



Catalogue of Research Reports on Infrastructure Sectors

October 2018

ABOUT US

India Infrastructure Research is a division of India Infrastructure Publishing Private Limited, a company dedicated to providing information on the infrastructure sectors through magazines, conferences, newsletters and research reports.

India Infrastructure Research publishes research reports in the areas of power, oil & gas, ports & shipping, roads & bridges, telecommunications, aviation and water.

Our reports are acknowledged as high-quality, user-friendly, up-to-date, accurate and comprehensive sources of information. They range from sector overviews (**Power in India**, for example) to more intensive studies of segments and subsegments (such as **Power Transmission in India** and **Power Distribution in India**).

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.

TABLE OF CONTENTS

ENERGY

<i>Underground Cables Market in India</i>	3
<i>CGD Market in India</i>	4
<i>LNG Market in India</i>	5
<i>Waste to Energy</i>	6
<i>Distribution Franchise in India</i>	7
<i>Competitive Bidding for Wind Projects</i>	8
<i>Rooftop Solar Market in India</i>	9
<i>Open-Access for Renewables</i>	10
<i>T&D Equipment Market in India</i>	11
<i>Future of Solar O&M in India</i>	12
<i>Industrial and Commercial Grid Power Market in India</i>	13
<i>Power Distribution in India</i>	14
<i>Power Transmission in India</i>	15
<i>Captive Power in India</i>	16
<i>Coal-based Power Generation in India</i>	17
<i>Hydro Power in India</i>	18
<i>Gas in India</i>	19
<i>Solar Power in India</i>	20
<i>Wind Power in India</i>	21
<i>Solar Plant Performance in India</i>	22

TRANSPORTATION

<i>Logistics in India</i>	23
<i>Railways in India</i>	24
<i>Ports in India</i>	25
<i>Dredging in India</i>	26
<i>Freight Market in India</i>	27
<i>Storage Infrastructure in India</i>	28
<i>Airports in India</i>	29
<i>Road Development in India</i>	30
<i>Urban Rail in India</i>	31
<i>Clean Bus Market in India: Hybrid, Electric, Gas-Based</i>	32
<i>Container Market in India</i>	33

CONSTRUCTION & MINING

<i>Construction in India</i>	34
<i>Mining in India</i>	35
<i>Tunnelling in India</i>	36
<i>Mining Equipment Market</i>	37

URBAN INFRASTRUCTURE

<i>Affordable Housing in India</i>	38
<i>Smart Cities in India</i>	39
<i>Municipal Solid Waste in India</i>	40
<i>Sewage Treatment Market in India</i>	41
<i>Real Estate in India</i>	42

TELECOM

<i>Optic Fibre Cable Market in India</i>	43
--	----

MULTI-SECTOR

<i>Infrastructure Projects in Pipeline</i>	44
<i>Investment and Market Opportunities in African Infrastructure</i>	45
<i>Investment and Market Opportunities in Southeast Asian Infrastructure</i>	46
<i>Indian Defence Industry</i>	47
<i>Healthcare Infrastructure and Market in India</i>	48
<i>Investment Experience and Opportunities in Infrastructure</i>	49
<i>Irrigation Market in India</i>	50
<i>Banking Technology in India</i>	51
<i>Mergers and Acquisitions in Infrastructure and Real Estate</i>	52
<i>Renewable Energy Development in Africa</i>	53

NEWSLETTERS

ORDER FORM

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 will attempt to give 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 will give 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 will look 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 will attempt to provide 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 will attempt to provide 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 will be 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 will primarily focus on the profiles of key vendors and technology providers for underground cabling. Each profile will cover the following information:

- Brief Company Overview
- Key Product Offerings
- Existing Manufacturing Capacity
- Financial Performance
- Future Plans



The report will be available in a PDF format.

Market Analysis, New Opportunities and Outlook

Table of Contents

<p>1. Executive Summary</p> <p>2. Overview</p> <ul style="list-style-type: none"> - Network Size and Growth - Key Consumer Segments - Gas Supply for CGD - Policy and Regulatory Developments - Major Players - Growth Drivers - Issues and Challenges - Future Outlook <p>3. Existing Networks (PNG and CNG)</p> <ul style="list-style-type: none"> - Current Network Size - Growth in the Last Five Years - Growth in Network - by State - Growth in Network - by Operator - Growth in PNG and CNG Segments - Sales by CGD operators <p>4. Upcoming Networks (Under Construction/Awarded)</p> <ul style="list-style-type: none"> - GAs Granted Authorisations - Progress Made so Far - Key Issues and Challenges - Lessons Learnt - Expected Commissioning <p>5. Upcoming Networks (Under Bidding)</p> <ul style="list-style-type: none"> - Upcoming GAs under Round 9 - GAs Yet to be Authorised under Round 2 to 8 - Potential Regions/Markets - New Guidelines and Regulations for Bidding - Opportunities for CGD Operators <p>6. Bidding Experience</p> <ul style="list-style-type: none"> - Experience so Far - Amendments in Bidding Criteria - Recent Aggressive Bids - Trends in Network and Compression Charges - Expected Impact of Aggressive Bids - Key Lessons Learnt <p>7. Economics and Business Viability</p> <ul style="list-style-type: none"> - Commercial Viability of CGD Projects - Cost Competitiveness of CNG and PNG - New Bidding Criteria and Impact - Tariffs in Recent Bids - Pricing Strategies of CGD Players (domestic versus R-LNG) - Profitability/Margins of CGD Players - Historical and Expected Returns 	<p>8. Key Players</p> <ul style="list-style-type: none"> - Major CGD Companies - Current Size of Network - Growth in Network - Operational Performance - Financial Performance - Future Plans of Key Players <p>9. Update on Pipeline Infrastructure</p> <ul style="list-style-type: none"> - Current Status of Pipeline Connectivity - Major Projects under Implementation - Key Proposed Projects <p>10. Gas Supply Availability and Outlook</p> <ul style="list-style-type: none"> - Current Production - Recent Policy Enablers (OALP, DSF, etc.) - Sourcing Options of CGD Players - Projections of Gas Supply (till 2024-25) - Projections for R-LNG - Projections for LNG Terminal Capacity - Gas Demand Outlook for CGD <p>11. Demand Projections (till 2024-25)</p> <ul style="list-style-type: none"> - Growth Drivers - Overall Gas Demand Projections - Sector-wise Demand Projections - Potential Markets - Investment Projections <p>12. Market Opportunities for Service/Equipment Providers</p> <ul style="list-style-type: none"> - GAs under Round 9 <ul style="list-style-type: none"> • CNG Dispensing stations • Piping • Compression Equipment • Meter Manufacturers • Others - GAs under Round 2 to 8 <ul style="list-style-type: none"> • CNG Dispensing Stations • Piping • Compression Equipment • Meter Manufacturers • Others
--	---



The report is available in a PDF format.

Table of Contents

SECTION I: MARKET TRENDS AND ANALYSIS

1. EXECUTIVE SUMMARY

2. OVERVIEW

- LNG Value Chain
- Gas Demand Supply Scenario
- Role of LNG
- LNG Market Size and Growth
- Recent Trends and Developments
- Key Regulations
- Global LNG Scenario
- India's Geopolitical Relations with Key Importers
- Issues and Challenges
- Future Outlook

3. DEMAND ANALYSIS

- Current Demand
 - Natural Gas Demand
 - LNG Demand
 - Unmet Demand
- Analysis by Consuming Segments
 - City Gas Distribution
 - Power
 - Fertilisers
 - Mining and Industrial

4. SUPPLY ANALYSIS

- Domestic Gas Production Trends
- Import Trends
- Sourcing Countries
- Key LNG Contracts (Long-term and Spot)
- Recent Contract Renegotiations

5. PRICING TRENDS AND FORECASTS

- Global LNG Pricing Trends
- Spot LNG Price Analysis
- Long-term Contract Pricing
- LNG Price Forecast

6. OUTLOOK AND PROJECTIONS

- Growth Drivers
- Natural Gas Demand Projections by Consumer Segment
- Domestic Gas Production Projections
- LNG Demand Projections
- LNG Capacity Projections

SECTION II: FOCUS ON LNG INFRASTRUCTURE

7. EXISTING LNG TERMINALS

- Dahej
- Hazira
- Dabhol
- Kochi

8. UPCOMING LNG TERMINALS

- Under Construction Terminals
 - Dhamra LNG Import Terminal
 - Ennore LNG Terminal
 - Jaigarh LNG Terminal
 - Pipavav LNG FSRU Import Terminal
- Proposed/Announced Terminals
 - Digha LNG FSRU Terminal
 - Gangavaram LNG Terminal
 - Port Blair FSRU Terminal
 - Hooghly LNG Terminal
 - Krishna Godavari LNG Import Floating Terminal
 - Kakinada Floating LNG FSRU Import Terminal
 - Kakinada LNG Terminal (GMR)
 - Krishnapatnam LNG FSRU Terminal
 - Mangalore LNG Terminal
 - Karawar LNG FSRU Terminal
- Market Opportunities for Key Players

9. PIPELINE INFRASTRUCTURE

- Existing Pipeline Infrastructure
- Upcoming Pipeline Projects
- Issues and Challenges

SECTION III: PROFILES OF MAJOR LNG EXPORTING COUNTRIES

10. KEY COUNTRIES AND REGIONS

- Australia
- Qatar
- Russia
- US
- South America
- Nigeria
- Other MENA Countries
- Others



The report is available in a PDF format.

Segment Analysis, Trends and Outlook

Table of Contents

1. EXECUTIVE SUMMARY**SECTION A: MARKET OVERVIEW, TRENDS AND OUTLOOK****2. CURRENT SCENARIO**

- Waste Generation Potential in India
- Size and Growth of Waste to Energy
- Leading Cities in Waste to Energy Development
- Current Industry Structure
- Waste Treatment and Processing Practices
- New Technology Advancements
- Market for Waste Residues/Byproducts
- Key Issues and Challenges
- Future Outlook

3. ENABLING POLICY FRAMEWORK

- Swachh Bharat Mission
- Smart Cities Mission
- Government Schemes for Waste-based Projects
- National Tariff Policy, 2016
- Solid Waste Management Rules, 2016
- Environmental Norms for WtE Projects
- GST for WtE Projects
- WtE Tariffs Determined by CERC and SERCs
- State-wise WtE Policies and Regulations

4. FUTURE OUTLOOK AND MARKET OPPORTUNITIES

- MNRE's Targets
- Key Growth Drivers
- Capacity Addition Outlook
- Investment Projections
- City-wise Potential and Opportunities
- Market Opportunities
- The Way Forward

5. ANALYSIS OF OPERATIONAL PROJECTS

- City-wise Analysis of Waste to Energy Capacity
- Technology-wise Analysis
- Segment-wise Analysis: MSW Power Plants; Grid Power Projects in Industries; Captive off-grid Projects; Biogas for Captive Thermal; Bio-CNG Projects

6. ECONOMICS AND FINANCING

- Cost Economics
- Key Financiers
- Year-wise CFA and Sanctions
- New Financing Tools and Instruments
- Emerging Business Models for Project Development
- Key Risks and Concerns
- Project IRRs

SECTION B: SEGMENT ANALYSIS**7. MSW-BASED POWER PROJECTS**

- Size and Growth
- MSW Generation in Major Cities of India
- Growth Drivers
- Upcoming Projects
- Key Issues and Challenges
- Future Outlook
- Key Project Case Studies: Key Features; Waste Collection System; Waste Management Practices; Performance Trends; Critical Success Factors

8. INDUSTRIAL WASTE-BASED POWER PROJECTS (INCLUDING CAPTIVE OFF-GRID)

- Size and Growth
- Industry-wise Potential
- Growth Drivers
- Upcoming Projects
- Key Issues and Challenges
- Future Outlook
- Key Project Case Studies: Key Features; Waste Collection System; Waste Management Practices; Critical Success Factors

9. BIOGAS PROJECTS

- Size and Growth
- Market Potential
- Growth Drivers
- Upcoming Projects
- Key Issues and Challenges
- Future Outlook
- Key Project Case Studies: Key Features; Waste Collection System; Waste Management Practices; Critical Success Factors

10. BIO-CNG PROJECTS

- Size and Growth
- Market Potential
- Growth Drivers
- Upcoming Projects
- Key Issues and Challenges
- Future Outlook
- Key Project Case Studies: Key Features; Waste Collection System; Waste Management Practices; Critical Success Factors



The report is available in a PDF format.

Table of Contents

1. OVERVIEW

- Key Trends in Power Distribution Segment
- Needs and Requirements for DFs
- PPP Experience in Power Distribution
- Evolution of DF model
- Policy and Regulatory Environment
- Current Scenario
- Recent Initiatives/Developments
- NEP's Recommendations on DF
- Key Players

2. DF CONTRACTS AND STRATEGIES FOR BIDDING

- Types of DF contracts
 - Collection-based
 - Input-based
 - Input-based Franchisee-Incremental Revenue Sharing
 - Input plus Investment-based
 - Others
- Key Features
- Responsibilities of Franchisee and Utility
- Advantages and Limitations
- Bidding criteria and considerations
 - SBD for IBF-IRS by MoP
 - Analysis of RFPs for appointment of DF

3. EXPERIENCE SO FAR

- Operational/Awarded Franchises
- Terminated Franchises
- Recently Awarded Franchises
- Recent Bids

4. FUTURE OUTLOOK

- Growth Drivers
- Key Success Factors
- Upcoming Opportunities
- Evolving DF Models
- Issues and Challenges

5. PROFILES OF DISTRIBUTION FRANCHISES

- Year of Award
- Area and No of Consumers Served
- Term of Franchise Validity
- Bid Details
- Key Issues and Challenges
- Current Infrastructure in DF area
- Performance Review (AT&C loss reduction, Revenue Gap, Energy deficit, Revenue Realised)
- Major Initiatives undertaken by DF

The franchises covered include:

- Bhiwandi (Torrent Power Limited)
- Nagpur (Spanco Nagpur Discom Limited)
- Agra (Torrent Power Limited)
- Muzaffarpur (Essel Vidyut Vitaran (Muzaffarpur) Limited)
- Bhagalpur (SPML Infra Limited)
- Gaya (India Power Corporation Limited)
- Kendarapara Division I & II, Jagatsinghpur, Dhenkanal, Talcher and Angul (Enzen Global Solutions Private Limited)
- Khurda, Balugaon, Puri and Nayagarh (Feedback Electricity Distribution Company Limited)
- City Electrical Division (Cuttack), Athagarh and Salipur (Riverside Utilities Private Limited)
- Nimapara (Seaside Utilities Private Limited)
- Kota, Bharatpur and Bikaner (CESC Limited)
- Ajmer (Tata Power Company Limited)



The report is available in a PDF format.

Key Trends, Risks, Alternatives and Outlook

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>2. WIND SECTOR OVERVIEW</p> <ul style="list-style-type: none"> - Capacity Addition Trends - Yearly Targets and Achievements - State-Wise Capacity Growth Trends - Key Milestones And Developments - Impact Of Competitive Bidding On Capacity Addition - Emerging Growth Drivers - Emerging Areas of Opportunity - Key Issues And Challenges <p>3. POLICY AND REGULATORY FRAMEWORK</p> <ul style="list-style-type: none"> - Key Features Of Competitive Bidding Guidelines For Wind Projects - State-wise Competitive Bidding Policies And Guidelines - Renegotiation Of Older PPAs - Policy And Regulatory Needs And Outlook <p>4. EXPERIENCE OF COMPLETED WIND TENDERS</p> <ul style="list-style-type: none"> - Bidding Processes And Overall Experience - Result Analysis Of SECI Tranche I To IV Tenders - Result Analysis Of State-Wise Tenders <p>5. UPCOMING WIND TENDERS</p> <ul style="list-style-type: none"> - Key Features Of Upcoming tenders - Key Issues and Challenges <p>6. RISKS AND CHALLENGES</p> <ul style="list-style-type: none"> - Policy And Regulatory Risks - Legal Challenges - Financing-Related Issues <p>7. ALTERNATIVE WIND POWER SELLING OPTIONS</p> <ul style="list-style-type: none"> - Renewable Energy Certificates (REC) - Open Access - Sale On Power Exchanges - Pros And Cons For Alternative Power Sale Options 	<p>8. IMPACT ON INDUSTRY STRUCTURE</p> <ul style="list-style-type: none"> - Trends in Market Share - Emerging Project Developers Landscape - Impact on Manufacturing Industry - Industry Structure post-Competitive Bidding - Industry Consolidation <p>9. CHANGING COST ECONOMICS</p> <ul style="list-style-type: none"> - Wind Tariff Trends - Tariffs Determined Through Competitive Bidding - Average Power Purchase Cost - REC Price and Volume Trends - Return on Investment Analysis and Comparison <p>10. FINANCING OF COMPETITIVELY BID PROJECTS</p> <ul style="list-style-type: none"> - Change in Project Costs Post-Competitive Bidding - Key Sources of Funds - Emerging Sources of Financing for Wind Power Developers - Financing Outlook <p>11. IMPACT ON CAPACITY ADDITION AND INVESTMENT</p> <ul style="list-style-type: none"> - Future Growth Drivers - Impact on Capacity Addition Outlook - Impact on Investment Requirements - Key Risks and Challenges
---	--



The report is available in a PDF format.

(November 2017)

Table of Contents

<p>1. ROOFTOP SOLAR OVERVIEW</p> <ul style="list-style-type: none"> - Current Power Scenario in India - Potential and Growth - Current Status of Rooftop Solar Market - Key Growth Drivers - Emerging Trends - Market Share of Rooftop EPC Contractors - Market Share of Rooftop Project Developers - Market Share of Inverter Suppliers - Recent Projects - MNRE's Plans and Targets - Barriers to Adoption of Rooftop Solar <p>2. POLICY AND REGULATORY FRAMEWORK</p> <ul style="list-style-type: none"> - Central Level Policies - State-wise Tariffs, Subsidies and incentives - State-wise Rooftop Policies and Targets - Key Features of Net Metering Regulations - Implementation Status of Net Metering Regulations - Key Issues and Challenges - Future Plans and Targets <p>3. BUSINESS MODELS AND THEIR APPLICATION</p> <ul style="list-style-type: none"> - Grid-connected vs Off-grid - By Metering Arrangement - By Cost Structure - By Offtaker <p>4. SECI'S ROOFTOP PROGRAMME</p> <ul style="list-style-type: none"> - Implementation Models and Allocation - Results for Allocated Tenders - Summary of Phase V Rooftop Tender- 500 MW - Upcoming Tenders - Achievement-linked Incentives Scheme - Key Vendors - Issues and Challenges <p>5. STATE-WISE ANALYSIS</p> <ul style="list-style-type: none"> - State-wise Installed Capacity - State-wise Rooftop Solar Capacity Addition Targets - Tender Results in Select States <p>6. FINANCING TRENDS</p> <ul style="list-style-type: none"> - Debt and Equity Options - Funding Strategy and Challenges - Recent Equity Deals - Recent Debt Transactions - Funding by Government and Development Institutions - Future Investment Requirement <p>7. COST ECONOMICS</p> <ul style="list-style-type: none"> - Cost of Generation - Capital Cost Breakdown - State-wise Feasibility - State-wise Tariffs - Existing HT, LT and Commercial Tariffs - APPC Rates - Future Outlook 	<p>8. PROJECT PIPELINE</p> <ul style="list-style-type: none"> - MNRE's Year-wise Rooftop Targets - Ongoing and Upcoming Tenders - Plans of Key Rooftop Owners <p>9. KEY PROJECT PROFILES</p> <ul style="list-style-type: none"> - Indian Railways - Delhi Metro Rail Corporation - Airports Authority of India Limited - Case Study: Delhi International Airport Limited - Radha Soami Satsang Beas Educational and Environmental Society - Infosys - Google - Snapdeal - Walmart India <p><i>(Each profile includes information on current operational capacity, business models, tenders, future plans, etc.)</i></p> <p>10. KEY DEVELOPER/EPC PLAYERS PROFILES</p> <ul style="list-style-type: none"> - CleanMax Enviro Energy Solutions Private Limited - Cleantech Solar Energy (India) Private Limited - Azure Power Global Limited - Amplus Energy Solutions Private Limited - RattanIndia Power Limited - Tata Power Solar Systems Limited - Sure Energy Systems Private Limited - Fourth Partner Energy Private Limited - Ujaas Energy Limited - SunSource Energy Private Limited <p><i>(Each profile covers the details related to their business models, existing and in-pipeline project portfolio, installed capacity, geographical presence, future plans, O&M practices, etc.)</i></p> <p>11. KEY INVERTER MANUFACTURER'S PROFILES</p> <ul style="list-style-type: none"> - Delta Electronics India - SMA Solar Technology - ABB - KACO New Energy - Fronius International - Huawei Technologies Co. Limited <p><i>(Each profile provides information on market share, product portfolio, projects they have supplied to, future plans, etc.)</i></p> <p>12. DATABASE OF PROJECTS ALLOCATED UNDER VARIOUS STATE AND CENTRAL LEVEL SCHEMES</p> <p><i>(This includes details pertaining to winner, tariff, capacity, project location, project size, etc.)</i></p>
--	--



The report is available in a PDF format.


Table of Contents

<p>1. CURRENT STATUS OF OPEN ACCESS</p> <ul style="list-style-type: none"> - Size and Growth - Key Growth Drivers for Open Access in Renewables - Open Access Policy - Electricity Act 2003: Open Access - Regulatory Framework - Open Access Charges and Losses - Model Regulations for Intra-State Open Access - Upcoming Regulations/Amendments - State-wise Definition of Open Access - State-Wise Implementation Status - State-wise Power Demand and Supply - RPO Trajectory - Key Issues and Challenges <p>2. INDUSTRY STRUCTURE AND BUSINESS MODELS</p> <ul style="list-style-type: none"> - Power Sale Options - Industry Structure - Open Access Segregation - Open Access Transmission Models - Key Players and Capacities - Risks and Concerns <p>3. OPEN ACCESS CHARGES FOR SOLAR AND WIND POWER</p> <ul style="list-style-type: none"> - Andhra Pradesh - Chhattisgarh - Delhi - Gujarat - Haryana - Karnataka - Maharashtra - Madhya Pradesh - Punjab - Rajasthan - Tamil Nadu - Telangana - Uttar Pradesh 	<p>4. OPEN ACCESS TRANSACTIONS ON REC MARKET</p> <ul style="list-style-type: none"> - Open Access Transactions on Power Exchanges - Open Access Transactions in REC Market - Open Access Transactions in REC Market in 2016-17 - Trends and Analysis <p>5. COST ECONOMICS/ VIABILITY ANALYSIS</p> <ul style="list-style-type: none"> - State-wise APPC Rates - State-wise Solar Tariffs - State-wise Wind Tariffs - Discom-wise HT Industrial Tariff Trend - REC Price Trend - Return Analysis <p>6. LITIGATION AND DISPUTE SETTLEMENT</p> <ul style="list-style-type: none"> - Why Litigation? - Petitions and Orders at Central Level - Petitions and Orders at State Level <p>7. BOTTLENECKS, RECOMMENDATIONS AND OUTLOOK</p> <ul style="list-style-type: none"> - Key Hurdles in Open Access - Suggestions and Recommendations - Future Outlook
--	---



The report is available in a PDF format.

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>SECTION I: T&D MARKET TRENDS AND OUTLOOK</p> <p>2. T&D MARKET OVERVIEW</p> <ul style="list-style-type: none"> - Current Size and Growth -Transmission & Distribution, Key Policy Developments, Key Regulatory Developments, Issues and Challenges Outlook <p>3. RECENT TRENDS AND DEVELOPMENTS IN EQUIPMENT MARKET</p> <ul style="list-style-type: none"> - Product and Technology Trends, Changing Competitive Landscape, Equipment Price/Cost Trends, Trends in Procurement Process <p>4. PROGRAMMES/ INITIATIVES IMPACTING EQUIPMENT MARKET</p> <ul style="list-style-type: none"> - Update on Key Government Programmes (UDAY, IPDS, DDUGJY and Power for All), Private Participation in Transmission, Green Energy Corridors, Smart Grids, Transmission Plans of Indian Railways, Initiatives for Innovations in Equipment Technology <p>5. T&D MARKET OUTLOOK AND PROJECTIONS (2017-22)</p> <ul style="list-style-type: none"> - Network Addition Projections - Transmission & Distribution, Key Growth Drivers, Projected Investments in T&D Network, T&D Equipment Market Projections, Outlook for T&D Equipment Market <p>SECTION II: TRANSMISSION EQUIPMENT ANALYSIS AND PROJECTIONS</p> <p>6. TRANSMISSION TOWERS</p> <ul style="list-style-type: none"> - Technology Overview, Recent Trends and Advances, Major Players, Projections for Transmission Line Length, Projected Demand for Transmission Towers <p>7. CONDUCTORS AND CABLES</p> <ul style="list-style-type: none"> - Technology Overview, Recent Trends & Advances, Utility Initiatives for Underground Cabling, Major Players, Overhead Conductor Demand <p>8. POWER TRANSFORMERS</p> <ul style="list-style-type: none"> - Technology Overview, Recent Trends and Advances, Major Players, Projections for Transformer Capacity, Projected Demand for Transformers <p>9. INSULATORS</p> <ul style="list-style-type: none"> - Technology Overview, Recent Trends and Advances, Major Players, Projected Demand for Insulators <p>10. SWITCHGEAR</p> <ul style="list-style-type: none"> - Technology Overview, Recent Trends and Advances, Projections for Substation Addition, Projected Demand for Switchgear <p>11. REACTIVE POWER EQUIPMENT</p> <ul style="list-style-type: none"> - Reactive Power Management, Types of Reactive Power Compensation, Line Reactor and Bus Reactors, FACTS, Major Players, Reactive Power Equipment under Implementation <p>SECTION III: DISTRIBUTION EQUIPMENT ANALYSIS AND PROJECTIONS</p> <p>12. DISTRIBUTION POLES</p> <ul style="list-style-type: none"> - Technology Overview, Recent Trends and Advances, Major Players, Projections for Distribution Line Length (2017-22), Projected Demand for Poles, Key Specifications of Required Poles <p>13. DISTRIBUTION CONDUCTORS & CABLES</p> <ul style="list-style-type: none"> - Technology Overview - Recent Trends & Advances: Underground Cabling, Covered Conductors - Utility Initiatives for Underground Cabling - Major Players - Projected Demand for Cables and Conductors (2017-22) 	<p>14. DISTRIBUTION TRANSFORMERS</p> <ul style="list-style-type: none"> - Technology Overview, Recent Trends & Advances, Major Players, Projections for Distribution Transformer Capacity (2017-22), Projected Demand for Transformers (2017-22) <p>15. SWITCHGEAR</p> <ul style="list-style-type: none"> - Technology Overview - Recent Trends and Advances - Major Players - Projections for Transformer Capacity (2017-22) - Projected Demand for Switchgear (2017-2022) <p>16. ENERGY METERS</p> <ul style="list-style-type: none"> - Advance Metering Infrastructure - Smart Metering - Prepaid Metering - Net Metering - Demand Drivers - Projected Demand for Meters (2017-22): DT Meters, Consumer Meters, Smart Meters <p>SECTION IV: EQUIPMENT MANUFACTURER AND SUPPLIER PROFILES</p> <p>17. KEY EQUIPMENT MANUFACTURERS AND SUPPLIERS</p> <ul style="list-style-type: none"> - ABB India Limited, Aditya Birla Insulators, Apar Industries Limited, Bharat Heavy Electricals Limited, CG Power and Industrial Solutions Limited, Diamond Power Infrastructure Limited, Finolex Cables Limited, GE T&D India Limited, Jyoti Structures Limited, Kalpataru Power Transmission Limited, KEC International Limited, KEI Industries, Kirloskar Electric Company Limited, LS Cable & System, Schneider Electric Infrastructure Limited, Siemens Limited, Sterlite Power Transmission Limited, Skipper Limited, Toshiba T&D India Private Limited, Transformers & Rectifiers (India) Limited, Voltamp Transformers, WEG Industries(India) Private Limited <p>Other Manufacturers and Suppliers</p> <ul style="list-style-type: none"> - A2Z Infra Engineering Limited, Asbesco (India) Private Limited, Automatic Electric Limited, Autometers Alliance Limited, Bajaj Electricals Limited, C&S Electric Limited, Cabcon India Private Limited, Cable Corporation of India, Danish Private Limited, Deepak Cables (India) Limited, Delton Cables Limited, ECE Industries Limited, Elektrolites Power Private Limited, EMC Limited, EMCO Limited, Ensto India Private Limited, Eon Electric Limited, Esennar Transformers Private Limited, Fluke Corporation, Gemscab Industries Limited, General Cable Energy India Private Limited, Genus Power Infrastructures Limited, Goldstone Infratech Limited, Gupta Power Infrastructure Limited, Havells India Limited, Hind Aluminium Industries Limited, Hindusthan Vidyut Products Limited, HPL India, IMP Powers Limited, Indian Transformers Company Limited, Karamtara Engineering Private Limited, Kotsons Private Limited, KRYFS Power Components Limited, Lapp India Private Limited, Paramount Communications Limited, Polycab Wires Private Limited, Powercap Capacitors Private Limited, PP Industries Private Limited, Pragati Electricals Private Limited, Prolec GE, Ravin Cables Limited, Shilchar Technologies Limited, Skytone Electricals India Limited, Stelmec Limited, Switchgear & Control Technics Private Limited, Technical Associates Limited, Teracom Limited, Thermo Cables Limited, Universal Cables Limited, Universal Power Transformer Private Limited, Uttam (Bharat) Electricals (P) Limited, Valmont India Limited, W.S. Industries (India) Limited <p><i>(Each profile covers existing and planned manufacturing capacity, product portfolio, recent orders, financial performance, etc.)</i></p> <div style="display: flex; align-items: center;">  <p>The report is available in a PDF format.</p> </div>
---	---

Changing Landscape, Growing Role of Digitisation and New Opportunities

Table of Contents

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 2018-19. 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
- ❖ Long-term projections



The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: HT CONSUMERS MARKET

2. MARKET OVERVIEW

- Historical Trends
 - Sale of Power to HT Consumers
 - Share of HT Consumers in Total Power Sales
 - Revenues from HT Consumers
 - Share of HT Consumers in Total Discom Revenues
- Key Drivers
- Outlook and Projections

3. TARIFF TRENDS

- All-India Average HT Industrial Tariff Revisions
- State- and Utility-wise Trends in Average Rate of Sale of Power
- HT Tariffs as a Percentage of Average Cost of Supply
- Year-on-Year Changes in Tariffs
- Trends in Cross-Subsidy Surcharges for HT Industrial Consumers

4. INTER-STATE COMPARISON

- Utility-wise Sale of Power to HT Consumers
- Utility-wise Share of HT Consumers in Sale of Power
- Utility-wise Revenues from HT Consumers
- Utility-wise Share of HT Consumers in Total Revenues

SECTION II: LT CONSUMERS MARKET

5. MARKET OVERVIEW

- Historical Trends
 - Sale of Power to LT Consumers
 - Share of LT Consumers in Total Power Sales
 - Revenues from LT Consumers
 - Share of LT Consumers in Total Discom Revenues
- Key Drivers
- Outlook and Projections

6. TARIFF TRENDS

- All-India Average LT Industrial Tariff Revisions
- State- and Utility-wise Trends in Average Rate of Sale of Power
- Year-on-Year Changes in Tariffs

7. INTER-STATE COMPARISON

- Utility-wise Sale of Power to LT Consumers
- Utility-wise Share of LT consumers in Sale of Power
- Utility-wise Revenues from LT Consumers
- Utility-wise Share of LT consumers in Total Revenues

SECTION III: COMMERCIAL CONSUMERS MARKET

8. MARKET OVERVIEW

- Historical Trends
 - Sale of Power to Commercial Consumers
 - Share of Commercial Consumers in Total Power Sales
 - Revenues from Commercial Consumers
 - Share of Commercial Consumers in Total Discom Revenues
- Key Drivers
- Outlook and Projections

9. TARIFF TRENDS

- All-India Average Commercial Industrial Tariff Revisions
- State- and Utility-wise Trends in Average Rate of Sale of Power
- Year-on-Year Changes in Tariffs

10. INTER-STATE COMPARISON

- Utility-wise Sale of Power to Commercial Consumers
- Utility-wise Share of Commercial Consumers in Sale of Power
- Utility-wise Revenues from Commercial Consumers
- Utility-wise Share of Commercial Consumers in Total Revenues

11. STATE-WISE DISCOM MARKET ANALYSIS

- Andhra Pradesh
- Assam
- Bihar
- Chhattisgarh
- Delhi
- Gujarat
- Haryana
- Himachal Pradesh
- Jammu & Kashmir
- Jharkhand
- Karnataka
- Kerala
- Madhya Pradesh
- Maharashtra
- Meghalaya
- Odisha
- Punjab
- Rajasthan
- Tamil Nadu
- Telangana
- Uttarakhand
- Uttar Pradesh
- West Bengal



The report is available in a PDF format.

