

Knowledge Sharing On

Best Practices in Implementation of the Planned Transmission Systems

The Tata Power Company Limited

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Current practice in India for implementation of transmission scheme / system

Power infrastructure project in India are executed under following modes

RTM (Regulated Tariff Management)

The **Regulated Tariff Mechanism (RTM)** is a framework used primarily in the electricity sector (under Section 62 of the Electricity Act, 2003) where regulatory commissions determine power tariffs based on calculated, cost-plus parameters. This method sets prices by assessing capital costs, operational expenses, and a guaranteed return on equity.

TBCB (Tariff Basis Competitive Bidding)

In **TBCB** where government bodies (BPC) or utility companies (STU) invite private developers to bid on long-term power or transmission projects. The **developer quoting the lowest tariff (price per unit)** wins the project / scheme.



NATION-WIDE PRESENCE OF TATA POWER TRANSMISSION



TBCB-1
JALPURA – KHURJA
744 Cr

UNDER CONSTRUCTION

- ❖ 400 kV LILO Line & 400/220 kV Metro Depot S/S (GIS) – Element I (commissioned on 31.10.2025)
- ❖ 400 kV Jalpura-Khurja Transmission line & 400/220 kV Jalpura S/S (GIS): Element II

TBCB-2
BIKANER – NEEMRANA
1534 Cr

UNDER CONSTRUCTION

- ❖ Bikaner-III - Neemrana-II 765 kV D/C line (2nd)
- ❖ 330 MVAr switchable line reactor

TBCB-3
ANGUL – PARADEEP
2293 Cr

UNDER CONSTRUCTION

- ❖ 765 kV Angul (Powergrid) Paradeep Transmission line
- ❖ 765 kV 2X1500 MVA GIS at Paradeep
- ❖ 400 kV Paradeep – Paradeep (OPTCL) D/C Line

TBCB-4
ANGUL – GOPALPUR
2513 Cr

UNDER CONSTRUCTION

- ❖ 765 kV Angul-Gopalpur D/C Transmission line
- ❖ 765 kV 2X1500 MVA GIS at Gopalpur
- ❖ 400 kV Gopalpur – Gopalpur (OPTCL) D/C Line

