



Catalogue of Research Reports on Infrastructure Sectors

April 2022

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

Power Transmission in India 2022	5
Update on Charging Infrastructure for Electric Vehicles 2022	6
Update on Green Hydrogen Market in India 2022	7
Power Distribution in India 2022	8
Power Market in South Asia 2021	9
India's Renewable Energy Outlook 2021	10
City Gas Distribution Market in India 2021	11
Captive Power in India 2021	12
Solar Power in Africa 2021	13
Bangladesh Power Market 2020	14
Operational and Financial Performance of Discoms 2020	15
Solar Power Market in India (2020-2030)	16
Small-scale LNG Market 2020	17
Commercial and Industrial Solar Market in India 2020	18
Coal-Based Power Generation in India 2020	19
Hydro Power Market in India 2020	20
Electricity Tariff Trends in India 2019	21
Cost of Power for Discoms and Industrial Users 2019	22
Wind-Solar Hybrid Market in India 2019	23
Floating and Canal-based Solar PV Market in India 2019	24
T&D Equipment Market Projections in India 2019	25
Rooftop Solar in India 2019	26
Open-Access for Renewables 2018	27
Underground Cables Market in India 2018	28
Future of Solar O&M in India 2018	29
Waste to Energy 2018	30
Competitive Bidding for Wind Projects 2018	31
Renewable Energy Development in Africa 2018	32
Distribution Franchise in India 2018	33
Solar Plant Performance in India 2017-18	34

TRANSPORTATION

Ports in India 2022	35
Urban Rail Market in India 2022	36
Airports in India 2022	37
Railways in India 2022	38
Road Development in India 2021-22	39
Logistics in India 2021	40
Container Market in India 2021	41
Storage Infrastructure in India 2020	42
Dredging in India 2018	43
Clean Bus Market in India: Hybrid, Electric, Gas-Based 2018	44

CONSTRUCTION & MINING

Mining in India 2022	45
Tunnelling in India 2022	46
Construction in India 2021-22	47
Mining Equipment Market 2020	48

URBAN INFRASTRUCTURE

Water in India 2022	49
Affordable Housing Market in India 2022	50
Desalination Market in India 2021	51
Sewage Treatment Market in India 2021	52
Wastewater Treatment and Reuse Market in India 2020	53
Municipal Solid Waste Market in India 2020	54
Smart Cities in India 2020	55

TELECOM

Small Cell Market in India 2021	56
Optic Fibre Cable Market in India 2021	57
Telecom Tower Infrastructure in India 2020	58

MULTI-SECTOR

Foreign Investments in Indian Infrastructure	59
Opportunities in Defence Manufacturing in India 2021	60
Investment and Market Opportunities in Africa 2021-22	61
Irrigation in India 2020	62
Infrastructure Investment and Market Opportunities in Southeast Asia 2020	63
Banking Technology in India 2018	64

NEWSLETTERS

ORDER FORM

EXECUTIVE SUMMARY

SECTION I: SECTOR ANALYSIS, OPPORTUNITIES AND OUTLOOK

1. SECTOR SIZE AND GROWTH

- Growth in Transmission Line Length
- Growth in Transmission Transformer Capacity
- Trends in Substation Additions
- Growth in Interregional Transfer Capacity
- Growth in Total Transfer Capacity
- Trends in Network Reliability
- Capex and Investments

2. UPCOMING PROJECT PIPELINE

- Under construction projects; Under bidding projects; Proposed/Announced projects; Market Opportunities for; Project Developers; Investors; EPC Contractors; Equipment Providers

3. NETWORK GROWTH AND INVESTMENT OUTLOOK

- Growth Drivers; Projected Line Length; Projected Transformer Capacity; Projected Substation Additions; Expansion in Interregional Transfer Capacity; Investment Projections; Issues and Concerns

4. TBCB EXPERIENCE AND OPPORTUNITIES

- Private Participation Trends (Interstate and Intrastate)
- Status of Projects Awarded through TBCB
- Projects Under Bidding
- Future Project Pipeline (Interstate and Intrastate)
- Issues and Concerns

5. TRANSMISSION INFRASTRUCTURE FOR RE

- Trends in RE Growth
- Expected Penetration of Renewables
- Green Energy Corridors I and II
- Transmission Scheme for RE Zones
- Upcoming Projects for RE Evacuation (RTM, TBCB)
- Reactive Compensation
- Issues in RE Integration

6. REGIONAL GRID INTERCONNECTIONS

- Overview
- Current cross-border transmission links
- Planned transmission links
- Issues and challenges

7. EQUIPMENT DEMAND PROJECTIONS (2025-26)

- Technology Trends
- Projected Requirements: Conductors; Towers; Insulators; Transformers; Switchgear; Reactors

SECTION II: KEY DEVELOPMENTS, POLICY AND REGULATORY LANDSCAPE

8. KEY RECENT DEVELOPMENTS

- Key Commissioned Projects; Projects Awarded in last 12 months; Recent M&A Deals; Recent Financings and InVits; Asset Monetisation Pipeline; One Sun, One World, One Grid Initiative; Cross Border Trading on Exchanges; New Technology Initiatives (including BESS)

9. POLICY AND REGULATORY INITIATIVES

- Latest TBCB guidelines and SBDs
- MoP notice on 33 kV network under transmission
- MoP Paper on MBED
- ISTS Charges and Losses Waiver for RE
- Draft NEP 2021

- MoP order on TBCB in intra-state projects
- CTU and Powergrid division and demerger
- Equipment testing order
- CERC Procedure in Grant of connectivity to RE projects to ISTS
- CERC Power Market Regulations 2021
- CERC Sharing of ISTS Charges and Losses Regulations, 2020
- MoP Amendments in Charging Infra Guidelines
- CEA transformer testing guidelines
- General Network Access
- CERC Draft Ancillary Services Regulations, 2021
- MoP Designated Authority Procedure 2021

10. TRANSMISSION TARIFFS

- Interstate Transmission Tariffs
- Intra-state Transmission Tariff (Long-Term and STOA)
- SLDC Charges

SECTION III: STATE TRANSCO PERFORMANCE ANALYSIS

11. NETWORK SIZE AND OPERATIONAL PERFORMANCE

- Transmission Line Length; Substation Capacity; Number of substations; Transmission Losses; System Availability

12. FINANCIAL PERFORMANCE

- Revenues; Expenditure; O&M Costs; Net Profit/Loss; Capex

13. FUTURE TARGETS AND CAPEX PLANS

- Network Addition Plans; Planned Investments

SECTION IV: KEY PLAYER PROFILES

14. CENTRAL SECTOR PLAYERS

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

15. 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; Odisha Power Transmission Corporation Limited; West Bengal State Electricity Transmission Company Limited; Punjab State Transmission Corporation Limited; Chhattisgarh State Power Transmission Company Limited; Kerala State Electricity Board Limited; Bihar State Power Transmission Company Limited; Assam Electricity Grid Corporation Limited; Himachal Pradesh Power Transmission Corporation Limited; Jharkhand UrjaSancharan Nigam Limited; Jammu and Kashmir Power Development Department; Power Transmission Corporation of Uttarakhand Limited; Meghalaya Power Transmission Corporation Limited; Delhi Transco Limited; Tripura State Electricity Corporation Limited

16. PRIVATE NETWORK DEVELOPERS AND OPERATORS

- Adani Transmission Limited; Sterlite Power Transmission Limited; IndiGrid InVIT; Apraava Energy; Sekura Energy; Essel Infraprojects; Essar Power Transmission; L&T Infrastructure Development Projects; Others

The report is available in a PDF format.

