POWER DISTRIBUTION IN INDIA 2020
Sector Growth, Discom Performance, Emerging Trends and Future Outlook

The report will help you:
- Identify key market trends and growth in the sector for the period 2014-15 to 2018-19
- Analyse the impact of recent policy and regulatory developments
- Assess the progress, challenges and opportunities under various government programmes
- Identify the new and emerging opportunities in the sector
- Gain insights on the outlook for the sector
- Understand the issues and challenges impacting the power distribution segment
- Track the operation and financial performance of all state and private discoms in recent years

POWER TRANSMISSION IN INDIA 2020
Sector Analysis, Recent Developments, Project Pipeline and Outlook

The report will help you:
- Gain insights into the recent trends and developments
- Evaluate utility performances and learn about their technology initiatives
- Learn about major programmes such as GEC, IR 41k and cross-border interconnections
- Analyse utilities’ plans for network expansion and investments
- Assess private sector experience
- Identify opportunities for both developers and suppliers

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The government is planning a slew of reforms for the power distribution sector. Structural reforms in the tariff policy are expected, besides a revamped Ujwal Discom Assurance Yojana (UDAY). The existing distribution franchise (DF) model is also being modified to ensure greater participation by private players. Further, the separation of wires and supply businesses in distribution is one of the top priorities of the government. These policy announcements, if implemented in time and effectively, would have a direct and significant impact on the sustainability of the power distribution segment. The Power Distribution in India 2020 report will provide a comprehensive view and outlook for the power distribution market in India.

SECTION I: TRENDS, DEVELOPMENTS, OUTLOOK AND PROJECTIONS

1. Sector Size and Growth
   - Growth Drivers
   - Trends in Power Demand and Supply
   - Growth in Distribution Line Network
   - Growth in Distribution Transformer Capacity
   - Substation Additions
   - Energy Sales Trends
   - Consumer Growth
   - AT&C Loss Targets and Achievements
   - Metering Scenario
   - System Reliability Indices
   - Key Issues and Concerns
   - The Way Forward

2. Recent Policy and Regulatory Developments
   - MoP Order on LC Mechanism
   - APTEL Directive on Delay in Tariff Revisions
   - Draft Electricity (Amendment) Act, 2018
   - National Power Discos
   - Aggregate Power Procurement under Pilot Scheme 2
   - Aggregate Medium-term Power Procurement Scheme
   - SCED Pilot Implementation
   - CERC (Terms and Conditions of Tariff) Regulations, 2019
   - CERC (Power System Development Fund) Regulations, 2019
   - Charging Infrastructure for Electric Vehicles- Revised guidelines
   - RPOs
   - Others

3. Other Recent Developments
   - Key Developments under Government Schemes (IPDS, DDUGY, NSGM)
   - Updates under Smart Metering National Programme
   - PPA-related Updates
   - Tariff Hikes
   - Developments Impacting Discom Tariffs
   - Discom Rankings
   - Distribution Franchises
   - Digital Mapping of Feeders

4. Inter-Discom Comparison Public (2014-15 to 2018-19)
   - Consumer Base
   - Energy Sales
   - Line Length
   - Transformer Capacity
   - AT&C Losses
   - ACS-ARR Gap
   - Power Purchase Costs
   - Net Profits
   - Metering Coverage
   - System Reliability

5. Inter-Discom Comparison Private (2014-15 to 2018-19)
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   - System Reliability

   - Projected Line Length Additions
   - Projected Substation Additions
   - Projected Distribution Transformer Capacity Additions
   - Projected Metering Requirements
   - Stakeholder Opportunities for Charging Infrastructure for EVs

7. Future Outlook for Costs, Tariffs and Finances
   - Projected Power Purchase Costs
   - Tariff Outlook
   - Outlook on Discom Finances and Losses
   - Outlook for UDAY

8. Upcoming Policies and Their Expected Impact
   - UDAY 2.0
     - Five-year Vision Plan
     - Electricity (Amendment) Act
     - Separation of Content and Carriage
     - New Tariff Policy
     - Private Participation in Distribution
     - DBT for Subsidies
     - Others (Distribution Perspective Plan)

   - Projected Investments in Distribution Network
   - Growth Drivers
   - Projected Demand for Equipment
     - Cables
     - Conductors
     - Transformers
     - Switchgear
     - Smart Meters
     - Others

