www.tarang.website

3rd Edition 12th April 2017

Hello and Welcome!!

At the onset, we would like to thank all the stakeholders for overwhelming response & very useful suggestions and inputs in respect of first two editions of TARANG newsletter.

In the backdrop of VIKRAM SAMVAT HINDU NAVVARSH, we would like to highlight philosophy of Transmission System Planning. Transmission planning philosophy in India has evolved over last few decades keeping pace with developments and needs of the electricity sector. The transmission planning has been aligned with the Electricity Act 2003, National electricity policy, tariff policy, regulations and market orientation of the electricity sector. The objectives, approach and criteria for transmission planning, which evolved in time, take care of uncertainties in load growth and generation capacity addition while optimizing investment in transmission on long term basis. These objectives, approach and criteria are kept in view while planning transmission addition requirements to meet targets for adequacy, security and reliability. Transmission plan is firmed up through system studies/analysis considering various technological options and the transmission planning philosophy.

Apart from TARANG, we are pleased to inform you that Urja Mitra - An Outage Management System designed by RECTPCL under the guidance of Ministry of Power was dedicated to the NATION by Shri Piyush Goyal, MoS (IC) for Power, Coal and New & Renewable Energy on 11th April, 2017. It is first of its kind of an application which shall provide a platform (Web-Portal as well as Mobile App) for State Power Distribution Utilities to disseminate Power Outage information to urban/rural power consumers across India, through SMS/email/push notification.

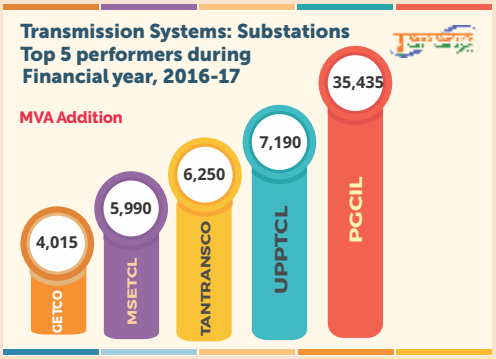
We also feel very proud to share that Urja Mitra has been declared Winner of "Golden Peacock Innovative Product/Service Award" for the year 2017.

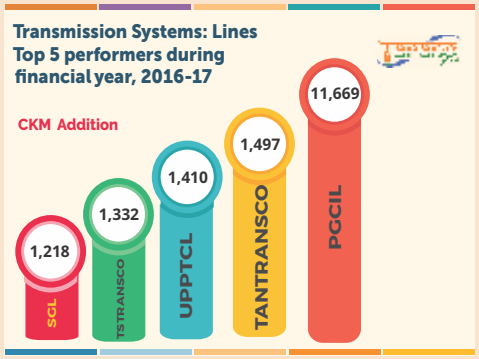
RECTPCL also takes this opportunity to wish you all a **"HAPPY VAISAKHI", & a "HAPPY GOOD FRIDAY."**

Top 5 Performers in Indian Transmission Sector (FY 2016-17):

We congratulate Power Grid Corporation of India Limited (PGCIL) for emerging as top performer in the category of Substations and Transmission Lines with commissioning of 35,435 MVA transformation capacity and line length of 11,669 CKM during the Financial Year 2016-17.

We also congratulate U.P. Power Transmission Corporation Limited (UPPTCL) and Tamil Nadu Transmission Corporation Limited (TANTRANSCO) for emerging as top performers amongst States by commissioning of 7,190 MVA transformation capacity and 1,497 CKM Transmission Lines respectively in the category of Intra-State Transmission Systems during the Financial Year 2016-17.





- Power Grid Corporation of India Limited
- U.P. Power Transmission Corporation Ltd.
- Tamil Nadu Transmission Corporation Ltd.
- Transmissipn Corporation of Telangana
- Maharashtra State Elec. Transmission Company Ltd.
- Gujarat Energy Transmission Corp. Limited
- Sterlite Grid Ltd.

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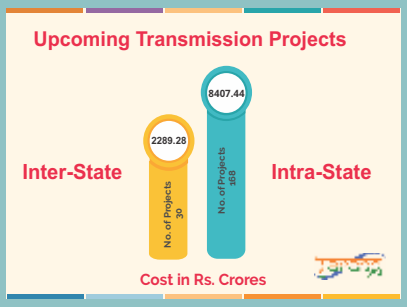
(A Wholly owned subsidiary of Rural Electrification Corporation Limited, A CPSE under Ministry of Power, Govt. of India)