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>2. CHARGING INFRASTRUCTURE ECOSYSTEM</p> <ul style="list-style-type: none"> - Market Overview - Captive and Public Charging Landscape - Potential Growth Drivers - Emerging Business Models <ul style="list-style-type: none"> • Led by Urban Local Bodies/ Public Transport Corporations • Public Private Partnerships • Anchored by Discoms • Facilitated by Transport Aggregators or Corporates • Owned by Charge Point Developers - Recent Tenders - Key Developments - Key Barriers - Critical Enablers <p>3. POLICY AND REGULATORY REGIME</p> <ul style="list-style-type: none"> - Government Targets and Roadmap - Union Budget Highlights 2022-23 - Progress under FAME II - Updates to Charging Station Guidelines - Fiscal and Non-Fiscal Incentives - State-wise Policies and Programmes - Evolving Standards Framework - Insights from Policy Makers Municipal Bodies - Insights from Municipal Bodies <p>4. TECHNOLOGY TRENDS</p> <ul style="list-style-type: none"> - Types of Chargers <ul style="list-style-type: none"> • Slow, Fast and Ultra-Fast • AC and DC Chargers - Comparison of Charger Types - Network Management Software - Ongoing Advancements <ul style="list-style-type: none"> • Interoperability and Roaming • Smart Charging • V2G Capabilities • Wireless Charging <p>5. COSTS AND TARIFFS</p> <ul style="list-style-type: none"> - Charging Tariff Guidelines - State Tariff Regulations - Cost Structure of Charging Stations - Viability Assessment - Strategic Way Ahead for Key Market Players 	<p>6. DISCOM-WISE PROGRAMS AND PLANS</p> <ul style="list-style-type: none"> - Discom-Level Initiatives - Impact on Grid - Renewable Energy Integration - Emerging Opportunity for Discoms - Case Studies <ul style="list-style-type: none"> • BSES • MSEDCL • BESCOM • KSEB <p>7. PROJECTIONS AND OUTLOOK (Till 2030)</p> <ul style="list-style-type: none"> - EV Sales Forecast - Power Demand Forecast - Charging Station Demand Forecast <ul style="list-style-type: none"> • Home Charging • Captive Charging • Public Charging • Battery Swapping - Future Outlook <p>8. CHARGING INFRASTRUCTURE DEVELOPERS</p> <ul style="list-style-type: none"> - Volttic - Exicom - Tata Power - Magenta Power - Fortum - NTPC - ChargeZone - BluSmart - CPO Aggregator Platforms <p>9. OTHER STAKEHOLDERS AND THEIR PLANS</p> <ul style="list-style-type: none"> - Governments and Their Agencies - City Level Authorities - Public Sector Undertakings - Automobile Manufacturers - Corporate Establishments - Charging Infrastructure Developers
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Table of Contents

SUMMARY AND KEY INSIGHTS

1. MARKET SIZE AND EMERGING LANDSCAPE

- Current Status and Market Size
- Types of Hydrogen – Grey, Blue and Green
- Market Dynamics
 - Drivers
 - Roadblocks
 - Opportunities
- Future Addressable Market

2. POLICY FRAMEWORK AND ROADMAP

- Timeline of Key Government Initiatives
- National Hydrogen Energy Roadmap (2006)
- National Hydrogen Mission
- DST's Hydrogen and Fuel Cell Program and Ongoing Projects
- Global Benchmarking of National Green Hydrogen Policies
- Required Policy and Regulatory Interventions

3. MAJOR PLAYERS, RECENT TENDERS AND UPCOMING PROJECTS ...

- Recent Tenders
- Plans of Key Players
 - NTPC Limited
 - Reliance Industries Limited
 - Adani Group
 - ACME
 - Ohmium
 - Greenko
 - Biezel Green Energy
 - IOCL
 - GAIL
 - BPCL
 - Mahindra & Mahindra
 - Tata Motors
 - Other Key Players and Developments
- Projects and Case Studies

4. TECHNOLOGY TRENDS

- Types of Electrolysers
 - Proton Exchange Membrane
 - Alkaline Electrolysers
 - Others
- Hydrogen Storage and Safety
- Hydrogen Transportation and Utilisation
- Applicable Codes and Standards
- Key Domestic Technology Providers

5. USE CASES AND APPLICATIONS

- Power
- Grid Stability and Management
- Opportunities for Utilities
- Industries
- Transport

6. FOCUS ON FUEL CELLS

- Fuel Cell Technology
- Benefits of Fuel Cell Vehicles over EVs
- Government Incentives and Policies
- Uptake in India

7. EMERGING COSTS AND FINANCING REQUIREMENTS

- Cost of Production
- Cost Reduction Strategies
- Cost Trends in India
- Emerging Financing Options

8. KEY INSIGHTS FROM GLOBAL MARKET

- Global Uptake Trends
- Recent Developments and Global Alliances
- Country-wise Targets and Initiatives
- Noteworthy Projects and Upcoming Investments

9. FUTURE OUTLOOK (Till 2070)

- Potential Business Models
- Early and Late Adopters
- Estimated Demand Analysis – Case Study
- Short-, Medium-, and Long-Term Outlook
- Required Renewable Energy Capacity
- The Way Forward

10. INDUSTRY INSIGHTS

- Akshay Bhardwaj, ACME Cleantech Solutions
- ParitoshGarga, IIFCL
- Kapil Maheshwari, Reliance Industries
- Parveen Nanda, Greenko Group
- D.M.R. Panda, NTPC Limited
- Dipesh Pherwani, Ministry of New and Renewable Energy
- Chintan Shah, IREDA
- Arul Shanmugasundaram, Ayana Power

The report is available in a PDF format.

Table of Contents

EXECUTIVE SUMMARY

SECTION I: SECTOR ANALYSIS, KEY DEVELOPMENTS, PROGRAMME UPDATES AND OUTLOOK

1. SECTOR SIZE AND GROWTH

- Power Demand and Supply; Growth in Distribution Line Network; Growth in Distribution Transformer Capacity; Substation Additions; Energy Sales Trends; Consumer Growth; Billing & Collection Efficiency; AT&C Losses; Smart Metering; System Reliability Indices; Discom Financial Performance; Profitability and Revenue Gap; Issues and Concerns

2. RECENT POLICY AND REGULATORY DEVELOPMENTS

- UT Discom Privatisation updates; Draft National Electricity Policy, 2021; Revamped Distribution Sector Scheme; Electricity Amendments Bill 2021; APTEL order on RE power curtailment; Market-Based Economic Dispatch Framework; Electricity Rights of Consumer Rules; Updates under Liquidity Infusion Scheme; Discom audit norms; Approval to exit from old PPAs; Timely Recovery of Costs due to Change in Law Rules

3. PROGRESS UNDER KEY GOVERNMENT PROGRAMMES

- Revamped Distribution Sector Scheme; Integrated Power Development Scheme; Deendayal Upadhyaya Gram Jyoti Yojana; Smart Meter National Programme; National Smart Grid Mission; Others

(Each programme will cover the scheme's targets, components, timelines, outlay, physical & financial progress till date, issues and challenges, etc.)

