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Our clients include most organisations involved in the infrastructure sectors – multinationals, top Indian corporates, commercial and investment banks, consulting companies, public sector companies, government agencies, multilateral agencies and legal firms.
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**EXECUTIVE SUMMARY**

With the growing demand for power in urban areas and industries, underground cable systems are becoming an increasingly indispensable part of power transmission and distribution systems. With improved technologies and increased reliability, the cost differential between underground cables and overhead power lines is narrowing and utilities are acknowledging the benefits associated with underground cabling. This report will attempt to take a look at the key trends in the deployment of underground cables so far; analyse the plans and proposal of T&D utilities; examine new and evolving technology improvements and solutions being offered by the industry; as well as assess the key issues and challenges.

1. **T&D INDUSTRY OVERVIEW**

The T&D industry has been growing steadily with investments being made in system strengthening and capacity additions. This chapter gives an overview of the T&D industry and will focus on:
- Growth and Size of Existing T&D Networks
- Recent T&D Network Additions
- Projected T&D Network Additions
- Projected Capex (till 2022-23)
- Future Outlook
- Issues and Challenges

2. **MARKET SIZE AND GROWTH FOR UNDERGROUND CABLES**

Most of India’s T&D network continues to be strung overhead across the country; however, concerns about reliability and quality of supply are making utilities gradually replace their networks with underground lines. This chapter gives an overview on the new and emerging utility requirements in the underground cabling segment and will cover the following:
- Experience so far in T&D Networks
- Emerging Utility Requirements
  - Transmission
  - Distribution
- Major Projects Commissioned
  - Transmission
  - Distribution
- Major Projects Awarded/Under Construction
  - Transmission
  - Distribution
- Key Recent Tenders
- Issues and Challenges

3. **RECENT TRENDS AND ADVANCES**

Well-designed and well-installed underground cable systems are expected to have a service life of 30-40 years. Utility providers, transmission companies and cable manufacturers are hence, looking for new technologies and solutions to respond to new grid challenges. This chapter looks at the new and promising technologies, designs and solutions for underground cable networks.
- Design, Laying and Construction Processes
- Product and Technology Trends
- Market Trends and Developments (JVs/Acquisitions/Partnership Deals)
- Pricing and Cost Trends

4. **OPPORTUNITIES UNDER KEY CENTRAL/STATE GOVERNMENT PROGRAMMES**

Underground cables are an important part of several central government initiatives for improving T&D networks under IPDS. This chapter provides the details of plans and targets of works proposed to be taken up under various schemes.
- Snapshot of Key Government Programmes (IPDS, Green Energy Corridors, State Government Initiatives, etc.)
- Physical Targets for UG Cabling Works
- Funding Availability for UG Cabling Projects
- Issues and Concerns

5. **OPPORTUNITIES UNDER SMART CITIES MISSION**

The Smart Cities Mission offers significant opportunities for underground cabling in key cities. Some cities such as Indore, Belagavi, Dharamshala, Lucknow, Kanpur and Tirupati are implementing projects for setting up underground cabling network for utilities such as electric wires, water pipelines, stormwater drains, sewers and telecommunication cables. This chapter provides the details of plans and targets of works proposed to be taken up under various schemes.
- Snapshot of the Mission
- Physical Targets for UG Cabling Works
- Projects Completed so Far in Key Cities
- Projects Under Construction/ Awarded
- Proposed Projects
- Issues and concerns

6. **OUTLOOK AND PROJECTIONS (till 2022)**

This chapter will give a snapshot of the investments and physical targets proposed for underground cabling networks by transcos and discoms. The information presented in this chapter is based on both primary and secondary information collected from transcos and discoms.
- Growth Drivers for UG Cabling
- Expected Demand for UG Cables
- Plans and Targets of Utilities by Segment
  - Transmission
  - Distribution
- Budgeted Capital Expenditures on UG Cabling
- Future Outlook