Market Analysis and Trends; Outlook and Projections

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>SECTION I: MARKET SIZE, TRENDS AND DEVELOPMENTS</p> <p>2. SECTOR SIZE AND GROWTH</p> <ul style="list-style-type: none"> - Growth in Line Length (by voltage), Growth in Distribution Transformer Capacity (by voltage), Growth in Substation Addition, Trends in Energy Sales by Category, Growth in Customer Base, Trends in AT&C Losses, Metering Status, Reliability Indices Performance, Key Issues and Challenges, Outlook <p>3. POLICY AND REGULATORY INITIATIVES</p> <ul style="list-style-type: none"> - Consultation Paper on Open Access, Saubhagya Promise, Draft National Energy Policy, Electricity Act (Amendment) Bill, MERIT Portal, Viduyut PRAVAH, E-mobility and Charging Infrastructure <p>4. KEY RECENT DEVELOPMENTS</p> <ul style="list-style-type: none"> - Update on Key Government Programmes, Smart Meter Tender Results, Discom Rankings as per Annual Ratings, Update on Distribution Franchises, Compensatory Tariff Update, Recent Tariff Hikes, Recent Competitive Bids and PPA Cancellations, Others Developments <p>5. INTER-DISCOM COMPARISON</p> <ul style="list-style-type: none"> - Number of consumers, Energy sales, Line length, Transformer capacity, Metering Status, Collection efficiency, AT&C losses, ACS-ARR gap, Power purchase costs, Profits/losses, Power quality and reliability <p>SECTION II: OUTLOOK AND KEY PROJECTIONS</p> <p>6. NETWORK GROWTH AND INVESTMENTS</p> <ul style="list-style-type: none"> - Projected Line Length Additions, Projected Substation Additions, Projected Transformer Capacity Additions, Projected Metering Requirements, Projected Investments in Distribution Network <p>7. CAPITAL EXPENDITURE</p> <ul style="list-style-type: none"> - Trends in Year-wise Capex, Discom-wise Capex Trends, Key Capex Components, Targets/Planned Capex By Discoms (till 2022-23), Proposed Break-up of Planned Capex, Funding Sources <p>8. EQUIPMENT REQUIREMENT</p> <ul style="list-style-type: none"> - Growth Drivers; Projected Demand for Equipment: Cables, Conductors, Transformers, Switchgear, Meters <p>SECTION III: FOCUS AND IMPACT OF KEY GOVERNMENT PROGRAMMES</p> <p>9. UJWAL DISCOM ASSURANCE YOJANA</p> <ul style="list-style-type: none"> - Key Features and Targets, All India Impact of UDAY, State-wise Performance on Key Parameters, Bond Issuance, Tariff Revisions, Smart Metering, Recent Developments, Issues and Concerns, The Way Forward <p>10. SAUBHAGYA</p> <ul style="list-style-type: none"> - Overview, Rural Electrification Progress, Household Electrification Status, SAUBHAGYA - Rationale, Key Features, Implementation Guidelines, Funding Guidelines, Initial Results, Expected Impact, Challenges, Update on DDUGJY, Way Forward <p>11. INTEGRATED POWER DEVELOPMENT SCHEME (IPDS)</p> <ul style="list-style-type: none"> - Status of R-APDRP, Progress under IPDS, Sanctions and Disbursements, SCADA Progress, Plans for IT Phase-II, Other Proposed Initiatives under IPDS, Key Issues and Concerns, Outlook <p>12. SMART GRIDS</p> <ul style="list-style-type: none"> - Current status of pilot projects, National Smart Grid Mission Update, Smart Metering Related Updates, Other Smart Grid projects, Issues and the way forward 	<p>13. DEMAND SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAMMES</p> <ul style="list-style-type: none"> - Overview, PAT Scheme, UJALA, Other DSM initiatives, Regulatory Scenario, Issues and Challenges <p>SECTION III: COSTS, TARIFFS AND DISCOM FINANCES</p> <p>14. POWER PURCHASE COSTS</p> <ul style="list-style-type: none"> - Aggregate Power Purchase Cost Trend, Per Unit Power Purchase Cost Trend, Source-wise Power Purchase Costs (by Utility), Long-term Procurement through Case 1, Short-term Power Trading by Discoms, E-bidding under DEEP <p>15. O&M COSTS</p> <ul style="list-style-type: none"> - Year-wise Trends in O&M Costs, Trends in Utility-wise O&M Costs, O&M Costs break-up <p>16. TARIFF TRENDS</p> <ul style="list-style-type: none"> - Tariff Revisions, Agricultural Tariff Trend, Domestic Tariff Trend, Commercial Tariff Trend, LT Industrial Tariff Trend, HT Industrial Tariff Trend, Trend in Cross Subsidy Surcharges <p>17. DISCOM FINANCES</p> <ul style="list-style-type: none"> - Key Trends: Revenue, Expenditure, Profits/Losses, ACS-ARR Gap, Outstanding debt of discoms, Subsidies <p>18. KEY RATIO ANALYSIS</p> <ul style="list-style-type: none"> - Return on Equity, Return on Net Worth, Return on Capital Employed, Debt-Equity Ratio <p>19. OUTLOOK</p> <ul style="list-style-type: none"> - Factors Impacting Long-term Power Purchase Costs, Projected Power Purchase Costs, Tariff Outlook, Outlook on Discom Finances <p>SECTION V: DISTRIBUTION FRANCHISEES: EXPERIENCE AND OUTLOOK</p> <p>20. EXPERIENCE SO FAR</p> <ul style="list-style-type: none"> - Operational/Awarded Franchises - Terminated Franchises - Recent Awards - Issues and Challenges - Success Factors - Outlook <p>21. PERFORMANCE OF OPERATIONAL FRANCHISEES</p> <ul style="list-style-type: none"> - Overview of Operations - AT&C Loss Reduction Performance - Performance on Other Parameters - Key Initiatives Undertaken <p>SECTION VI: DISCOM PROFILES</p> <p>22. PROFILES OF DISCOMS BY STATE</p> <ul style="list-style-type: none"> - Andhra Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Gujarat, Goa, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttarakhand, Uttar Pradesh, West Bengal <p>Each profile covers the following:</p> <ul style="list-style-type: none"> - Operational Area, Line Length, Transformer Capacity, Customer Base, Category-wise Energy Sales, AT&C losses, Recent and Proposed Capex, Metering Status, Reliability Indices (SAIFI, SAIDI), Planned Network Additions, Key Financials, Tariffs, Power Purchase Cost, O&M Costs
--	---



The report is available in a PDF format.

SECTION I: MARKET SIZE, TRENDS AND DEVELOPMENTS

1. EXECUTIVE SUMMARY

2. SIZE AND GROWTH

- Growth in Transmission Line Length (by ownership and by voltage), Growth in Transmission Transformer Capacity (by ownership and by voltage), Trend in Substation Additions (by ownership and by voltage), Growth in Inter-regional Transfer Capacity, Growth in Transmission against Generation Capacity, Growth in Total transfer Capability, Trend in Network Reliability, Trend in Sector Investments, Key Issues and Challenges, Outlook

3. RECENT DEVELOPMENTS

- Railways' Transmission System Development Plans, Competition in Intra-state Transmission, Strengthening Cross-border Links, Update on High Capacity Power Transmission Corridors, Cybersecurity for Critical Energy Infrastructure, Reducing Transmission Congestion, Impact of EV Penetration on Grid Operators and Transcos, Developments in Ancillary Services Market, Consolidation Moves/M&A Deals, Key Financings

4. POLICY AND REGULATORY DEVELOPMENTS

- Draft National Energy Policy, Electricity Act (Amendment) Bill, Draft SDB for Intra-state Transmission Projects, Draft Regulations-Transmission Planning, GNA, Cross-border Trade, Regulations on Communication System for Interstate Electricity Transmission, Other Key Amendments

5. PRIVATE SECTOR PARTICIPATION

- Experience so Far, Tariff-based Competitive Bidding (TBCB), Private Participation at Interstate level, Private Participation at Intra-state level, Key Issues and Concerns

6. TRANSMISSION TARIFFS

- Point of Connection Methodology and Charges, Interstate Transmission Tariffs, Intra-state Transmission Tariffs

7. PROJECT PIPELINE

- Overall pipeline
 - Interstate Projects: Line Length and Transformer Capacity (by voltage and utility)
 - Intra-state Projects: Line Length and Transformer Capacity (by voltage and utility)

SECTION II: INTERTRANSCO COMPARISON

8. NETWORK GROWTH AND OPERATIONAL PERFORMANCE

- Transmission Line Length, Transformer Capacity, Number of substations, Transmission Losses, System Availability

9. FINANCIAL PERFORMANCE

- Trends in Utility-wise Revenues, Trends in Utility-wise Expenditure, Trends in Utility-wise Net Profit, Trends in O&M Costs, Trends in Capital Expenditure, Debt/Equity Ratio

SECTION III: OUTLOOK AND PROJECTIONS

10. NETWORK GROWTH AND INVESTMENTS (till 2022-23)

- Projected Line Length Additions, Projected Transformer Capacity Addition, Project Addition to Substations, Expansion in Interregional Transfer Capacity, Investment Projections, TBCB Opportunities at Interstate and Intra-state Levels, Key Issues and Concerns, Future Outlook

11. EQUIPMENT REQUIREMENTS (till 2022-23)

- Growth Drivers
- Projected Demand for Equipment
 - Towers
 - Conductors
 - Power Transformers
 - Switchgears

SECTION IV: KEY PROJECTS AND TECHNOLOGY INITIATIVES

12. RENEWABLE ENERGY INTEGRATION PROJECTS

- Projected Renewable Energy Capacity Addition
- Challenges in Grid Integration of Renewable Energy
- Renewable Energy Management Centres

13. TARIFF-BASED COMPETITIVE BIDDING PROJECTS

- Interstate Projects: Status of Projects Awarded so Far, Projects under Bidding, New Project Pipeline
- Intra-state projects: Status of Projects Awarded so Far, Projects under Bidding, New project Pipeline

14. CROSS-BORDER INTERCONNECTIONS

- Existing Interconnections: India-Bangladesh, India-Nepal, India-Bhutan
- Ongoing Interconnection Projects
- Interconnections under Planning
- Issues and Challenges

15. NEW AND PROMISING TECHNOLOGIES: PLANS AND PILOTS

- Overview
- Technology adoption by POWERGRID: HVDC and UHVAC, FACTS, PMU/URTDMS, PST, UAV and Aerial Technologies, Digital Substations, GIS
- Technology Initiatives of State Utilities

SECTION V: TRANSMISSION UTILITY PROFILES

16. CENTRAL TRANSMISSION UTILITIES

- Power Grid Corporation of India Limited
- Damodar Valley Corporation
- Bhakra Beas Management Board

17. STATE TRANSMISSION UTILITIES

- Gujarat Energy Transmission Corporation Limited, Maharashtra State Electricity Transmission Company Limited, Karnataka Power Transmission Corporation Limited, Rajasthan Rajya Vidyut Prasaran Nigam Limited, Madhya Pradesh Power Transmission Company Limited, Uttar Pradesh Power Transmission Corporation Limited, Tamil Nadu Transmission Corporation Limited, Transmission Corporation of Andhra Pradesh Limited, Transmission Corporation of Telangana Limited, Haryana Vidyut Prasaran Nigam Limited, etc.

18. PRIVATE TRANSMISSION COMPANIES

- Adani Transmission Limited, Reliance Infrastructure Limited, Sterlite Power Transmission Limited, Essel Infraprojects Limited, Kalpataru Power Transmission, Instalaciones Inabensa S.A., Essar Power Transmission Company Limited, L&T Infrastructure Projects Limited, Techno Electric & Engineering Company Limited, Other companies



The report is available in a PDF format.

Trends, Capacity Analysis and Outlook

Table of Contents

1. EXECUTIVE SUMMARY**SECTION I: MARKET TRENDS, DEVELOPMENTS AND OUTLOOK****2. OVERVIEW**

- Size and Growth
- Growth Drivers
- Key Trends
- Plans and Investments
- Future Outlook

3. POLICY AND REGULATORY DEVELOPMENTS

- Draft Amendments in Electricity Rules, 2005
- CERC's APPC Order
- Renewable Purchase Obligations
- Rooftop Market and Net Metering
- Open Access
- Wheeling, Banking and Third Party Sale Options
- Update on Environmental Norms
- Other Key Developments

4. INSTALLED CAPACITY ANALYSIS

- Estimated Total Captive Capacity
- Distribution of Captive Capacity
 - By Size
 - By Fuel
 - By Industry
 - By State

5. FOCUS ON GROUP CAPTIVES

- Growth Drivers
- Market Size
- Technology Options and Cost Economics
- Impact of New Draft Rules
- Future Outlook

6. CAPTIVE POWER FROM RENEWABLES

- Overview
- Capacity Addition Trends by Source
- State-wise Capacity Addition
- Growth Drivers
- REC Trading Trends
- Policy Measures and Incentives
- Challenges and Outlook

7. OUTLOOK AND PROJECTIONS

- Key Drivers for Future Demand
- Upcoming Captive Capacity
- Issues and Challenges

SECTION II: ECONOMICS, FUEL OUTLOOK AND TRADING OPTIONS**8. CAPTIVE POWER ECONOMICS**

- Technology Options
- Coal-based CPPs (Capex and Opex)
- Gas-based CPPs (Capex and Opex)
- Liquid Fuel-based CPPs (Capex and Opex)
- Renewable Energy (Capital Costs and Tariffs)

9. FUEL OUTLOOK

- Coal
 - Demand and Offtake Trends
 - Trends in Production and Supply
 - E-auctions
 - Coal Import Trends
 - Coking Coal Supply Trends
 - Prices of Linkage Coal
 - International Price Trends
 - Supply Outlook and Projections
- Gas
 - Consumption
 - Supply and Offtake Trends
 - Domestic Gas Prices
 - LNG Imports
 - Trends in LNG Prices
 - Pipeline Infrastructure Developments
 - Supply Outlook and Projections
- Liquid Fuels
 - Consumption Trends
 - Price Trends for Crude Oil and Diesel
 - Future Outlook

10. GRID POWER TARIFFS

- Tariff Trends
 - HT Industrial Tariff
 - LT Industrial Tariff
 - Commercial Tariff
- Recent Tariff Revisions
 - HT Industrial Tariff
 - LT Industrial Tariff
 - Commercial Tariff
- Open Access Charges
- Trends in Cross-subsidisation
- Future Outlook

11. POWER TRADING SCENARIO

- Short-Term Power Market Trends
- Key Drivers
- Power Trading through Exchanges
- Power Trading through Licensees
- Open Access in Exchanges
- Major Buyers and Sellers
- Issues and Concerns
- Future Outlook

SECTION III: DATABASE OF CAPTIVE POWER PLANTS

The most comprehensive database covering about 2,600 captive power plants with information on owner, capacity, location and fuel type. Industries covered would include: Metals and Minerals; Cement; Petrochemicals (Inc. Refineries); Chemicals; Textiles; Engineering; Pulp and Paper; Fertilisers; Sugar; Institutional Users; Group Captive; etc.



The report is available in a PDF format.

Table of Contents

EXECUTIVE SUMMARY

SECTION I: OVERVIEW AND RECENT DEVELOPMENTS

1. COAL-BASED GENERATION - SIZE AND GROWTH

- Growth in Installed Capacity
- Analysis of Existing Capacity: Sector; Location; Size of Units; Type of Coal
- Trends in Generation
- Trends in PLF

2. POLICY INITIATIVES AND DEVELOPMENTS

- Update on SHAKTI, Revised Mega Power Policy, Methodology for Flexible Utilisation of Coal for IPPs, CEA's FGD Perspective Plan, SC Ruling on Tribunal Order in Compensatory Tariff Case, Replacement and Upgradation of Old Units, Status of Auctioned Captive Coal Blocks for Power

3. UPDATE ON STRESSED ASSETS

- Stressed Assets in Power Sector, Stressed Projects and Developers, Measures to Revive Stressed Assets, Recent Acquisitions, Deals under Discussions, Potential Buyers, Future Outlook

4. NEED FOR FLEXIBILISATION

- Growth Drivers, All-India Load Pattern Analysis, Existing Policy and Regulatory Provisions for Flexibilisation, Flexible Generation Options for Coal-based Plants, Retrofits and Modifications to Enhance Flexibility, Performance of Flexibilised Plants, Impact on Costs, Key Limitations and Challenges, Flexibilisation Initiatives underway in India, Future Outlook

5. EMISSION CONTROL REGULATIONS: TIMELINES, COSTS AND STATUS

- Trends in Emissions from Coal-based Plants, Overview of Revised Environmental Standards, Rationale for New Standards, Existing and Upcoming Capacity Impacted by Emission Norms™, Timelines for Implementation, Impact on Cost of Generation and Tariffs, Key Technologies, Industry Issues and Concerns

6. IMPACT OF RENEWABLES

- Current Share of Electricity Generation, Coal versus Renewables Generation Cost Comparison, Projected Renewable Capacity Additions, Projected Fuel Mix by 2022 and 2027, Future Load Generation Scenario, Role of Coal-based Plants in Grid Balancing, Flexibility Requirements with High Share of Renewables

SECTION II: PLANT PROFILE AND OPERATING PERFORMANCE

7. PLANT PERFORMANCE ANALYSIS

- Size of Plants and Units, Subcritical and Supercritical Units, Age of Units, Boiler and Turbine Makes, PLF Trends, Heat Rate Trend Analysis, Auxiliary Consumption trends

8. CANDIDATES FOR SHUTDOWN AND O&M

- Current O&M Projects, Potential for O&M, Candidates for O&M, Candidate Plants for Closure

SECTION III: COAL SUPPLY, PRICES AND OUTLOOK

9. COAL SUPPLY SCENARIO

- Coal Demand from Thermal Power Plants, Current Production, Supply of Coking versus Non-coking Coal, Captive Coal Production, Trends in Coal Imports, Projections for Coal Demand and Supply

10. TRENDS IN COAL PROCUREMENT

- Source Comparison, Linkage Volume and Trends, E-auction Volume and Trends, Captive Volume and Trends, Imported Volume and Trends

11. COAL PRICES

- Domestic Coal Prices, E-Auction Prices, Global Price Trend, Pricing Outlook and Forecasts

12. COAL TRANSPORTATION

- Share of various Modes of Coal Transportation, Trends in Rail Freight Costs, Status of Critical Rail Connectivity Projects, Ports Capacity for Handling Coal, Upcoming Railways and Ports Capacity, Key Issues and Challenges

SECTION IV: COSTS AND TARIFFS

13. TARIFF AND PRICES

- Factors affecting Tariffs, Tariff Trends, Tariff Trends in PPAs, Tariff Discovered under Case 1 and 2 Bids, Short-term Power Prices, E-bidding under DEEP

14. GENERATION COSTS

- Trends in Generation Costs, Factors Affecting Cost of Generation, Cost Comparison with other Fuels Options, Energy Charges for New Plants, Equipment Costs for New Plants, Other Costs (AFC and O&M), Future Outlook

SECTION V: MARKET OUTLOOK AND OPPORTUNITIES

15. NEW PROJECT PIPELINE

- Analysis of Capacity under Construction: By Ownership; By Expected CoD; By Size; By Location, Status of Capacity under Construction, Time and Cost Overruns in Upcoming Projects, Stalled Projects, Issues and Concerns

16. FUTURE OUTLOOK

- Capacity Addition, Power Demand and Power Procurement, Capacity Utilisation, Merchant Sales, Generation Tariffs, Emission Norms

17. MARKET OPPORTUNITIES FOR TECHNOLOGY PROVIDERS

- FGD Systems, ESP Upgradation, Water Management Systems, Control and Instrumentation (C&I) Systems

SECTION VI: KEY POWER PRODUCERS

18. MAJOR PLAYERS

- NTPC Limited, Damodar Valley Corporation, NLC India Limited, Adani Power Limited, Tata Power Company Limited, Reliance Power Limited, JSW Energy Limited, Jindal Power Limited, Essar Power Limited, GMR Energy Limited, RattanIndia Power Limited, Lanco Infratech Limited, Maharashtra State Power Generation Company Limited, Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited, Rajasthan Vidyut Utpadan Nigam Limited, Tamil Nadu Generation and Distribution Corporation Limited, West Bengal Power Development Corporation Limited, Karnataka Power Corporation Limited, Madhya Pradesh Power Generating Company Limited, Gujarat State Electricity Corporation Limited, Chhattisgarh State Power Generation Company Limited, Telangana State Power Generation Corporation Limited, Andhra Pradesh Power Generation Corporation Limited, Haryana Power Generation Corporation Limited

Each profile includes information on current capacity, upcoming projects, operating performance and financial performance.



The report is available in a PDF format.

Trends, Developments and Future Outlook

Table of Contents

SECTION I: MARKET OVERVIEW AND OUTLOOK**1. EXECUTIVE SUMMARY****2. SIZE AND GROWTH**

- Hydro Power Potential, Growth in Installed Capacity, Hydro Capacity Addition Trend, Generation Trend, Trend in Hydro Thermal Mix, Pumped Storage Hydro Power Plants, Issues and Challenges

3. KEY RECENT DEVELOPMENTS

- Recent Capacity Additions, Recent Generation Performance, Recent Policy Developments, Recent M&A Deals and Financings, Environmental and Forest Clearances, Other Developments

4. NEW HYDRO POWER POLICY

- Proposed Features
- Expected Fiscal Benefits
- Expected Impact on the Sector
- Issues and Concerns

5. OTHER POLICY AND REGULATORY DEVELOPMENTS

- Cross-border Electricity Trade Guidelines, National Tariff Policy 2016: Provisions for Hydro Power, Government's Scheme for Basin-wise Review of Hydro Power Potential, Peaking & Load Balancing

6. COST AND TARIFFS

- Key Factors Impacting Costs, Project Cost Trends, Hydro Power Tariffs, Tariff Trends, Challenges and Outlook

7. FINANCING

- Funding Options, Recent Financings, M&A Deals, Stressed Projects, Investment Requirements, Issues and Concerns

8. DELAYED AND STALLED PROJECTS

- Key Reasons for Project Delays, Analysis of Stalled Projects, Outlook for Stalled Projects, Impact on Capacity Addition

9. CROSS-BORDER INITIATIVES

- Existing Power Ties with Nepal and Bhutan
- New Guidelines for Cross-border Electricity Trade and Impact
- Upcoming Projects in Bhutan
- Upcoming Projects in Nepal
- Existing and Proposed Transmission Interconnections
- Issues and Challenges

10. STATE INITIATIVES

- Overview
- Arunachal Pradesh, Himachal Pradesh, Jammu & Kashmir, Sikkim and Uttarakhand: Potential vs Development, Institutional Framework, Key Policy Provisions, Installed Capacity, Upcoming Capacity
- Issues and Concerns

11. FUTURE OUTLOOK

- Projected Capacity Additions, Investment Requirements, Outlook on Costs and Tariffs, Impact on Renewables and Role in Balancing, Risks and Challenges, Market Opportunities

SECTION II: PLANT PERFORMANCE ANALYSIS**12. ANALYSIS OF EXISTING CAPACITY**

- By Project Size, Ownership, Player, Type of Project, Age of Project, State, Equipment-make

13. GENERATION PERFORMANCE ANALYSIS

- Historical Trends, Best Performing Plants, Inter-plant Comparison, Inter-state Comparison, Inter-developer Comparison, Operating Availability, Trend in Outages

14. RENOVATION AND MODERNISATION

- Age-profile of Existing Projects, Completed R&M Projects in Twelfth Plan, Projects Proposed for R&M, R&M Contracts Awarded

SECTION III: UPCOMING PROJECT ANALYSIS**15. PIPELINE OF UPCOMING PROJECTS**

- Projects Under Construction, Projects Under Planning, Survey and Investigation, Projects Allotted by States, Stalled Projects

16. ANALYSIS OF UPCOMING CAPACITY

- Upcoming Capacity Profile, By Year of Commissioning, By Ownership, By Unit Size, By Location, By Equipment-make, By Type, By Status

17. ANALYSIS OF DELAYED PROJECTS

- Delayed Project Capacity, Average Time Overruns, Average Cost Overruns, Reasons for Delays, Mitigation Strategies

18. KEY PROJECTS UNDER EXECUTION

- Project Background, Progress so Far, Key Issues Impacting the Projects, Completion Schedule

19. UPCOMING PROJECT PROFILES

- Capacity, Location, Number of Units, Developer
- Expected Year of Commissioning
- Investments Proposed
- Key Contractors
- Construction Status

SECTION IV: DEVELOPER PROFILES

(Each profile includes information on existing projects, operational performance, future plans, status of upcoming projects and financial performance.)

20. CENTRAL PUBLIC SECTOR UNITS

- NHPC Limited, SJVN Limited, THDC India Limited, NTPC Limited, NHDC Limited, NEEPCO, BBMB, DVC

21. STATE-OWNED GENCOS

- Karnataka Power Corporation Limited, Maharashtra State Power Generation Company Limited, Tamil Nadu Generation and Distribution Corporation, Orissa Hydro Power Corporation Limited, Kerala State Electricity Board, Andhra Pradesh Power Generation Company Limited, Telangana State Power Generation Company Limited, Sardar Sarovar Narmada Nigam Limited, Uttarakhand Jal Vidyut Nigam Limited, Punjab State Power Corporation Limited, Jammu and Kashmir State Power Development Corporation Limited, Teesta Urja Limited

22. INDEPENDENT POWER PRODUCERS

- JSW Energy, LNJ Bhilwara Group, Jaiprakash Power Ventures, Tata Power, Greenko, Sneha Kinetic, Lanco Infratech, GMR Energy, GVK Power and Infrastructure, Indo Arya Energy, Gati Infrastructure, Dans Energy



The report is available in a PDF format.