SECTION II: UPDATE ON POLICY PROGRAMMES

10. Ujwal Discom Assurance Yojana (UDAY)
    - Discom Loss Performance in Last Four Years
    - AT&C Loss Performance in the Last Four Years
    - Collection and Billing Efficiency Achievements
    - ACS-ARR Gap Performance in Last Four Years
    - Power Purchase Costs
    - Trend in Tariff Hikes
    - Smart Meter Deployments
    - Other UDAY Parameters (feeder metering, UJALA, etc.)
    - Issues and Concerns
    - The Way Forward

11. Integrated Power Development Scheme (IPDS)
    - Sanctions and Disbursements
    - Physical Progress So Far
    - Digital Transformation under IPDS
    - Update under RAPDRP & SCADA Projects
    - Progress of IT enablement under Phase-II
    - Underground Cabling under IPDS
    - Smart Meter Installations
    - New Initiatives and Next Steps

12. DDUGY
    - Scheme Coverage
    - Sanctions and Disbursements
    - Physical Progress So Far
    - State-wise Progress of Sanctioned Projects
13. National Smart Grid Mission
   - MoP-sanctioned Pilot Projects
   - NSGM Targets
   - Projects Approved under NSGM
   - Other Initiatives by Discoms
   - Issues and the Way Forward

14. Operational Performance
   - Billing & Collection Efficiency
   - AT&C Losses
   - Outages
   - SAIDI & SAIFI Indices
   - DT Failure Rates
   - Issues and Concerns
   - The Way Forward

15. Financial Performance
   - Utility-wise Revenues
   - Utility-wise Goss Profits
   - Utility-wise Net Profits
   - ACS-ARR Gap
   - Outstanding Debt of Discoms
   - Outstanding Discom Dues from PRAAPTI
   - Subsidies Booked vs Received
   - Key Ratio Analysis

16. Expenditure Analysis
   - Year-wise Aggregate Expenditure Trend
   - Utility-wise Aggregate Expenditure Trend
   - Cost Break-up of Utilities
   - Trend in Power Purchase Costs
   - Trend in O&M Costs

17. O&M Costs
   - Year-wise Trends in O&M Costs
   - Trends in Utility-wise O&M Costs
   - O&M Costs Break-up

18. Capital Expenditure
   - Trends in Year-wise Capex
   - Discom-wise Capex Trends
   - Key Capex Components
   - Planned Capex and Proposed Break-up
   - Capex Break-up of Major Discoms

19. Power Purchase Costs
   - Year-wise Trends in Power Purchase Costs (aggregate and per unit)
   - Trends in Utility-wise Power Purchase Costs (aggregate and per unit)
   - Impact of Recent Developments on Power Purchase Costs

20. Tariff Trends
   - State and Utility-wise Trends in Tariffs
   - Recent Developments Impacting Tariffs
   - Category-wise Tariff Trends (Agricultural, Domestic, Industrial HT & LT, Commercial)
   - Tariff Revisions
   - Trends in Cross-subsidy Surcharges

21. Distribution Franchisees
   - Operational/Awarded DFs
   - Terminated Franchisees
   - Recently Awarded Franchisees
   - Recent Bids
   - Performance Analysis of Existing Distribution Franchisees
   - Upcoming Opportunities
   - Issues and Concerns
   - Outlook
   - Stakeholder-wise Opportunities

22. Smart Metering Initiatives
   - Current Scenario and Progress So Far
   - Policy Drivers
   - Central and State Government Initiatives
   - EESL’s Smart Metering Plans
   - Recent and Upcoming Smart Metering Tenders
   - Stakeholder-wise Opportunities
   - Issues and Concerns
   - Future Outlook

23. Trends in Discom Power Procurement
   - Trends in Long-term PPAs in Case I and II
   - Experience Under Aggregate Power Procurement Scheme
   - Exchange-based Power
   - Issues and Concerns
   - Future Outlook