7. **LEADING PLAYERS**

This chapter primarily focuses on the profiles of key vendors and technology providers for underground cabling. Each profile covers the following information:
- Brief Company Overview
- Key Product Offerings
- Existing Manufacturing Capacity
- Financial Performance
- Future Plans

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The report is available in a PDF format.
City Gas Distribution Market in India 2019 (June 2019)  
Performance Analysis, New Bidding Rounds, Business Opportunities and Future Outlook  
(Draft ToC)
# LNG Market in India (August 2018)

## Market Analysis, Key Trends and Outlook

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The franchises covered include:
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- Nagpur (Spanco Nagpur Discom Limited)
- Agra (Torrent Power Limited)
- Muzaffarpur (Essel Vidyut Vitaran (Muzaffarpur) Limited)
- Bhagalpur (SPML Infra Limited)
- Gaya (India Power Corporation Limited)
- Kendrapara Division I & II, Jagatsinghpur, Dhenkanal, Talcher and Angul (Enzen Global Solutions Private Limited)
- Khurda, Balugaon, Puri and Nayagarh (Feedback Electricity Distribution Company Limited)
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The report will be available in a PDF format.
Open-Access for Renewables (December 2018)

Price: Rs 60,000 (USD 1,180)

Emerging Economics, Evolving Regulatory Framework, Increasing Opportunities and Changing Risks

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1. MARKET OVERVIEW, KEY TRENDS AND RECENT DEVELOPMENTS
   - There is a rising popularity among developers, especially renewable energy players, to go for third-party direct sale agreements. States of Karnataka, Tamil Nadu, Andhra Pradesh and Telangana in the southern region of India and Rajasthan, Punjab and Haryana in the northern region of the country are fast catching up with open access transactions. But there are significant challenges in the growth of this segment, especially those pertaining to discoms’ resistance to let go of their high-and consumers.
   - Size and Growth of Open Access-based Power Projects
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4. INDUSTRY STRUCTURE AND BUSINESS MODELS
   - The industry structure in the renewable open access segment has been emerging gradually with more number of players entering into this space. Project developers and investors are currently cautious of investing significantly in this segment, but the trend is now changing.
   - Power sale options: Bilateral, Collective, REC
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5. TERMS OF THIRD-PARTY POWER SALE CONTRACTS
   - It is important for both the buyers and sellers to clarify and list out their expectations and accordingly draw up the commercial power sale contract as per the applicable regulatory framework in the respective state.
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6. ROLE OF ENERGY BANKING, F&S AND DEVITION SETTLEMENT MECHANISM
   - Energy banking will play a key role in the success of solar and wind power-based open access projects. Banking is presently allowed by SERCs upon the levy of a banking charge, which differs in magnitude across states. Rules around energy banking are specified in different types of documents in various states. Additionally, various attributes of the energy banking framework also differ across states.
   - State-wise Energy Banking Mechanism for Open Access Projects: Banking Charge, Banking Period, Buy-back Rate, Restrictions on Time of Injection, Withdrawal of the Banked Energy, Other Attributes (seasonality constraints, buy-back rates, accounting for RPO, etc.)
   - State-wise Emerging Energy Banking Framework
   - State-wise Forecasting and Scheduling
   - Deviation Settlement Charges

7. STATE PROFILES
   - This chapter will include profiles of Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Telangana, Uttar Pradesh, Chhattisgarh, Haryana, Delhi, Punjab, etc.
   - Key Players and Capacities: Overall Solar, Solar Open Access, Overall Wind, Wind Open Access
   - Landed Cost and Return Analysis
   - Process and Approvals for Open Access Projects
   - Key Industrial and Corporate Clusters: Existing, Upcoming

8. PROJECTED OPEN ACCESS MARKET
   - Over 2 GW of green power is being sold to big corporates through direct agreements and the trend is northbound as more and more corporates and industries are joining in the race. The business case for renewable energy based open access is getting stronger with the decreasing cost of green power and increasing cost of thermal power.
   - Short-term (2019-23) and Long-term (2024-28) Projections
   - Renewable-based Open Access Capacity Projections
   - Open Access Projected Tariff and Pricing Trends
   - IRR Projections
   - Future Growth Drivers
   - Expected Market Restraints