A GLANCE AT STATUS OF TRANSMISSION PROJECTS : THROUGH TARANG

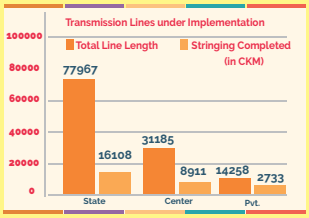
Upcoming Transmission Projects

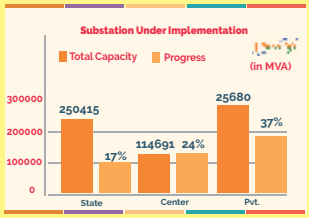
56 New Projects with estimated project cost Rs. 692.73 crores have been uploaded in "Upcoming Transmission Projects" section of TARANG since Jan, under Inter and Intra State Transmission Systems. Out of these projects, Intra State Projects were uploaded by State TRANSCOs and Inter State Transmission Projects are as approved in Empowered Committee and Standing Committee on Transmission.



Under Construction Transmission Projects

At the end of FY 2016-17, implementation of 1,23,410 CKM Transmission lines (40,850 CKM under Inter State Transmission Systems and 82560 CKM under Intra State Transmission Systems) and Substations of 3,90,786 MVA Transformation Capacity (2,56,319 MVA under Inter State Transmission Systems and 1,34,467 MVA under Intra State Transmission Systems) is under progress.

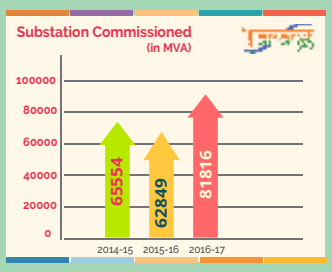


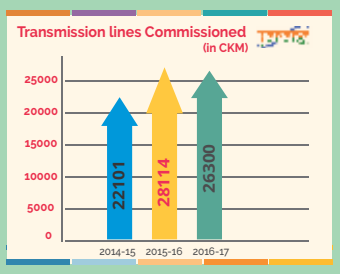


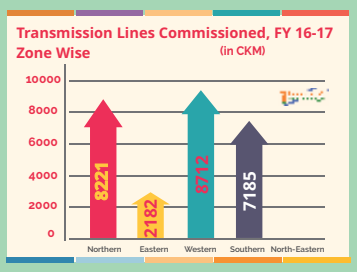
In the Inter State Transmission System 14,584 CKM is being implemented through Tariff Based Competitive Bidding (TBCB) route and balance 26,266 CKM is being implemented through Regulated Tariff Mechanism.

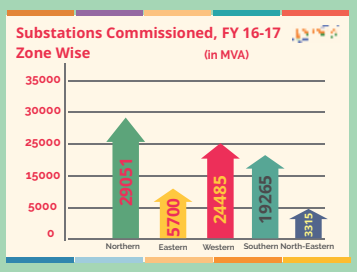
Completed Transmission Projects

During the year 2016-17, 26,300 CKM Transmission Lines added against the target of 23,384 CKM. In case of substations, 81,816 MVA of transformation capacity added during the FY 2016-17, against the target of 45,188 MVA. This is highest ever capacity addition in a single year.









PROJECTS UNDER TARIFF BASED COMPETITIVE BIDDING (TBCB)

Currently 6 projects are under bidding through TBCB mode. Out of these 6, 3 projects with estimated cost of Rs. 1,717 crores, 1,000 MVA transformation capacity & 698 CKM transmission lines are underbidding through PFCCL and bidding for balance 3 projects with estimated cost of Rs. 3361 crores, 7,062 MVA transformation capacity & 1,090 CKM Transmission lines are being carried out by RECTPCL. Recently, RECTPCL has successfully handed over the SPV, NER II Transmission Limited created for implementation of System Strengthening in North Eastern Region, NER – II Part-B and V scheme to successful bidder M/s Sterlite Grid 4 Limited emerged L1 after e-Reverse Auction.

RECTPCL handed over NER II Transmission Limited to M/S Sterlite Grid - 4 on 31-03-2017

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#Source: Figures of data at Tarang Portal as received from CEA Website uploaded by TRANSCOs

e-TRANS

The 'e-Trans' web platform for e-Bidding and e-Reverse Auction for Tariff Based Competitive Bidding (TBCB) in transmission projects is a powerful tool designed by RECTPCL under guidance of Ministry of Power. e-Bidding & e-Reverse Auction leads to better price discovery & increased transparency. The bidders can participate in the bidding process from anywhere in the world.

6 projects of estimated cost Rs. 5078 crores are under different stage of bidding through TBCB on e-Trans web platform. In March, 2017 RECTPCL has successfully handed over SPV NER System Strengthening Scheme II & V to M/s Sterlite Grid 4 Limited after conducting successful biding on e-Trans.

State TRANCOs may use this platform for Transmission Projects to be awarded through TBCB process after introducing e-Bidding & e-Reverse Auction for their upcoming transmission projects.