4. OUTLOOK AND KEY PROJECTIONS (2021-22 to 2026-27)

- Projected Network Growth (Line length and Substations); Projected Distribution Transformer Capacity Additions; Projected Metering Requirements; Outlook for Costs; Outlook for Tariffs; Projected Investments

5. OUTLOOK FOR FINANCES (Till 2026-27)

- Projected Outlook for Costs; Tariff Outlook; Projected Discom Losses; Projected Investments; Issues and Concerns

SECTION II: INTER-DISCOM COMPARISON (2016-17 to 2020-21)

6. INTER-DISCOM COMPARISON

- Consumer Base; Energy Sales; Line Length; Transformer Capacity; AT&C Losses; Net Profits; ACS-ARR Gap; Power Purchase Costs; Metering Coverage; Reliability Indices

7. OPERATIONAL PERFORMANCE

- Billing Efficiency; Collection Efficiency; AT&C Losses; Outages; SAIDI & SAIFI Indices; Issues and concerns; Way Forward

8. FINANCIAL PERFORMANCE

- Utility-wise Revenues; Utility-wise Goss Profits; Utility-wise Net Profits; ACS-ARR Gap; Outstanding Debt of Discoms; Outstanding Discom Dues; Subsidies Booked vs Received; Key Ratios

SECTION III: POWER PROCUREMENT, COST, TARIFFS AND EXPENDITURE ANALYSIS (2016-17 to 2020-21)

9. EXPENDITURE ANALYSIS

- Year-wise aggregate expenditure trend; Utility-wise aggregate expenditure trend; Cost Break-up of Utilities; Trend in Power Purchase Costs; Trend in O&M Costs; Trends in Utility-wise O&M Costs; O&M Costs Break-up

10. TRENDS IN DISCOM POWER PROCUREMENT

- Trend in long-term power procurement; Pilot Scheme I and II; Exchange-based Power Procurement – DAM, TAM, RTM, GTAM; Issues and Concerns; Outlook

11. CAPITAL EXPENDITURE

- Trends in Year-wise Capex; Discom-wise Capex Trends; Key Capex Components; Planned Capex and Proposed Break-up; Capex Break-up of Major Discoms

12. POWER PURCHASE COSTS

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

13. TARIFF TRENDS

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

SECTION IV: DISCOM PROFILES

PUBLIC AND PRIVATE UTILITIES BY STATE

- Andhra Pradesh (APSPDCL, APEPDCL, APCPDCL); Assam (APDCL); Bihar (NBPDC, SBPDCL); Chhattisgarh (CSPDCL); Delhi (BSES Rajdhani, BSES Yamuna, Tata Power Delhi Distribution Limited); Gujarat (PGVCL, UGVCL, MGVCL, DGVCL, Torrent Power); Goa (Goa PD); Haryana (UHBVN, DHBVN); Himachal Pradesh (HPSEB Limited); Jharkhand (JBVNL); Karnataka (BESCOM, HESCOM, GESCOM, CESCO, MESCOM); Kerala (KSEB Limited); Madhya Pradesh (MP Paschim, MP Poorv, MP Madhya); Maharashtra (MSEDCL, Adani Electricity Mumbai, Tata Power, BEST); Manipur (MSPDCL); Meghalaya (MePDCL); Odisha (Tata Power Central, TP Northern, TP Southern, TP Western); Punjab (PSPCL); Rajasthan (Jaipur discom, Ajmer discom, Jodhpur discom); Sikkim (Sikkim PD); Tamil Nadu (TANGEDCO); Telangana (TSNPDCL, TSPDCL); Tripura (TSECL); Uttarakhand (UPCL); Uttar Pradesh (DVVNL, PVNVL, PuVVNL, MVVNL, KESCO, NPCL); West Bengal (WBSEDCL, CESC Limited, India Power)
- OTHERS: Union Territory Power Departments; Operational Distribution Franchisees

Each Profile would cover the following:

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

Excel Data Set

- Per Capita Consumption of States; Power demand-supply scenario
- Update on Government Schemes: IPDS; DDUGJY; SMNP; Others
- Operational and Financial Performance of Discoms: AT&C Losses; PAT; ACC-ARR Gap
- Smart Metering Progress
- Purchases by Discoms on Power Exchanges

The report will be available in a PDF format.

1. EXECUTIVE SUMMARY

SECTION I: ANALYSIS, GROWTH DRIVERS AND OUTLOOK

2. POWER MARKET SNAPSHOT AND OVERVIEW

- GDP Growth Rates
- Power Generation and Consumption Trends
- Electricity Coverage
- Recent Developments
- Growth Drivers
- Issues and Challenges
- Future Outlook

3. POLICY AND REGULATORY FRAMEWORK

- Institutional Framework
- Key Power Sector Policies and Regulations
- Policy Outlook

4. IMPACT OF COVID ON POWER SECTOR

- Overall Impact on the Region
- Impact on Power Demand-Supply and Projects
- Country-wise Forecasts for Economic Growth
- Country-wise Power Market Outlook
- Policy Response and Mitigation Strategies

5. COSTS AND TARIFFS

- Trend in Generation Costs
- Trend in Power Purchase Costs
- Electricity Tariff Trends
- Future Outlook

6. FINANCING AND INVESTMENT TRENDS

- Key Funding Sources and Requirements, Impact of Covid-19 on Financing Landscape, Recent Financing Trends, Potential for Private Participation, Focus on foreign participation, Key Recent Financings, Investment Requirements, Risks and Challenges, Project IRRs, Investment Outlook

7. FUTURE OUTLOOK AND PROJECTIONS

- Power Demand Outlook
- Investment Projections
- Fuel Outlook
- Power Trading Outlook
- Projected Generation Capacity Addition
- Projected T&D Network Addition
- Issues and Concerns

8. PROJECT PIPELINE AND MARKET OPPORTUNITIES

- Overall Project Pipeline
- Project Pipeline Assessment: Country, Stage, Sector
- Top Upcoming Projects
- Market Opportunities

9. GENERATION PROJECTS WITH BILATERAL CO-OPERATION

- Growth Drivers and Benefits
- Existing Projects
- Proposed/Under-Construction Projects

10. CROSS-BORDER TRANSMISSION INTERCONNECTIONS

- Key Growth Drivers
- Existing Cross-border Interconnections
- Proposed Interconnections
- One Sun One World One Grid Initiative
- Issues and Challenges
- Future Outlook

SECTION II: SEGMENT ANALYSIS, GROWTH TRENDS, UPCOMING PROJECTS AND OPPORTUNITIES

11. CONVENTIONAL ELECTRICITY GENERATION

- Size and growth
- Power Generation Trends
- Power Sector Fuel-mix
- Trend in Fuel Consumption
- Key Trends and Developments
- Key Under-construction Projects
- Key Upcoming Projects
- Future Outlook
- Market Opportunities
- Issues and Challenges

12. GENERATION - RENEWABLES

- Intended Nationally Determined Contributions (INDC) Targets, Renewable Potential, Analysis by Segment, Emerging Trends and Developments, Upcoming Projects, Plans and Targets, Outlook and Projections, Market Opportunities, Issues and Challenges

13. TRANSMISSION

- Network Size and Growth
- Grid Reliability
- Recent Developments
- Key Completed Projects
- Investment Requirements
- Key Upcoming Transmission Projects
- Market Opportunities
- Outlook and Projections
- Issues and Challenges

14. DISTRIBUTION

- Network Size and Growth, Trend in System Losses, Consumer Mix and Energy Sales, Recent Significant Developments, Smart Metering, Key Ongoing Projects, Discom Finances and Accounts Receivables, Market Opportunities, Outlook and Projections, Issues and Challenges

15. ELECTRICITY TRADING

- Growth Drivers
- Benefits of CBET
- Current Status of CBET
- South Asian Regional Power Exchange
- Policy and Regulatory Scenario
- Risks and Challenges
- Way Forward

SECTION III: COUNTRY PROFILES

- Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka

Each country profile will cover:

- Macroeconomic Scenario
- Institutional Structure
- Power Generation and Consumption
- Electricity Coverage
- Existing Infrastructure (Generation, Transmission and Distribution)
- Power Sector Fuel-mix
- Fuel Consumption
- Operational & Financial Performance of T&D segment
- Power Trading
- Power Import
- Capacity Addition Plans and Targets

The report is available in a PDF format.