24. Profiles of Discoms by State
   - Andhra Pradesh (APSPDCL, APEPDCL)
   - Assam (APDCL)
   - Bihar (NBPDCL, SBPDCL)
   - Chhattisgarh (CSPDCL)
   - Delhi (BRPL, BYPL, TPDDL)
   - Gujarat (PGVCL, UGVCL, MGVCCL, DGVCL, Torrent Power)
   - Goa (Goa PD)
   - Haryana (UHBVN, DHBVN)
   - Himachal Pradesh (HPSEB Limited)
   - Jammu & Kashmir (J&KPD)
   - Jharkhand (J BVN)
   - Karnataka (BESCOM, HESCOM, GESCOM, CESCOM, MESCOM)
   - Kerala (KSEB Limited)
   - Madhya Pradesh (MP Paschim, MP Poov, MP Madhya)
   - Maharashtra (MSEDCL, Adani Electricity, Tata Power, BEST)
   - Manipur (MSPDC)
   - Meghalaya (MePDCL)
   - Odisha (CESU, WESCO, NESCO, SOUTHCO)
   - Punjab (PSPCL)
   - Rajasthan (J VVN, AVVNL, J dVVN)
   - Sikkim (Sikkim PD)
   - Tamil Nadu (TANGEDCO)
   - Telangana (TSNPDCL, TSSPDCL)
   - Tripura (TSECL)
   - Uttarakhand (UPCL)
   - Uttar Pradesh (DVN, PVNL, PuVVNL, MVNKL, KESCo, NPCL)
   - West Bengal (WBSEDCL, CESC, India Power)

Each profile would cover the following:
- Area of Operations
- Line Length (voltage-wise break up)
- Number of Transformers
- Transformer Capacity (voltage-wise break up)
- Substations
- Total Number of Customers
- Energy Sales (HT and LT)
- AT&C Losses
- Billing and Collection Efficiency
- Revenue Gap
- Financial Performance
- Metering Status
- System Reliability Indices (SAIFI, SAIDI)
- Planned Network Additions
- Tariffs
- Power Purchase Costs
- Key Financials
- O&M Costs
- Capex Trends
- Contact Details

25. APPENDIX
India's power grid is transforming at an exceptional rate. Large-scale integration of renewable energy to catering to new demand loads and provide reliable electricity is motivating transmission utilities to redesign their grid strategies. It is estimated that an investment of Rs 2.6 trillion is required in the transmission sector by 2021-22. While most of the future investment will be for the expansion of physical grid infrastructure, utilities are expected to invest significant sums in new technologies to make grids more reliable, resilient, secure and smart. Competitive bidding has picked up at both interstate and intra-state levels, thus offering significant opportunities for the private sector. The sector is also expected to immensely benefit from major policy and regulatory reforms such as the new tariff regulations and early regulatory approvals to transmission schemes.

1. Executive Summary

SECTION I: MARKET TRENDS AND DEVELOPMENTS

2. Sector Size and Growth
   - Growth in Transmission Line Length
   - Growth in Transmission Transformer Capacity
   - Trends in Substation Additions
   - Growth in Interregional Transfer Capacity
   - Growth in Transmission against Generation Capacity
   - Growth in Total Transfer Capacity
   - Trends in Network Reliability
   - Ancillary Services Operations
   - Trends in Sector Investments
   - Key Issues and Challenges

3. Recent Developments
   - Key Commissioned Projects
   - TBCB Projects Secured in the Past Year
   - Changing Dynamics of the Private Transmission Sector
   - M&A Deals in the Operator, EPC and Supplier Space
   - Key Loans and Financing Deals
   - Update on Smart Grid Projects
   - Technology Advancements
   - Grid Integration with Neighbouring Countries
   - Telecom Opportunities for Transmission Operators
   - Status of India’s First Offshore Wind and Grid Integration Project
   - Others (Powergrid’s Maharatna status, international projects won, etc)

4. Policy and Regulatory Initiatives
   - Reconstitution of National Committee on Transmission
   - Early Regulatory Approval to Transmission Schemes
   - National Open Access Registry
   - CERC Tariff Regulations for 2019-24
   - EV Charging Infrastructure-related Policy Updates
   - CERC Order on AGC Implementation
   - CERC’s DSM (Fifth Amendment) Regulations
   - CERC’s Power System Development Fund Regulations
   - CERC’s Sharing of Inter-State Transmission Charges and Losses Regulations
   - CERC’s (Sharing of Revenue Derived from Utilisation of Transmission Assets for Other business) Regulations
   - SAMAST Implementation
   - Others (FRAS, Proposed framework for Real-Time Market for Electricity, etc)