TBCB-5
JEJURI – HINJEWADI
1333 Cr

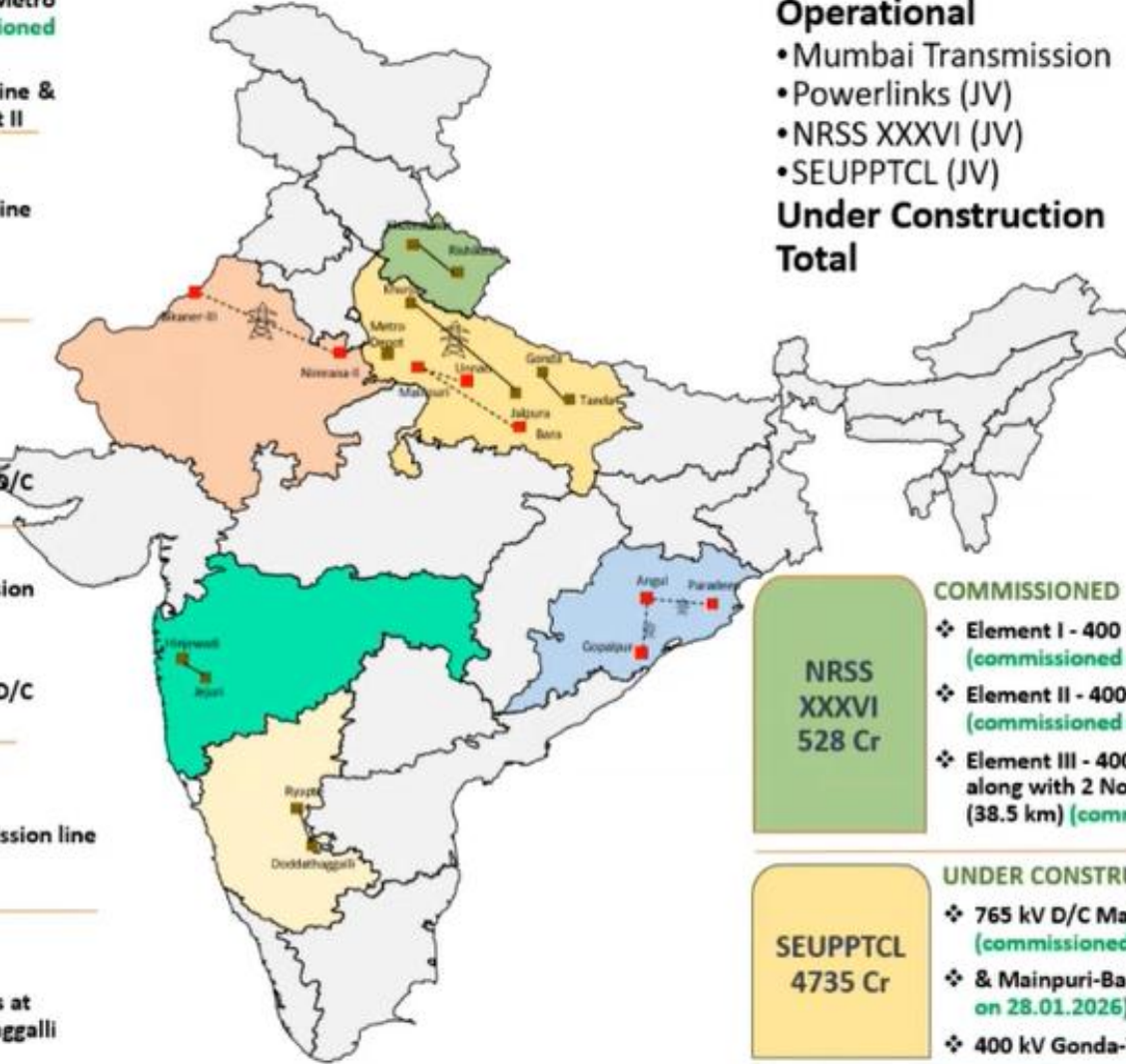
PRE-REQUISITE WORK INITIATED

- ❖ 400 kV D/C Jejuri – Hinjewadi Transmission line with total 8 Nos. 400 kV Bays

TBCB-6
RYAPTE
5033 Cr

UNDER SPV ACQUISITION

- ❖ 400 kV D/C Ryapte – Doddathaggalli Transmission line with 5x500 MVA S/s at Ryapte & 3x MVA S/s at Doddathaggalli



Transmission Portfolio:

Operational	4,710 ckm
• Mumbai Transmission	1,317 ckm
• Powerlinks (JV)	2,328 ckm
• NRSS XXXVI (JV)	302 ckm
• SEUPPTCL (JV)	789 ckm
Under Construction	2,349 ckm
Total	7,085 ckm

- 765 kV Substation
- 400 kV Substation
- 765 kV D/c Transmission Line
- 400 kV D/c Transmission Line
- - - - LILO Line

NRSS XXXVI
528 Cr

COMMISSIONED

- ❖ Element I - 400 kV LILO from Sikar to Neemrana (commissioned on 08.12.2025)
- ❖ Element II - 400 kV line from Babai to Bhiwani (commissioned on 16.11.2023)
- ❖ Element III - 400 kV line from Koteswar to Rishikesh along with 2 Nos. of bays at Rishikesh (Uttarakhand) (38.5 km) (commissioned on 08.12.2025)

SEUPPTCL
4735 Cr

UNDER CONSTRUCTION

- ❖ 765 kV D/C Mainpuri-Unnao line (380 km) (commissioned on 16.01.2026)
- ❖ & Mainpuri-Bara line (194 km) (commissioned on 28.01.2026)
- ❖ 400 kV Gonda-Tanda line (38.5 km)

Project Planning, Survey & Detailed Engineering

- Detailed survey & check survey take almost 30 to 45 days for an average length of 100km line. Developer can carry detailed survey in advance to save time after award of contracts.
- In view of sever RoW in different regions of India it is recommended to carry LiDAR survey which will reduce cost & time also encounter less Row during survey.
- Advance tools like MSP shall be used to carry detailed planning of material & resources.
- Standardization of technical requirement will certainly bring all the developer & OEM on common platform which will interim help for early designing & manufacturing of critical equipment like transformer, breaker etc.