SECTION I: OVERALL SECTOR ANALYSIS

1. EXECUTIVE SUMMARY

2. OVERVIEW

- Introduction
- Biomass Potential
- Size and Growth
- Inter-state Comparison
- Growth Drivers
- Issues and Challenges
- Emerging Trends
- Conclusion

3. POLICY AND REGULATORY FRAMEWORK

- Introduction
- Policy and Legal Framework
- Current Policy Guidelines
- Regulatory Framework
- State Initiatives
- Issues and Challenges
- The Way Forward

4. FUEL SUPPLY AND LOGISTICS

- Introduction
- Current Scenario
- Fuel Price Trends
- Evolving Fuel Management Strategies
- Conclusion

5. COST ECONOMICS AND TARIFFS

- Introduction
- Cost Components
- Indicative Capital Cost of Existing Plants
- Biomass Energy Tariffs
- Incentive Options Driving Project Economics
- Conclusion

6. EQUIPMENT AND TECHNOLOGY

- Introduction
- Key Technologies
- Key Equipment
- Market Overview
- Issues and the Way Forward

7. FINANCING

- Introduction
- Size and Growth
- Sources of Funding
- Equity Financing
- Debt Financing
- External Financing
- Issues and Challenges
- Future Outlook

8. OFF-GRID BIOMASS

- Introduction
- Size and Growth
- Growth Drivers
- Government Initiatives and Programmes
- Biomass-based Microgrids
- Conclusion

9. FUTURE OUTLOOK

- Introduction
- Future Growth Drivers
- Capacity Addition Outlook
- Investment and Financing Outlook
- Emerging Policy and Regulatory Framework
- Conclusion

SECTION II: PROJECTS AND DEVELOPERS

10. PROJECT PROFILES

- Rake Power Limited's 10 MW Project in Nagpur
- Usher Eco Power's 16 MW Cogen Plant in Mathura
- ASET's 1.2 MW Gasification-Based Plant in Vadodara
- MPPPL's 4.5 MW Plant in Kirugavalu
- Malwa Power's 7.5 MW Plant in Muktsar
- DEE Development's 8 MW Plant in Fazilka
- PBPL's 12 MW Plant in Patiala
- SWIVPL's 9.9 MW Project in Mohindergarh
- Auro Mira's 7.5 MW Plant in Pudukottai
- KPTL's 7.8 MW Plant in Ganganagar
- Greenko's 8 MW ISA Power Project in Dhamtari
- STPPPL's 6 MW Plant in Beechpally
- RRREL's 18 MW Plant in Pamboor
- MUUL's 7.5 MW Plant in Raipur
- Suryachakra Global's 9.8 MW Plant in Janjgir
- Abellon's 9.9 MW Plant in Khas
- GAPS Power's 13 MW Plant in Shendra
- OGPL's 10 MW Plant in Narsimhapur
- Chambal Power's 7.5 MW Project in Kota
- A.A. Energy's 10 MW Project in Gadchiroli

11. DEVELOPER PROFILES

- Introduction
- AllGreen Energy India Private Limited
- Auro Mira Energy Company Private Limited
- Bermaco Energy Limited
- Clenergen India Private Limited
- MPPL Renewable Energy Private Limited
- Orient Green Power Company Limited
- Shalivahana Green Energy Limited
- Usher Eco Power Limited

12. APPENDIX



The report is available along with a presentation in PDF format.

Segment Analysis, Trends and Developments

Table of Contents

SECTION A: OVERALL MARKET SCENARIO AND OUTLOOK

- 1. SECTOR OVERVIEW**
- Size and Growth, Key Growth Enablers, Industry Structure, Existing and Emerging Sub-segments, Investment and Financing, Policy and Regulations, Costs & Tariffs, Issues & Challenges, Future Roadmap
- 2. RECENT DEVELOPMENTS**
- Recent Capacity Addition Trends, Emerging State Order, Emerging Cost and Tariff Trends, Recent Policies and Regulations, Recent Financing Trends, New Opportunities
- 3. GRID INTEGRATION AND POWER EVACUATION**
- Current Scenario, Update on Green Energy Corridors, State-wise Transmission Infrastructure Development Plans, Financing Requirements, Key Issues & Challenges, Emerging Technology Solutions
- 4. INVESTMENT AND FINANCING**
- Investment Trends, Financing Options, Sources of Financing, Emerging Financial Instruments, Investment Requirements
- 5. DOMESTIC MANUFACTURING**
- Industry Snapshot, Key Trends and Developments, Make in India, Plans and Investments - Domestic Players, Market Opportunities for Foreign Manufacturers, Plans and Investments - International Players, Current Production Capacity, Changing Business Model, WTO Ruling and Domestic Content Requirement, Issues and Challenges, Outlook
- 6. FUTURE OUTLOOK AND PROJECTIONS**
- Capacity Addition, Policy and Regulations, RPO Trajectory, Domestic Manufacturing, Costs and Tariffs, Solar Capacity Addition Projections, Equipment Outlook, Investment and Financing Outlook

SECTION B: UTILITY SCALE MARKET

- 7. CAPACITY GROWTH TRENDS**
- Size and Growth, Recent Capacity Additions, Key Growth Drivers, Capacity Allocations, Issues & Concerns, Outlook and Way Forward
- 8. POLICY AND REGULATORY SCENARIO**
- Introduction, Key Policies, Key Regulations, Open Access Policy, Solar RPO Trajectory, Solar RPO Compliance, Solar REC Trends, Key Challenges
- 9. SOLAR PARKS**
- MNRE's Solar Park Policy, Solar Park Charges, Key Features of Existing Solar Parks, Key Features of Approved Parks, Recent and Upcoming Tenders
- 10. SOLAR HYBRIDS AND ENERGY STORAGE**
- Solar-wind Hybrids: Estimated Potential, Key Policy Features, Pilot Projects, Key Issues and Challenges
- Energy Storage: Cost Economics, Case for Energy Storage Systems, Types of Storage Systems, Current Policy Scenario, SECI's Initiatives, CERC's Initiatives, Emerging Technology
- 11. STATE INITIATIVES**
- Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh
- 12. COST ECONOMICS AND TARIFF TRENDS**
- Cost of Generation, CERC-determined Tariffs, Capital Cost Breakdown, Tender-wise Analysis of Tariffs Realised, Future Outlook

SECTION C: ROOFTOP MARKET

- 13. ROOFTOP SEGMENT OVERVIEW**
- MNRE's Plans and Targets, Potential and Growth, Size and Growth, Emerging Trends, Ongoing Tenders, Recent Projects, Key Players, Key Growth Drivers, Issues & Concerns, Outlook & The Way Forward
- 14. POLICY AND REGULATORY SCENARIO**
- MNRE's Initiatives, Key Policies and Regulations, State Policy Initiatives, State-wise Rooftop Policies and Targets, Initiatives by Local Administration and Authorities, State-wise Tariffs and Incentives, Metering, Key Features of State-wise Net Metering Policy, Key Issues and The Way Forward
- 15. SECI'S ROOFTOP PROGRAMME**
- Introduction, Implementation Model and Allocations, Snapshot of Results for Key Allocated Tender, Summary of Phase V Rooftop Tender - 500 MW, Upcoming 500 MW Rooftop Tender, Achievement-linked Incentives Scheme, Key Vendors, Key Issues and Challenges
- 16. COST ECONOMICS AND TARIFF TRENDS**
- Cost of Generation, Capital Cost Breakdown, SERC-determined Tariffs, Tender-wise Analysis of Tariffs Realised, Future Outlook

SECTION D: DECENTRALISED MARKET

- 17. MICROGRIDS**
- Overview, Key Players, Issues and Challenges, Emerging Best Practices, Case Studies
- 18. SOLAR PUMPSETS**
- Background, Government Initiatives, Central Financial Assistance for Solar Pumps, State-wise Sanctions and Disbursements, State Initiatives, Size and Growth, Current Installation Status, Key Issues and Challenges
- 19. OTHER OFF-GRID MARKET SEGMENTS**
- Introduction, Solar Water Heaters, Solar Cooking, Solar Lighting
- Solar Cooling
- Telecom Towers

SECTION E: SOLAR POWER EQUIPMENT

- 20. EQUIPMENT MARKET OVERVIEW**
- Current Size by Equipment: Modules; Inverters; Mounting Structures and Trackers; Cables, Connectors and Junction Boxes
- Cost Structure
- Current Demand versus Supply
- Key Players and Market Shares
- Price Trends
- 21. EQUIPMENT OUTLOOK AND KEY PROJECTIONS**
- MNRE's Targets for Solar Power Capacity
- Projections for Solar Power Capacity Addition
- Demand Projections by Segment (2017-22): Utility-scale, Rooftop
- Demand Outlook by Equipment (2017-22): Modules, Inverters, Mounting Structures, Trackers



The report is available in a PDF format.

<p>1. EXECUTIVE SUMMARY</p> <p>SECTION A: SECTOR ANALYSIS, RECENT DEVELOPMENTS AND OUTLOOK</p> <p>2. OVERVIEW</p> <ul style="list-style-type: none"> - Emerging Power Mix - Wind Power Potential - Size and Growth - Capacity Addition Trends: By State, Year, Players - Growth Drivers - Recent Developments - Issues and Challenges - Investment Plans and Outlook (till 2021-22) <p>3. CHANGING MARKET DYNAMICS</p> <ul style="list-style-type: none"> - Key Players and their Capacity: IPPs, Equipment Vendors - Year-wise Trends in Market Shares - Ongoing Market Consolidation - Key M&A Deals - Entry of New Players - Future Outlook <p>4. COMPETITIVE BIDDING</p> <ul style="list-style-type: none"> - Key Features of MNRE's Competitive Bidding Guidelines - Impact Analysis of Competitive Bidding - Analysis of SECI's 1 GW Tender Result - State-wise Update on Competitive Bidding - Upcoming Tenders - Future Outlook <p>5. POLICY AND REGULATORY ROUND-UP</p> <ul style="list-style-type: none"> - Key Policy Initiatives - Update on AD and GBI - Highlights of Draft Renewable Energy Act - State-wise Open Access Policy - State-wise Feed-in Tariffs - Non-Solar RPOs: National Trajectory, State-wise Trajectory, State-wise Compliance, State-wise Action - Amendments in REC Mechanism - REC Market Trends (market clearing price & volume, & participants) - Upcoming Policies and Regulations <p>6. COST AND FINANCING</p> <ul style="list-style-type: none"> - Cost Economics: FIT-based Projects, REC-based Projects, Captive/Group Captive - Risk-Return Analysis - Recent Financings: Bond Market, Debt Deals, Equity Transactions (project equity, PE/VC, etc.) - Emerging Financing Instruments: Green/Masala Bonds, InvtTs, Green Infrastructure Funds, Others - Investment Requirements (till 2022) <p>7. GRID INTEGRATION AND PLANNING</p> <ul style="list-style-type: none"> - Grid Requirements for Renewables - Update on Green Energy Corridors - State-wise Transmission Plans - Forecasting, Scheduling and Deviation Settlement Mechanism <ul style="list-style-type: none"> • Key Features • State-wise Implementation Status - Power System Development Fund Regulations - Update on REMCs - Key Issues and Challenges 	<p>8. EQUIPMENT AND TECHNOLOGY MARKET</p> <ul style="list-style-type: none"> - Current Production Capacity - Player-wise Analysis: Production Capacity, Rated Capacity, Turbine Class and Make - Support Mechanisms for Domestic Manufacturing: Make in India, Focus on Localisation, Export Promotions, Exemptions on Imported Duty, SEZ Benefits - Technology Trends: Towers and Blades, Drives and Motors - Key Challenges - Future Procurement and Upgradation Plans <p>9. OUTLOOK AND OPPORTUNITIES (TILL 2021-22)</p> <ul style="list-style-type: none"> - Government Plans and Targets - Plans of Major Players: IPPs, Captive Power Producers, Equipment Vendors - Project Pipeline - Emerging Opportunities: Repowering, Wind-Solar Hybrids, Offshore Wind - Policy and Regulatory Outlook <p>10. IMPACT OF GST</p> <ul style="list-style-type: none"> - Highlights of the GST Framework - Likely Impact on IPPs - Likely Impact on Equipment Manufacturers - Key Unaddressed Issues - Outlook <p>SECTION B: EMERGING AREAS OF OPPORTUNITY</p> <p>11. ENERGY STORAGE</p> <ul style="list-style-type: none"> - Pilot Projects - Technology Options - Cost Economics - Issues and Challenges - Global Experience - Outlook <p>12. WIND-SOLAR HYBRIDS</p> <ul style="list-style-type: none"> - Estimated Potential - Key Policy Features - Pilot Projects - Key Issues and Challenges <p>13. WIND REPOWERING</p> <ul style="list-style-type: none"> - Estimated Potential - Key Policy Features - Pilot Projects - Key Issues and Challenges <p>14. OFFSHORE WIND</p> <ul style="list-style-type: none"> - Key Policy Features - Government Initiatives - Key Issues and Challenges - Global Trends <p>SECTION C: DATABASE OF EXISTING WIND POWER PLANTS <i>(This includes information on owner, project capacity, location, turbine make, rated capacity, year of commissioning, etc.)</i></p>
--	---



The report is available in a PDF format.

(January 2018)

Table of Contents

<p>1. SOLAR POWER SECTOR OVERVIEW</p> <ul style="list-style-type: none"> - Size and Growth <ul style="list-style-type: none"> • By State • By Programmes/Schemes • By Technology - Key Growth Drivers - Emerging Market Structure - Recent Developments <ul style="list-style-type: none"> • Capacity Recently Allocated • Capacity Planned to be Allocated • Policy and Regulatory Updates - Tariff Trends - Assessment of Key Challenges - Future Outlook <p>2. REVIEW OF SOLAR PLANT PERFORMANCE (2012-2017)</p> <ul style="list-style-type: none"> - Key Demographics - Overall Performance Trends <ul style="list-style-type: none"> • Year-wise Performance • Project Size-wise Performance • State-wise Performance • Technology-wise Performance • Developer Type-wise Performance <p>3. PLANT PERFORMANCE BY YEAR OF COMMISSIONING (2012-2017) .</p> <ul style="list-style-type: none"> - Year-wise Distribution of Plants Tracked - Annual Trends in Generation/Net Exported Power - Annual Trends in CUF - Seasonality Trends <p>4. PLANT PERFORMANCE BY STATE (2012-2017)</p> <ul style="list-style-type: none"> - State-wise Distribution of Plants Tracked - Interstate Comparison <ul style="list-style-type: none"> • Annual Trends • Seasonality Trends - Intra-state Comparison <ul style="list-style-type: none"> • Annual Trends • Seasonality Trends <p>5. PERFORMANCE BY PLANT SIZE (2012-2017)</p> <ul style="list-style-type: none"> - Size-wise Distribution of Plants Tracked - Comparative Performance Analysis <ul style="list-style-type: none"> • < 5 MW • 5-10 MW • 10-20 MW • 20-50 MW • 50-100 MW • >100 MW <p>6. PLANT PERFORMANCE BY TECHNOLOGY (2012- 2017)</p> <ul style="list-style-type: none"> - Technology-wise Distribution of Plants Tracked - Comparative Performance Analysis <ul style="list-style-type: none"> • Crystalline Silicon • Thin Film 	<p>7. PLANT PERFORMANCE BY DEVELOPER TYPE (2012-2017)</p> <ul style="list-style-type: none"> - Share of Projects Tracked by Developer Type - Comparative Performance Analysis: Integrated Solar Project Developers, Independent Power Producers, Power Generation Companies, Diversified Players <p>8. PLANT PERFORMANCE BY KEY DEVELOPERS (2012-2017)</p> <ul style="list-style-type: none"> - Current Market Share of Key Developers - Share of Key Developers in Plants Tracked - Comparative Performance Analysis - Performance of Key Developers: ACME Solar, Greenko, SB Energy, Mahindra Susten, Fortum, Adani Power, Azure Power, First Solar, Hero Solar Energy, NTPC, Renew Power, Tata Power Renewable Energy Limited, Shapoorji Pallonji, Etc. <p>9. PLANT PERFORMANCE BY KEY MODULE MANUFACTURERS (2012-2017)</p> <ul style="list-style-type: none"> - Current Market Share of Key Module Manufacturers - Share of Key Module Manufacturers in Plants Tracked - Comparative Performance Analysis - Performance of Module Manufacturers: BHEL, Canadian Solar, First Solar, Hanwha, Moser Baer, ReneSola, Tata Power Solar, Trina Solar, Vikram Solar, Waaree Energies, Etc. <p>10. PLANT PERFORMANCE BY KEY EPC CONTRACTORS (2012-2017) . .</p> <ul style="list-style-type: none"> - Current Market Share of Key EPC Contractors - Share of Key EPC Contractors in Plants Tracked - Comparative Performance Analysis - Performance of Key EPC Contractors: Gamesa Solar, Lanco Solar, Larsen & Toubro, Mahindra Susten, Moser Baer, Premier Solar, Rays Power Infra, Sterling & Wilson, Tata Power Solar, Ujaas, Etc. <p>11. PLANT PERFORMANCE BY KEY INVERTER MANUFACTURERS (2012-2017)</p> <ul style="list-style-type: none"> - Current Market Share of Key Inverter Manufacturers - Share of Key Inverter Manufacturers in Plants Tracked - Comparative Performance Analysis - Performance of Key Inverter Manufacturers: ABB, Delta, Hitachi, Huawei, Schneider Electric, SMA, Sungrow, TMEIC, Etc. <p>12. CASE STUDIES</p> <p>(This includes 10-12 case studies of operational solar projects covering details related to technology, vendors, performance analysis, location, plant size, implementation challenges, tariff, scheme, operational challenges, O&M practices, etc.)</p> <p>13. DATABASE OF PLANTS TRACKED</p> <p>(The database includes month-wise power generation, developer, location, size, EPC contractor, etc.)</p>
---	---



The report is available in a PDF format.

SECTION I: OVERVIEW, TRENDS AND OUTLOOK

1. EXECUTIVE SUMMARY

2. OVERVIEW

- Macroeconomic Scenario
- Budget 2018-19 Announcements
- GST and its Impact
- Logistics Sector Size and Growth
- Emerging Trends and Developments
- Issues and Challenges
- Outlook and Projections

3. GROWTH DRIVERS

- Growing Demand for Transport and Storage Services
- Grant of Infrastructure Status to Logistics Sector
- Other Key Recent Policy Initiatives
- E-Commerce Boom
- Demand from End-user Industries
- Technology and Automation
- Development of Integrated Facilities
- Planned Fleet Acquisition by Logistics Service Providers/3PL Providers
- Make in India

4. IMPACT OF GST ON LOGISTICS

- Snapshot
- Redesigning Supply Chain Management
- Faster Turnaround/Transit Time
- Consolidation in Storage and Warehousing Sector
- Deployment of Efficient Practices (Bulk-breaking, Cross-docking)
- Impact on Cost of Operations
- Greater Deployment of IT
- Others

5. INVESTMENT EXPERIENCE

- Experience So Far
- Recent Trends
- Key Investment Avenues: Private equity (PE), Initial Public Offer (IPO), Mergers and Acquisitions (M&A)
- Historical and Expected Returns
- Investment Plans
- Investment Projections

6. SECTOR OUTLOOK AND PROJECTIONS

- Freight Traffic Projections
- Warehousing Demand Projections
- Emergence of Warehousing Hubs
- Policy and Regulatory Outlook
- Upcoming Projects and Opportunities

SECTION II: ANALYSIS OF FREIGHT AND STORAGE SEGMENTS

7. FREIGHT MARKET

- Size and Growth, Key Trends, Key Programmes and Initiatives, Demand Drivers, Upcoming Projects and Investments, Major Players, Market Opportunities, Outlook and Projections (2018-19 to 2022-23), Issues and Challenges

8. WAREHOUSING MARKET

- Size and Growth
- Key Government Schemes and Initiatives
- Technological Advancements
- Demand Drivers
- Projected Demand
- Upcoming Projects and Investments

- Market Opportunities
- Major Players
- Sector Outlook and Projections (2018-19 to 2022-23)
- Issues and Challenges

SECTION III: NEW AND EMERGING MARKET SEGMENTS

9. MULTI-MODAL LOGISTICS PARKS

- Existing Infrastructure
- Key Government Schemes and Initiatives
- Technological Advancements
- Demand Drivers
- Projected Storage Demand
- Upcoming Projects and Investments
- Market Opportunities
- Major Players
- Sector Outlook and Projections (2018-19 to 2022-23)
- Issues and Challenges

10. FREE TRADE WAREHOUSING ZONES

- Existing Infrastructure
- Key Government Schemes and Initiatives
- Recent trends and developments
- Growth Drivers
- Projected Demand
- Upcoming Projects
- Market Opportunities
- Major Players
- Future Outlook
- Issues and Challenges

11. THIRD PARTY LOGISTICS

- Market Size and Growth
- Government Initiatives
- Key Trends
- Demand Drivers
- Major Players
- Future Outlook
- Projections
- Issues and Concerns

12. FREIGHT FORWARDING

- Market Size and Growth
- Key Government Initiatives
- Key Trends
- Growth Drivers
- Major Players
- Key Issues and Concerns
- Future Outlook

13. VALUE ADDED SERVICES

- Key Segments, Recent Trends, Demand Drivers, Major Players, Issues and Concerns, Future Outlook

SECTION IV: DEMAND FROM USER INDUSTRIES

14. KEY END USER INDUSTRIES

- Food Processing, Pharmaceutical, Automobiles, Electronics, Chemicals, Textiles, Engineering Goods, Brick and Mortar Retail, E-commerce and Express Logistics, Cement, Steel



The report is available in a PDF format.

Market Analysis, Outlook and Opportunities

Table of Contents

1. EXECUTIVE SUMMARY	17. RAILWAY TUNNELS
SECTION I: SECTOR OVERVIEW AND OUTLOOK	- Growth in The Past Five Years, Key Completed Projects, Key Ongoing Projects, Key Upcoming Projects, Recent Contracts and Tenders, Investment Projections, Segment Outlook
2. OVERVIEW	SECTION V: SEGMENT FOCUS: SIGNALLING AND TELECOMMUNICATIONS
- Size and Growth, Modal Share of Railways, Key Sector Trends, Growth in Budgetary Outlay, Investment Projections, Issues and Challenges, Sector Outlook	18. SIGNALLING AND TRAIN CONTROL
3. RECENT DEVELOPMENTS AND INITIATIVES	- Size and Growth, Recent Initiatives and Developments, Technology Trends, Focus on Indigenisation, Expenditure Trends, Future Investment Plans (2017-22), Key Issues and Challenges, Upcoming Opportunity, Segment Outlook
- New Institutions/Agencies, Policy Developments, Freight Segment Initiatives, Passenger Segment Initiatives, Measures to Increase IR Revenue, Recent Funding Initiatives, Key Recent Contracts and Tenders, Key Collaborations and Joint Ventures, Initiatives Under Seven Missions, Progress Under Vision 2020	19. TELECOMMUNICATIONS
4. PROJECT PIPELINE AND ANALYSIS	- Size and Growth, Key Initiatives and Developments, Technology Trends, Expenditure Trends, Future Investment Plan under Rashtriya Rail Sanraksha Kosh (2017-22), Key Issues & Challenges, Segment Outlook
- Project Pipeline and Analysis, Delayed/Stalled Projects, Top Upcoming Projects, Expected Network Addition	SECTION VI: NEW FOCUS AREAS - INITIATIVES AND FUTURE PLANS
5. SECTOR OUTLOOK AND MARKET OPPORTUNITIES	20. SAFETY
- Growth Drivers, Project Award and Completion Targets, Investment Outlook and Projections, Policy Outlook and Initiatives Planned, Market Opportunities	- Current Safety Scenario, Expenditure Trends, Creation of New Safety Fund (Rashtriya Rail Sanraksha Kosh), Measures Adopted to Improve Safety, Collaboration & Tie-Ups, Issues & Challenges, Segment Outlook
6. PPP EXPERIENCE AND OPPORTUNITIES	21. ENERGY NEEDS AND REQUIREMENTS
- PPP Models and Formats, Experience So Far, Key Policies and Schemes, Sources of Finance, Key PPP Projects, Upcoming Opportunities, Investment Requirements, Key Issues and Challenges	- Electricity Consumption and Expenditure Trends, Diesel Consumption and Expenditure Trends, Traction Power Distribution System of IR, IR's Targets Under Mission 41K, Mission Electrification, Initiatives to Reduce Energy Bills - Snapshot, Purchasing Power Agreements (PPAs) of IR, Expansion of IR's Transmission Network, Setting Up New Captive Power Plants, Other Key Developments, The Way Forward
7. MAKE IN INDIA	22. FOCUS ON RENEWABLE ENERGY
- Key Features of the Programme, FDI Inflows in Railways, Recent Initiatives, Ease of Doing Business, Foreign Collaborations, Key Opportunity Areas, Upcoming Projects, Investment Requirement, Road Ahead	- Current Operational Capacity (Solar & Wind), UNDP-IR Initiative - 5 GW Solar Power, Key Ongoing and Upcoming Projects, Issues and Challenges, Upcoming Opportunities
SECTION II: IR'S OPERATIONAL AND FINANCIAL PERFORMANCE	SECTION VII: KEY PROJECTS/PROGRAMMES - CURRENT STATUS AND MARKET OPPORTUNITIES
8. EFFICIENCY INDICATORS	23. DEDICATED FREIGHT CORRIDOR
- Efficiency Indicators for Freight Operations, Passenger km per Route km, Line Capacity and Utilisation, Staff Utilisation Indicators, Zonal Performance and Analysis	- Corridor Routes, Progress So Far, Project Funding, Trends in Capital Expenditure (2012-13 to 2016-17), Impact of DFC on Transport Logistics, Recent Contracts, Commissioning Targets of DFC, Key Issues and Challenges, Investment Requirements, Upcoming Corridors and Opportunities
9. FREIGHT TRAFFIC AND EARNINGS	24. HIGH SPEED RAIL CORRIDORS
- Key Trends (2012-13 to 2016-17), Monthly Traffic and Earnings Trend in 2017-18, Zone-wise Analysis (2012-13 to 2016-17), Initiatives for Improving Freight Traffic, Segment Outlook	- Overview of HSR Corridors, Global Comparison of HSR Corridors, Progress So Far, Identified Semi HSR Corridors, Recent Developments, Key Issues and Challenges, Investment Requirements, Upcoming Opportunities
10. COMMODITY-WISE FREIGHT TRENDS	25. STATION INFRASTRUCTURE DEVELOPMENT
- Commodity-wise trends (2012-13 to 2016-17), Commodity-wise Monthly Freight Traffic and Earnings Trends in 2017-18, Commodity Specific Freight Traffic and Earnings Analysis, Segment Outlook	- Growth in Number of Stations (2013-14 to 2017-18), Policy Development and Initiatives, Progress Under Key Schemes and Programmes, Recent Contracts, Investment Requirements, Upcoming Opportunities
11. PASSENGER TRAFFIC AND EARNINGS	26. NORTH-EAST RAIL CONNECTIVITY
- Key Trends (2012-13 to 2016-17), Monthly Traffic and Earnings Trend in 2017-18, Suburban and Non-suburban Traffic and Earnings Analysis, Class-Wise Traffic and Earnings Analysis, Zone-wise Analysis (2012-13 to 2016-17), Initiatives for Improving Passenger Services, Segment Outlook	- Network Size and Growth (2013-14 to 2017-18), Expenditure Trends (2012-13 to 2016-17), Recent Developments, Key Ongoing Projects, Key Upcoming Projects, Key Tunnel Works, Key Bridge Works, Issues and Challenges, Upcoming Opportunities
12. FINANCIAL PERFORMANCE	27. TERMINAL AND LOGISTICS PARKS
- Financial Performance of IR - A Snapshot, Sources of Core Revenue for Railways, Revenue Trends, Cost Components, Cost Trends, Revenue Surplus, Operating Ratio, New Revenue Streams, Issues and Challenges	- Terminals - Container Train and Private Freight Terminals, Logistics Parks, Key initiatives and Developments, Investment Requirements, Segment Outlook
SECTION III: SEGMENT FOCUS: ROLLING STOCK	SECTION VIII: PROFILE OF RAILWAY PSUS
13. IR'S FLEET STATUS	28. KEY RAILWAY PSUS
- Growth in the Past Five Years (2013-14 to 2017-18), Trends in Acquisition of Coaches, Net holdings of Electric Locomotives, Net holdings of Diesel Locomotives, Net Addition of Wagons, Production Target and Achievements (2013-14 to 2017-18), Future Production Plans, Zone-wise Planned Expenditure on Rolling Stock	- Braithwaite & Company Limited, Burn Standard Company Limited, Centre for Railway Information Systems, Container Corporation of India Limited, Dedicated Freight Corridor Corporation of India, High Speed Rail Corporation of India Limited, Indian Port Rail Corporation Limited, Indian Railway Finance Corporation Limited, Indian Railway Catering and Tourism Corporation Limited, Irocon International Limited, Konkan Railway Corporation Limited, Mumbai Railway Vikas Corporation Limited, Pipavav Railway Corporation Limited, Rail India Technical and Economic Services Limited, Rail Land Development Authority, RailTel Corporation of India Limited, Rail Vikas Nigam Limited
14. PRODUCTION SUPPLY AND CAPACITY	
- Existing Infrastructure/Capacity, Budget Proposal 2017-18, Production of LHB Coaches, New Components and Products, Recent Innovations in Designs, Focus on Indigenisation, Upcoming Production Units	
SECTION IV: SEGMENT FOCUS: CONSTRUCTION	
15. TRACK CONSTRUCTION AND RENEWAL	
- Growth in the Past Five years (2013-14 to 2017-18), Network Expansion - Targets versus Achievements, Track Electrification, Track Renewal and Repair, Recently Completed Projects (in the past 15-18 months), Key Ongoing Projects, Key Upcoming Projects, Recently Approved Projects, Investment Projections, Market Opportunities, Segment Outlook	
16. BRIDGES	
- Growth in Number of Rail Bridges, Technology and Design Trends, Key Completed Projects, Key Ongoing Projects, Key Upcoming Projects, Recent Contracts and Tenders, Investment Projections, Segment Outlook	



The report is available in a PDF format.