EXPERT OPINION
- The report will feature 5-8 interviews of senior representatives at regulatory commissions, large open access consumers and key open access project developers, and experienced industry consultants

The report is available in a PDF format.
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3. RECENT TRENDS AND DEVELOPMENTS IN EQUIPMENT MARKET
   - Product and Technology Trends, Changing Competitive Landscape, Equipment Price/Cost Trends, Trends in Procurement Process

4. PROGRAMMES/ INITIATIVES IMPACTING EQUIPMENT MARKET
   - Update on Key Government Programmes (UDAY, IPDS, DDU) and Power for All, Private Participation in Transmission, Green Energy Corridors, Smart Grids, Transmission Plans of Indian Railways, Initiatives for Innovations in Equipment Technology

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9. INSULATORS
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10. SWITCHGEAR
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11. REACTIVE POWER EQUIPMENT
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13. DISTRIBUTION CONDUCTORS & CABLES
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      - Utility Initiatives for Underground Cabling
      - Major Players
      - Projected Demand for Cables and Conductors (2017-22)

14. DISTRIBUTION TRANSFORMERS

15. SWITCHGEAR
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      - Smart Metering
      - Prepaid Metering
      - Net Metering
      - Demand Drivers
      - Projected Demand for Meters (2017-22): DT Meters, Consumer Meters, Smart Meters

SECTION IV: EQUIPMENT MANUFACTURER AND SUPPLIER PROFILES

17. KEY EQUIPMENT MANUFACTURERS AND SUPPLIERS

Other Manufacturers and Suppliers

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1. EXECUTIVE SUMMARY  
   Solar plants are built to last 20-25 years. After the engineering procurement and construction period is completed, developers need to ensure that the operations and maintenance (O&M) activities are seamless for sustained energy generation over the project lifetime. The report will highlight the emerging opportunities in this space and the growing role of new technologies like automation and artificial intelligence.

2. MARKET OVERVIEW  
   In the initial years of solar power development in India, O&M was often coupled with EPC and performed by the same vendors, but of late, solar O&M has emerged as a separate market with its own landscape, trends and dynamics. This chapter will cover the following areas:
   - Current size of the solar O&M market
   - Market size by segment
     - Utility-scale, Rooftop, Canal-top & floating solar
   - Key growth trends and drivers
   - O&M Evolution - Reactive to Predictive Analysis
   - Applications in solar O&M, Cost and time savings
   - Emerging Role of Energy Storage
   - Key issues and concerns

3. COST TRENDS  
   The cost of O&M services has been declining over the past few years and the downward trend is expected to continue. The cost composition itself is changing due to greater automation and use of advanced tools. This chapter will cover the following areas:
   - Solar O&M cost trajectory (2012-18)
   - Cost breakup analysis
     - Vehicles and logistics, Equipment and tools, Overheads, Personnel/Manpower, Digital, Others
   - Cost projections (2019-24)
     - Business model evolution, Key cost considerations, Impact of scale, Impact of energy storage, Future cost estimates

4. EMERGING O&M BUSINESS MODELS  
   Globally, there has been a rise of third party solar O&M service providers. As more sophisticated and structured approach emerges in the solar O&M market, third party providers are able to deliver more value to solar investors and owners. This chapter will cover the following areas:
   - Capex-based
   - Profit-sharing
   - Fixed cost
   - O&M extensions
   - Others

5. TERMS OF O&M CONTRACTS  
   It is important for both developers and O&M service providers to clarify and list out their expectations and accordingly draw up a long-term contract. An effective contract will result in higher plant efficiencies. This chapter will cover the following areas:
   - Time periods
   - Product warranties
   - Performance guarantees/SLAs
   - Penalties
   - Ownership
   - Legal terms