Table of Contents

SUMMARY AND KEY INSIGHTS**1. STATE OF THE SECTOR AND RECENT DEVELOPMENTS**

- Segment-wise Annual Growth Trends
- State-wise Potential and Growth Trends
- Emerging Energy Mix
- Key Recent Developments
 - Policy and Regulatory
 - New Tender Designs
 - Latest Tenders Results
 - Winning Tariff Trend
- Annual Capacity Addition Targets and Achievements, by Segment

2. IMPACT OF COVID-19

- Timeline of Key Events
- Impact on Tender Timelines and Targets
- Impact on Project Development
- Impact on Supply Chain and O&M
- Covid-19-related Relief Measures

3. TENDER PIPELINE

(This highlights the tender conditions and expected outcome)

- Overview
- Solar Power
 - SECI Tender for Solar Power in Rajasthan - 1.8 GW
 - NTPC Tender for Solar Power - 1 GW
 - NTPC's EPC Tender for Solar Power - 1.2 GW
 - NTPC's EPC Tender for Solar Power - 735 MW
 - MSEDCL Tender for Solar Power - 1.3 GW
 - GUVNL Tender for Solar Power - 700 MW
- Wind, Hybrids and RTC
 - SECI Tender for Wind Power - 1.2 GW
 - SECI Tender for Wind-Solar Hybrid Power - 1.2 GW
 - SECI Tender for Round-The-Clock Power - 2.5 GW
 - NTPC Tender for Wind-Solar Hybrid Power- 600 MW
- Announced Projects

4. NEW AND EMERGING GROWTH SEGMENTS

(This covers estimated potential, key commissioned projects, economic viability, recent tenders, upcoming tenders, policy support, key issues, and outlook)

- Solar-Wind Hybrids
- Round-the-Clock Power
- Energy Storage
- Corporate PPAs
- Green Hydrogen
- Floating Solar
- Offshore Wind

5. TARIFF PROJECTIONS AND OUTLOOK (2021, 2025, 2030)

- Tariff Comparison with Conventional sources
- Tariff Projections
- Cost Projections
- Return Analysis and Outlook

6. CAPACITY PROJECTIONS AND OUTLOOK (2021, 2025 and 2030)

- Power Demand Projections
- Total Capacity Requirement Projections
- Segment-wise Share in Capacity Mix
- State-wise Projected Capacity
 - Low Growth Scenario
 - Medium Growth Scenario
 - High Growth Scenario

7. GENERATION PROJECTIONS AND OUTLOOK (2021, 2025 and 2030) ..

- Key Factors Impacting Generation
- Generation Requirement Projections
- Segment-wise Share in Generation Mix
- State-wise Generation
 - Low Growth Scenario
 - Medium Growth Scenario
 - High Growth Scenario

8. KEY SECTOR RISKS AND CHALLENGES

- Contractual Issues
- Poor Discom Health
- Policy Uncertainty
- Land Constraints
- Grid Integration Issues
- Difficulty in Accessing Low-Cost Finance
- The Way Forward

The report is available in a PDF format.

KEY INSIGHTS AND THE ROAD AHEAD

SECTION I: MARKET ANALYSIS, COVID-19 IMPACT ASSESSMENT, UPCOMING NETWORKS AND PROJECTIONS

1. OVERVIEW AND KEY TRENDS

- Growth in the Past Five Years; Key Consumer Segments; Notable Developments; Recent Authorisations (in the past 15 to 18 months); Government Initiatives in the Light of Covid-19; Union Budget 2021-22: Key Announcements and Expected Impact; Issues and Challenges; MWP Targets; Investment Requirements (Till 2025-26); Future Outlook

2. CNG NETWORK - SIZE AND GROWTH

- Growth in the Last Five Years: By State; Operator; Trends in CNG Sales; CNG Network Added in New GAs; MWP Targets & Achievements under Rounds 9 & 10; New CNG stations to be added

3. PNG NETWORK - SIZE AND GROWTH

- Growth in the Last Five Years: By State; Operator; Consumer Mix (Industrial, Commercial and Domestic); PNG Connections Added in New GAs; MWP Targets & Achievements under Rounds 9 and 10; New PNG Connections to be added

4. IMPACT OF COVID-19 ON OPERATIONS, NETWORK ADDITION AND CAPEX PLANS

- Impact on Operations (CNG and PNG); Impact on Revenue (CNG and PNG); Impact on MWP Targets and Achievements; Impact on: Ongoing/Under Construction GAs; New GAs Awarded; New Bidding Round Announcements; Impact on: Revenue and Gas Sales; CNG and PNG Network Additions; Planned Capex; Invocation of Force Majeure; Impact on Supply Chain and Labour; Estimated Time and Cost Overruns; Revival Strategies and Relief Measures

5. RECENT REGULATORY DEVELOPMENTS

- New Open Access Norms: Salient Features and Expected Impact; New Guidelines on Determination of Transportation Rate for CGD Networks; New Unified Tariff Policy: Impact on CGD players and Challenges in Implementation; Easing of LNG Distribution and Regulation; Recent Amendments in Technical Standards and Access Code; Indian Gas Exchange: Key Benefits to CGD Players; New Force Majeure Guidelines and Time Extensions; Other Regulatory Developments

6. FUTURE OUTLOOK AND KEY PROJECTIONS (Till 2025-26)

- Growth Drivers; MWP Targets; Projected Network Addition: CNG Stations; PNG Connections (Industrial and Domestic); Gas Demand Projections for Operational and New GAs; Projected Gas Sales for Key Players; Equipment Demand Projections: Smart Meters; Steel and MDPE Pipelines; CNG Cascade; CNG Compressors; Sensors; Valves; Investment Requirements (Till 2025-26); Regulatory Outlook

7. MARKET OPPORTUNITIES (MEDIUM AND LONG TERM)

- EPC Contractors; Technology Providers; Financiers/Lenders; Pipe Manufacturers; Compression and Dispensing Equipment Suppliers; Meter Manufacturers; Consultants

8. UPDATE ON LICENSING ROUNDS AND BIDDING EXPERIENCE

- Snapshot of Bidding Rounds; Amendments to Bidding Criteria; Aggressive Bidding Trends; Impact of Penalty Clause; Trends in Network and Compression Charges; Other Trends; Entry of New Players; Key Lesson Learnt

