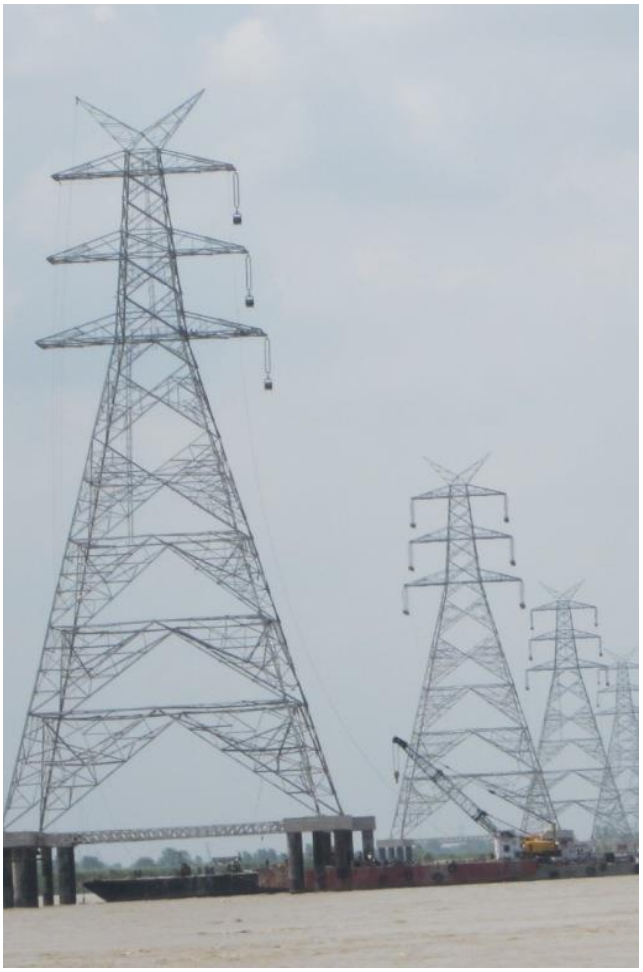
CASE STUDY

Sterlite Power

Farakka-Malda Transmission Line
India's first 400Kv D/C Twin Invar Reconductoring project

Project Details	
Name of the Project	PGCIL-400 kV D/C Farakka-Malda Transmission Project
Equity held	100%
Date of Project Completion	April 2016
Project Authority	Power Grid Corporation of India Limited
Project Architect, Design & Engineering	Sterlite Power Transmission Limited

PGCIL was seeking a solution that could enable enhancement of the power transfer capacity on the existing tower structures.
There was no scope of building of additional line due to extreme ROW with congested residential corridor and unrest situation.
The project experienced challenging state of affairs with conductor stringing across Ganges basin, railway line crossing and also installing during social unrest in the West Bengal region.



Customer's Pain

Powergrid the Central Transmission Utility (CTU) of the country is engaged in power transmission was looking for solution for evacuating the power generated from NTPC Farakka power plant .
Solution was also required to debottleneck the power transmission capacity from NTPC Farakka power plant to Malda 400Kv substation.
Due to the congested corridor, it was essential that the required sag of the conductor, should be less than that of the existing ACSR conductor.

Pain Points

Evacuation of Power generated from NTPC Farakka.
Increasing Load from residential corridor
Enhancement of power transfer capacity on the existing tower structures
High on ampacity while less weight to retain on the existing towers

Sterlite's Solution

With installation of Sterlite's New generation Conductor technology i.e Super thermal alloy conductor invar reinforced (STACIR) technology which facilitated higher ampacity to accommodate peak load demand with reduction in line losses at normal loading conditions; Low sag resulted in better ground profile & increased clearances. Moreover, the INVAR solution could be deployed on the existing infrastructure as it would have been very expensive to build a new line on the stretch of 3.5Kms of Ganga crossing.

Outcome/ Result

The installation of Composite core conductor technology has led to a total augmentation of the capacity of the line from approx. **850MW to 2400MW**, reducing the losses with ground clearance improved by **1 meter.**

Impact

- Reliable Power to the Industrial Area
- Improvement in ground clearance to 1 Mtr eliminating the electrocution accidents
- Debottlenecked power transmission from NTPC Farakka power plant to Malda 400Kv substation.
- 2X more power transmission from 850MW to 2400MW.
- Provisioning of Losses against Idealing, Theft and Pilferage.

Particulars	Pre Deployment	Post Deployment
Power Carrying Capacity	850 MW	2400 MW