Innovations Corner- OPGW (Optical Ground Wire) Based Communication in Power Sector

An Optical Ground Wire (also known as an OPGW or, in the IEEE standard, an optical fiber composite overhead ground wire) is a type of cable that is used in overhead power lines. Such cable combines the functions of grounding and communications. An OPGW cable contains a tubular structure with one or more optical fibers in it, surrounded by layers of steel and aluminium wire. The OPGW cable is run between the tops of high-voltage electricity pylons. The conductive part of the cable serves to bond adjacent towers to earth ground, and shields the high-voltage conductors from lightning strikes. The optical fibers within the cable can be used for high-speed transmission of data, either for the electrical utility's own purposes of protection and control of the transmission line, for the utility's own voice and data communication, or may be leased or sold to third parties to serve as a high-speed fiber interconnection between cities.

The optical fiber itself is an insulator and is immune to power transmission line and lightning induction, external electrical noise and cross-talk. Typically OPGW cables contain single-mode optical fibers with low transmission loss, allowing long distance transmission at high speeds. The outer appearance of OPGW is similar to aluminium-conductor steel-reinforced cable (ACSR) usually used for shield wires.

Know Your Utility: Tamil Nadu Transmission Corporation Limited (TANTRANSCO)

TANTRANSCO is an electric power transmission system operator owned by Government of Tamil Nadu. It was established in November 2010, as a result of restructuring the Tamil Nadu Electricity Board with a vision to provide adequate and reliable transmission infrastructure.

Transmission sector of TANTRANSCO consists of the following network Infrastructure:

- EHT for a total length of 24,497 KMS.
- A total of 842 substations
- 95 Substations in and around Chennai have been provided with SCADA and have been integrated into Chennai Distribution and control centre (DCC)
- TANTRANSCO has one State Load Dispatch Centre at Chennai and 3 Sub LDCs at Chennai, Madurai and Erode.

The transmission network expansion is aimed at evolving a national power grid to facilitate free flow of power across regional boundaries, raising the transmission voltage from 230 kV to 400 kV level. In order to evacuate bulk power from one region to another region, there is scope for enhancing the transmission capability to 765 KV level. Tamil Nadu Electricity Board has taken up the indigenous erection of 400 KV substations and lines. Establishment of 765 KV transmission lines is also under investigation.

The Government of India has approved non-discriminatory open access to the transmission system to all generators for injecting power and to any consumer to carry the power from the point of injection to his load. To augment the power supply, the Government of Tamil Nadu has also permitted third party sale of power produced by IPPs, CPPs & other private power producers through short term Intra-State open access to HT consumers within Tamil Nadu as it will provide an incentive to the generators within the State to produce to their full capacity.

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RECTPCL IN NEWS

Ms. Ritu Maheshwari, IAS
CEO,RECTPCL
receiving
"Golden Peacock"
award for
"UrjaMitra"
in "27th World Congress on BUSINESS EXCELLENCE & INNOVATION" Dubai.

Shri Piyush Goyal, MoS (IC) for Power, Coal and New & Renewable Energy and other senior dignatories inaugrating the brochure of Urja Mitra scheme

TRANSMISSION SECTOR IN NEWS

ADB signs $175 mln loan pact with govt to help improve solar transmission system: Asian Development Bank has signed a $175 million loan agreement with the government to support construction of high voltage transmission systems for evacuation of power generated from new mega solar parks to the interstate grid, and improve reliability of the national grid system here.

Siemens and Sumitomo Electric consortium bags HVDC contract in India : A consortium of German Siemens and Japanese Sumitomo Electric Industries Limited has been awarded a high voltage transmission system contract from Power Grid Corporation of India Limited to develop India's first high voltage direct current (HVDC) link featuring state-of-the-art voltage-sourced converter (VSC) technology.

Power Grid to invest around Rs. 1 Lakh Crores in Transmission Sector: Power Grid Corporation will invest close to Rs. 1 lakh crore in Transmission Sector projects in five years to 2024, which is likely to shoot up if the government approves the electricity storage projects in the coming years. Out of the total Rs 2,60,000 crore worth of projects likely to be approved under the National Electricity Plan for the sector, including the Intra-State Transmission Projects, Power Grid would get around Rs. 1,00,000 crore worth of projects to implement. The entire approved cost for the sector would entail setting up of 1,06,000 circuit km of transmission capacity, 2,92,000 MVA of transformation capacity, and 14,000 MW of high voltage direct current bi-pole lines.

Dr. P.V Ramesh, IAS
Chairman, RECTPCL
Ritu Maheshwari, IAS
CEO, RECTPCL
Bhupender Gupta,
Addl. CEO, RECTPCL

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