9. PERFORMANCE OF KEY OPERATIONAL AND UNDER CONSTRUCTION NETWORKS

- Key Features - Area, Population, Consumer Mix, etc.; CNG Stations Operational; PNG Connections Provided; Steel and MDPE Pipeline Laid; Gas Sales in the Last Five Years; Current Gas Requirements and Supply Sources; Network Expansion Plans; Future Gas Demand; Investment Requirements

10. PROGRESS AND OPPORTUNITIES UNDER ROUND 9

- Snapshot of GAs - Area, Population, State, Authorised CGD Entity, etc.; Progress So Far: CNG Stations; PNG Connections; MWP Targets & Infrastructure to be Laid in the Next Eight Years; Current Gas Requirements & Supply Sources; Pipeline Connectivity; GA-wise Gas Demand Projections; Top Investment Destinations; Upcoming Opportunities

11. PROGRESS AND OPPORTUNITIES UNDER ROUND 10

- Snapshot of GAs - Area, Population, State, Authorised CGD Entity, etc.; Progress So Far: CNG Stations; PNG Connections; MWP Targets & Infrastructure to be Laid in the Next Eight Years; Current Gas Requirements & Supply Sources; Pipeline Connectivity; GA-wise Gas Demand Projections; Top Investment Destinations; Upcoming Opportunities

12. OPPORTUNITIES UNDER THE 11TH ROUND: UPCOMING GAS AND DEMAND ASSESSMENT

- Geographical Spread of GAs Offered; Salient Features - Area, Population, etc.; Pipeline Connectivity & Proximity to Gas Supply Sources; Planned Infrastructure/Network Addition; New Bidding Criteria; Plans and Timelines for Bid Announcements; Investment Requirements; Gas Demand Projections; Top Investment Destinations

13. COST ECONOMICS AND COMPETITIVENESS OF CGD NETWORKS

- Commercial Viability of CGD Networks; Expected Impact of New Regulations on the Economics & Viability; Capex Requirements; Opex Requirements; Cost Competitiveness of CNG and PNG; Profitability/Margins of CGD Players; Impact of Covid-19 on Revenue and Tariffs; Expected Returns; Key Risks and Challenges

SECTION II: GAS SUPPLY SCENARIO & FUTURE DEMAND PROJECTIONS

14. DOMESTIC GAS SUPPLY AVAILABILITY & R-LNG SUPPLY SCENARIO

- Current Domestic Gas Production: Policy Enablers; Trends in LNG Imports; Sourcing Options for CGD Players (Domestic versus RLNG); Gas Supply Projections - Existing Domestic Fields; Expected Production from New Fields; India's Existing LNG Re-gasification Capacity; Upcoming LNG Re-gasification Capacity; Domestic Gas and Spot LNG Pricing Trends; Supply Outlook (Domestic & LNG Imports)

15. UPDATE ON GAS PIPELINE INFRASTRUCTURE

- Current Status of Pipeline Infrastructure; Projects Underway; Proposed Projects/Projects at Initial Stages of Development: Domestic, Transnational; Investment Requirements; Pipeline Development and Connectivity Issues Impacting CGD Networks

16. POTENTIAL DEMAND FOR SMALL-SCALE LNG

- SSLNG - Overview; Existing Facilities; Capex and Opex Costs; Cost Competitiveness vis-à-vis Gas Pipeline; Key Trends and Recent Developments; Issues and Challenges; Key Upcoming Facilities; Future Outlook and Investment Requirements

SECTION III: NEW FOCUS AREAS: TRENDS, ADVANCEMENTS AND OPPORTUNITIES

17. O&M AND ASSET MANAGEMENT

- Current O&M Practices; Technology Trends & Advancements (SCADA, GIS, IoT, CRM, SAP, ERP, etc.); Role of Next-Gen Technologies - AI, ML and Robotics; Best Practices in Asset Management; Key Benefits & Lessons Learnt; Implementation Roadblocks; Future Plans & Post-Covid-19 Requirement

18. SMART METERING PRACTICES

- Current Metering Practices; New Trends and Advancements (AMR, LoRAWAN, Prepaid, IoT meters, etc.); Billing Practices & Online Services; Implementation Roadblocks & Best Practices; Future Plans

19. NEW MODELS FOR CNG STATION DEVELOPMENT

- Dealer Owned Dealer Operated (DODO) Model; LCNG Stations; Bio CNG; Hydrogen enriched CNG; Simulated Natural Gas

SECTION IV: KEY PLAYERS

20. PROFILES OF KEY PLAYERS

- Aavantika Gas Limited; Adani Total Gas Limited; AG&P; Assam Gas Company Limited; Bhagyanagar Gas Limited; Bharat Gas Resource Limited; Central UP Gas Limited; GAIL Gas Limited; Green Gas Limited; Gujarat Gas Limited; Haryana City Gas Distribution Limited; Hindustan Petroleum Corporation Limited; Indian Oil- Adani Gas Private Limited; Indian Oil Corporation Limited; Indraprastha Gas Limited; IRM Energy Private Limited; Mahanagar Gas Limited; etc.

The report will be available in a PDF format.