SECTION I: SECTOR TRENDS, OUTLOOK AND OPPORTUNITIES

- 1. EXECUTIVE SUMMARY**
- 2. SECTOR OVERVIEW**

 - Macroeconomic and Trade Scenario, Sector Size and Growth, Private Participation, Key Trends and Developments, Issues and Challenges, The Way Forward

- 3. RECENT POLICY INITIATIVES AND IMPACT**

 - Central Level Initiatives, Impact of Goods and Services Tax, Proposed Policy Initiatives, Industry Concerns and Expectations

- 4. OTHER RECENT DEVELOPMENTS (Past 12-15 months)**

 - Initiatives for Ease of Doing Business at Ports/Technology Initiatives, Key Projects Awarded and Completed, Recent Financings, MoUs/Agreements Signed, Other Developments

- 5. SAGARMALA: PROGRESS AND OPPORTUNITIES**

 - Programme Scope, Key Milestones, National Perspective Plan, Investment Requirement, Progress so Far, Upcoming Opportunities for Stakeholders, The Way Forward

- 6. SECTOR OUTLOOK AND OPPORTUNITIES**

 - Growth Drivers, Investment Requirement (till 2025), Traffic Projections (till 2025), Capacity Projections (till 2025), Upcoming Projects, Market Opportunities

- 7. PERFORMANCE ANALYSIS (Major vs Non-Major Ports)**

 - Traffic Trends, Cargo Handling Capacity and Utilisation, Vessel Traffic, Efficiency Performance Indicators, Technological Advancement

- 8. PPP EXPERIENCE AND OUTLOOK**

 - Experience so Far, Policy and Regulatory Framework, New Policy Measures, Risk and Concerns, Project Pipeline, The Way Forward

- 9. EAST COAST DEVELOPMENT**

 - Overview of East Coast Ports, Traffic Trends, Current Capacity, Comparison with West Coast Ports, Existing and Planned Connectivity to East Coast Ports, Coastal Shipping Potential, Growth Drivers, Upcoming Port Projects on the East Coast, Issues and Challenges, The Way Forward

SECTION II: PROJECT PIPELINE AND ANALYSIS

- 10. PROJECTS AT MAJOR PORTS**

 - Overall pipeline, Project pipeline analysis, Planned/ proposed new major ports

- 11. OVERALL PIPELINE**

 - Project pipeline analysis

- 12. NEW AND UPCOMING NON-MAJOR PORTS**

 - Overview, New and Upcoming Non-major Ports

SECTION III: KEY FOCUS AREAS

- 13. INLAND WATER TRANSPORT**

 - Overview, Inland Water Transport Traffic, Commodity Composition, Policy & Regulatory Framework, Recent Initiatives, Growth Drivers, Upcoming Projects, Key Issues and Challenges, Future Outlook

- 14. COASTAL SHIPPING**

 - Coastal Traffic at Indian Ports, Commodity Composition, Government Schemes/ Initiatives, Key Trends and Developments, Industry Structure and Key Players, Growth Drivers, Key Issues and Challenges, Future Outlook and Opportunities

- 15. PORT CONNECTIVITY**

 - Mode of Evacuation of Cargo - Overall Scenario, Mode of Evacuation of Cargo - Port-wise Analysis, Experience so Far - Rail Port Connectivity Projects, Experience so Far - Road-port Connectivity, IPRCL - Progress so Far, Upcoming Projects and

Investments - Rail Port and Road-port Connectivity, Key Issues and Challenges, The Way Forward

- 16. MODERNISATION AND MECHANISATION**

 - Mechanised v/s Conventional Handling at Major Ports, Efficiency Indicators, Key Technologies and Solutions Deployed, Impact of Sagarmala, Key Issues and Challenges, The Way Forward

- 17. OTHER FOCUS AREAS**

 - Roll-on, Roll-off, Cruise Tourism, Ship-Repair/ Dry Docks at Ports, Renewable Energy, Smart Port Cities, Port-based SEZs/Coastal Economic Zones (CEZs), Others

SECTION IV: COMMODITIES ANALYSIS

- 18. COAL**

 - Traffic Trends, Coal Handling Capacity, Key Coal Handling Ports, Berthing Facilities, Technological Advancements, Planned Capacity Addition, Ongoing Projects, Key Issues and Challenges, Outlook and Projections

- 19. IRON ORE**

 - Traffic Trends, Iron Ore Handling Capacity, Key Iron Ore Handling Ports, Berthing Facilities, Technological Advancements, Planned Capacity Addition, Ongoing Projects, Key Issues and Challenges, Outlook and Projections

- 20. FERTILISERS**

 - Traffic Trends, Fertilisers and FRM Handling Capacity, Key Fertilisers and FRM Handling Ports, Berthing Facilities, Technological Advancements, Planned Capacity Addition, Ongoing Projects, Key Issues and Challenges, Outlook and Projections

- 21. CONTAINERS**

 - Traffic Trends at Indian Ports, Current Container Handling Capacity, Key Container Handling Ports, Vessel Traffic, Efficiency Trends, Performance of Key Container Terminals, Berthing Facilities, CFS/ ICD Infrastructure, Technological Advancements in Handling of Cargo, Planned Capacity Addition, Traffic Projections at Indian Ports, Ongoing And Upcoming Projects, Key Issues and Challenges, Outlook and Projections

- 22. POL**

 - Traffic Trends, Refineries in India, POL Handling Capacity, Key POL Handling Ports, Berthing Facilities, Technological Advancements, Planned Capacity Addition, Ongoing Projects, Key Issues and Challenges, Outlook and Projections

SECTION V: OPERATIONAL PORT PROFILES

- 23. MAJOR PORTS**
 - Overview, Deendayal Port, Gujarat, Paradip Port, Odisha, Mumbai Port, Maharashtra, Jawaharlal Nehru Port Trust, Maharashtra, Visakhapatnam Port, Andhra Pradesh, Kolkata Port, West Bengal, Chennai Port, Tamil Nadu, New Mangalore Port, Karnataka, V.O. Chidambaram Port, Tamil Nadu, Mormugao Port, Goa, Kamarajar Port, Tamil Nadu, Cochin Port, Kerala
- Each profile covers operational (traffic, capacity, efficiency performance) and financial performance (income, expenditure, surplus), existing infrastructure, and a snapshot of ongoing and upcoming projects.*
- 24. NON-MAJOR PORTS**
 - Overview, Dahej Port, Gujarat, Dhamra Port, Odisha, Dighi Port, Maharashtra, Gangavaram Port, Andhra Pradesh, Gopalpur Port, Odisha, Hazira Port, Gujarat, JSW Jaigarh Port, Maharashtra, Kakinada Seaports, Andhra Pradesh, Karaikal Ports, Puducherry, Kattupalli Port, Tamil Nadu, Krishnapatnam Port, Andhra Pradesh, Mundra Port, Gujarat, Port of Pipavav, Gujarat
- Each profile covers traffic, capacity, existing infrastructure, and a snapshot of ongoing and upcoming projects*



The report is available in a PDF format.

Market Analysis, New Opportunities and Outlook

Table of Contents

1. DREDGING MARKET OVERVIEW

- Size and Growth
- Key Trends
- Recent Developments
- Major Players
- Growth Drivers
- Issues and Challenges
- Future Outlook

2. POLICY FRAMEWORK AND CONTRACTING PRACTICES

- Policy Framework
- New Dredging Guidelines
- Impact of GST
- Regulatory Developments
- Disinvestment in DCI
- Type of Contract
- Current Contracting Practices
- Global Best Practices

3. SEGMENT FOCUS - MAINTENANCE DREDGING

- Size and Growth
 - Major Ports
 - Non-major Ports
 - National Waterways
- Key Completed Projects
- Key Ongoing Projects
- Future Outlook

4. SEGMENT FOCUS - CAPITAL DREDGING

- Size and Growth
 - Major Ports
 - Non-major Ports
 - National Waterways
- Key Completed Projects
- Key Ongoing Projects
- Future Outlook

5. DREDGING COST ECONOMICS

- Experience So Far
- Factors Impacting Project Viability
- Key Cost Components
- Funding Sources
- New Funding Options
- Investment Projections (till 2024-25)

6. KEY GOVERNMENT PROGRAMMES

This chapter will highlight the current status and upcoming opportunities under Sagarmala, Jal Marg Vikas and National Mission for Clean Ganga.

Each programme will cover the following information:

- Project Scope
- Investment Requirement
- Progress So Far
- Key Completed Projects
- Key Ongoing Projects
- Announced/Planned Projects
- Targets and Timelines

7. MARKET OPPORTUNITIES (TILL 2024-25)

- Under Key Schemes/Programmes
 - At the Central Level
 - By Port Authorities
 - By IWAI
- For Key Stakeholders

- EPC Contractors
- Dredger Manufacturers
- Technology Providers
- Equipment Suppliers
- Etc.

8. RISKS AND CHALLENGES

- Policy, Fiscal and Regulatory Issues
- Contractual Issues
- Inadequate Survey and Investigation
- Environmental Concerns
- Financing Issues
- Absence of Dredger Building and Repair Facilities
- Manpower Issues

(This chapter will include views/perspective of key dredging companies and technology/equipment providers on the key issues and challenges affecting the implementation of dredging projects)

9. DREDGER MARKET

- Current Size
- Import of Dredgers
- Market Trends
- Advancements and New innovations
- Indigenous Manufacturing
 - Experience So Far
 - Future Potential
- Segment Outlook

10. OTHER EQUIPMENT REQUIREMENTS

- Type of Equipment
- Key Suppliers
- Trends in Equipment Usage
- Advancements and Developments in Technology
- Segment outlook

11. EMERGING AREAS OF GROWTH

- Experience So Far
- Key Completed Projects
- Key Ongoing Projects
- Future Outlook

12. PROFILES OF MAJOR PLAYERS

- Company Overview
- Fleet Size
- Project Portfolio (Completed and Ongoing Projects)
- Upcoming Projects
- Financial Performance
- Future Plans

DATABASE OF DREDGING PROJECTS

A comprehensive database of key dredging projects with information on quantity dredged, contractor, location, contract value, type of dredged deployed, etc. The database would include projects being undertaken at the major ports, non-major ports, national waterways, oil and gas fields, rivers, beaches, etc. It would also cover the ongoing and upcoming projects under the central government programmes.



The report will be available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: MARKET OVERVIEW, TRENDS AND OUTLOOK

2. OVERVIEW

- Macroeconomic and Trade Scenario, Size and Growth, Modal Split, Competitive Landscape, Industry Structure, Policy and Regulatory Framework, Recent Trends and Developments, Upcoming Projects and Investments, Key Issues and Challenges, Outlook and Projections (till 2022-23)

3. FUTURE OUTLOOK AND INVESTMENT OPPORTUNITIES

- Growth Drivers; Policy and Regulatory Outlook; Union Budget 2017-18 - Announcements and Impact; Investment Requirements; Upcoming Projects (rail freight terminals, cargo/container berths at ports, cargo terminals at airports, express cargo terminals, connectivity, etc.); Market Opportunities for: Developers, Construction Contractors, Technology Providers, Equipment Suppliers, Raw Material Suppliers, Financiers/Investors

4. KEY PROJECTIONS (TILL 2022-23)

- Growth Drivers
- Freight Traffic Projections By Mode of Transportation (rail, ports, air, roads, and others)
- Cargo Capacity Projections
- Projected Freight Rates

5. IMPACT OF GST

- Introduction to GST; Key Features; Specific Impact on: Road Transportation and Trucking Industry, Developers and Operators, Contractors, Container Train Operators, Shipping Companies, Airlines, Express Cargo Carriers, etc.; Key Challenges in Implementation

SECTION II: ANALYSIS OF KEY MODES OF TRANSPORT

6. ROADS

- Size and Growth, Policy and Regulatory Framework, Government Schemes/Initiatives, Key Trends and Developments, Technological Advancements, Industry Structure and Key Players, Pricing Trends, Growth Drivers, Investment Requirement, Issues and Challenges, Outlook and Projections (till 2022-23)

7. RAIL

- Size and Growth (freight traffic, freight earnings, efficiency performance, etc.), Policy and Regulatory Framework, Government Schemes/Initiatives, Key Trends and Developments, Technological Advancements, Impact of DFC on the Freight Segment, Industry Structure and Key Players, Pricing Trends, Growth Drivers, Investment Requirement, Key Issues and Challenges, Outlook and Projections (till 2022-23)

8. PORTS

- Size and Growth (cargo traffic, export and import traffic, cargo capacity, vessel traffic), Major Trading Partners of EXIM Cargo, Mode of Evacuation of EXIM Cargo (roads, rail, water, pipeline), Efficiency Performance, Policy and Regulatory Framework, Government Schemes/Initiatives, Key Trends and Developments,

Technological Advancements, Impact of Sagarmala on Port Traffic, Industry Structure and Key Players, Pricing/Tariff Trends, Growth Drivers, Investment Requirement, Key Issues and Challenges, Outlook and Projections (till 2022-23)

9. AIR

- Size and Growth (freight traffic, cargo capacity, efficiency performance), Policy and Regulatory Framework, Government Schemes/Initiatives, Key Trends and Developments, Technological Advancements, Industry Structure and Key Players, Pricing Trends, Investment Requirement, Key Issues and Challenges, Outlook and Projections (till 2022-23)

10. INLAND WATER TRANSPORT

- Inland Water Transport Traffic, Commodity Composition, Policy and Regulatory Framework, Government Schemes/Initiatives, Key Trends and Developments, Industry Structure and Key Players, Growth Drivers, Investment Requirement, Key Issues and Challenges, Outlook and Projections (till 2022-23)

11. COASTAL SHIPPING

- Coastal Traffic at Indian Ports, Commodity Composition, Policy and Regulatory Framework, Government Schemes/Initiatives, Key Trends and Developments, Industry Structure and Key Players, Coastal Tariff at Indian Ports, Growth Drivers, Investment Requirement, Key Issues and Challenges, Outlook and Projections (till 2022-23)

SECTION III: KEY USER INDUSTRIES

12. KEY CUSTOMER SEGMENTS

- Size and Growth
- Key Trends and Developments
- Market Structure and Key Players
- Logistics Need and Requirements
- Growth Drivers
- Key Issues and Challenges
- Outlook and Projections (till 2022-23)

The industries covered include brick and mortar retail, food processing, chemicals, engineering goods, textiles, electronics, pharmaceutical and automobiles

13. E-COMMERCE

- Size and Growth
- Key Trends and Developments
- Logistics Need and Requirements
- Growth Drivers
- Key Issues and Challenges,
- Outlook and Projections (till 2022-23)

14. EXPRESS INDUSTRY

- Segment Size and Growth, Mail/Parcel Traffic through Modes of Transport (air, rail, etc.), Government Schemes/Initiatives, Key Trends and Developments, Pricing Trends, Industry Structure and Key Players, Logistics Need and Requirements, Growth Drivers, Key Issues and Challenges, Outlook and Projections (till 2022-23)



The report is available in a PDF format.

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>SECTION I: MARKET SIZE, TRENDS AND OUTLOOK</p> <p>2. SECTOR OVERVIEW</p> <ul style="list-style-type: none"> - Market Size and Growth - Industry Structure - Policy and Regulatory Framework - Recent Trends and Developments - Major Warehousing Hubs - Upcoming Projects and Investments - Issues and Challenges - Outlook and Projections (till 2022-23) <p>3. FUTURE OUTLOOK AND MARKET OPPORTUNITIES (TILL 2022-23) ...</p> <ul style="list-style-type: none"> - Growth Drivers - Policy and Regulatory Outlook - Union Budget 2017-18 - Announcements and Impact - Investment Requirements - Upcoming Projects and Investment - Market Opportunities for: Construction Contractors, Material Suppliers, Technology Providers, Equipment Suppliers, Others <p>4. WAREHOUSING DEMAND PROJECTIONS (TILL 2022-23)</p> <ul style="list-style-type: none"> - Demand Drivers - Warehousing/Storage Requirements across Segments: Manufacturing, Consumption, EXIM - Industry-wise Demand Projections - Warehousing Requirements of Top Hubs/Cities <p>5. IMPACT OF GST</p> <ul style="list-style-type: none"> - Introduction to GST - Key Features - Overall Impact on: Cost of Operations, Consolidation, Demand Planning and Inventory Management, Technology Implementation, Others - Impact on Specific Segments: Agriculture warehousing, Industrial warehousing, ICDs & CFSSs, Cold Storages, Logistics Parks, FTWZs - Impact on Key Stakeholders: Contractors, Equipment and Technology Providers, Material Suppliers - Challenges in Implementation <p>SECTION II: SEGMENT ANALYSIS AND OUTLOOK</p> <p>6. AGRICULTURE WAREHOUSING</p> <ul style="list-style-type: none"> - Size and Growth, Government Schemes/Initiatives, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Key Issues and Challenges, Outlook and Projections (till 2022-23) <p>7. INDUSTRIAL WAREHOUSING</p> <ul style="list-style-type: none"> - Size and Growth, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Key Issues and Challenges, Outlook and Projections (till 2022-23) <p>8. COLD STORAGES</p> <ul style="list-style-type: none"> - Size and Growth, Government Schemes/Initiatives, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Key Issues and Challenges, Outlook and Projections (till 2022-23) 	<p>9. LIQUID STORAGE (Crude, Petroleum Products, Chemicals, etc.)</p> <ul style="list-style-type: none"> - Size and Growth, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Key Issues and Challenges, Outlook and Projections (till 2022-23) <p>10. CONTAINER FREIGHT STATIONS (CFSSs)/Inland Container Depots (ICDs)</p> <ul style="list-style-type: none"> - Size and Growth - Key Trends and Developments - Impact of Direct Port Delivery on CFSSs/ICDs - Market Structure and Key Players - Growth Drivers - Upcoming Projects - Key Issues and Challenges - Outlook and Projections (till 2022-23) <p>SECTION III: EMERGING WAREHOUSING/STORAGE MODELS</p> <p>11. LOGISTICS PARKS/MULTI-MODAL LOGISTICS PARKS</p> <ul style="list-style-type: none"> - Size and Growth - Key Trends and Developments - Market Structure and Key Players - Growth Drivers - Upcoming Projects and Investments - Key Issues and Challenges - Segment Outlook <p>12. FREE TRADE WAREHOUSING ZONES</p> <ul style="list-style-type: none"> - Size and Growth, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Upcoming Projects and Investments, Key Issues and Challenges, Segment Outlook <p>SECTION IV: KEY USER INDUSTRIES</p> <p>13. MAJOR CONSUMING SEGMENTS</p> <ul style="list-style-type: none"> - Size and Growth, Key Trends and Developments, Market Structure and Key Players, Warehousing Need and Requirements, Growth Drivers, Key Issues and Challenges, Outlook and Projections (till 2022-23) <p><i>The industries covered include brick and mortar retail, food processing, chemicals, engineering goods, textiles, electronics, pharmaceutical and automobiles</i></p> <p>14. FOCUS ON E-COMMERCE</p> <ul style="list-style-type: none"> - Size and Growth, Key Trends and Developments, Warehousing Need and Requirements, Growth Drivers, Key Issues and Challenges, Outlook and Projections (till 2022-23) <p>SECTION V: ANALYSIS OF TOP WAREHOUSING HUBS</p> <p>15. KEY WAREHOUSING HUBS</p> <ul style="list-style-type: none"> - Ahmedabad, Bengaluru, Chennai, Hyderabad, Kolkata, Mumbai, NCR-Delhi, Pune, Others <p><i>Each profile covers the industrial activity, infrastructure connectivity, warehousing clusters in the cities, growth drivers, warehousing space requirements, indicative warehouse rentals (wherever available), average land cost, expected investor returns, etc.</i></p>
---	---



The report is available in a PDF format.

1. EXECUTIVE SUMMARY

SECTION I: SECTOR OVERVIEW, TRENDS AND OUTLOOK

2. OVERVIEW

- Size and Growth
- Policy Developments
- Key Recent Developments
- PPP Experience
- Risks and Challenges
- Future Outlook

3. INTER-AIRPORT COMPARISON: KEY AIRPORTS

- Capacity
- Capacity Utilisation
- Passenger Traffic
- Freight Traffic
- Aircraft Movement

4. GROWTH DRIVERS

- Growing Demand for Air Travel
- National Civil Aviation Policy
- Open Skies Policy
- Greenfield Airport Development
- Planned Fleet Acquisitions by Airlines

5. PROJECT PIPELINE

- Overall Project Pipeline
- Expansion Plans at Brownfield Airports
- Upcoming Greenfield Airport Projects
- Project Pipeline Analysis
 - By Stage, By Mode of Implementation

6. REGIONAL CONNECTIVITY

- Need and Requirements
- Operational Airports/Airstrips
- Regional Connectivity Scheme - UDAN - Objectives and Scope
- RCS UDAN - Update on First Round of Bidding
- RCS UDAN Second Round of Bidding - Key Features
- RCS UDAN Second Round of Bidding - Viability
- RCS UDAN - Update on Second Round of Bidding
- Experience So Far
- Future Plans

7. SECTOR OUTLOOK AND PROJECTIONS (2018-19 TO 2022-23)

- Key Projections - Capacity
- Key Projections - Passenger Traffic
- Key Projections - Freight Traffic
- Investment Projections and Outlook
- Opportunity Areas
- The Way Forward

8. FINANCING AND INVESTMENT SCENARIO

- Investment Requirements (2018-19 to 2022-23)
- Key Funding Sources
- Private Investment Trends
- Airport Revenues and IRRs
- Emerging and Upcoming Sources of Funding
- Issues and Challenges

9. REGULATION AND TARIFFS

- Institutional and Regulatory Framework
- Recent Amendments in AERA Act
- Tariff at Key Airports
- Impact on Investor Interest
- Risks and Challenges

SECTION II: OPPORTUNITIES IN CONSTRUCTION AND O&M

10. PASSENGER INFRASTRUCTURE

- Overall Passenger Traffic Trends
- Domestic vs. International Passenger Traffic
- Foreign vs. Indian Passenger Carriers
- Airline-wise Passenger Traffic
 - International, Domestic, Evolving Construction Techniques
- Planned Capacity Addition at Airports
- Upcoming Projects
- Opportunities for Construction Players
- Issues and Challenges

11. CARGO SIZE AND GROWTH

- Overall Traffic and Capacity Trends
- Future Plans
- Upcoming Projects (Cargo Terminals, Air Freight Stations, Warehouse Facilities, etc.)
- Opportunities for Market Players

12. OPERATIONS AND MAINTENANCE (O&M)

- Needs and Requirements
- Experience So Far
- Future Plans
- The Way Forward
- Issues and Challenges

SECTION III: OPPORTUNITIES IN EQUIPMENT AND TECHNOLOGY MARKET

13. EQUIPMENT (COMMUNICATION, NAVIGATION AND SURVEILLANCE)

- Current Infrastructure
- Recent Trends and Advancements
- Key Suppliers
- Procurement Targets for Equipment at Airports
- Key Growth Drivers
- Upcoming Opportunities for Equipment Suppliers

14. TECHNOLOGY

- Current Technologies in Use (terminal gates, x-ray machines, check-in counters, baggage handling, biometric access system, e-gate, etc.)
- Recent Trends and Advancements
- Technology Plans at Key Airports
- Upcoming Opportunities for Technology Providers

SECTION IV: PROFILES OF UPCOMING AND NEW AIRPORTS

15. FOCUS ON NAVI MUMBAI AND MOPA

- Navi Mumbai Airport, Maharashtra
 - Overview, Planned Infrastructure, Key Timelines, Expected Capacity Addition and Traffic Projections, Current Status, Issues and Challenges
- Mopa Airport, Goa
 - Overview, Planned Infrastructure, Scope of Work, Key Timelines, Expected Capacity Addition and Traffic Projections, Current Status, Issues and Challenges

16. OTHER KEY PROJECTS

- Bhogapuram Airport, Andhra Pradesh; Kannur Airport, Kerala; Dholera Airport, Gujarat; Hassan Airport, Karnataka; Kushinagar Airport, Uttar Pradesh; Sindhudurg Airport, Maharashtra; Deoghar Airport, Jharkhand; Shirdi Airport, Maharashtra; Dagadharthi Airport, Andhra Pradesh; Orvakal Airport, Andhra Pradesh; Dabra Airport, Madhya Pradesh; Bijapur Airport, Karnataka; Shimoga Airport, Karnataka; Gulbarga Airport, Karnataka; Karaikal Airport, Puducherry; Other Upcoming Airports



The report is available in a PDF format.

Table of Contents

SECTION I: MARKET TRENDS AND OUTLOOK

- 1. EXECUTIVE SUMMARY**
- 2. SECTOR OVERVIEW**
- Network Size and Growth, Policy and Institutional Framework, Project Targets vs Achievements, Key Sector Trends, Recent Developments, Competitive Landscape (EPC and PPP), Issues and Challenges, Future Outlook
- 3. POLICY CHANGES AND INITIATIVES**
- Key Policy Announcements Since 2014; Analysis of Impact on the Sector; New Government Initiatives: Online Portals, Road Safety, Wayside Amenities and Green Highway Mission, Technology Initiatives, Others; State-level Policy Developments; Proposed Policy Changes; Industry Concerns and Expectations
- 4. PROJECT PIPELINE**
- National Highways: By Status (Ongoing, Awarded, Under Bidding and Planned), By Cost, By Mode of Implementation
 - State Highways: By Status (Ongoing, Awarded, Under Bidding and Planned), By Cost, By Mode of Implementation
 - Bridges/Flyovers/Elevated Roads: By Status (Ongoing, Awarded, Under Bidding and Planned), By Cost, By Mode of Implementation
 - Road Tunnels: By Status (Ongoing, Awarded, Under Bidding and Planned), By Cost, By Mode of Implementation
- 5. FUTURE OUTLOOK AND MARKET OPPORTUNITIES**
- Growth Drivers; Project Award and Completion Targets: National Highways (MoRTH, NHAI, NHIDCL); State Roads, Other Government Programmes (Bharat Mala, Setu Bharatam, etc.); Financing Needs and Requirements; Investment Outlook; Policy Outlook; Opportunity by Mode of Development; Opportunity by Stakeholder: Developers, EPC contractors, Financiers, Equipment and Material Suppliers

SECTION II: IMPLEMENTATION MODELS: EXPERIENCE & OPPORTUNITIES

- 6. HYBRID ANNUITY MODEL (HAM)**
- Key Features; Progress So Far; Bidding Scenario; Key Players; Current Stance of Financiers; Upcoming Project Pipeline and Opportunity; Issues and Challenges
- 7. TOLL-OPERATE-TRANSFER (TOT)**
- Key Features; Current Status; Bidding Strategy; Pipeline of Identified Road Stretches; Opportunity for Long Term Investors; The Way Forward
- 8. BUILD-OPERATE-TRANSFER (BOT)**
- Experience So Far; Pace of Project Award and Completion; Key Successes and Failures; Re-award of Languishing Projects; Project Pipeline and Upcoming Opportunity; Key Concerns; Future Outlook
- 9. ENGINEERING PROCUREMENT AND CONSTRUCTION (EPC)**
- Experience So Far; Project Award and Completion; Current Bidding Scenario; Project Pipeline and Upcoming Opportunity; Key Challenges; Future Outlook
- 10. OPERATE, MAINTAIN AND TRANSFER (OMT)**
- Current Scenario; Industry Experience; Progress under EPC Implementation; Key OMT Players; Opportunities under TOT and Asset Sales; Issues and Concerns; Future Outlook

SECTION III: INVESTMENT AND M&A EXPERIENCE

- 11. FINANCING SCENARIO**
- Growth in Budgetary Outlay; Key Funding Sources; Current Stance of Lenders/Investors; Level of Stressed Assets; Measures/Initiatives for Resolution of Stressed Assets; Recent Deals/Transactions:

Financial Closures, Bonds, Refinancing under 5/25, FDI Inflows, Debt Restructuring, InvITs, Others; New Funding Sources; Opportunities for Long-term Investors (SWFs, Pension Funds, etc.); Risks and Challenges

12. M&A LANDSCAPE AND ACTIVITY

- Current Scenario, Deal Analysis (Mergers, Acquisitions by Corporates and Financial Investors, Asset Sales), Valuation Trends, Analysis by Buyer Groups (Corporates/PE firms/ARCs/Pension and SWFs), Key Recent Deals, Historical and Expected Returns, Outlook and Opportunities

SECTION IV: CONSTRUCTION EQUIPMENT AND MATERIAL MARKET**13. EQUIPMENT MARKET OVERVIEW AND OUTLOOK**

- Types of Equipment, Sourcing Options, Size and Growth of Key Equipment, Rental and Leasing Market, Major Players, New Innovations and Products, Demand Projections (till 2022-23)

14. MATERIAL MARKET OVERVIEW AND OUTLOOK

- Types of Materials (Cement, Steel, Bitumen etc.), Current Size and Growth, Key Players, Pricing Trends, New Innovations and Products, Demand Projections (till 2022-23)

SECTION V: KEY GOVERNMENT PROGRAMMES**15. UPDATE ON NHDP**

- Progress So Far (FY2006-17), Project Award & Completion in 2016-17 and 2017-18, Trends in Construction Rate, Progress under Expressway Development, Project Pipeline & Targets, The Way Forward

16. ROAD DEVELOPMENT IN THE NORTHEAST

- Overview of NHIDCL's Operations, Projects Awarded, Targets and Achievements, Key Initiatives, Future Plans, Key Concerns

17. UPCOMING GOVERNMENT PROGRAMMES

- Bharat Mala Programmes, Setu Bharatam, Char Dham Connectivity, Others

SECTION VI: STATE ROAD DEVELOPMENT**18. INTERSTATE COMPARISON**

- Network Size and Growth, Key Initiatives, Analysis of Project Pipeline, Investment Plans and Outlook, Market Opportunities

19. PROFILES OF KEY STATES

- Andhra Pradesh, Bihar, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand, West Bengal

Each state profile covers road network, recent developments and project portfolio (completed, under implementation and upcoming)

SECTION VII: KEY PLAYERS**20. PROFILES OF LEADING PLAYERS**

- Ashoka Buildcon Limited, Dilip Buildcon Limited, Gayatri Projects Limited, GR Infraprojects Limited, GVR Infrastructure Limited, Essel Infraprojects Limited, Hindustan Construction Company Limited, IL&FS Transportation Networks Limited, Others (PNC Infratech, J Kumar Infraprojects, Welspun Enterprises, etc.)