6. GRID MANAGEMENT BY O&M PLAYERS  
   As the government becomes stricter in its implementation of forecasting, scheduling and deviation settlement mechanism regulations, grid management will become a key component of O&M players. Integration of energy storage on to existing plants will lead to a greater O&M play. This chapter will cover the following areas:
   - Forecasting and scheduling
   - Deviation settlement management
   - Integration of energy storage into existing plants
   - Cost implications
   - Experience so far

7. O&M COMPANY PROFILES  
   A large number of O&M focused players are coming up, some as hive-offs from existing EPC companies and others as independent specialists. This chapter will have 5-8 profiles of key O&M players in India covering the following:
   - Project portfolio
   - Service offerings
   - Technology tie-ups
   - On-ground experience
   - In-pipeline capacity
   - Etc.

8. DIGITALISATION AND AUTOMATION AT PLANT LEVEL  
   Digitalisation and automation will play a key role in providing efficient O&M services, thereby changing the current O&M cost composition, which is currently dominated by manpower expenses. New technologies are being adopted for improving asset lifecycle management, predictive maintenance, remote sensing and control, cloud computing, and use of drones for visual imaging. A number of companies have also already started using robotics for cleaning modules. This chapter will cover the following areas:
   - Emerging role, applications and use case for the following
     - Manpower and material management, Automated monitoring and big data analytics, Robotics, drones and wearables
   - Growing role of artificial intelligence
     - Machine learning applications, AI field assistants and predictive analytics, Existing use cases
   - Key technology providers
   - Industry Perspective
     - (Views of key personnel from the solar O&M industry and technology providers on the growing role of AI, robotics and data analytics)

9. KEY CHALLENGES, BEST PRACTICES AND CASE STUDIES  
   The lack of attention given to O&M practices is one of the primary challenges that the segment is facing. If the plant is not maintained properly, developers can lose up to 15 per cent of the returns. This chapter will cover the following areas:
   - O&M challenges matrix
   - Best practices (Globally and in India)
   - Case studies (This will cover successes and failures of various technologies, business models and strategies adopted by O&M players)

10. PROJECTED O&M MARKET SIZE (FROM 2019-20 TO 2024-25)  
   The total addressable market for solar PV O&M is expected to reach 30 GW in 2016-19. It is likely to more than triple by 2022 to exceed 100 GW. In fact, going forward, as the installed base gets larger, O&M revenue may even exceed the development and construction revenue. This chapter will cover the following areas:
   - Impact factors
   - Emerging O&M industry structure
   - Short-term projections
   - Medium-term projections
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The report is available in a PDF format.
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- Maharashtra
- Meghalaya
- Odisha
- Punjab
- Rajasthan
- Tamil Nadu
- Telangana
- Uttarakhand
- Uttar Pradesh
- West Bengal

The report is available in a PDF format.
Power Distribution in India 2019
(Feb 2019)
No. of slides: 851 Price: Rs. 75,000 (USD 1,770)
Segment Analysis and New Developments; Outlook and Projections

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3. KEY RECENT DEVELOPMENTS
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15. INTEGRATED POWER DEVELOPMENT SCHEME (IPDS)
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16. SMART GRID INITIATIVES
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17. IMPACT OF ALTERNATIVE POWER PROCUREMENT OPTIONS ON DISCOMS
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Each profile covers information on traffic, capacity, existing infrastructure, ongoing and upcoming projects, and future expansion plans.

The report is available in a PDF format.
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The report is available in a PDF format.
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The report is available in a PDF format.
Coal-Based Power Generation in India 2019
Trends, Developments, Future Role and Market Outlook

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Each of the profiles will cover information on current capacity, upcoming projects, operating performance and financial performance.