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>2. KEY TRENDS IN POWER SECTOR</p> <ul style="list-style-type: none"> - Current Captive Capacity - Growth in the Past Five Years - Recent Developments - Impact of Covid - New and Emerging Trends - Issues and Challenges - Growth Drivers - Outlook and Opportunities <p>3. IMPACT OF POLICY AND REGULATORY MOVES</p> <ul style="list-style-type: none"> - Highlights of Electricity Act (Amendment) Bill 2020 - Draft National Tariff Policy - Amendments to Electricity Rules, 2005 - Sharing of ISTS Charges and Regulations - Electricity (Rights of Consumers) Rules, 2020 - MoEFCC's Notification on Coal Washing - Extension of date for meeting emission norms for TPPs - State-level Policy and Regulatory Moves <p>4. EXISTING CAPTIVE CAPACITY ANALYSIS</p> <ul style="list-style-type: none"> - Market Analysis <ul style="list-style-type: none"> • By Location • By Size • By Fuel • By Industry - Key Players <p>5. FUTURE OUTLOOK AND CAPACITY PROJECTIONS</p> <ul style="list-style-type: none"> - Outlook for Economic and Industrial Growth - Upcoming Captive Capacity - Analysis of Upcoming Capacity (by fuel, industry, state, industry and status) - Key Projects Announced and Contracts Awarded - Issues and Concerns - The Way Forward <p>6. GRID POWER ECONOMICS</p> <ul style="list-style-type: none"> - Grid Power Supply Scenario - Grid Power Reliability - Tariffs Trends (LT and HT Industrial and Commercial) - Recent Trends and Revisions - Cross-subsidy charges - Sale by CPPs to Grid - Outlook for Grid Power Tariffs <p>7. CHARGES AND LEVIES FOR CPPS</p> <ul style="list-style-type: none"> - Trends in Cross-subsidy Surcharges and Additional Charges - Trends in Open Access Charges - Wheeling and Banking Charges - State-wise Orders relevant for CPPs - Issues and Challenges <p>8. CAPTIVE FROM RENEWABLE SOURCES</p> <ul style="list-style-type: none"> - Growth Drivers - Growth in Renewable-based CPP Capacity - Analysis of Renewable Power-based CPP capacity - Industry Experience and Uptake by C&I consumers - Recent Policy and Regulatory Developments - RPO Targets for CPPs - Upcoming Capacity and Projects - New and Emerging Technologies - Issues and concerns 	<p>9. GROUP CAPTIVE MODEL</p> <ul style="list-style-type: none"> - Overview - PPA and Ownership Structures - Analysis of Existing Group Captive Capacity - Draft Amendments to Electricity Rules - Recent Projects - Issues and Concerns - Future Outlook <p>10. POWER PLANT COST ECONOMICS</p> <ul style="list-style-type: none"> - Factors impacting Captive Power Costs - Capital Costs Comparison across Coal, Gas, Liquid Fuel and Renewables - Variable Costs Comparison across Coal, Gas, Liquid fuels and Renewables - Future Outlook <p>11. FUEL SUPPLY SCENARIO AND OUTLOOK</p> <ul style="list-style-type: none"> - Coal: Coal Demand; Coal Offtake; Coal Production; Coal Despatches; Coal Supply through E-Auctions; Domestic Coal Price Trends; Coal Imports; International Coal Prices; Measures to Reduce Coal Imports; Commercial Coal Mining; Coal Supply Projections - Gas: Gas Production and Consumption; Gas Offtake; Domestic Gas Pricing; Existing LNG Terminals; LNG Imports; Spot LNG Prices; Upcoming LNG Terminals in India; Gas Pipeline Network; Upcoming Gas Pipeline Infrastructure; Gas Supply Projection - Liquid Fuel: Liquid Fuel - Trends in Consumption and Production; Trend in Prices - Diesel; Trend in Prices - Crude Oil <p>12. REVISED EMISSION NORMS</p> <ul style="list-style-type: none"> - Emission Norms Applicable to CPPs - Progress and Compliance So Far - FGD Implementation Status - Issues and Concerns <p>13. OPPORTUNITIES IN THE SHORT-TERM MARKET</p> <ul style="list-style-type: none"> - Short-term Power Market Overview - Pricing and Volume Trends - Major Buyers and Sellers - Participation by Industrial Consumers - Real-time Market - GTAM - Trading of RECs - Issues and Concerns <p>14. DATABASE OF EXISTING PLANTS</p> <p><i>About 2,900 CPPs from the following industries have been covered across the fuel types (Coal, Lignite, Natural gas, Bagasse, Co-generation, Solar Ground-Mounted, Rooftop Solar, Wind, Waste-heat Recovery, Liquid fuels, Biomass, Mixed Fuels, etc). Metals and Minerals, Cement, Petrochemicals and Refineries, Chemicals, Textiles, Engineering, Pulp and Paper, Fertilisers, Sugar, Institutional Users, Group Captive, etc.</i></p>
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EXECUTIVE SUMMARY

SECTION A: MARKET OVERVIEW AND SEGMENT REVIEW

1. KEY TRENDS AND RECENT DEVELOPMENTS

- Overview
- Key growth drivers
- Cost competitiveness of solar power
- Solar power's promising attributes
- Targets and mandates for solar power, by country
- Key policy and regulatory developments, by country
- Emerging industry structure

2. MARKET SIZE AND OPPORTUNITY

- Current solar power capacity, by country
- Share of solar power in the energy mix
- Developer wise solar capacity
- Projected solar power capacity, by country
- Investment requirements, by country

3. LARGE-SCALE SOLAR UTILITY PROJECTS

- Growth in capacity for utility-scale projects
- Key operational projects
- Key players in the segment
- Project pipeline, by country
- Emerging policy and regulatory regime

4. SOLAR C&I MARKET

- Growth in capacity for C&I projects
- Key operational projects
- Key players in the segment
- Project pipeline
- Policy incentives

5. SOLAR MICROGRIDS AND MINIGRIDS

- Growth in capacity for microgrids and minigrids
- Key operational and upcoming projects
- Key players in the segment
- Policy incentives

6. CAPACITY AND INVESTMENT OUTLOOK

- Future growth drivers
- Upcoming tenders, by country
- Upcoming solar capacity
 - By country
 - By segment
 - By year
 - By technology

- Key issues and challenges
- Investment requirement
 - By country
 - By segment
- Investment outlook

SECTION B: COUNTRY PROFILES

- 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
- Zimbabwe

The report is available in a PDF format.

Market Trends, Developments, Opportunities and Outlook

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>SECTION A: MACRO ANALYSIS, TRENDS, POLICY, AND OUTLOOK</p> <p>2. BANGLADESH POWER SECTOR OVERVIEW</p> <ul style="list-style-type: none"> - Industry Structure - Energy and Peak Power Demand - Electricity Coverage - Power Generation - Key Trends - Growth Drivers - Future Plans and Targets - Key Issues and Challenges - Projected Investments - Impact of Covid - Sector Outlook <p>3. POLICY AND REGULATORY FRAMEWORK</p> <ul style="list-style-type: none"> - Institutional Framework - Key Power Sector Policies - Analysis of Power Sector Master Plan - Regulatory Framework and Developments - Policy Outlook <p>4. IMPACT OF COVID ON BANGLADESH'S POWER SECTOR</p> <ul style="list-style-type: none"> - Impact on Power Demand - Impact on Project Implementation and Bids - Impact on Labour Supply and Input Costs - Forecasts for Economic Growth - Sector Outlook (Short Term and Medium Term) - Response of Industry Stakeholders <p>5. COSTS AND TARIFFS</p> <ul style="list-style-type: none"> - Trend in Generation Costs - Trend in Power Purchase Costs - Electricity Tariff Trends - Outlook <p>6. FINANCING AND INVESTMENT TRENDS</p> <ul style="list-style-type: none"> - Key Funding Sources - Recent Financing Trends - Green Financing in Bangladesh - FDI Inflows - Potential for Private Participation - Key Recent Deals - Project IRRs - Risks and Challenges <p>7. FUTURE OUTLOOK AND PROJECTIONS (Till 2025)</p> <ul style="list-style-type: none"> - Power Demand Outlook - Project Pipeline: Generation (Coal, Gas, Hydro, Nuclear, Others); Transmission Infrastructure; Distribution Network - Investment Projections - Top Upcoming Projects - Power Trading Outlook - Issues and Concerns - Market Opportunities for: Project Developers; EPC Contractors; Financiers; Technology and Equipment Providers <p>SECTION B: SEGMENT ANALYSIS</p> <p>8. GENERATION - CONVENTIONAL</p> <ul style="list-style-type: none"> - Industry Structure and Key Players - Growth in Installed Capacity: Gas/ LNG; Liquid Fuel; Coal; Hydro - Annual Power Generation Trends by Fuel and Sector - Capacity Mix by Ownership: Public; IPPs; Rental - Trend in Fuel Consumption 	<ul style="list-style-type: none"> - Trends in Supply and Imports - Recent Significant Developments - Key Upcoming Projects - Investment Requirements - Outlook and Projections <p>9. GENERATION - RENEWABLES</p> <ul style="list-style-type: none"> - Intended Nationally Determined Contributions (INDC) Targets - Renewable Potential - Analysis by Segment: Solar; Wind; Biomass and Biogas; Hydro; Off-Grid Power; Others - Recent Developments - Upcoming Projects - Outlook and Projections <p>10. TRANSMISSION</p> <ul style="list-style-type: none"> - Industry Structure - Network Size and Growth - Grid Reliability - Recent Developments - Key Completed Projects - Investment Requirements - Key Upcoming Transmission Projects - Growth Drivers - Outlook and Projections <p>11. DISTRIBUTION</p> <ul style="list-style-type: none"> - Industry Structure and Key Players - Network Size and Growth - Trend in System Losses - Consumer Mix and Energy Sales - Discom Finances & Accounts Receivables - Recent Significant Developments - Prepaid Metering - Key Ongoing Projects - Outlook and Projections <p>12. ELECTRICITY TRADING</p> <ul style="list-style-type: none"> - Cross-border Trading Scenario - Trend in Energy Imports and Exports - Recent Deals Signed - Planned Cross-border Transmission Projects - Outlook <p>SECTION C: MAJOR PLAYER PROFILES</p> <ul style="list-style-type: none"> - Bangladesh Power Development Board - Power Grid Company of Bangladesh - Dhaka Power Distribution Company - Summit Power International - Ashuganj Power Station Company Limited - EGCB - NWPGL - BCPCL - Rural Power Company Limited - BR Powergen - Orion Group - DESCO - WZPDCL - Others <p><i>(Each profile would cover the company's current infrastructure, financial performance, operational performance, key projects, contact details of key personnel, among others)</i></p> <p><i>The report is available in a PDF format.</i></p>
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Table of Contents