Each profile provides an overview of the project portfolio (completed, under construction and planned projects), financial performance, recent developments, future plans etc.



The report is available in a PDF format.

Table of Contents

SECTION I: MARKET TRENDS AND OUTLOOK

1. EXECUTIVE SUMMARY

2. SECTOR OVERVIEW

- Network Size and Growth; Trends in Ridership; Key Sector Trends; Impact of 'Make in India' and Focus on Indigenisation; Budgetary Outlay for 2018-19; Recent Developments: Key Government Initiatives, Project Completions, Recent Contract Awards, Projects Approved/Launched/Proposed, New Concepts and Technologies; Investment Requirements; Issues and Challenges; Future Outlook

3. METRO RAIL POLICY 2017

- Salient Features, Potential Benefits, Impact on PPPs, Scope for Private Participation in O&M, Industry Feedback

4. INVESTMENT AND FINANCING EXPERIENCE

- Investment Experience So Far, Funding Sources and Financing Models, Recent Financing Trends, Project Economics, Cost Components, Historical and Expected Rates of Returns, Key Sources of Revenue, New Revenue Streams, Risks and Challenges

5. PROSPECTS FOR PPP

- PPP Experience So Far, Key Milestones, Projects Completed and Under Implementation, Case Studies of PPP Projects, Learning Points, Key Success Factors, Impact of Metro Rail Policy 2017 on PPP, Planned Projects and Investments, Risks and Challenges

6. PROJECT PIPELINE

- By Status: Ongoing, Awarded, Under bidding, Planned
- By Mode of Implementation: EPC, PPP
- By Type of System: At grade, Elevated, Underground

7. INVESTMENT OUTLOOK AND OPPORTUNITIES

- Growth Drivers; Expected Network Expansion by 2020 and Beyond 2020; Investment Projections, Upcoming Opportunities: Contractors/developers, Tunnel Construction, Traction and E&M, Rolling Stock, Signalling, Train Control and Telecommunication, Fare Collection; Market Opportunities; Issues and Challenges; Sector Outlook

SECTION II: SEGMENT ANALYSIS, OUTLOOK AND OPPORTUNITIES

8. ROLLING STOCK

- Market Size and Growth, Nature of Fleet and Specifications, Recent Orders (past 15-18 months), Upcoming Bids and Tenders, Market Share of Key Players, Focus on Indigenous Production, Outlook and Projections (till 2023-24)

9. SIGNALLING, TRAIN CONTROL AND TELECOMMUNICATIONS

- Market Size and Growth, Technologies and Systems in Use, System Upgrades and Innovations, Market Share of Key Players, Recent Contracts, Upcoming Bids and Tenders, Recent Developments, Outlook and Projections

10. FARE COLLECTION SYSTEMS

- Market Size and Growth, Specifications of Systems in Use, System Upgrades and Innovations, Global Scenario, Market Share of Key Players, Recent Contracts, Upcoming Bids and Tenders, Plans of Key Metro Systems, Key Trends, Recent Developments, Outlook and Projections

11. CONSTRUCTION: METRO TUNNELS

- Size and Growth, Analysis of TBM Market, Market Share of Key Players, Recent Contracts (past 15-18 months), Upcoming Bids and Tenders, Recent Developments, Best Practices in Tunnel Design, Outlook and Opportunities

12. CONSTRUCTION: ELEVATED MRTS

- Size and Growth, Per-km Construction Cost, Prevalent Methods and Techniques, Market Share of Key Contractors, Recent Contracts, Upcoming Tenders, Key Trends, Outlook and Projections

13. STATIONS

- Size and Growth, Innovations in Material and Design, Key Components of Station Design, Key Players, Recent Contracts, Global Best Practices, Upcoming Tenders, Outlook and Projections

14. TRACTION AND E&M

- Traction Systems, Market Size, Specifications of Traction and E&M Systems, Energy Consumption and Expenditure, Energy Conservation Initiatives, Key Players, Recent Contracts, Upcoming Tenders, Outlook and Projections

SECTION III: PROJECT PROFILES

15. OPERATIONAL/UNDER CONSTRUCTION PROJECTS

- Ahmedabad-Gandhinagar Metro Rail Project Phase I, Bengaluru Metro Rail Project Phase I and Phase II, Chennai Metro Rail Project Phase I, Chennai Metro Rail Project Phase I Extension, Delhi Metro Rail Project Phase I and II, Delhi Metro Rail Project Phase III, Rapid Metro Rail Project Gurgaon Phase I and II, Hyderabad Metro Rail Project Phase I, Jaipur Metro Rail Project Phase I, Kochi Metro Rail Project Phase I, Kolkata North-South Metro Rail Project, Kolkata Metro Rail Project (East-West and Expansion projects), Lucknow Metro Rail Project, Mumbai Metro Rail Project Phase I - Line 1, Mumbai Metro Rail Project Phase I - Line 2A, Mumbai Metro Rail Project Line 2B, Mumbai Metro Rail Project Phase I - Line 3, Mumbai Metro Rail Project Phase II - Line 4, Mumbai Metro Rail Project Phase III - Line 7, Mumbai Monorail Project Line 1, Nagpur Metro Rail Project, Navi Mumbai Metro Rail Project Phase 1, Noida-Greater Noida Metro Rail Project, Pune Metro Rail Project Phase I

16. ANNOUNCED, APPROVED AND UNDER BIDDING PROJECTS

- Metro Rail Projects: Agra Metro Rail Project, Bengaluru Metro Rail Project Phase 2A (KR Puram-Silk Board corridor), Bengaluru Airport Metro Line Phase 2B, Bengaluru Metro Rail Project Phase III, Bhubaneswar-Cuttack Metro Rail Project, Chennai Metro Rail Project Phase II, Dehradun-Haridwar-Rishikesh Metro Rail Project, Delhi Metro Rail Project Phase IV, Greater Noida - Jewar Metro Rail Project, Greater Noida-IGI Airport Metro Rail Project, Gurgaon-Manesar-Bawal Metro Rail Project, Guwahati Metro Rail Project Phase I, Hinjewadi-Shivajinagar Metro Rail Project, Rapid Metro Rail Project Gurgaon Phase III, Jaipur Metro Rail Project Phase II, Kanpur Metro Rail Project Phase I, Kochi Metro Rail Project Phase IB, Meerut Metro Rail Project Phase I, Mumbai Metro Phase II Line 5, Mumbai Metro Rail Project Line 6, Mumbai Metro Phase III Line 10, Noida Sector 142 - Kalindi Kunj Metro Rail Project, Noida Sector 71-Knowledge Park V Metro Rail Project, Patna Metro Rail Project Phase I, Patna Metro Rail Project Phase I, Srinagar Metro Rail Project, Surat Metro Rail Project, Varanasi Metro Rail Project, Vijayawada Metro Rail Project Phase I, etc.
- Light Rail Transit Projects: Bangalore LRT Project, Bhopal LRT Project, Indore LRT Project, Kozhikode LRT Project, Ranchi LRT Project, Thiruvananthapuram LRT Project, Vijayawada LRT project
- Monorail Projects: Chennai Monorail Project (First Corridor), Delhi Monorail Project, Kolkata Monorail Project, Warangal Monorail Project

[Each profile covers the project scope (network length, number of stations, rolling stock, fare system, signalling and telecommunication, traction, etc.), implementing agency, project cost, key consultants, key contractors, key milestones, sources of funding, recent contracts, upcoming tenders, current status, etc.]



The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY**SECTION I: MARKET OVERVIEW AND OUTLOOK****2. OVERVIEW**

- Growth in India's Bus Market
- Current Share of Clean Buses
- Recent Trends
- National Electric Mobility Mission and FAME Scheme
- Key Regulations and Incentives
- Investment Needs and Requirements
- Issues and Challenges
- Future Outlook

3. GROWTH DRIVERS

- Key Trends
- Focus on Emission Control
- Strengthening of Public Transport
- Government's Subsidy Scheme
- Rising Oil Imports
- Smart Cities Mission

4. OUTLOOK AND MARKET OPPORTUNITIES

- Procurement Plans of Transport Undertakings
- Key Upcoming Bids and Tenders
- Future Demand Projections
- Market Opportunities
 - Bus Manufacturers
 - Battery Manufacturers
 - Other Component Suppliers

5. COMPETITIVE LANDSCAPE

- Key Players (Indian and Global)
 - Company Profile
 - Operational Fleet of Clean Buses
 - Future Plans
 - Key Milestones
 - Recent Collaborations/JV/Technology Partner
- Current Market Shares

SECTION II: SEGMENT FOCUS**6. HYBRID BUS MARKET**

- Types of Hybrid Buses
- Operational Fleet
- Experience So Far
- Procurement Models and Incentives
- Technology Options
- Cost Benefit Analysis
- Key Issues and Challenges
- Demand Projections and Market Opportunities

7. ELECTRIC BUS MARKET (BATTERY OPERATED)

- Experience So Far
- Lesson from China
- Operational Fleet
- Procurement Models and Incentives
- Recent Orders and Investments Made So Far
- FAME Phase I Bidding-Key Takeaway
- Cost Benefit Analysis
- Battery Technology Option
- Potential of Battery Swapping
- Charging Infrastructure and Technologies
- Impact of Charging on Grid
- Issues and Challenges in E-bus Adoption
- Demand Projections and Market Opportunities

8. GAS-BASED BUS MARKET (CNG, LNG, BIOGAS)

- Current Size and Growth
- Operational Performance: Costs and ROI
- Experience So Far
- Recent Contract and Tenders
- Initiatives So Far
- Potential for LNG and Biogas Buses
- Issues and Challenges
- Demand Projections and Market Opportunities



The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: MARKET SIZE AND OUTLOOK

2. OVERVIEW

- India's Macroeconomic Scenario, India's Modal Mix, Level of Containerisation, Region-wise Containerised Commodities, Trade of Major Containerised Commodities, Size and Growth, Trend in Freight Rates, Recent Developments and Initiatives, Issues and Challenges, Outlook and Opportunities

3. INVESTMENTS, OPPORTUNITIES AND OUTLOOK

- Growth Drivers, Union Budget 2017-18 – Announcements and Impact, Traffic Projections, Upcoming Projects and Investments, Market Opportunities, Sector Outlook

4. IMPACT OF GST

- Key Features of GST; Current Status and Timelines; Recent Developments; Likely Impact: Port Operators, Road Transportation and Trucking Industry, Container Train Operators, Shipping Companies, ICDS and CFSS, Logistics Parks, FTWZs; Key Issues and Challenges

SECTION II: SEGMENT TREND AND OPPORTUNITIES

5. PORTS

- Traffic Trends, Container Handling Capacity, Efficiency Trends, Mode of Evacuation, Impact of Sagarmala on Container Market, Recent Initiatives, Key Ongoing Projects, Key Upcoming Projects, Key Issues and Challenges, Growth Drivers, Outlook and Projections

6. RAILWAYS

- Share of Container in IR's Freight Traffic and Earnings; Traffic Trends: Overall – IR's Container Traffic, Zone-wise, EXIM and Domestic; Trends in Earnings: Overall – IR's Container Freight Earnings, Zone-wise, EXIM and Domestic; Recent Developments/Initiatives; Container Train Operators: Industry Structure, Current Infrastructure; Analysis of Charges and Fees; Issues and Challenges; Outlook and Projections (till 2022-23)

7. DEDICATED FREIGHT CORRIDOR

- Project Overview, Corridor Route, Key Features, Phased Commissioning of DFC, Current Status, Impact of DFC on the Container Market, DMIC- Key Features, DMIC- Likely Impact on the Container Market, Issues and Challenges, Projected Container Traffic Growth, Future Corridors and Opportunities

8. ROADS

- Current Scenario, Cost of Container Movement, Connectivity to Container Handling Ports, Market Structure and Key Players, Issues and Challenges, Outlook and Projections

9. INLAND WATER TRANSPORT

- Overview - National Waterways
- Current Infrastructure - Container Handling
- Container Movement on NW-3 - Experience so Far
- Container Movement on NW-3 - Potential Routes/Commodities
- Recent Government Initiatives: Jal Marg Vikas, Kaladan Multi-Modal Transit Transport Project, Indo-Bangladesh Protocol, National Waterways Act
- Key Ongoing Projects: NW-1, NW-2, NW-3, NW-4, NW-5
- Key Upcoming Projects
- Key Issues and Concerns
- Potential for Container Movement

10. COASTAL SHIPPING

- Coastal Container Traffic at Indian Ports: Overall, Port-wise, Year-on-Year Growth
- Market Structure and Key Players: Recent Developments, Policy Initiatives, New Players and Acquisition of Vessels
- Key Issues and Concerns
- Outlook and Projections

11. REFRIGERATED CONTAINER TRANSPORT

- Size and Growth, Regional Analysis, State-wise Analysis, Market Structure and Key Players, Growth Drivers, Recent Developments, Issues and Challenges, Outlook and Projections

12. CFSS AND ICDS

- Institutional Framework: Procedure for Approval, Basic Requirements, Agencies Involved; Existing Infrastructure: CFSS and ICDS, CFSS, ICDS; Market Structure and Key Players; Projects under Implementation; Proposed Projects; Key Issues and Challenges; Outlook and Opportunities

13. LOGISTICS PARKS AND FTWZS

- Size and Growth - Operational Projects, Key Ongoing Projects, Market Structure and Key Players, Recent Developments, Growth Potential, Issues and Challenges, Upcoming Projects, Outlook and Projections

SECTION III: PROFILES OF PORT CONTAINER TERMINALS

14. KEY PORT CONTAINER TERMINALS

- Adani CMA Mundra Terminal, Adani Hazira Container Terminal, Adani International Container Terminal, Adani Mundra Container Terminal, APM Terminals Mumbai, APM Terminals Pipavav, Chennai Container Terminal Limited, Chennai International Terminals Private Limited, Dakshin Bharat Gateway Terminal, Haldia Container Terminal, International Container Transshipment Terminal (ICTT) Vallarpadam, Jawaharlal Nehru Port Container Terminal, Kandla International Container Terminal, Kattupalli International Container Terminal, Krishnapatnam Port Container Terminal, Mundra International Container Terminal, Netaji Subhas Dock Container Terminal, Nhava Sheva International Container Terminal, Nhava Sheva International Gateway Terminal, PSA Sical Container Terminal, Visakha Container Terminal

Each profile covers information on traffic handled, capacity, capacity utilisation, draught levels, equipment and planned expansion, etc.

SECTION IV: PROFILES OF CONTAINER TRAIN OPERATORS

15. KEY CONTAINER TRAIN OPERATORS

- Adani Logistics Limited, Arshiya Rail Infrastructure Limited, Container Corporation of India Limited, Central Warehousing Corporation, Distribution Logistics Infrastructure Private Limited, Gateway Rail Freight Limited, Hind Terminals Private Limited, IndiaLinx, Inlogistics, International Cargo Terminals and Rail Infrastructure Private Limited, Kribhco Infrastructure Limited, Sical Multimodal and Rail Transport Limited, TransRail Logistics Limited, Other Key Container Train Operators

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.

Table of Contents

SECTION I: CONSTRUCTION MARKET OVERVIEW

- 1. EXECUTIVE SUMMARY**
- 2. OVERVIEW**

 - Size and Growth, Demand from Infrastructure and Housing, Key Trends and Developments, Construction Formats, Investment Projections, Issues and Challenges, Outlook and Opportunities (till 2022-23)

- 3. SECTOR OUTLOOK AND MARKET OPPORTUNITIES**

 - Growth Drivers, Upcoming Project Pipeline, Equipment Market Projections, Material Market Projections
 - Market Opportunities: For Construction Contractors, Developers, Equipment Providers, Consultants, Financiers and Investors

- 4. NEW POLICY INITIATIVES AND IMPACT**

 - Recent Announcements, Amendments to Existing Policies, Fiscal Initiatives, Sector-level Policy Developments, Proposed Policy Changes, Industry Concerns and Expectations

- 5. IMPACT OF GST**

 - Progress so Far, Timelines
 - Likely Impact: On Project Owners/Developers, Contract Structuring, Construction Contractors/EPC Players, Equipment and Material Providers; Key Actions Required

- 6. FINANCING NEEDS AND CHALLENGES**

 - Key Funding Sources, Investment Requirement, Financial Position of Companies, CDR Cases, New Sources of Funds, Key Issues and Concerns

SECTION II: CONSTRUCTION DEMAND – INFRASTRUCTURE & HOUSING

- 7. ROADS AND BRIDGES**

 - Network Size and Growth, Key Trends, Launch and Impact of Online Portals, Expected Investments and Capacity Addition, Long Term Investment Requirement, Project Pipeline, Construction Opportunity, Key Issues and Challenges, Sector Outlook, Projected Investments

- 8. PORTS**

 - Sector Size and Growth - Traffic, Capacity
 - Key Trends, Project Pipeline, Planned Capacity Addition, Expected Investments, Construction Opportunity, Key Issues and Challenges, Outlook and Projections

- 9. POWER**

 - Sector Size and Growth, Key Trends, Expected Investments and Capacity Addition, Project Pipeline, Construction Opportunity, Key Issues & Challenges, Sector Outlook, Capacity Addition Projections

- 10. AIRPORTS**

 - Sector Size and Growth, Key Trends, Expected Investments, Project Pipeline, Construction Opportunity, Key Issues and Challenges, Outlook and Projections

- 11. WATER AND IRRIGATION**

 - Sector Size and Growth, Key Trends, Project Pipeline, Planned Capacity Addition, Expected Investments, Construction Opportunity, Key Issues and Challenges, Outlook and Projections

- 12. URBAN TRANSPORT**

 - Sector Size and Growth, Key Trends, Project Pipeline, Planned Network Addition, Expected investments, Construction Opportunity, Key Issues and Challenges, Outlook

- 13. RAILWAYS**

 - Sector Size and Growth, Key Trends, Investment Requirement by the IR, Planned Capacity Addition, Project Pipeline, Construction Opportunity, Focus on DFC: Future Corridors and Opportunities, Key Issues and Challenges, Key Projections, Sector Outlook

- 14. HOUSING**

 - Sector Size and Growth, Key Trends, Project Pipeline, Expected Investments, Construction Opportunity, Demand and Supply Challenges, Regulatory Constraints, Outlook and Projections

- 15. TUNNELS**

 - Sector Size and Growth, Key Trends
 - Planned Network Addition - By Sector, State
 - Expected Investments, Project Pipeline, Construction Opportunity, Key Issues and Challenges, Outlook and Projections

SECTION III: CONTRACTING CAPACITY AND PERFORMANCE

- 16. MARKET SIZE AND KEY PLAYERS**

 - Current Market Structure, Contractor Capacity, Recent Trends, Key Issues, Sector Outlook

- 17. INTER-CONTRACTOR PERFORMANCE**

 - Leading Players, Order Books, Revenues, Debt Servicing, Profits and Profit Margins, Key Ratios/Margins

SECTION IV: EQUIPMENT MARKET

- 18. EQUIPMENT SIZE AND GROWTH**

 - Market Size, Production and Sales, Equipment-wise Sales, Imports and Exports, Industry Structure, Key Trends, Rental and Leasing Market, New Products, Market Projections (till 2022-23), Outlook and Opportunities

- 19. OUTLOOK AND PROJECTIONS**

 - Future Plans by Key Players, Demand Projections for Equipment, Sales Projections for Equipment, National Capital Goods Policy 2016, Opportunities for Equipment Providers

SECTION V: KEY MATERIALS

- 20. MATERIAL MARKET OUTLOOK AND PROJECTIONS**

 - Planned Capacity Additions by Key Suppliers, Planned Investments by Key Suppliers, Demand Projections for Materials, Supply Projections for Materials, Opportunities for Material Suppliers

- 21. CEMENT**

 - Key Consuming Segments, Demand-Supply Scenario, Existing Capacity and Utilisation, Production and Consumption Trends, Import/Export Trends, Pricing Trends, Impact of Demonetisation, Industry Structure and Key Players, New Innovations/Technologies, Demand Drivers, Market Outlook and Key Projections (till 2022-23)

- 22. STEEL**

 - Key Consuming Segments, Demand-Supply Scenario, Existing Capacity and Utilisation, Production and Consumption Trends, Import and Export Trends, Pricing Trends, Industry Structure and Key Players, New Innovations/Technologies, Demand Drivers, Key Projections, Market Outlook

- 23. BITUMEN**

 - Production and Consumption Trends, State-wise Consumption of Bitumen, Import Trends, Export Trends, Pricing and Cost Trends, Industry Structure and Key Players, Operational Parameters of Key Bitumen Manufacturers, Demand Drivers, Market Projections and Projections

- 24. OTHER MATERIALS**

 - Production and Consumption Trends, Industry Structure and Key Players, Demand Drivers, Market Projections and Projections



The report is available in a PDF format.

Table of Contents

SECTION I: MARKET TRENDS, OPPORTUNITIES AND OUTLOOK

- 1. EXECUTIVE SUMMARY**
- 2. OVERVIEW**
 - Key Facts, Mineral Reserves, Production Trends, Consumption Trends, Exports and Imports, Policy Developments, Key Trends, Issues and Concerns, Outlook and Projections, The Way Forward
- 3. NATIONAL MINERAL EXPLORATION POLICY 2016**
 - Overview; Key Features: Auctioning of Identified Exploration Blocks, National Aero-geophysical Program, National Geoscientific Data Repository; Planned Expenditure under the Policy; Expected Impact on the Mining Industry; Issues and Challenges
- 4. POLICY AND RECENT DEVELOPMENTS**
 - MMDR (Amendment) Act, 2016; Coal Bridge Linkage Policy; Commercial Mining in Coal; Expected Impact of Policy Changes; Update on Mine Auctions; Update on Recent Mining Leases Granted; Key Projects Completed; Initiatives for Mine Safety; Initiatives for Curbing Illegal Mining; National Mineral Exploration Policy 2016; Impact of GST on the Mining Sector; Others
- 5. PROJECT PIPELINE AND MARKET OPPORTUNITIES**
 - Overall Project Pipeline; Analysis: By Minerals, Stage, State, Ownership; Market Opportunities: For MDOs, Equipment/Technology Providers
- 6. SECTOR OUTLOOK AND PROJECTIONS**
 - Growth Drivers, Policy Support, Demand and Supply Projections of Key Minerals, Policy Outlook, Investment Outlook, Key Upcoming Projects, Challenges and The Way Forward
- 7. EXPLORATION NEEDS AND REQUIREMENTS**
 - Current Exploration Spend, Current Drilling Levels, Investment Needs and Requirements for Exploration, Drilling/Exploration Targets for 2016-17/2017-18, Funding Options for Mining Companies, New Financing Instruments, Key Challenges
- 8. RISKS AND CHALLENGES**
 - Macroeconomic Factors, Project Execution Challenges, Inadequate Infrastructure Facilities, Safety Concerns, Environmental and Geological Risks, Other Concerns
- 9. MDO EXPERIENCE AND PLANS**
 - Experience So Far, Key Trends, Issues and Challenges, Industry Recommendations, Opportunities for MDOs, Outlook

SECTION II: FOCUS ON COAL MINING

- 10. SIZE AND GROWTH**
 - Coal Reserves, Demand and Supply Trends, Demand and Supply Gap, Domestic Coal Production, Import Trends, Recent Policy Developments, Price Trends - Domestic and Global, Demand Projections, Supply Projections, Outlook
- 11. UPDATE ON COAL MINING AUCTIONS**
 - Experience So Far, Status and Results of Captive Block Allocations, E-auction Prices, Recent Auctions, Upcoming Auctions, Key Issues and Challenges, Outlook
- 12. PROSPECTS FOR COMMERCIAL MINING IN INDIA**
 - Plans for 2017-18, Eligibility Conditions, Proposed Methodology and Pricing Strategy, Industry Views/Suggestions, Areas of Concern, Expected Impact on the Sector

SECTION III: TRENDS IN KEY MINERALS

- 13. LIGNITE**
 - Reserves, Production, Key Producers, Dispatch, Demand, Price Trends, Recent Developments and Upcoming Auctions, Key Investment Plans of Major Lignite Producers, Outlook and Projections
- 14. BAUXITE**
 - Reserves, Production, Major Consuming Segments, Foreign Trade, Price Trends, Key Producers, Recent and Upcoming Auctions, Key Investment Plans and Projects, Outlook and Projections
- 15. IRON ORE**
 - Reserves, Production, Major Consuming Segments, Foreign Trade, Price Trends, Key Producers, Recent and Upcoming Auctions, Key Investment Plans and Projects - NMDC Limited, Key Investment Plans and Projects - SAIL, Key Projects - OMCL and Tata Steel, Outlook and Projections
- 16. COPPER**
 - Reserves, Production, Consumption, Foreign Trade, Price Trends, Key Producers, Recent and Upcoming Auctions, Key Investment Plans and Projects, Outlook and Projections
- 17. LEAD AND ZINC**
 - Reserves; Production - Ore, Concentrates; Foreign Trade - Lead, Zinc; Price Trends - Lead & Zinc; Key Producers; Key Investment Plans & Projects; Outlook & Projections - Lead; Outlook & Projections - Zinc
- 18. OTHER MINERALS (Limestone, Dolomite, Quartz, Kaolin, Magnesite, Silica, etc.)**
 - Reserves, Production, Foreign Trade, Price Trends, Key Producers, Recent and Upcoming Auctions, Key Investment Plans (Limestone and Cement), Outlook and Projections

SECTION IV: EQUIPMENT AND TECHNOLOGY MARKET

- 19. EQUIPMENT MARKET SIZE AND PROJECTIONS**
 - Size and Growth (drilling, loading, haulage, crushing, etc.), Equipment Productivity and Utilisation, Procurement Plans of CIL, Industry Structure and Key Equipment Providers, Issues and Challenges, Outlook and Projections
- 20. TECHNOLOGY UPGRADATION TRENDS**
 - Level of Mechanisation, Trends in Automation and Technology, New Technology Solutions/Advancements, Technology Upgrade Plans of CIL, Outlook

SECTION V: COMPANY PROFILES

- 21. COMPETITIVE LANDSCAPE**
 - Industry Structure, Market Size, Operational Performance, Productivity Trends, Financial Performance, Investment Plans of Key Players
- 22. PROFILES OF KEY MINING COMPANIES**
 - Coal India Limited, Singareni Collieries Company Limited, Gujarat Mineral Development Corporation Limited, NLC India Limited, National Aluminium Company Limited, Hindalco Industries Limited, NMDC Limited, Vedanta Resources, Steel Authority of India Limited, Tata Steel Limited, Hindustan Copper Limited, Hindustan Zinc Limited

Each profile includes information on company operations, production and sales, financial performance, key projects, expansion plans, outlook, etc.



The report is available in a PDF format.