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www.indiainfrastructure.com
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*The report is available in a PDF format.*
Wind Power in India 2017 (August 2017)
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Each country profile provides information on:
   - Economic Scenario and Demography
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  - Praveer Sinha, Managing Director and CEO, Tata Power
- Charging Infrastructure Technology Providers
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  - Maxson Lewis, Managing Director, Magenta Power
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- Automobile Manufacturers:
  - Rohit Gothi, CEO, Hero Cycles
  - Ayush Lohia, CEO, Lohia Auto Industries
  - Manu Saxena, Vice-President, Business Planning, TVS Motor Company
- EV Consumer:
  - Nandini Maheshwari, Head-Business Development, Uber India
- Consultant:
  - Rahul Tongia, Fellow, Brookings India

The report is available in a PDF format.

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**Price:** Rs 80,000 (USD 1,888)
Logistics in India 2019 (June 2019) (Draft ToC)
Emerging Trends, Segment Analysis, Growth Drivers and Market Opportunities

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The report will be available in a PDF format.

Price: Rs 100,000 (USD 2,360)
Railways in India 2019 (February 2019)

Research report with weekly newsletters and monthly updates

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The report is available in a PDF format.
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*The report is available in a PDF format.*
# Storage Infrastructure in India

**Market Size, Outlook and Projections (till 2022-23)**

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The report is available in a PDF format.

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**Market Size, Outlook and Projections (till 2022-23)**

**Storage Infrastructure in India** (October 2017)  
**Price:** Rs 60,000 (USD 1,416)
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Each profile will provide an overview of the airport, traffic trends, financial performance current capacity, expected timelines, key initiatives, recent contracts; expansion plans, etc.

The report will be available in a PDF format.
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The report is available in a PDF format.
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    - Light Rail Transit Projects: Bengaluru LRT Project, Bhopal LRT Project, Indore LRT Project, Kochi Kollam LRT Project, Ranchi LRT Project, etc.
    - Monorail Projects: Chennai Monorail Project (First Corridor), Delhi Monorail Project, others

[Each profile will cover the project background and scope (network length, number of stations, rolling stock, fare system, signalling and telecommunication, traction, etc.), the implementing agency, project cost, time and cost overruns, key consultants, key contractors, key milestones, sources of fund, recent contracts, upcoming tenders, current status, etc.]
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Each profile covers information on traffic handled, capacity, capacity utilisation, draught levels, equipment and planned expansion, etc.

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Each profile covers information on company overview, existing infrastructure, network/route covered, financial performance, future plans, key contacts, etc.

The report is available in a PDF format.
# Construction in India 2017 (March 2017)

## Trends, Outlook and Projections

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The report is available in a PDF format.

www.indiainfrastructure.com
EMERGING TRENDS, EVOLVING POLICY FRAMEWORK, NEW OPPORTUNITIES AND FUTURE OUTLOOK

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Tunnelling in India 2019 (January 2019)
Segment Analysis, New Opportunities and Future Outlook

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# Mining Equipment Market

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Each profile covers existing and planned manufacturing capacity, product portfolio, recent initiatives, financial performance, etc.

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# Affordable Housing in India 2018

**Executive Summary**

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(Each profile covers information on company overview, project portfolio – completed & ongoing, upcoming projects, financial performance and future plans.)

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Each project will provide information on:
- Scope, Current Status, Mode of Implementation, Implementing agency, Project Cost, Type of Project (Area-based or Pan-City), Contractor/Developer, Expected Date of Completion, etc.

The report will be available in a PDF format
# Municipal Solid Waste in India 2017

## Market Analysis, Outlook and Opportunities

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The report is available in a PDF format.
# Sewage Treatment Market in India 2018

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The report is available in a PDF format.
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20. REAL ESTATE
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SECTION IV: LIST OF M&A DEALS

23. DATA SET
    The data set includes a complete list of M&A deals in the infrastructure and real estate space for the Indian market for the period 2014 to 2017. The parameters covered include: deal value, type of deal, sector, target company, investor/buyer groups, date of investment, exit details (wherever applicable), etc.

The report is available in a PDF format.

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Each profile gives an overview of the company’s operations, key contracts, recent collaborations, joint ventures, and future plans and strategies.

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