<p>1. DISTRIBUTION SECTOR SIZE AND GROWTH</p> <ul style="list-style-type: none"> - Trends in Power Demand and Supply - Growth in Distribution Line Network - Growth in Distribution Transformer Capacity - Substation Additions - AT&C Losses and Targets - Consumer Mix - Energy Sales Trends - Recent Policy and Regulatory Updates - Updates on Key Government Programmes - Issues and Concerns <p>2. OVERALL TRENDS IN KEY OPERATIONAL PARAMETERS</p> <ul style="list-style-type: none"> - Billing & Collection Efficiency - Utility-wise Trends in AT&C Losses - State-wise Average Number and Duration of Outages - SAIDI & SAIFI Indices - DT Failure Rates - Issues and Concerns - The Way Forward <p>3. OVERALL TRENDS IN KEY FINANCIAL PARAMETERS</p> <ul style="list-style-type: none"> - UDAY Updates - Trend in Utility-wise Revenues - Trend in Utility-wise Net Profits - ACS-ARR Gap Trend - Trend in Outstanding Debt of Discoms - Trend in Outstanding Discom Dues - Subsidy Trend - Trend in Key Ratios - Tariff Revisions - Impact of LC Mechanism - Expected Reforms (ADITYA Scheme) <p>4. INTER-DISCOM COMPARISON - PUBLIC</p> <ul style="list-style-type: none"> - Consumer Base - Energy Sales - Line Length - Transformer Capacity - AT&C Losses - ACS-ARR Gap - Per Unit Power Purchase Cost Trend - Net Profits - Metering Coverage - System Reliability Parameters <p>5. INTER-DISCOM COMPARISON - PRIVATE</p> <ul style="list-style-type: none"> - Consumer Base - Energy Sales - Line Length - Transformer Capacity - T&D Losses - Power Purchase Costs - System Reliability Parameters <p>6. OVERALL EXPENDITURE TRENDS</p> <ul style="list-style-type: none"> - Year-wise Aggregate Expenditure Trend - Utility-wise Aggregate Expenditure Trend - Cost Break-up of Utilities 	<p>7. 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>8. CAPITAL EXPENDITURE</p> <ul style="list-style-type: none"> - Trends in Year-wise Capex - Discom-wise Capex Trends - Key Capex Components - Planned Capex - Break-up of Proposed Capex - Capex Break-up of Major Discoms <p>9. POWER PURCHASE COSTS</p> <ul style="list-style-type: none"> - Aggregate Power Purchase Cost Trend - Impact of Recent Developments on Power Purchase Costs - Source-wise Power Purchase Costs Trends - Long-term Power Procurement Trends - Short-term Power Trading Trends <p>10. CATEGORY-WISE TARIFF TRENDS</p> <ul style="list-style-type: none"> - Overall Tariff Trends (Agricultural, Domestic, Industrial HT & LT, Commercial) - State and Utility-wise Trends in Tariffs - Tariff Revisions - Recent Developments Impacting Tariffs - Trends in Cross-subsidy Surcharges
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The report is available in a PDF format

Table of Contents

SUMMARY AND KEY INSIGHTS**SECTION I: MARKET ANALYSIS, DEVELOPMENTS AND INVESTMENTS****1. CURRENT STATE OF THE SECTOR**

- Solar Installation Trends
- State-wise Installed Solar Capacity
- Solar Power Generation Trends
- Emerging Energy Mix
- Growth Drivers
- New Industry Landscape
- Solar RPO Targets and Achievements
- Annual Capacity Addition Targets
- Key Issues and Concerns

2. RECENT DEVELOPMENTS

- Impact of COVID-19; Provisions under Budget 2020; PPA Crisis; Regulations Developments; Competitive bidding guidelines; Safeguard Duties; Development-linked Manufacturing; Market Consolidation; GST; Changing Technology Mix; Tariffs Determined in Recent Auctions Policy and Regulatory Outlook

3. STATE-WISE ANALYSIS

- Andhra Pradesh; Gujarat; Haryana; Karnataka; Maharashtra; Madhya Pradesh; Punjab; Rajasthan; Uttar Pradesh; Tamil Nadu; Telangana

4. TENDER PIPELINE AND ANALYSIS

- Tenders by SECI
- Tenders by NTPC
- Tenders by State-level Agencies
- Tenders by PSUs
- Others

5. FINANCING AND INVESTMENT TRENDS

- Current Funding Sources
- Recent Deals- Mergers, Acquisitions and Private Equity
- Recent Lines of Credits
- Solar-focused Funds and Their Portfolios
- Emerging Sources of Finance- Green Bonds
- Emerging Sources of Finance- IPOs
- Emerging Sources of Finance- Municipal Bonds and InvTs
- Investment Requirements

SECTION II: RISK MAPPING AND MITIGATION**6. IMPACT OF CORONAVIRUS**

- Key Events
- Supply-side Impact
- Demand-side Impact
- Impact on Equipment Costs and Financing
- Case for Make in India

7. OFF TAKERS' CREDIBILITY AND FINANCIALS

- Credit Ratings of Discoms
- Achievements under UDAY
- Roadmap Post UDAY: Proposed ADITYA Scheme
- Payment Defaults by Discoms
- New and Upcoming Payment Security Mechanisms
- Mitigation and Outlook

8. PPA TERMS AND CONDITIONS

- Power Purchase Agreements
- Tariff Structures
- Payment Security
- Project Development Timelines
- Default and Termination
- Setting up Power Evacuation Infrastructure
- Outlook

9. SOLAR GRID INTEGRATION AND MANAGEMENT

- Solar Power Integration
- Current Status of Green Energy Corridors
- Key Grid Related Challenges

- Mitigation Measures
- State-wise Forecasting and Scheduling Regulations
- State-wise Deviation Settlement Mechanism

SECTION III: SEGMENT ANALYSIS**10. UTILITY-SCALE SOLAR PV**

- Size and Growth
- State-wise Capacity Addition Analysis
- Project Development Models: Solar Parks; Individual Set-ups
- Emerging Policy and Regulatory Framework
- Recent Tender Results: SECI; NTPC; State-level; Other PSUs
- Key Risks and Concerns