Table of Contents

SECTION I: SECTOR OVERVIEW AND OUTLOOK

- 1. OVERVIEW**
 - Size and Growth: By Sector, State
 - Notable Trends
 - Key Developments (past 15-18 months)
 - Recent Contracts
 - Issues and Challenges
 - Outlook and Opportunities
- 2. PROJECT PIPELINE AND ANALYSIS**
 - Overall Project Pipeline
 - Analysis by Sector (metro, rail, hydropower, roads, water supply and sewage and irrigation)
 - Analysis by Stage of Development (completed, ongoing, upcoming)
 - Analysis by Region and State
 - Analysis by Completion Period (till 2020-21, between 2020-21 and 2024-25)
- 3. SECTOR OUTLOOK AND MARKET OPPORTUNITIES**
 - Growth Drivers
 - Upcoming Project Pipeline
 - Investment Requirements
 - Equipment Requirement and Outlook
 - Material Market Projections
 - Market Opportunities: For Construction Contractors, Equipment Providers, Consultants
- 4. CONTRACTING - MARKET SIZE AND KEY PAYERS**
 - Size and Growth
 - Market Structure
 - Leading Players and Key Projects
 - Impact of GST
 - Issues and Challenges
 - Project Pipeline
 - Market Opportunities

SECTION II: SEGMENT ANALYSIS, OUTLOOK AND PROJECTIONS (Till 2024-25)

- 5. METRO RAIL TUNNELS**
 - Size and Growth: Overall Size; Analysis by City/State, Technique
 - Key Projects (completed and ongoing)
 - Key Contractors
 - Key Equipment Providers
 - Upcoming Projects
 - Recent Tenders
 - Outlook and Projections (till 2024-25)
- 6. RAILWAY TUNNELS**
 - Size and Growth: Overall Size; Analysis by City/State, Technique
 - Key Projects (completed and ongoing)
 - Key Contractors
 - Key Equipment Providers
 - Upcoming Projects
 - Recent Tenders
 - Outlook and Projections (till 2024-25)
- 7. TUNNELS IN THE HYDROPOWER SECTOR**
 - Size and Growth: Overall Size; Analysis by City/State, Technique
 - Key Projects (completed and ongoing)
 - Key Contractors
 - Key Equipment Providers
 - Upcoming Projects
 - Recent Tenders
 - Outlook and Projections (till 2024-25)

- 8. ROAD TUNNELS**
 - Size and Growth: Overall Size; Analysis by City/State, Technique
 - Key Projects (completed and ongoing)
 - Key Contractors
 - Key Equipment Providers
 - Upcoming Projects
 - Recent Tenders
 - Outlook and Projections (till 2024-25)
- 9. IRRIGATION TUNNELS**
 - Size and Growth: Overall Size; Analysis by City/State, Technique
 - Key Projects (completed and ongoing)
 - Key Contractors
 - Key Equipment Providers
 - Upcoming Projects
 - Recent Tenders
 - Outlook and Projections (till 2024-25)
- 10. WATER SUPPLY AND SEWAGE TUNNELS**
 - Size and Growth: Overall Size; Analysis by City/State, Technique
 - Key Projects (completed and ongoing)
 - Key Contractors
 - Key Equipment Providers
 - Upcoming Projects
 - Recent Tenders
 - Outlook and Projections (till 2024-25)

SECTION III: EQUIPMENT AND MATERIALS

- 11. DRILL AND BLAST (INCLUDING NATM)**
 - Current Size
 - Type of Equipment
 - Sourcing Options
 - Notable Trends
 - Key Projects (using D&B/NATM)
 - Key Equipment Providers
 - Issues and Challenges
 - Segment Outlook
- 12. TBM - MARKET SIZE AND OUTLOOK**
 - Current Size
 - Type of Equipment
 - Sourcing Options
 - Notable Trends
 - Key Projects (using TBM)
 - Key Equipment Providers
 - Issues and Challenges
 - Segment Outlook
- 13. CONSTRUCTION MATERIALS**
 - Type of Materials
 - Key Requirements
 - Pricing Trends
 - New Materials and Innovation
 - Issues and Challenges
 - Outlook and Projections



The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: MARKET SIZE, TRENDS AND GROWTH DRIVERS

2. MINING INDUSTRY TRENDS AND OUTLOOK

- Production
- Consumption
- Exports and Imports
- Recent Developments
- Key Trends
- Issues and Challenges
- Investment Requirements and Plans
- Outlook and Projections (2018-22)

3. EQUIPMENT SIZE AND GROWTH

- Market Size (equipment-wise)
- Current Equipment Size of Coal India Limited
- Key Equipment Used (by technique)
- Key Equipment Used in Supply Chain
- Industry Structure
- Key Recent Developments
- Outlook and Opportunities
- Market Projections (2018-21)

4. EQUIPMENT AND TECHNOLOGY TRENDS

- Equipment Productivity
- Equipment Utilisation
- Evolving Mining Techniques
- Trends in Automation and Technology
- Emerging Trends in Technology

5. GROWTH DRIVERS

- Private Commercial Mining in Coal
- CIL's Technology Upgrade Plans
- Non-coal Mine Auctions by State Governments
- Larger Scale of Mining Operations
- Deeper Deposits and High Stripping Ratios
- Enhancing Output from Underground Mines
- Performance Improvement and Cost Efficiency
- Private Sector and Contract Mining
- Reducing Carbon Footprint
- Key Policy Developments

6. KEY CONSUMING SEGMENTS

- Coal
- Lignite
- Bauxite
- Copper
- Iron Ore
- Lead and Zinc
- Other Non-Metallic Minerals

7. PROCUREMENT PLANS OF MINING COMPANIES

- Coal India Limited
- South Eastern Coalfields Limited
- Western Coalfields Limited
- Central Coalfields Limited
- Eastern Coalfields Limited
- Mahanadi Coalfields Limited
- Northern Coalfields Limited
- Private Players

SECTION II: DEMAND PROJECTIONS (2018-21)

8. DRILLING

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections for Drills (2018-21)
 - Number and Value Terms, Type of Mineral (coal versus non-coal)

9. LOADING

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections for Excavators (2018-21)
 - Number and Value Terms, Type of Mineral (coal versus non-coal)

10. HAULAGE

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections for Dumpers (2018-21)
 - Number and Value Terms, Type of Mineral (coal versus non-coal)

11. CRUSHING, PULVERISING AND SCREENING EQUIPMENT

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections (2018-21)
 - Number and Value Terms, Type of Mineral (coal vs. non-coal)

12. AUXILIARY AND SUPPORT EQUIPMENT

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections (2018-21)
 - Number and Value Terms, Type of Mineral (coal vs. non-coal)

SECTION III: COMPETITIVE LANDSCAPE

13. MAJOR PLAYERS

- Action Construction Equipment Limited, Atlas Copco (India) Limited, BEML, Case New Holland Construction Equipment India Private Limited, Caterpillar Inc., Daimler India Commercial Vehicles, Eimco Elecon (India) Limited, Escorts Limited, Hyundai Construction Equipment India Private Limited, JCB India, Komatsu, L&T Construction Equipment Limited, Liebherr India Private Limited, Mahindra Construction Equipment, Metso, Sandvik Asia Private Limited, Scania, Tata Hitachi Construction Machinery Company Private Limited, Volvo India Private Limited, Other Key Players (Doosan Infracore, Voltas M&CE etc.)

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



The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY**SECTION I: MARKET TRENDS AND DEVELOPMENTS****2. HOUSING MARKET OVERVIEW**

- Urbanisation and Demographic Trends
- Current Infrastructure/Scenario
- Institutional Structure
- Policy and Regulatory Framework
- Growth Drivers
- Key Trends
- Recent Government Initiatives
- Upcoming Opportunities
- Future Outlook
- Issues and Challenges

3. DEMAND AND SUPPLY INDICATORS

- Demand and Supply Gap (Overall, State-wise), Urban and Rural Demand and Supply, Affordable Housing Demand and Supply, Households versus Housing Stock, Houses by Habitable Conditions, House Congestion, Affordable Rental Housing Market

4. IMPACT OF NEW POLICY DEVELOPMENTS

- Infrastructure Status to Affordable Housing
- Impact of GST
- RBI's Priority Sector Lending Norms
- Union Budget 2018-19 - Announcements and Expected Impact
- Credit-Linked Subsidy Scheme
- RERA Act
- Impact of the Smart Cities Mission
- Other Policy and Regulatory Announcements (tax incentives, increase in carpet area, etc.)
- Unresolved Legal and Regulatory Issues

5. PRIVATE SECTOR EXPERIENCE AND PPP POTENTIAL

- PPP Policy and New Models: Impact of the New Policy, Snapshot of Eight Models, Incentives for PPP, Successful Global Models/Case Studies
- Industry Expectations: Views of key private sector players in the affordable housing industry on the new PPP models and their potential.
- Experience so Far: Current Scenario, Investments Mobilised, Key Projects (Completed and Under Implementation), Upcoming Opportunities, Unresolved Issues

6. PROJECT ECONOMICS AND INVESTMENT EXPERIENCE

- Experience So far
- Factors Impacting Project Viability/Profitability
- Key Cost Components
- Project IRRs (Historical and Expected)
- Funding Sources
- Growing Interest from Private Equity/Institutional Investors
- New Financing Instruments
- Investment Projections (till 2023-24)
- Issues and Challenges

7. CENTRAL LEVEL SCHEMES: PROGRESS AND OPPORTUNITIES

- Pradhan Mantri Awas Yojna - Housing for All (Urban)
- Pradhan Mantri Awas Yojna - Gramin
- Deen Dayal Antodya Yojna - National Urban Livelihoods Mission
- Integrated Housing and Slum Redevelopment Programme

(Each of the schemes will cover details about the scope of each scheme, investment requirements, progress so far, completed and ongoing projects, key projects announced, targets and timelines, housing stock addition, and market opportunities for key players).

8. CONSTRUCTION MATERIALS, DESIGN AND TECHNIQUES

- Current Practices in Design and Construction
- New Construction Techniques
- Global Best Practices
- Advancements and Developments in Technology
- Trends in Material and Equipment Usage
- New Green Materials and Innovations
- Segment Outlook

SECTION II: OUTLOOK, PROJECTIONS AND OPPORTUNITIES**9. DEMAND AND SUPPLY PROJECTIONS (TILL 2023-24)**

- Growth Drivers
- Housing Stock Requirement by 2023-24 (By Region and States)
- Housing Supply Projections
- Land Requirement
- Projections for Material and Equipment Requirements
- Sector Outlook

10. PROJECT PIPELINE

- Overall Project Pipeline
- Project Pipeline by State
- By Ownership (Central Level, State Level and Private Sector Projects)
- By Stage of Development (Ongoing, Awarded, Announced, Planned/Proposed)

11. TOP MARKETS FOR AFFORDABLE HOUSING

- Real Estate Profile
- Experience in Affordable Housing (Completed and Ongoing Projects)
- Demographic Profile
- State of Existing Infrastructure and Connectivity
- Upcoming Big-ticket Investments
- Major Players
- Sector Outlook

12. MARKET OPPORTUNITIES (TILL 2023-24)

- Under Key Schemes/Projects (Central, State Level and Private Sector Developers)
- For Key Stakeholders: EPC Contractors, Project Developers, Technology Providers, Material Suppliers, Equipment Suppliers, Consultants

SECTION III: FOCUS ON STATE INITIATIVES**13. MAJOR STATE PROFILES**

- Andhra Pradesh, Bihar, Chhattisgarh, Delhi, Gujarat, Haryana, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, West Bengal

SECTION IV: PROFILES OF KEY PLAYERS**14. KEY PLAYERS**

- Company Overview
- Project Portfolio (Completed and Ongoing Projects)
- Upcoming Projects
- Financial Performance
- Future Plans



The report will be available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: OVERVIEW AND PROGRESS UNDER THE SMART CITIES MISSION

2. OVERVIEW

- Key Aspects and Features; Smart Cities Mission: Coverage and Duration, Selection Process and No. of Cities Selected from Each State, Update on SPV Formation, Progress So Far; Institutional Framework; Union Budget 2017-18 and 2018-19: Key Announcements; Investment Requirements; Issues and Concerns; Outlook and Projections

3. ROUND I - FIRST 20 CITIES

- Investment Requirements; Key Details of Selected 20 Cities; Current Status of Infrastructure; Key Sources of Funding; Progress on Projects; Upcoming Tenders; Outlook and Opportunities

4. FAST TRACK COMPETITION - 13 CITIES

- Key Details of Selected 13 Cities; Current State of Infrastructure; Investment Requirements; Key Sources of Funding; Progress on Projects; Upcoming Tenders; Outlook and Opportunities

5. ROUND II - 27 CITIES

- Key Details of Selected 27 Cities; Current State of Infrastructure; Investment Requirements; Key Sources of Funding; Progress on Projects; Upcoming Tenders; Outlook and Opportunities

6. ROUND III - 30 CITIES

- Key Details of Selected 30 Cities; Current State of Infrastructure; Investment Requirements; Key Sources of Funding; Progress on Projects; Upcoming Tenders; Outlook and Opportunities

7. ROUND IV - 9 CITIES

- Key Details of Selected 9 Cities; Current State of Infrastructure; Investment Requirements; Key Sources of Funding; Outlook and Opportunities

8. INTERNATIONAL COLLABORATIONS UNDER THE SMART CITIES MISSION

- International Collaborations; Key Focus/ Intervention Areas; Nature of Assistance; Experience So Far - Bilateral Agreements Signed under the Mission; The Way Forward

9. RISKS, CHALLENGES AND IMPACT ASSESSMENT

- Initial Project Risks and Mitigation Strategies; Implementation Risks and Mitigation Strategies; O&M Risks and Mitigation Strategies; Financial Risks; Impact of Smart City Development; Key Success Factors

SECTION II: INVESTMENTS, OUTLOOK AND OPPORTUNITIES

10. FINANCING NEEDS AND CHALLENGES

- Experience So Far; Key Sources of Funding; New and Innovative Financing Options; Funding Pattern; Funds Released So Far; Recent Government Measures; Risks and Challenges; The Way Forward

11. PPP POTENTIAL AND OUTLOOK

- Key Thrust Areas for PPP; Experience So Far; Update on PPP Projects; Issues and Challenges; Future Outlook

12. ANALYSIS OF PROJECT PIPELINE (By 2025-26)

- Overview of Projects in Pipeline; Analysis by Segment; Analysis by State; Analysis by Stage of Development; Analysis by Completion Period; Expected Capacity Addition (Segment-wise)

13. OUTLOOK AND MARKET OPPORTUNITIES (By 2025-26)

- Growth Drivers; Upcoming Project Pipeline; Investment Projections and Opportunities; Market Opportunities; Opportunity by Stakeholder; Future Outlook

SECTION III: SEGMENT ANALYSIS AND OPPORTUNITIES

14. SMART MOBILITY

- Key Technology Solutions; Key Performance Indicators; Area-based Developments; Pan-City Developments; Convergence with Central

- Government Schemes; Noteworthy Initiatives/Projects; Key Learnings; Key Projects Under Implementation; Upcoming Tenders; Outlook and Opportunities

15. SMART WATER AND WASTE MANAGEMENT

- Key Technology Solutions; Key Performance Indicators; Area-based Developments; Pan-City Developments; Convergence with Central Government Schemes; Noteworthy Initiatives/Projects; Key Learnings; Key Projects Under Implementation; Upcoming Tenders; Outlook and Opportunities

16. SMART ENERGY

- Key Technology Solutions; Key Performance Indicators; Noteworthy Initiatives/ Projects; Convergence with Government Schemes; Key Projects Under-implementation; Key Projects - Under Tendering; Key Learning; Outlook and Opportunities

17. SMART SAFETY AND SECURITY

- Key Technology Solutions; Key Performance Indicators; Noteworthy Initiatives/Projects; Key Projects Under-implementation; Key Learning; Key Projects - Under Tendering; Outlook and Opportunities

18. SMART GOVERNANCE AND COMMUNICATION

- Key Technology Solutions; Key Performance Indicators; Noteworthy Initiatives/Projects; Convergence with Digital India; Key Projects Under-implementation; Key Projects - Under Tendering; Key Learning; Outlook and Opportunities

19. AFFORDABLE HOUSING

- Key Performance Indicators; Convergence with Central Government Schemes; Key Learnings; Noteworthy projects; Key projects Under Implementation and Announced; Upcoming Tenders

20. OTHER FOCUS AREAS

- Education; Healthcare; Roads and Flyovers; City Gas Distribution; Public Amenities/ Capacity Building

SECTION IV: GLOBAL AND INDIAN CASE STUDIES

21. CASE STUDIES OF SELECT SMART CITIES IN INDIA

- GIFT City; Lavasa; Naya Raipur; Dholera; Aurangabad Industrial Smart City; Vikram Udyogpuri; Integrated Industrial Township Greater Noida Limited; New Delhi; Surat; Varanasi
Each case study provides information on:
- Key Focus Areas (Mobility, Water and Waste, Energy, Governance, Safety and Security, Buildings, Communication, etc.)
- New Innovations and Technologies
- Best Practices and Key Learnings
- Issues and Challenges

22. CASE STUDIES OF EXISTING GLOBAL SMART CITIES

- Amsterdam; Barcelona; Singapore; Stockholm; Manchester; Copenhagen
Each case study provides information on:
- Key Focus Areas (Mobility, Water and Waste, Energy, Governance, Safety and Security, Buildings, Communication, etc.)
- New Innovations and Technologies
- Best Practices and Key Learnings
- Issues and Challenges

23. DATABASE OF KEY PROJECTS

- A comprehensive excel-based database of projects across water supply, sewerage, waste, energy, mobility, roads, flyovers, safety and security, e-governance, healthcare, capacity building and city gas distribution segments.
Each project provides information on:
- Scope
- Project Cost
- Type of Project (Area-based or Pan-City)
- Contractor/Developer
- Completion Date (wherever available)



The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: MARKET OVERVIEW

2. SIZE AND GROWTH

- Sector Snapshot, MSW Generation and Growth, State-wise Analysis, City-wise Analysis, Key Sector Trends, Waste Recovery and Recycle, Issues and Challenges

3. RECENT INITIATIVES AND KEY DEVELOPMENTS (past 15-18 months)

- City-level Initiatives, Key Projects, Policy and Regulatory Developments, Other Developments

4. INTER-CITY COMPARISON: KEY CITIES

- Solid Waste Generation
- Status of Solid Waste Management Across Key Cities
- Current Waste Management Practices
- Collection and Transportation
- Treatment and Disposal
- Status of Open Defecation
- Upcoming Facilities
- Performance under Swachh Survekshan 2016
- Status of Swachhata Mobile Application

5. ECONOMICS AND FINANCING

- Experience So Far, Key Financing Sources, Recent Trends, Economics of MSW Projects, Revenue Sources and Cost Recovery, Investment Requirements (till 2022-23), Issues and Challenges

SECTION II: PROJECTS, OUTLOOK AND OPPORTUNITIES

6. PROJECT PIPELINE AND ANALYSIS

- Summary of Key Projects in Pipeline
- Project Pipeline by Stage of Development, State, City, Completion Period
- Expected Capacity Addition

7. PPP PROJECTS AND OUTLOOK

- Formats and Models, Experience So Far, Revenue Streams, PPP Project Portfolio, Key Completed Projects, Key Ongoing Projects, Project Pipeline & Outlook, Issues Impacting PPPs, Key Lessons Learnt

8. OUTLOOK AND OPPORTUNITIES

- Key Growth Drivers, Investment Projections, Market Opportunities, Sector Outlook

SECTION III: REVIEW OF GOVERNMENT PROGRAMMES

9. SWACHH BHARAT MISSION

- Mission, Scope and Outlay, Allocations, Disbursements, Allocations and Disbursements, Progress So Far: Toilets, SWM, Overall, The Way Forward

10. ATAL MISSION FOR REJUVENATION AND URBAN TRANSFORMATION (AMRUT)

- Mission and Scope
- AMRUT Components
- Cities Covered under AMRUT
- Reforms Milestones and Timelines

- Funding Pattern
- Update on Projects
- Update on Sewerage/Septage Management and Drainage Projects
- Allocations and Disbursements
- The Way Forward

11. SMART CITIES MISSION

- Mission and Scope, Selection Process of Mission Cities, Mission Cities, Investment Requirements under the Smart Cities Mission, Project Funding, Convergence with Other Schemes, City-wise Analysis of Sewerage/Drainage Projects, Progress So Far, The Way Forward

SECTION IV: MSW TREATMENT AND ANALYSIS

12. COLLECTION AND TRANSPORTATION

- Current Practices
- Level of Waste Collection
- Vehicles and Equipments
- Deployment of Advanced Technology
- Collection and Transportation under Swachh Bharat Mission (SBM)
- Expenditure Requirements
- Issues and Concerns

13. TREATMENT AND DISPOSAL

- Current Practices
- Status - Waste Processing
- Relevant Technologies
- Scientific Disposal
- Integrated MSW Management
- Regional/Cluster Development: Overview, Case Study
- 3Rs (Reduce, Recycle and Reuse)
- Issues and Challenges

14. WASTE TO ENERGY

- Experience So Far: Capacity Addition, Regulatory Framework
- Cluster-based Approach
- Existing Capacity
- Policies and Incentives
- Relevant Technologies: Technology Options, SWOT Analysis
- Potential for Energy Generation
- Key Projects: Operational, Under Construction, Under Tendering
- Issues and Challenges

SECTION V: KEY PLAYERS

15. PROFILES OF LEADING PRIVATE PLAYERS

- A2Z Infrastructure Limited
- BVG India Limited
- Eco Wise
- Hanjer Biotech Energies Private Limited
- Hydroair Tectonics (PCD) Limited
- IL&FS Environmental Infrastructure and Services Limited
- JINDAL ITF Limited
- Ramky Enviro Engineers Limited
- SMPL Infra Limited
- UPL Environmental Engineers Limited



The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: MARKET OVERVIEW AND TRENDS

2. SECTOR SIZE AND GROWTH

- Sewerage Sector Snapshot
- Treatment Capacity
- Institutional Framework
- Policy and Regulatory Framework
- Norms for Sewage Treatment
- Key Trends
- Recent Developments
- Current Tariff Structure and Revisions
- Issues and Challenges

3. INVESTMENT SCENARIO AND PPP EXPERIENCE

- Experience So Far
- Funding Sources and Financing Model
- Key Sources of Revenue
- Cost Components
- Project Economics
- PPP Trends
- Case Studies of PPP Projects
- Key Success Factors
- Role of Multilateral Funds
- Investment Requirements

4. FOCUS ON HYBRID ANNUITY MODEL

- Salient Features
- Experience So Far
- Key Projects (Ongoing, Upcoming, Announced)
- Industry Expectations
- Risks and Challenges
- Future Outlook

5. INTERCITY COMPARISON

- Analysis of Sewage Generation
- Analysis of Sewage Treatment Capacity
- Technology-wise Analysis
- Capacity Addition Plans
- Initiatives towards Recycle and Reuse - Current Practices and Future Plans

6. COMPETITIVE LANDSCAPE

- Key Players (Indian and Global)
- Experience So Far
- Upcoming Contract Value
- Project Portfolio (Ongoing and Completed Projects)
- Capacity Addition Plans
- Financial Performance
- Key Concerns and Future Plans

7. TRENDS IN TREATMENT TECHNOLOGIES

- Conventional Technologies
- Advanced Technologies
- Current Capacity
- Key Case Studies
- Emerging Technologies
- Regulatory Initiatives

SECTION II: MARKET OUTLOOK AND OPPORTUNITIES

8. DEMAND DRIVERS

- Growth in Population and Urbanisation
- Depleting Water Resources
- Increasing Focus on Recycle and Reuse
- Others

9. OPPORTUNITIES UNDER KEY GOVERNMENT INITIATIVES

- Snapshot of Key Government Initiatives
- Namami Gange Programme
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
- Smart Cities Mission
- Swachh Bharat Mission

10. PROJECT PIPELINE

- Overall Project Pipeline
- Summary of Key Projects in Pipeline
- Project Pipeline by State
- Project Pipeline by Status
- Project Pipeline by Mode of Implementation
- Project Pipeline by Completion Period
- Key Sewerage Projects – Short-term Opportunity
- Key Sewerage Projects – Long-term Opportunity

11. FUTURE PROJECTIONS AND MARKET OPPORTUNITIES (till 2025-26)

- Investment Requirements
- Expected Capacity Addition
- Market Opportunities
- Sector Outlook

SECTION III: FOCUS ON EMERGING SEGMENTS

12. ENERGY FROM SEWAGE

- Existing Capacity
- Relevant Technologies
- Technologies in use across Cities
- Upcoming Projects
- Potential for Energy Consumption

13. RECYCLE AND REUSE

- Experience So Far
- Current Practices
- Standards for Reuse
- Technologies in use across Cities
- Potential for Recycle and Reuse
- Issues and Challenges
- Segment Outlook

SECTION IV: KEY CITY PROFILES

14. PROFILES OF KEY CITIES

- Mumbai, Hyderabad, Chennai, Bengaluru, Delhi, Ahmedabad, Kolkata, Surat, Pune, Nagpur, Pimpri Chinchwad



The report is available in a PDF format.

Table of Contents

SECTION I: MARKET OVERVIEW AND ANALYSIS

1. OVERVIEW	<ul style="list-style-type: none"> - Current Supply - Supply by Segments - Key Growth Drivers - Policy Support - Expected Demand and Investments - Issues and Challenges - Future Outlook
2. POLICY AND REGULATORY FRAMEWORK	<ul style="list-style-type: none"> - Key Agencies and their Role - Real Estate (Regulation and Development) Act, 2016 - Benami Transactions (Prohibition) Amendment Act, 2016 - Shops and Establishments Act - FDI Norms - Fiscal Incentives for Developers - Fiscal Incentives for Buyers
3. UNION BUDGET 2017	<ul style="list-style-type: none"> - Infrastructure Status and Impact - Impact on Supply - Allocation to Various Schemes: Pradhan Mantri Awas Yojana, AMRUT and Smart Cities, Loan refinancing through National Housing Board - Tax Reliefs - Overall Impact on Sector
4. IMPACT OF GST	<ul style="list-style-type: none"> - Scope and Timelines - Progress So Far - Likely Impact (on contractors, equipment providers, and material suppliers)
5. IMPACT OF DEMONETISATION	<ul style="list-style-type: none"> - Long-term and Short-term Impact: Impact on Real Estate Prices, Impact on Primary and Secondary Sales, Impact on the Type of Transactions (transition to smaller floor plates and units, investments in serviced apartment projects, etc.) - The Way Forward
6. RECENT GOVERNMENT INITIATIVES	<ul style="list-style-type: none"> - Online Registration, Online Revenue System, Transparency Initiatives, Others
7. PRIVATE EQUITY FINANCING AND TRANSACTIONS	<ul style="list-style-type: none"> - Current Size, Recent Trends, Recent Transactions, Investment Experience (by type and asset class), Expected Rates of Return
8. FOCUS ON REITS AND INVITS	<ul style="list-style-type: none"> - Key Elements, Structure and Models, Experience So Far, Regulatory Trends, Potential Yield Curve, Issues and Challenges
9. OTHER FINANCING TRENDS	<ul style="list-style-type: none"> - Trends in Debt Financing - Trends in FDI Inflow and ECBs - Recent Mergers and Acquisitions
10. MARKET OPPORTUNITIES AND OUTLOOK	<ul style="list-style-type: none"> - Projected Supply, New Avenues - Market Opportunities for: Contractors (Housing, Commercial, Retail and SEZ), Equipment Providers (Housing, Commercial, Retail and SEZ), Material Suppliers (Housing, Commercial, Retail and SEZ)

SECTION II: SEGMENT ANALYSIS AND OUTLOOK

11. HOUSING REAL ESTATE	<ul style="list-style-type: none"> - Current Scenario - Key Market Indicators - Key Drivers - Notable Trends - Key Developers - Investment Projections - Key Upcoming Projects - Segment Outlook
12. COMMERCIAL REAL ESTATE	<ul style="list-style-type: none"> - Current Scenario - Key Market Indicators - Key Drivers - Notable Trends - Key Developers - Investment Projections - Key Upcoming Projects - Segment Outlook
13. RETAIL REAL ESTATE	<ul style="list-style-type: none"> - Current Scenario - Key Market Indicators - Key Drivers - Notable Trends - Key Developers - Investment Projections - Key Upcoming Projects - Segment Outlook
14. SPECIAL ECONOMIC ZONES	<ul style="list-style-type: none"> - Current Scenario - Key Market Indicators - Key Drivers - Notable Trends - Key Developers - Investment Projections - Key Upcoming Projects - Segment Outlook

SECTION III: BIG EIGHT CITIES

15. PROFILES OF BIG EIGHT CITIES	<ul style="list-style-type: none"> - Mumbai, Bengaluru, National Capital Region, Pune, Hyderabad, Chennai, Kolkata, Ahmedabad <p><i>Each profile covers the following information:</i></p> <ul style="list-style-type: none"> - Current Supply and Asset Type - Trends in Market Indicators - Upcoming Supply - Location Strategy - Investment Scenario - Future Outlook
---	---



The report is available in a PDF format.