5. Network Growth and Investments (till 2024-25)
   - Growth Drivers
   - Projected Line Length
   - Projected Transformer Capacity
   - Projected Substation Additions
   - Expansion in Interregional Transfer Capacity
   - Investment Projections
   - TBCB Opportunities
   - Issues and Concerns
   - Future Outlook

6. Project Pipeline (till 2024-25)
   - Overall Pipeline
   - Interstate Projects
   - Line Length (by voltage and utility)
   - Transformer Capacity (by voltage and utility)
   - Intra-state Projects
   - Line Length (by voltage and utility)
   - Transformer Capacity (by voltage and utility)

7. Forecasted Equipment Demand (till 2024-25)
   - New and Emerging Technology Trends
   - Projected Requirements
   - Conductors
   - Towers
   - Transformers
   - Switchgear
   - Reactive Power Equipment

8. Private Sector Experience: Project Development and Financing
   - Private Participation Experience so far
   - TBCB Update
   - Status of Projects awarded through TBCB (interstate and intrastate)
   - Analysis of Recent Bids
   - Projects Under Bidding
   - New Projects Identified for Bidding
   - Projects Developed under JVs
   - New and Emerging Players
   - Financing Models for Project Development and Operation
   - Issues and Concerns
9. Analysis of Transmission Tariffs
   - PoC Methodology and Charges
   - Interstate Transmission Tariffs
   - Intra-state Transmission Tariffs (Long-term and STOA)
   - SLDC Charges

SECTION II: UTILITY PERFORMANCE AND INITIATIVES

10. Growth in Network and Capacity
    - Transmission Line Length
    - Transformer Capacity
    - Number of Substations

11. Operational Performance
    - Transmission Line Length
    - Transformer Capacity
    - Number of Substations
    - Transmission Losses
    - System Availability

12. Financial Performance
    - Trend in Utility-wise Revenues
    - Trend in Utility-wise Expenditure
    - Net Profits
    - O&M Costs
    - Capital Expenditure Trends

13. Grid Modernisation Initiatives and Programmes
    - Substation Digitilisation and Automation
    - Advanced Communication Infrastructure
    - Robotics and Aerial Technologies
    - Others

SECTION III: GRID EXPANSION AND REGIONAL INTEGRATION

14. Renewable Energy Integration and Management
    - RE Growth So far
    - Expected Penetration of Renewables
    - Transmission Infrastructure Supporting RE
    - Green Energy Corridors I and II
    - Transmission Scheme for RE Zones by 2022
    - REMCs
    - Battery Energy Storage Systems
    - Issues in Renewables Integration
    - Outlook

15. Cross-border Interconnections
    - Overview
    - Current Transmission Links with Neighbouring Countries
    - Recent Developments
    - Interconnections under Implementation
    - Planned Transmission Links
    - Issues and Concerns
    - The Way Forward

16. IR Plans for Transmission
    - IR’s mission electrification
    - Overview of 41k initiative
    - Planned Additions in Transmission Network
    - Issues and Challenges
    - The Way forward

SECTION IV: TRANSMISSION UTILITY PROFILES

17. Profiles of CTUs
    - Power Grid Corporation of India Limited
    - Damodar Valley Corporation
    - Bhakra Beas Management Board

18. Profiles of STUs
    - GETCO
    - MSETCL
    - RRVPNL
    - UPPTCL
    - KPTCL
    - TANTRANSCO
    - MPPTCL
    - APTRANSCO
    - TSTransco
    - HVPNL
    - WBSETCL
    - OPTCL
    - BSPTCL
    - CSPTCL
    - PSTCL
    - KESBL
    - AEGCL
    - J USNL
    - J KPDD
    - PTCUL
    - MePTCL
    - TSECL
    - DTL
    - HPPTCL

19. Profiles of Private Utilities
    - Sterlite Power Transmission Limited
    - Adani Transmission Limited
    - Essel Infraprojects
    - Kalpataru Power Transmission
    - L&T Infrastructure Projects
    - Essar Power Transmission
    - CLP India
    - Sekura Energy
    - Others
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