey.

Follow us on:    