Growth Drivers, Opportunities and Outlook

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: OVERVIEW, KEY TRENDS AND OUTLOOK

2. MARKET SIZE AND TRENDS

- Trends in Data Consumption
- Size and Growth of OFC Network
- Demand Drivers
- OFC Sharing
- Emerging Business Models
- OFC Deployment Models
- Supply-side Scenario
- Cost and Technology Trends
- Key Issue and Challenges

3. GROWTH DRIVERS FOR OFC

- 5G Network Roll-out
- Role of Fibre in 5G Deployments
- Smart Cities Mission
- FTTH Uptake
- FTTH Business Models
- Cable TV/DTH Services
- Data Centres
- Internet of Things

4. POLICY AND REGULATORY SCENARIO

- Indian Telegraph Right of Way Rules, 2016
- State-wise Implementation Status of RoW Policy
- Select State RoW Policies - Key Features
- Common Duct Policy - Key Features
- TRAI's Recommendations on In-Building Access
- Policy and Regulatory Challenges
- Key Recommendations

5. DEMAND PROJECTIONS AND OUTLOOK

- Growth in Data Traffic
- OFC Demand in Backhaul - Site Fiberisation
- OFC Demand in Last Mile
- Requirements for 5G
- Opportunities from Smart Cities
- OFC Demand and Investments from Consumer Segments
- Emerging Policy and Regulatory Scenario
- Market Outlook

SECTION II: CONSUMER SEGMENTS

6. BHARATNET: STRATEGIES, DESIGN AND IMPLEMENTATION

- Targets, Timelines and Progress
- Cost and Sanctions
- Phase I Implementation
 - State-wise Implementation Status
 - Implementing Agencies
 - Implementation Experience and Key Learnings

- Phase II Strategy and Plan
 - Overall Scope and Size
 - Implementing Agencies
 - Opportunities for Private Sector
- Key Differences between Phase I and Phase II
- Potential Scope and Size of Phase III
- Upcoming Tenders

7. TELECOM OPERATORS

- Bharti Airtel
- Idea-Vodafone
- Reliance Jio Infocomm Limited
- BSNL-MTNL

8. INTERNET SERVICE PROVIDERS

- Atria Convergence Technologies Private Limited
- DEN Networks
- Hathway Cable and Datacom Limited
- Sify Technologies
- Spectra

9. CABLE TV/DTH

- Airtel Digital TV
- Tata Sky
- Sun Direct
- Reliance Digital TV
- Dish TV-Videocon

10. UTILITIES

- Power Utilities
 - Technology Options
 - Current Status and Plans
- Gas Utilities
 - Use and Deployment
 - Current Status and Plans

11. NATIONAL TRANSMISSION/ TRANSPORTATION NETWORKS

- Powergrid Corporation of India Limited
- RailTel Corporation of India Limited
- GailTel

12. DEFENCE

- Army Static Switched Communication Network Project
- Network for Spectrum Project



The report is available in a PDF format.

(October 2017)

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>SECTION I: OVERVIEW, OPPORTUNITIES AND OUTLOOK</p> <p>2. OVERVIEW</p> <ul style="list-style-type: none"> - India's Macroeconomic Scenario - Current State of Infrastructure - Key Sector Trends - Government Programmes/Initiatives Driving Demand - Impact of GST - Challenges in Project Development and Implementation - Outlook and Opportunities (till 2024-25) <p>3. OVERALL PROJECT PIPELINE ANALYSIS</p> <ul style="list-style-type: none"> - Expected Capacity Addition (sector-wise) - Analysis by Sector, Ownership, Promoter, Contractor, Region and State, Investment - Top Upcoming Projects in Terms of Investment <p>4. PROJECT PIPELINE ANALYSIS BY STAGE OF DEVELOPMENT</p> <ul style="list-style-type: none"> - Under Implementation, Announced, Awarded, Under Planning, Projects Awaiting Clearances/Land Acquisition/Financial Closure, Under Bidding, Delayed/Stalled <p>5. OUTLOOK AND MARKET OPPORTUNITIES</p> <ul style="list-style-type: none"> - Growth Drivers - Investment Requirements - Expected Policy Changes and Impact - Market Opportunities for project developers, EPC contractors, financiers, equipment providers, construction material suppliers and consultants <p>SECTION II: PIPELINE ANALYSIS BY SECTOR</p> <p>6. ROADS AND BRIDGES</p> <ul style="list-style-type: none"> - Sector Snapshot - Projects Completed in 2016 and 2017 - Major Players - Overall Project Pipeline by Stage - Top Upcoming Projects in Terms of Investment - Outlook and Projections (till 2021-22) <p>7. PORTS</p> <ul style="list-style-type: none"> - Sector Snapshot - Projects Completed in 2016 and 2017 - Major Players - Overall Project Pipeline by Stage - Top Upcoming Projects in Terms of Investment - Outlook and Projections (till 2024-25) <p>8. RAILWAYS</p> <ul style="list-style-type: none"> - Sector Snapshot - Projects Completed in 2016 and 2017 - Major Players - Overall Project Pipeline by Stage - Top Upcoming Projects in Terms of Investment - Outlook and Projections (till 2022-23) <p>9. AIRPORTS</p> <ul style="list-style-type: none"> - Sector Snapshot, Projects Completed in 2016 and 2017, Major Players, Overall Project Pipeline by Stage, Top Upcoming Projects in Terms of Investment, Outlook and Projections (till 2020-21) 	<p>10. URBAN RAIL</p> <ul style="list-style-type: none"> - Sector Snapshot - Projects Completed in 2016 and 2017 - Major Players - Overall Project Pipeline by Stage - Top Upcoming Projects in Terms of Investment - Outlook and Projections (till 2026-27) <p>11. MINING</p> <ul style="list-style-type: none"> - Sector Snapshot, Projects Completed in 2016 and 2017, Major Players, Overall Project Pipeline by Stage, Top Upcoming Projects in Terms of Investment, Outlook and Projections (till 2025-26) <p>12. POWER</p> <ul style="list-style-type: none"> - Sector Snapshot - Projects Completed in 2016 and 2017 - Major Players - Overall Project Pipeline by Stage - Top Upcoming Projects in Terms of Investment - Outlook and Projections (till 2024-25) <p>13. RENEWABLE ENERGY</p> <ul style="list-style-type: none"> - Sector Snapshot - Projects Completed in 2016 and 2017 - Major Players - Overall Project Pipeline by Stage - Top Upcoming Projects in Terms of Investment - Outlook and Projections (till 2021-22) <p>14. OIL AND GAS</p> <ul style="list-style-type: none"> - Sector Snapshot - Projects Completed in 2016 and 2017 - Major Players - Overall Project Pipeline by Stage - Top Upcoming Projects in Terms of Investment - Outlook and Projections (till 2025-26) <p>15. WATER AND WASTE</p> <ul style="list-style-type: none"> - Sector Snapshot, Projects Completed in 2016 and 2017, Major Players, Overall Project Pipeline by Stage, Top Upcoming Projects in Terms of Investment, Outlook and Projections (till 2025-26) <p>16. IRRIGATION</p> <ul style="list-style-type: none"> - Sector Snapshot, Projects Completed in 2016 and 2017, Major Players, Overall Project Pipeline by Stage, Top Upcoming Projects in Terms of Investment, Outlook and Projections (till 2026-27) <p>SECTION III: DATABASE OF KEY PROJECTS</p> <p>A database of key projects across roads and bridges, ports, railways, airports, urban rail, mining, power, renewable energy, oil and gas, water and waste, and irrigation sectors.</p> <p><i>Each project provides information project scope, cost, capacity, location, implementing agency, ownership, EPC contractor/developer, equipment provider (wherever available), current status, date of commencement of construction/month of award (wherever available), and expected date of completion (wherever available).</i></p>
---	--



The report is available in a PDF format.

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>SECTION I: AFRICAN MARKET OVERVIEW</p> <p>2. SECTOR OVERVIEW</p> <ul style="list-style-type: none"> - Macroeconomic Scenario - Infrastructure Growth in the Past Five Years - Current Infrastructure Deficit - Competitive Landscape - Growth Drivers - Technology Trends - Key Issues and Challenges - Upcoming Opportunities - Future Outlook <p>3. FINANCING AND PPP EXPERIENCE</p> <ul style="list-style-type: none"> - Trends in Infrastructure Spending - Funding Sources <ul style="list-style-type: none"> • Government Funding • Multilateral Funding • Bilateral Funding • Bank Lending • Bond Financing • Other Key Funding Sources - Private Sector Participation <ul style="list-style-type: none"> • Experience So Far • Sector-wise Private Investments • Equity Funding • PE Exits • Historical and Expected Returns - Emerging Sources of Finance - Investment Requirement and Projections - Key Risks and Challenges - The Way Forward <p>4. FOREIGN INVESTMENT TRENDS</p> <ul style="list-style-type: none"> - Size and Growth - FDI Analysis <ul style="list-style-type: none"> • By Source • By Destination • By Sector - Initiatives to Encourage Foreign Investment - Proposed Foreign Investments - Participation of Overseas Equipment Manufacturers and Service Providers <p>5. PROJECT PIPELINE AND MARKET OPPORTUNITIES</p> <ul style="list-style-type: none"> - Overall Project Pipeline - Project Pipeline Analysis <ul style="list-style-type: none"> • By Sector • By Country • By Stage - Market Opportunities <ul style="list-style-type: none"> • Developers • Contractors • Financiers/Long-term Investors • Technology and Equipment Providers • Material Suppliers • Other Stakeholders - Future Outlook 	<p>6. TOP 100 UPCOMING PROJECTS</p> <ul style="list-style-type: none"> - By Sector, Country, Type (Brownfield/Greenfield), Stage of Implementation (Recently awarded/approved/announced) <p>SECTION II: COUNTRY-WISE ANALYSIS</p> <p>Chapters 7 and 8 will cover an analysis of key countries including Nigeria, Egypt, South Africa, Algeria, Morocco, Sudan, Angola, Kenya, Ethiopia, Tanzania, Libya, Tunisia, Ghana, Congo DR, Côte d'Ivoire, Uganda, Cameroon, Zambia, South Sudan, Mozambique, Botswana, Senegal, Mali, Gabon, Mauritius, Burkina Faso, Chad, Equatorial Guinea, Namibia, Madagascar, Benin, Congo, Rwanda, Niger, Guinea, Mauritania, Malawi.</p> <p>7. SNAPSHOT OF KEY AFRICAN COUNTRIES</p> <ul style="list-style-type: none"> - Economic Scenario - Infrastructure Growth Indicators - Ease-of-Doing Business Indicators - Recent Policy Developments - Key Commissioned Projects <p>8. CAPACITY ADDITION PLANS AND PROJECTIONS</p> <ul style="list-style-type: none"> - Budgetary Allocations and Outlays - Planned Capacity Additions - Proposed Investments - Sector-wise Capacity and Investment Targets <p>9. TOP 10-15 INVESTMENT DESTINATIONS (Based on Upcoming Opportunities)</p> <ul style="list-style-type: none"> - Infrastructure Sector Overview - Private Investment Mobilised - Project Pipeline - Upcoming Big-ticket Projects - Key Successes and Failures - Challenges and Lessons Learnt - Market Opportunities - Country Outlook <p>SECTION III: SECTOR-WISE ANALYSIS</p> <ul style="list-style-type: none"> - Electricity - Renewable Energy - Mining - Oil and Gas - Roads - Railways - Urban Transport - Seaports - Airports - ICT - Water and Sanitation <p>Each of the sectors will cover:</p> <ul style="list-style-type: none"> - Size and Growth, Emerging Trends and Recent Developments, Proposed Investments, Upcoming Projects, Market Opportunities, Issues and Challenges, Future Outlook
--	--



The report will be available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: MARKET ANALYSIS, PROJECT PIPELINE AND OPPORTUNITIES

2. OVERVIEW

- Macroeconomic and Trade Scenario, Infrastructure Growth in the Past Five Years, Recent Policies and Reforms, Key Trends and Developments, Investment Requirements, Key Issues and Challenges, Outlook and Projections (till 2022-23)

3. PROJECT PIPELINE ANALYSIS

- Summary of Project Pipeline
- Expected Investments in Projects
- Project Pipeline Analysis: By Country, Sector, Mode of Implementation (PPP/non-PPP), Stage: Ongoing/Under Construction, Bidding/Tendering and Announced

4. OUTLOOK AND OPPORTUNITIES

- Growth Drivers
- Policy and Regulatory Outlook
- Upcoming Project Pipeline
- Expected Capacity Addition
- Investment Outlook
- Opportunities for Key Stakeholders (Developers, Contractors, Financiers, Consultants, Technology and Equipment Providers, etc.)

5. FINANCING OF SOUTHEAST ASIAN INFRASTRUCTURE

- Funding Sources, Government Funding
- Debt Financing (commercial banks, bonds, multilateral agencies, export credit agencies, etc.)
- Equity Financing (private equity, FDI, IPOs, etc.)
- Emerging Sources of Finance (infrastructure bonds, Sukuk bonds, Asian Infrastructure Investment Bank (AIIB), ASEAN Infrastructure Fund, China-ASEAN Investment Cooperation Fund, etc.)
- New Investment Funds Announced, Risks and Returns

6. PRIVATE SECTOR PARTICIPATION

- PPP Formats for Implementation
- Experience so Far: Investments Mobilised so Far, Sector-wise Analysis, Country-wise Analysis, Mode-wise Analysis
- Policy and Regulatory Environment
- Innovative Modes being Explored
- Upcoming Projects: By Sector, Country, Stage
- Key Issues and Concerns
- The Way Forward

7. FOCUS ON REGIONAL INFRASTRUCTURE

- Cross-border Investments
- Regional Programmes/Initiatives: ASEAN Economic Community, Master Plan on ASEAN Connectivity 2025, ASEAN Single Window (ASW), ASEAN Highway Network, Single Aviation Market/ASEAN Open Sky Agreement, ASEAN Single Shipping Market, ASEAN Power Grid, Asian Super Grid, ASEAN Broadband Corridor, Others
- Key Upcoming Cross-border/Regional Projects
- Proposed Investments
- Key Issues and Challenges

8. INVESTMENT FRAMEWORK

- Overall Business and Investment Scenario
- Key Investment-related Policies
- Investment Treaties and Agreements
- Taxation Regime
- Recent Initiatives to Promote Ease of Doing Business
- Likely Impact on Infrastructure
- Key Issues and Concerns

9. FOREIGN DIRECT INVESTMENT TRENDS

- Size and Growth, Top FDI Contributing Countries, Key Trends, Initiatives to Encourage FDI, Participation of Overseas Equipment Manufacturers and Service Providers, Proposed Investments, Key Issues and Concerns, The Way Forward

SECTION II: SECTOR-WISE ANALYSIS

10. ELECTRICITY

11. RENEWABLES

12. OIL AND GAS

13. ROADS

14. SEAPORTS

15. RAILWAYS

16. AIRPORTS

17. URBAN TRANSPORT

18. WATER AND SANITATION

19. ICT

(Each chapter includes size and growth, policy and institutional framework, key sector trends, planned capacity/network addition, proposed investments, project pipeline [till 2022-23], market opportunities, key issues and challenges, outlook and projections [till 2022-23])

SECTION III: COUNTRY ANALYSIS

20. INTER-COUNTRY COMPARISON

- Country-wise Economic Scenario, Infrastructure Size and Growth, Expected Capacity Addition, Proposed Investments, Summary of Project Pipeline

21. COUNTRY PROFILES

- Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

Each country profile covers the following:

- Economic Growth in the Past Five Years
- Indicators of Infrastructure Growth
- Expected Capacity Addition in Infrastructure Sectors
- Expected Investments
- Summary of Key Upcoming Projects



The report is available in a PDF format.

Sector Overview and Market Trends; Outlook and Opportunities

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: MARKET SIZE, TRENDS AND OUTLOOK

2. SECTOR OVERVIEW

- Existing Infrastructure and Gaps; Key Agencies Involved and Industry Structure; Key Growth Drivers: Recent Developments, New Launches, Indigenisation Initiatives, Bilateral Agreements/MoUs, Key JVs and Collaborations, Key Contract Awards/Acquisitions, Industrial Licences Issued; Issues and Challenges; Sector Outlook

3. DEFENCE BUDGET ANALYSIS

- Trends in Allocation in the Past Five Years, Trends in Capital Acquisitions, New Procurements vs Committed Liabilities, Budget and GDP, Elements of Defence Expenditure, Share of Defence Services, Modernisation Budget

4. DPP 2016 AND STRATEGIC PARTNERSHIP MODEL

- DPP 2016: Key Features, Recent Amendments to the Procurement Procedure, Impact on Capital Procurement under the Buy Indian (IDDM) and Make Indian Categories
- Strategic Partnership Model: Key Features, Potential Benefits, Role of Strategic Partners as System Integrators, Role of OEMs
- Expectations from the Government
- Key Concerns

5. POTENTIAL FOR PRIVATE SECTOR PARTICIPATION

- Experience So Far, Expected Impact of the Strategic Partnership Policy, New JVs and Partnerships, Tax Environment and Incentives, Emerging Areas of Private Participation, Upcoming Opportunities, Issues and Challenges, Outlook and the Way Forward

6. MAJOR PROGRAMMES/ACQUISITIONS – UPDATES AND OPPORTUNITIES

- Future Infantry Combat Vehicle Programme, Future Ready Combat Vehicle Programme, Artillery Modernisation Programme, Avro Replacement Programme, Procurement of Kamov Helicopters and Rafale Fighter Jets, Battlefield Management System, Tactical Communication System, Light Specialist Vehicle Programme, Others

(This chapter includes details about the scope of each programme/acquisition, investment requirement, contract terms and structures, tentative timelines, current status and the opportunities).

7. R&D LANDSCAPE

- Current Scenario, Role of DRDO, Trends in R&D Expenditure, Recent R&D Initiatives, Role of Private Sector in R&D, Needs and Requirements, Upcoming Opportunities

8. ROLE OF MSMEs

- Current Role of MSMEs, Experience So Far, Opportunities under the Make in India Programme, Issues and Challenges, The Way Forward

9. PROGRESS IN DEFENCE OFFSETS

- Experience So Far, Impact of the Offset Policy, Performance of Key Offset Contracts, Upcoming Contracts and Orders, Outlook and Opportunities, Issues and Challenges

10. TRENDS IN DEFENCE EXPORTS AND IMPORTS

- Defence Export and Import Scenario, Dependence on Defence Imports, Trends in Foreign Direct Investments, Partner Countries, Key Products/Equipments, Policy Impediments & Procedural Issues

11. FUTURE OUTLOOK AND MARKET OPPORTUNITIES

- Investment Requirements, Budget Projections, Acquisition Plans of Armed Forces, Opportunities in Future Acquisitions, Segment-wise Opportunities: Defence Vehicles, Arms and Ammunitions, Aerospace, Electronics, Shipbuilding, Defence Equipment, Others

SECTION II: SEGMENT OVERVIEW, KEY TRENDS AND MARKET OPPORTUNITIES

12. AEROSPACE

- Current Market Size and Existing Fleet, Trends in Expenditure, Key Contracts Awarded, Industry Structure and Key Players, Collaborations and Tie-ups, R&D Initiatives, Make in India and Focus on Indigenisation, Modernisation Plans, New Launches, Upcoming Contracts & Orders, Market Opportunities, Segment Outlook

13. ARMoured VEHICLES, ARMS AND AMMUNITIONS

- Current Market Size, Trends in Expenditure, Key Contracts Awarded, Industry Structure and Key Players, Collaborations and Tie-ups, R&D Initiatives, Make in India and Focus on Indigenisation, Modernisation Plans, New Launches, Upcoming Contracts and Orders, Market Opportunities, Segment Outlook

14. DEFENCE LOGISTICS VEHICLES

- Existing Fleet Size, Trends in Expenditure, Key Contracts Awarded, Industry Structure and Key Players: Key Public and Private Players, Heavy/Construction Vehicle Providers, Collaborations and Tie-ups, R&D Initiatives, Make in India and Focus on Indigenisation, Modernisation Plans, New Launches, Upcoming Contracts and Orders, Market Opportunities, Segment Outlook

15. ELECTRONICS AND COMMUNICATION SYSTEMS

- Current Market Size, Trends in Expenditure, Key Contracts Awarded, Industry Structure and Key Players, Collaborations and Tie-ups, R&D Initiatives, Make in India and Focus on Indigenisation, Modernisation Plans, New Strategic Communication Technologies, New Launches, Upcoming Contracts and Orders, Market Opportunities, Segment Outlook

16. SHIPBUILDING

- Existing Fleet Size, Trends in Expenditure, Key Contracts Awarded, Industry Structure and Key Players, Collaborations and Tie-ups, R&D Initiatives, Make in India and Focus on Indigenisation, Modernisation Plans, New Launches, Upcoming Contracts and Orders, Market Opportunities, Segment Outlook

SECTION III: KEY PLAYERS

17. PROFILES OF DEFENCE PUBLIC SECTOR UNDERTAKINGS (DPSUs)

- Bharat Dynamics Limited, Bharat Electronics Limited, Bharat Earth Movers Limited, Garden Reach Shipbuilders and Engineers Limited, Goa Shipyard Limited, Hindustan Aeronautics Limited, etc.

(Each profile gives an overview of the DPSU's operations, indirect imports and vendor development, share in defence procurement, capex estimates, indigenisation targets, modernisation initiatives, key collaborations, R&D initiatives, financial performance, and future plans and strategies.)

18. ORDNANCE FACTORY BOARD

- Overview of Operations, Trends in Production and Sales/Supplies, Financial Indicators, Outsourcing and Vendor Development, Key Collaborations, R&D Initiatives

19. PRIVATE PLAYERS

- Overview, Airbus Group India, Ashok Leyland Defence Systems, Bharat Forge Limited, BAE Systems India, Boeing India, Larsen & Toubro, Mahindra Defence Systems, etc.

(Each profile gives an overview of the company's operations, key contracts serviced, equipment supplied, recent collaborations, joint ventures, and future plans and strategies).



The report is available in a PDF format.

Table of Contents

SECTION I: TRENDS, ANALYSIS AND OPPORTUNITIES

1. Market Overview

- ❖ Current Status of Healthcare Infrastructure
- ❖ Demand-Supply Gap
- ❖ Trends in Expenditure
- ❖ Industry Structure and Role of Private Sector
- ❖ Recent Trends and Developments
- ❖ Investment Needs and Requirements
- ❖ Government's Plans and Progress
- ❖ Issues and Challenges
- ❖ Segment Outlook

2. Policy Framework and Government Initiatives

- ❖ Institutional Framework
- ❖ Existing Policy Framework
- ❖ Key Government Programmes*
- ❖ National Health Policy, 2017
 - Policy Features
 - Priority Areas and Potential Benefits
- ❖ Recent Initiatives (National Health Profile 2018, National eHealth Authority, National Health Resource Repository, etc.)
- ❖ Permissions and Licences
- ❖ Incentives for Private Sector

**(This section will provide an update on key government programmes such as National Health Mission, National Urban Health Mission, National Rural Health Mission, Pradhan Mantri Swasthya Suraksha Yojana, Rashtriya Swasthya Bima Yojana, National Health Protection Scheme, and Intensified Mission Indradhanush)*

3. Investment Experience and Financing Trends

- ❖ Key Financing Trends
- ❖ Trends in Government Funding
- ❖ PPP Experience So Far
- ❖ Debt Financing in Healthcare
- ❖ Recent IPOs
- ❖ Emerging Business Models
- ❖ FDI in Healthcare [Trends in FDI Inflow, FDI in Hospitals and Diagnostics, Key Contributors (Africa, Middle East, etc.)]
- ❖ Private Equity Inflow (Historic Trends, Scenario in the Last Few Years, Trends in Hospitals and Diagnostics, Trends in PE Exits, Recent PE Deals, Historical and Expected Rates of Returns)
- ❖ Trends in Foreign Venture Capital Investment
- ❖ Key Mergers and Acquisitions
- ❖ Investment Outlook

4. Outlook, Opportunities and Projections (till 2022-2023)

- ❖ Growth Drivers
- ❖ Healthcare Market Size Projections
- ❖ Future Requirement for Hospital Beds
- ❖ Project Pipeline (Hospitals, Diagnostics)
- ❖ Opportunities for Key Stakeholders (Hospital Infrastructure, Diagnostics/Pathology Centres, Health Insurance, Pharmacies, Technology-Driven Services, Others)

SECTION II: SEGMENT ANALYSIS AND OUTLOOK

5. Public Healthcare

- ❖ Current Infrastructure (Hospital Beds, Workforce, Hospitals, Clinics and Blood Banks, Pharmacies, Diagnostics/Pathology Centres)

- ❖ Rural Infrastructure
- ❖ Urban Infrastructure
- ❖ Recent Developments and Plans
- ❖ Key Players
- ❖ Issues and Challenges
- ❖ Segment Outlook

6. Private Healthcare

- ❖ Current Infrastructure(Hospital Beds, Workforce, Hospitals, Clinics and Blood Banks, Pharmacies, Diagnostics/Pathology Centres)
- ❖ Growth in Private Spending
- ❖ Rural and Urban Market
- ❖ Recent Trends
- ❖ Key Players
- ❖ Issues and Challenges
- ❖ Segment Outlook

7. Health Insurance

- ❖ Current Status
- ❖ Health Insurance Penetration
- ❖ Health Insurance Premium Trends
- ❖ Market Composition: Private, Public and Standalone Health Insurance
- ❖ State-level Initiatives
- ❖ Deficiencies in Rural and Urban Market
- ❖ Recent Developments
- ❖ Key Players
- ❖ Issues and Challenges
- ❖ Segment Outlook

SECTION III: EMERGING GROWTH AREAS AND ROLE OF TECHNOLOGY

8. New Areas - Progress and Opportunities

- ❖ Tele-medicine(Experience So Far, Case Studies, Upcoming Opportunities, Key Challenges)
- ❖ Medicities [Experience So Far (Gurugram, Lucknow, Nagpur, Durgapur, Chennai, Bengaluru, etc.), Case Studies, Upcoming Opportunities, Key Challenges]
- ❖ Growth in Medical Tourism (Experience So Far, Government Initiatives, Upcoming Opportunities, Key Challenges)
- ❖ Launch of Air Dispensaries

9. Information Technology in Healthcare

- ❖ Technology Penetration in Healthcare Ecosystem
- ❖ IoT for Asset Tracking & Inventory Management Systems
- ❖ Patient-centric Healthcare Systems (Big Data, Cloud Computing, Wearable Technology, Artificial Intelligence, Robotic Surgeries, Technology in Healthcare Reporting, Personal Health Records, Electronic Medical Records, Electronic Prescriptions)
- ❖ mHealth
- ❖ Digital Pharmaceuticals
- ❖ e-Hospital Project
- ❖ Health apps



The report will be available in a PDF format.

SECTION I: INVESTMENT OVERVIEW AND OUTLOOK

EXECUTIVE SUMMARY

- 1. INVESTMENT EXPERIENCE**
 - By Sector - Equity Financing, By Source - Equity Financing, Investment Trends, Historical Rates of Return, Key Successful Exits, Debt Financing, Key Risks in Equity Investments
- 2. INVESTMENT OPPORTUNITIES**
 - Growth Drivers; Investment Requirements and Projections; Investment Outlook; Investment Opportunities - by Sector, Source
- 3. NEW SOURCES OF INVESTMENT**
 - Current Scenario, Insurance Funds, Pension Funds, Sovereign Wealth Funds, National Investment and Infrastructure Fund, Outlook
- 4. EMERGING FINANCING INSTRUMENTS**
 - Infrastructure Debt Funds, Infrastructure Investment Trusts (InvITs), Bond Financing, Outlook

SECTION II: ANALYSIS BY SOURCE/TYPE

- 5. PROJECT EQUITY**
 - Size and Growth, Key Factors Impacting Investment Activity, Investment Experience: Shift in Strategy, Key Exits, Sector-wise Analysis, Key Players, Key Deals and Transactions since 2015-16, Key Investment Areas, Investment Outlook, Expected Rates of Returns
- 6. PRIVATE EQUITY IN UNLISTED FIRMS**
 - Size and Growth, Investment Experience, Returns from Past PEUC Investments, Successful Investments, Disappointing Exits, Sector-wise Analysis, Key Players, Recent Deals and Transactions, Outlook and Expected Returns
- 7. PRIVATE INVESTMENT IN PUBLIC EQUITY (PIPE)**
 - Size and Growth, Investment Experience, Historical Returns, Successes and Failures, Sector-wise Analysis, Key Players, Recent Deals and Transactions, Outlook and Expected Returns
- 8. INITIAL PUBLIC OFFERINGS**
 - Size and Growth, Investment Landscape, Historical Returns, Successes and Failures, Sector-wise Analysis, Recent Issuances, Follow-on Public Offers, Outlook and Expected Returns
- 9. QUALIFIED INSTITUTIONAL PLACEMENTS**
 - Size and Growth, Current Environment, Experience from Past QIPs, Sector-wise Analysis, Recent Issuances, Outlook

SECTION III: ANALYSIS BY SECTOR

- 10. CONVENTIONAL POWER**
 - Size and Growth; Recent Trends; Investment Experience; Historical Rates of Return; Successes and Failures; Recent Deals; Investment Requirement; Project Pipeline; Investment Opportunities; Outlook: Generation, Transmission, Distribution; The Way Forward and Expected Returns
- 11. RENEWABLES**
 - Size and Growth, Recent Trends, Recent Policy Announcements, Investment Experience, Key Exits and Past Returns, Key Recent Deals, Project Pipeline (by capacity addition), Project Pipeline (by investment requirement), Investment Opportunities, Sector Outlook, Expected Returns

- 12. ROADS**
 - Size and Growth, Recent Trends, Investment Experience, Historical Rates of Returns, Successes and Failures, Key Recent Deals and Transactions, Project Pipeline, Investment Requirement (till 2020-21), Investment Opportunities, Expected Rates of Returns, Sector Outlook
- 13. PORTS**
 - Size and Growth - Traffic, Capacity; Recent Trends; Investment Experience; Key Exits and Past Returns; Past Deals; Sagarmala Programme; Project Pipeline (by capacity addition, investment requirement); Investment Opportunities; Sector Outlook
- 14. AIRPORTS**
 - Current Market Size, Growth in Recent Years, Key Trends, Investment Experience, Successes and Failures, Key Deals and Transactions, Project Pipeline (by capacity addition), Investment Requirement (by investment requirement), Investment Opportunities, Sector Outlook, The Way Forward and Expected Returns
- 15. WATER SUPPLY AND SANITATION**
 - Size and Growth, Recent Trends, Investment Experience and Historical Returns, Project Pipeline (by capacity addition, investment requirement), Investment Opportunities, Trend in Deal Activity, Sector Outlook and Expected Returns
- 16. URBAN TRANSPORT**
 - Size and Growth, Recent Trends, Investment Experience, Historical Rates of Returns, Recent Financings, Project Pipeline (by capacity addition, investment requirement), Investment Opportunities, Expected Rates of Returns, Sector Outlook
- 17. RAILWAYS**
 - Size and Growth, Key Trends, Investment Experience, Historical Rates of Returns, Successes and Failures, Key Recent Deals/Transactions, Investment Requirement, Investment Opportunities, Project Pipeline, Update on DFC, Upcoming Projects, Recently Approved Projects, Sector Outlook
- 18. TELECOM**
 - Size and Growth - Subscriber Base, Towers, Mobile Subscriptions; Recent Developments; Investment Experience; Key Exits and Past Returns; Key Successes and Failures; Recent Deals; Investment Requirement; Investment Opportunities; Sector Outlook
- 19. LOGISTICS**
 - Size and Growth, Recent Trends, GST - A Game Changer, Investment Experience, Historical Rates of Returns, Key Successful Exits, Key Recent Deals and Transactions, Investment Requirement, Opportunities Areas for PE Investors, Sector Outlook - Transport Segment, Sector Outlook - Storage/Warehousing Segment, Sector Outlook - Emerging Sub-segments, Expected Returns and The Way Forward, Summary
- 20. ENGINEERING, PROCUREMENT AND CONSTRUCTION**
 - Size and Growth, Recent Developments, Investment Experience, Historical Rates of Returns, Successes and Failures, Past Exits, Key PE Deals, Investment Requirement, Investment Opportunities, Sector Outlook



The report is available in a PDF format.