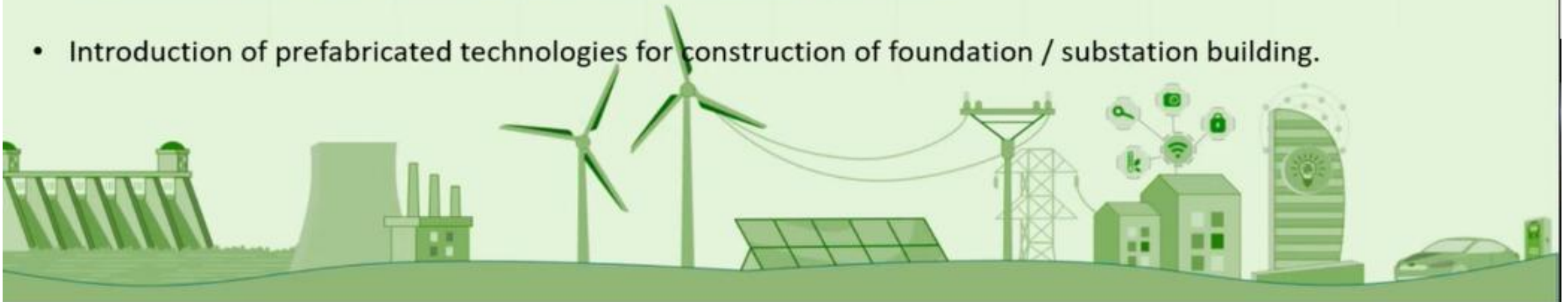
Land Acquisition, RoW, Clearances & Stakeholder Coordination

- Advocacy with state government for finalisation of ROW & compensation guidelines.
- Finalisation of compensation amount in consultation with government authorities.
- Creating awareness among stake holders about project importance.
- Engagement of local representatives for identification of landowner, coordination with them for finalisation & settlement of compensation amount.



Procurement, Material Management & Construction Methodologies

- Completion of tendering process upto LOI stage in parallel with project bidding process.
- Formulation of SLA with OEM of critical equipment to minimize delivery time.
- Identification / development of new vendors.
- Timely booking of metal to optimize financial impact.
- Standardization of specifications to minimize engineering cycle time.
- Introduction of prefabricated technologies for construction of foundation / substation building.



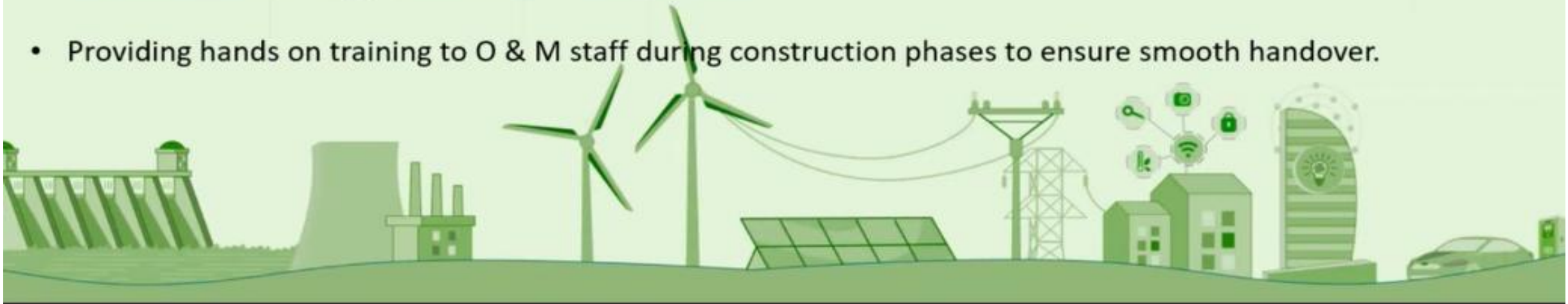
Construction Management, Monitoring & Risk Mitigation

- Use of project monitoring tools like MSP, PRIMAVERA to day to day monitoring of project progress.
- Regular review with all concern team members & identify critical path & prepare catch up plan.
- Preparation of construction plan in accordance weather seasons.
- Shortage of skilled manpower for transmission line related works.



Safety, Testing, Commissioning & Operational Readiness

- Provide project specific safety guidelines along with tender documents.
- Diligently carry safety evaluation of sub vendor before award of contract.
- Use of battery-operated tools to reduce electrical hazards.
- Adherence to FQP to ensure equipment healthiness & witness by third party.
- No alteration in wiring / scheme after successful SAT.
- Providing hands on training to O & M staff during construction phases to ensure smooth handover.



Thank you