Table of Contents

SECTION I: SECTOR OVERVIEW AND ANALYSIS

- 1. OVERVIEW**
 - Current size
 - Irrigation Potential
 - Type of potential (minor irrigation, major and medium irrigation, micro irrigation)
 - Source of Irrigation
 - Plan-wise Development
 - Targets Vs Achievements
 - Growth Drivers
 - Investment Projections
 - Issues and Challenges
- 2. WATER DEMAND, AVAILABILITY AND STORAGE**
 - Demand for Irrigation
 - Availability of Water (ground water and surface water)
 - Storage Capacity of Reservoirs
 - Storage Position of Important Reservoirs
 - Projected Water Demand
- 3. FINANCING AND INVESTMENTS**
 - Funding Sources, Budget and Allocation, Expenditure Trends, Investment Requirement, Risks and Challenges
- 4. PROJECT PIPELINE AND ANALYSIS**
 - Overall Project Pipeline
 - Analysis by Type, State, Stage of Development
- 5. OUTLOOK AND OPPORTUNITIES**
 - Growth Drivers, Investment Projections, Market Opportunities, Sector Outlook

SECTION II: POLICIES, REGULATIONS AND PROGRAMMES

- 6. POLICY AND REGULATORY FRAMEWORK**
 - Key Agencies and their Role
 - Evolution of Regulations in India
 - Current Policy Framework
 - State-level Policies and Regulations
 - Recent Developments
 - Issues and Shortcomings
- 7. PRADHAN MANTRI KRISHI SINCHAYEE YOJANA**
 - Physical Progress, Expenditure So Far, Financial Progress, State-wise Irrigation Potential, Issues and Constraints
- 8. OTHER KEY GOVERNMENT PROGRAMMES**
 - Accelerated Irrigation Benefit Programme, Bharat Nirman Programme, National Groundwater Management Improvement Program, Command Area Development and Water Management, Participatory Irrigation Management, Others
- 9. FOCUS ON MICRO IRRIGATION**
 - Size and Growth, Drip and Sprinkler Irrigation, Financing Mechanism, Key Government Initiatives, Key Projects, Key Players, State-wise Potential, Issues and Challenges

SECTION III: CONSTRUCTION OUTLOOK AND OPPORTUNITIES

- 10. CONTRACTING SIZE AND OPPORTUNITIES**
 - Sector Size and Growth
 - Type of Contracts
 - Expected Investments
 - Upcoming Projects

- Opportunities for Contractors
- Issues and Challenges
- Outlook and Projections (till 2021-22)

11. FOCUS ON TUNNEL CONSTRUCTION

- Size and Growth
- Construction Cost
- Key Trends
- Key Completed Projects
- Key Ongoing Projects
- Contractors and Equipment Providers
- Opportunities for TBM Suppliers
- Outlook and Projections (till 2021-22)

12. KEY CONTRACTORS

- Market Structure, Leading Contractors, Recent Contracts

13. EQUIPMENT MARKET

- Size and Growth
- Types of Equipment
- Sourcing Options
- Key Players
- New Innovations and Products
- Demand Projections (till 2022-23)

SECTION IV: PUMPS OUTLOOK AND PROJECTIONS

14. ELECTRIC PUMPS

- Size and Growth
- Type of Pumps
- Key Manufacturers
- Market Projections
- Issues and Concerns
- Segment Outlook

15. SOLAR PUMPS

- Current Status
- Cost-benefit Analysis
- Financing Models
- Key Manufacturers
- Solar Pumping Programme for Irrigation and Drinking Water
- State Government Initiatives
- Market Projections
- Issues and Concerns
- Segment Outlook

SECTION V: PROJECT DATABASE

This section includes the key completed and upcoming irrigation projects with details on implementing agency, project cost, capacity, state, contractor, etc.

SECTION VI: STATE PROFILES

16. PROFILES OF KEY STATES

- Andhra Pradesh (including Telangana), Bihar, Chhattisgarh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Uttar Pradesh, West Bengal, Others

Each state profile covers basic statistics (irrigation potential, surface water, ground water availability etc.), key agencies involved, recently completed projects, ongoing projects, future projects, new initiatives and key achievements.



The report is available in a PDF format.

Current Status and Emerging Trends

Table of Contents

1. EXECUTIVE SUMMARY

SECTION I: MARKET OVERVIEW AND TRENDS

2. BANKING TECHNOLOGY OVERVIEW

- Technology in Banking - Fintech versus Techfin
- IT Spending in India
- Global versus Indian Fintech Market
- Segments and Major Players in the Fintech Market
- Major Fintech Deals and Investments in India
- Current Tech Infrastructure of Banks
 - ATMs and PoS Terminals
 - Mobile and Internet Banking
 - Payments and Clearing Systems
- Growth of Fintech Market and Key Developments
 - Payments and Wallets
 - Alternate Lending
- Key Issues and Challenges

3. APPLICATION AREAS IN FOCUS

- Core Banking
 - Areas and Applications
 - Key Players and Products
 - Initiatives by Major Banks
 - Issues, Outlook and Prospects
- Risk, Identity and Security
 - Areas and Applications: Cybercrime and Fraud, Anti-money Laundering, Identity and Authentication
 - Key Players and Products
 - Initiatives by Major Banks
 - Issues, Outlook and Prospects
- Cloud Computing
 - Key Models: Private, Public and Hybrid, IaaS, SaaS, PaaS
 - Areas and Applications: Data Analytics, Mobility Applications
 - Key Players
 - Initiatives by Major Banks
 - Issues, Outlook and Prospects
- Enterprise Applications
 - Evolution and Trends
 - Major Application Areas: Data Management, Business Intelligence, ERP
 - | Key Players and Products
 - | Outlook and Prospects

4. ISSUES, OUTLOOK AND PROSPECTS

- Growth Drivers for Fintech Adoption
- Policy Developments Impacting Fintech
- Outlook for Fintech Infrastructure (ATMs, PoS, Mobile and Internet Banking, Payments)
- Future Prospects and Outlook for:
 - Blockchain
 - AI and Data Analytics
- Key Issues and Challenges for Fintech

SECTION II: TOP TECHNOLOGY TRENDS FOR THE FUTURE

5. BLOCKCHAIN

- Technology Overview and Evolution
- Major Use Cases in Banking
 - Trade Finance

- Payments
 - Identity, KYC and Anti-money laundering
- Global Developments
- Blockchain Developments in Indian Banking and Finance
- Case Studies and Blockchain Projects
 - International Payments
 - Domestic Payments and Settlements System
 - Trade Finance
- Blockchain Initiatives by Major Indian Banks
- Key Blockchain Players in India
- Key Issues and Challenges
- Outlook and Prospects

6. ARTIFICIAL INTELLIGENCE, DATA ANALYTICS AND ROBOTICS

- Technology Overview and Concepts-AI, Data Analytics and Robotics
- The Categories under AI
 - Business segments: Analytics, NLP, Computer Vision, RPA and Speech Recognition
 - Learning Methods: Machine Learning, Deep Learning
- Investment Trends in AI - Global and in India
- Key Use Cases of AI, Data Analytics and Robotics in Banking
 - Investment- Robo Advisory and Algorithmic Trading
 - Lending and Credit Analysis
 - Fraud Detection and Risk Management
 - Customer Support and CRM
 - Regulatory and Compliance
- Robotics in Banking and Finance
- Case Studies
 - AI- Fraud Detection
 - AI- Data Analytics
 - AI- Investment & Trading
- Key Global and Indian Players and Products
- Initiatives by Leading Indian Banks
- Key Issues and Challenges
- Outlook and Prospects -Global and Indian Market

7. APIS AND OPEN BANKING SYSTEMS

- APIs- Technical Overview and Evolution
- Applications and Uses
- Open Banking - The Origins and Developments
- The Different Models of API Banking
 - Bank Channel
 - App Market
 - Distributor
 - Aggregator
 - Banking as a Platform
- Case Studies in Open Banking
 - CBW-Leveraging APIs
 - Fidor Bank- The Bank as a Platform
 - The Monetary Authority of Singapore(MAS) Initiative
 - Other Cases in Open Banking
- Current Initiatives by Banks and Fintech Players in India
- Key Issues and Challenges
- Opportunities and Prospects for Opening Banking in India



The report is available in a PDF format.

(September 2017) No. of slides: 281

Table of Contents

SECTION I: MARKET ANALYSIS AND OUTLOOK

- 1. OVERVIEW**
- Macroeconomic Trends, Growth in M&A Activity, Overall M&A Trends, Big Ticket Deals, Sector-wise Analysis, Recent Policy and Regulatory Reforms, Valuations and Returns, Issues and Concerns, Outlook
- 2. DEAL ANALYSIS AND TRENDS**
- Current Size, Growth Trends, Sectoral Analysis, Top Deals since 2014
- 3. STRESSED ASSETS**
- Current Scenario, Sector-wise Break-up of Stressed Assets, SDR and S4A Schemes, Recent Companies invoking SDR/S4A, Key Buyers Groups, Issues and Challenges, Projects/Sectors at Risk of Slipping into Stressed Territory
- 4. VALUATIONS TRENDS AND RETURNS**
- Current Valuation Scenario, Key Valuation Trends, Factors Impacting Valuations, Issues and Challenges, Historical Returns, Expected Returns, The Way Forward
- 5. FOCUS ON BUYER/INVESTOR GROUPS**
- Deal Analysis by Buyer Groups, Most Active Investors, Investment Strategies, Exit Strategies, New Funds Launched since 2016 (Infrastructure and Real Estate Focused)
- 6. IMPACT OF KEY POLICY AND REGULATORY CHANGES**
- FDI Norms; Insolvency and Bankruptcy Code, 2016; Issues with Debt Restructuring Schemes; Impact of REITs/InvITs; General Anti Avoidance Rules (GAAR); Sector-specific Policy Changes; Other Recent Regulatory Changes
- 7. FUTURE OUTLOOK**
- Growth Drivers, Outlook for M&A Activity across Sectors, Outlook on Valuations, Expected Split of Buyer Groups, Factors that could inhibit M&As

SECTION II: DEAL TYPE ANALYSIS

- 8. MERGERS AND ACQUISITIONS**
- M&A Concept, Size and Growth, Investment Experience, Sectoral Trends, Focus on Joint Ventures, Valuations Scenario, Key Recent Deals, Outlook and Opportunities
- 9. ACQUISITION BY FINANCIAL INVESTORS**
- Size and Growth, Investment Experience, Sectoral Trends, Valuations Scenario, Historical Returns, Key Recent Deals, Key Deals by ARCs, Outlook and Opportunities
- 10. ASSET SALES**
- Current Scenario, Size and Growth, Investment Experience, Sectoral Trends, Key Recent Deals, Analysis by Buyers, Valuation Scenario, Past Returns, Outlook and Opportunities

SECTION III: SECTORAL ANALYSIS

- 11. ROADS**
- Size and Growth, Key Policy Changes, M&A Landscape and Activity, Analysis of Deals, Outlook and Opportunities
- 12. PORTS**
- Size and Growth, Key Policy Changes, M&A Landscape and Activity, Analysis of Deals, Outlook and Opportunities
- 13. CONVENTIONAL POWER**
- Size and Growth, Key Policy Changes, M&A Landscape and Activity, Analysis of Deals, Outlook and Opportunities
- 14. RENEWABLES**
- Size and Growth, Key Policy Changes, M&A Landscape and Activity, Analysis of Deals, Outlook and Opportunities
- 15. TELECOMMUNICATIONS**
- Size and Growth, Key Policy Changes, M&A Landscape and Activity, Analysis of Deals, Outlook and Opportunities
- 16. OIL AND GAS**
- Size and Growth, New HELP Regime, New Gas Pricing Policy for HPHT and Deepwater Fields, Other Key Policy Changes, M&A Landscape & Activity, Analysis of Deals, Outlook and Opportunities
- 17. URBAN INFRASTRUCTURE**
- Size and Growth, Key Policy Changes, M&A Landscape and Activity, Analysis of Deals, Outlook and Opportunities
- 18. LOGISTICS**
- Size and Growth, Game Changer - GST, Key Growth Drivers, M&A Landscape & Activity, Analysis of Deals, Outlook and Opportunities
- 19. CEMENT AND STEEL**
- Size and Growth, Key Policy Changes, M&A Landscape and Activity, Analysis of Deals, Outlook and Opportunities
- 20. REAL ESTATE**
- Size and Growth, Key Policy Changes, M&A Landscape and Activity, Analysis of Deals, Outlook and Opportunities

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.

SECTION A: EMERGING POWER SCENARIO IN AFRICA

1. CURRENT POWER SCENARIO

- Current Status
- Energy Mix
- Resource Availability and Potential
- Key Issues and Challenges
- Outlook and Opportunities

2. RENEWABLE ENERGY TRENDS AND OUTLOOK

- Size and Growth
- Segment-wise Share
- LCoE Trends
- Inter-country Analysis of Policy and Institutional Framework
- Key Growth Drivers
- Issues and Challenges
- Emerging Opportunities
- Sector Outlook

3. HYDROPOWER

- Overview
- Size and Growth
- Hydropower Targets
- Cost and Tariff Trends
- Key Upcoming Projects
- Market Opportunities
- Key Risks and Challenges
- Outlook and Projections

4. SOLAR POWER

- Size and Growth
- Solar Energy Targets
- Cost and Tariff Trends
- Key Upcoming Projects
- Market Opportunities
- Key Risks and Challenges
- Outlook and Projections

5. WIND POWER

- Overview
- Size and Growth
- Wind Power Targets
- Cost and Tariff Trends
- Key Upcoming Projects
- Market Opportunities
- Key Risks and Challenges
- Outlook and Projections

6. BIOENERGY

- Overview
- Size and Growth
- Bioenergy Targets
- Costs and Expenses
- Key Upcoming Projects
- Market Opportunities
- Key Risks and Challenges
- Outlook and Projections

7. DECENTRALISED OFFGRID RENEWABLES

- Estimated Offgrid Potential
- Emerging Business Models
- Case Studies
- Market Opportunities
- Key Risks and Challenges
- Outlook and Projections

8. INVESTMENT AND FINANCING

- Current Investment Trends
- Funding Sources
- Proposed Investments
- Emerging Financial Instruments
- Mergers and Acquisitions
- Key Risks and Concerns
- Investment Requirements and Outlook

SECTION B: COUNTRY PROFILES

This section has 30 chapters pertaining to the renewable energy scenario and outlook for 30 African countries. These includes Algeria, Angola, Botswana, Cameroon, Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, Guinea, Kenya, Libya, Madagascar, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe.

Each country profile provides information on:

- Economic Scenario and Demography
- Power Demand and Supply Scenario
- Resource-wise Renewable Energy Potential
- Segment-wise Size and Growth (Solar, Wind, Bioenergy, etc.)
- Key Growth Drivers
- Evolving Policy and Regulatory Scenario
- Recent Developments
- Segment-wise Cost and Tariff Trends
- Key Players and Plans
- Segment-wise Targets and Outlook
- Focus on Off-grid Renewables
- Renewable Energy Demand Outlook
- Renewable Energy Investment Outlook



The report is available in a PDF format.

ORDER FORM

Name (Block Letters)
 Designation
 Company
 Mailing Address
 Telephone Mobile
 Fax E-mail

Reports (PDF)	Price (INR)#	Price (USD)	<input checked="" type="checkbox"/>
ENERGY			
Underground Cables Market in India (November 2018)	50,000	1,180	<input type="checkbox"/>
City Gas Distribution Market in India (August 2018)	50,000	1,180	<input type="checkbox"/>
LNG Market in India (August 2018)	50,000	1,180	<input type="checkbox"/>
Waste to Energy (May 2018)	50,000	1,180	<input type="checkbox"/>
Distribution Franchise in India (April 2018)	50,000	1,180	<input type="checkbox"/>
Competitive Bidding for Wind Projects (May 2018)	50,000	1,180	<input type="checkbox"/>
Rooftop Solar Market in India (November 2017)	50,000	1,180	<input type="checkbox"/>
Open-Access for Renewables (October 2017)	50,000	1,180	<input type="checkbox"/>
T&D Equipment Market in India (August 2017)	75,000	1,770	<input type="checkbox"/>
Future of Solar O&M in India (September 2018)	60,000	1,416	<input type="checkbox"/>
Industrial and Commercial Grid Power Market in India (April 2017)	40,000	944	<input type="checkbox"/>
Power Distribution in India (January 2018)	75,000	1,770	<input type="checkbox"/>
Power Transmission in India (March 2018)	75,000	1,770	<input type="checkbox"/>
Captive Power in India (August 2018)	60,000	1,416	<input type="checkbox"/>
Coal-based Power Generation in India (April 2018)	60,000	1,416	<input type="checkbox"/>
Hydro Power in India (September 2017)	60,000	1,416	<input type="checkbox"/>
Gas in India (November 2017)	75,000	1,770	<input type="checkbox"/>
Solar Power in India (May 2017)	60,000	1,416	<input type="checkbox"/>
Wind Power in India (August 2017)	60,000	1,416	<input type="checkbox"/>
Solar Plant Performance in India (January 2018)	60,000	1,416	<input type="checkbox"/>
TRANSPORTATION			
Logistics in India (July 2018)	75,000	1,770	<input type="checkbox"/>
Railways in India (January 2018)	75,000	1,770	<input type="checkbox"/>
Ports in India (March 2018)	75,000	1,770	<input type="checkbox"/>
Dredging in India (October 2018)	60,000	1,416	<input type="checkbox"/>
Freight Market in India (October 2017)	60,000	1,416	<input type="checkbox"/>
Storage Infrastructure in India (October 2017)	60,000	1,416	<input type="checkbox"/>
Airports in India (June 2018)	75,000	1,770	<input type="checkbox"/>
Road Development in India (January 2018)	100,000	2,360	<input type="checkbox"/>
Urban Rail in India (April 2018)	60,000	1,416	<input type="checkbox"/>
Clean Bus Market in India: Hybrid, Electric, Gas-Based (May 2018)	50,000	1,180	<input type="checkbox"/>
Container Market in India (June 2017)	60,000	1,416	<input type="checkbox"/>
CONSTRUCTION & MINING			
Construction in India 2017 (March 2017)	75,000	1,770	<input type="checkbox"/>
Construction Materials Market (July 2016)	60,000	1,416	<input type="checkbox"/>
Tunnelling in India (August 2017)	100,000	2,360	<input type="checkbox"/>
Mining Equipment Market (May 2018)	75,000	1,770	<input type="checkbox"/>
URBAN INFRASTRUCTURE			
Affordable Housing in India (October 2018)	75,000	1,770	<input type="checkbox"/>
Smart Cities in India (February 2018)	75,000	1,770	<input type="checkbox"/>
Municipal Solid Waste in India (April 2017)	50,000	1,180	<input type="checkbox"/>
Sewage Treatment Market in India (August 2018)	50,000	1,180	<input type="checkbox"/>
Real Estate in India (May 2017)	60,000	1,416	<input type="checkbox"/>
TELECOM			
Optic Fibre Cable Market in India (April 2018)	50,000	1,180	<input type="checkbox"/>
MULTI-SECTOR			
Infrastructure Projects in Pipeline (October 2017)	75,000	1,770	<input type="checkbox"/>
Investment and Market Opportunities in African Infrastructure (November 2018)	100,000	2,100	<input type="checkbox"/>
Investment and Market Opportunities in Southeast Asian Infrastructure (December 2017)	100,000	2,360	<input type="checkbox"/>
Indian Defence Industry (January 2018)	75,000	1,770	<input type="checkbox"/>
Healthcare Market in India (October 2018)	75,000	1,770	<input type="checkbox"/>
Investment Experience and Opportunities in Infrastructure (February 2017)	75,000	1,770	<input type="checkbox"/>
Irrigation Market in India (April 2017)	50,000	1,180	<input type="checkbox"/>
Banking Technology in India (September 2018)	80,000	1,888	<input type="checkbox"/>
Mergers and Acquisitions in Infrastructure and Real Estate 2017 (September 2017)	100,000	2,360	<input type="checkbox"/>
Renewable Energy Development in Africa (April 2018)	200,000	3,200	<input type="checkbox"/>

Total

INR

USD

Weekly Newsletters

India Infrastructure Publishing brings out weekly newsletters that cover the latest developments in infrastructure sectors such as power, oil & gas, infrastructure finance, ports & shipping, roads & bridges, urban water & sanitation, telecom and aviation.

These newsletters are sent every Monday morning via e-mail or fax to provide subscribers with accurate, reliable, up-to-date and comprehensive information on the key developments in these sectors during the previous week.

This service is indispensable for anyone involved with the infrastructure sectors: **developers/operators of infrastructure projects (public or private sector), regulators, policymakers, financiers, bankers, consultants, legal specialists, equity analysts, contractors, equipment manufacturers, service providers, etc.**

The newsletters offered and their primary focus areas are:

Power News

Power News covers the latest developments in the Indian power sector across all key segments – generation, transmission and distribution. The focus areas of this newsletter are government policy, project updates, legal and regulatory developments, contracts and orders, corporate news, financings and reform/restructuring developments.

Oil & Gas News

Oil & Gas News covers the latest developments in the Indian oil and gas sector in the upstream, midstream and downstream segments. The focus areas of this newsletter are developments in policy, exploration and production, downstream, LNG, transportation and finance. It covers news related to investments, contracts and orders, legal and regulatory affairs and corporate developments.

Telecom News

Telecom News covers the latest developments in the Indian telecom sector across all segments – fixed, wireless, broadband, long distance, satellite-based services, etc. The focus areas of this newsletter are government policy, legal and regulatory developments, contracts and orders, corporate news, sales promotion news, and new product/service introductions.

Ports & Shipping News

Ports & Shipping News covers the latest developments in the Indian ports and shipping sector. The focus areas of this newsletter are policy, deals, investments, contracts, plans, financings, projects, tariffs and other regulatory developments. It covers news related to major and minor ports, Indian and foreign shipping lines as well as related segments and sectors like rail connections, containers, etc.

Roads & Bridges News

Roads & Bridges News covers the latest developments in the Indian roads and bridges sector. Its scope includes national, state and key local projects. The focus areas of this newsletter are project updates, government plans and initiatives, contracts and orders, corporate news, financings, concessions and other agreements.

Infrastructure Finance News

Infrastructure Finance News covers the latest developments in the area of infrastructure finance. The focus areas of this newsletter are policy, equity moves, debt/bond issues, mergers and acquisitions, loans and credit, credit ratings, primary and public issues, joint ventures/agreements and financial results. The sectors covered include power, telecom, oil & gas, ports & shipping, roads & bridges, aviation, railways, urban infrastructure, water and housing. The lending institutions covered include financial institutions, nationalised banks, private banks, foreign banks, multilateral institutions and bilateral funding agencies.

Aviation News

Aviation News covers the latest developments in the Indian aviation sector. It covers both the airline and airport segments. The primary focus areas of this newsletter are infrastructure development, policy, investment, contracts and orders, privatisation and modernisation initiatives, promotional offers, financing and key statistics.

Urban Water & Sanitation News

Urban Water and Sanitation News covers policies, regulations, projects, finance, service providers, sanitation, and international news in the urban water development and sanitation sector. The newsletter will include a brief write-up on trends, project developments, key concepts, city profiles, relevant data, etc.

Each newsletter is priced at Rs 24,780 (Rs 21,000 plus GST @ 18%) per year . There are package rates available for subscribing to more than one newsletter.

ORDER FORM

Newsletters

- | | | | |
|-------------------------|--------------------------|---------------------------------|--------------------------|
| ❖ Oil & Gas News | <input type="checkbox"/> | ❖ Telecom News | <input type="checkbox"/> |
| ❖ Ports & Shipping News | <input type="checkbox"/> | ❖ Infrastructure Finance News | <input type="checkbox"/> |
| ❖ Power News | <input type="checkbox"/> | ❖ Aviation News | <input type="checkbox"/> |
| ❖ Roads & Bridges News | <input type="checkbox"/> | ❖ Urban Water & Sanitation News | <input type="checkbox"/> |

Annual Package	Price (INR)#	Price (USD)	<input checked="" type="checkbox"/>
Any 1	21,000	450	<input type="checkbox"/>
Any 2	40,000	850	<input type="checkbox"/>
Any 3	57,000	1,200	<input type="checkbox"/>
Any 4	74,000	1,550	<input type="checkbox"/>
Any 5	88,000	1,850	<input type="checkbox"/>
Any 6	1,02,000	2,150	<input type="checkbox"/>
Any 7	1,15,000	2,400	<input type="checkbox"/>
All 8	1,28,000	2,650	<input type="checkbox"/>

Please check the newsletters you would like to subscribe to.
* 18 per cent GST is applicable

Total (Reports + Newsletters)

INR

USD

I am enclosing Rs. _____, vide cheque/demand draft no. _____ drawn on
_____ dated _____ in favour of "India Infrastructure Publishing Pvt. Ltd."

Signature

Payment Options

Wire transfer details

Beneficiary : India Infrastructure Publishing Pvt. Ltd.
Bank Name : The Hongkong and Shanghai Banking Corporation Ltd
Address : R-47, Greater Kailash-1, New Delhi-110048
Account No. : 094179587002
Swift Code : HSBCINBB
IFSC Code : HSBC0110006

Contact Details

India Infrastructure Publishing Pvt. Ltd.

B-17, Qutab Institutional Area,
New Delhi – 110016, India
Tel: 91-11-41034600, 41034601
Fax: 91-11-26531196
Email: reports@indiainfrastructure.com

To buy online please visit www.indiainfrastructure.com

CUSTOM RESEARCH

India Infrastructure Research now offers custom research solutions.

Our core research team comprises over 30 highly qualified full-time professionals with masters or higher degrees in various fields such as economics, engineering and business. Our extended team includes a network of senior industry experts who support the core team on an as-needed basis. The team is headed by a senior professional with two decades of industry experience with international and national organisations.

We have an in-house archive of sector information and data on projects and companies spanning the last decade and a half. Our extensive knowledge and information base relating to the infrastructure sectors ensures greater insight, faster delivery time and competitive cost.

We accept assignments that do not conflict with our obligations as a publisher of industry magazines or involve competitive intelligence.

For more information on how **India Infrastructure Research** can provide customised solutions for your research needs, please contact:

Atika Wadhwa

Director

B-17, Qutab Institutional Area

New Delhi 110016

Phone: 91-11-46560419 (D), 91-11-4103 4600/01 (B)

Fax: 91-11-2653 1196

Email: atika.wadhwa@indiainfrastructure.com

India Infrastructure Research

B-17, Qutab Institutional Area, New Delhi 110016

Phone: +91-11-4103 4600-01 Fax: +91-11-2653 1196

Email: reports@indiainfrastructure.com

www.indiainfrastructure.com