11. COMMERCIAL AND INDUSTRIAL PV

- Size and Growth
- Capacity Trends
- Project Development models
- Emerging Policy and Regulatory Framework
- State-wise Net Metering Regulations
- Case Studies
- Key Risks and Concerns
- Future Outlook

12. RESIDENTIAL PV

- Size and Growth
- State-wise Capacity Analysis
- Project Development Models
- Developer-led Business Models
- Emerging Policy and Regulatory Framework
- Key Risks, Concerns and Future Outlook

13. SOLAR PLUS STORAGE

- Need/Growth Drivers
- Benefits
- Market Potential
- Key Policy Promotions
- State Level Developments
- Cost Economics
- Case Study: 10 MW Energy Storage Project at TPDDL, Delhi
- Key Risks and Concerns
- Future Outlook

14. SOLAR OPEN ACCESS MARKET

- Solar Open Access Potential
- Open Access Business Model
- Current State-wise Solar Open Access Projects
- Policy and Regulatory Framework
- State-wise Charges and Waivers
- Risks and Concerns
- Future Outlook

SECTION IV: OUTLOOK AND PROJECTIONS (Till 2030)**15. CAPACITY PROJECTIONS**

- Overall Solar Project Pipeline: By Stage; Location
- Impact of COVID-19 on Project Pipeline
- Total Capacity Requirement Projections
- Solar Power Share in Capacity Mix
- Solar Power Share in Power Generation Mix
- The Way Forward

16. INVESTMENT AND IRR PROJECTIONS

- Tariff Projections
- Cost Projections
- IRR Projections
- Utility-scale
- Rooftop Solar
- Open Access
- Investment Projections
- Financing Requirements

The report is available in a PDF format

EXECUTIVE SUMMARY

SECTION I: MARKET INSIGHTS, DEVELOPMENTS, FUTURE OUTLOOK AND OPPORTUNITIES

1. SMALL-SCALE LNG MARKET OVERVIEW

- Growth Drivers; SSLNG Value Chain; Existing Facilities; Notable Trends; Demand from Key Gas Consumers Segments (CGD, off-grid power; and industrial consumers); Mode of Supply (Truck, Rail, Ship); Major Players/Industry Structure and Stakeholders; Recent Developments; Investment Outlook; Issues and Challenges

2. REGULATORY LANDSCAPE FOR SSLNG

- Current Regulatory Regime; Key Regulatory Authorities (PESO, PNGRB, OISD, etc.); Technical and Safety Standards; Issues and Challenges; Regulatory Outlook

3. FUTURE POTENTIAL AND MARKET OPPORTUNITIES

- Key Upcoming Facilities; Demand Outlook; Investment Outlook; Regulatory Outlook; Market Opportunities

4. COST ECONOMICS & VIABILITY

- Commercial Viability and Business Models; Capex Requirements; Opex Requirements; Cost Competitiveness vis-a-vis Other Fuels; Cost Competitiveness vis-à-vis Pipeline Transportation

5. POTENTIAL DEMAND FROM KEY GAS CONSUMERS

- Growth in Gas Demand in the Past Five Years; Sourcing Options; Demand-Supply Gap; Pipeline Connectivity; Gas Costs and Tariffs; Potential Demand for SSLNG; Upcoming Plans and Projects; Issues and Challenges

6. GLOBAL EXPERIENCE & CASE STUDIES

- Global SSLNG Market Size & Growth; Trends and Advancements; Select Case Studies (Infrastructure & Capacity, Key Consumers, Mode of Supply, Pricing, etc.); Key Lessons and Takeaways

SECTION II: LNG MARKET TRENDS, SUPPLY OUTLOOK & INFRASTRUCTURE

7. LNG MARKET TRENDS AND OUTLOOK

- Gas Demand Supply Scenario; LNG Import Trends; Sourcing Options; Long-term Contracts; Supply Outlook; Projected LNG Demand

8. PRICING TRENDS AND FORECASTS

- Global LNG Pricing Trends; Spot LNG Price Analysis; Long-term Contract Pricing; LNG Price Forecasts

9. EXISTING LNG TERMINALS

- Existing Capacity; Utilisation Levels; Pipeline Connectivity; Key Players; Future Expansion Plans

10. PLANNED LNG TERMINALS AND CAPACITIES

- Under Construction LNG Terminals, FSRUs and Storage Tanks (Mundra LNG Terminal, Jaigarh LNG Terminal, Chhara LNG Terminal, Dhamra LNG Terminal, Jafrabad LNG Terminal); Proposed/Announced LNG Terminals, FSRUs and Storage Tanks (Kakinada LNG Terminal, Krishnapatnam LNG Terminal, Karaikal LNG Terminal, Kukrahati LNG Terminal, Haldia Dock Complex LNG Terminal)

Each terminal's profile will cover project scope, capacity, investment, pipeline connectivity, developer, current status, expected completion timelines, etc.

SECTION III: STORAGE, TRANSPORTATION & DISTRIBUTION OF SSLNG

11. LNG TRUCK LOADING FACILITY

- Existing Infrastructure/Noteworthy Projects; Capex and Opex Requirements; New Trends and Advancements; Key Upcoming Projects; Investment Requirements; Key Issues and Challenges

12. STORAGE CAPACITY AND FACILITIES

- Type of Storage Tanks
- Existing Facilities/Capacity
- Trends and Advancements
- Upcoming Capacity
- Investment Requirements
- Issues and Challenges

13. LNG SATELLITE STATIONS

- Existing Infrastructure/Noteworthy Projects
- Capex and Opex Requirements
- New Trends and Advancements
- Key Upcoming Projects
- Investment Requirements
- Key Issues and Challenges

14. L-CNG STATIONS

- Existing Infrastructure/Noteworthy Projects
- Capex and Opex Requirements
- New Trends and Advancements
- Key Upcoming Projects
- Investment Requirements
- Key Issues and Challenges

The report is available in a PDF format.

Table of Contents

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

- Market Overview
- Open Access and Captive Solar
- Focus on Captive Solar Segment
- Focus on Rooftop solar
 - Growth Trend in C&I space
 - State-wise Installed Capacity in C&I Space
- Key Growth Drivers
- Addressable C&I Solar Market, by State
- Key Risks and Challenges
- Impact of COVID-19 on Sector Outlook
- Insights

3. KEY TRENDS AND DEMAND DRIVERS

- Drivers and Roadblocks
 - Impact of COVID-19 on Supply Chain, Project Development and Electricity Demand
 - State-wise Open Access Charges
 - Solar Policy Targets in Focus States
 - State-wise Retail Tariffs
 - Discom Health across States
 - State-wise APPC Trends
 - RPO Trajectory
 - Energy Demand Outlook
- Impact of Electricity Act Amendment on C&I Solar
- Government measures to mitigate coronavirus impact
- Policy and Regulatory Outlook
- Potential Challenges
- State-wise C&I Solar Score
- Insights

4. TARIFF TRENDS, COST STRUCTURES AND PROJECT RETURNS

- Annual HT Industrial Tariff Trends
- Annual Commercial Tariff Trends
- Solar Tariff Trends across States
- Project Cost Economics
 - Rooftop Solar Projects
 - Ground-Mounted Solar Projects
- O&M Cost Trends
- Return Analysis

5. INDUSTRY STRUCTURE AND BUSINESS MODELS

- Power Sale Options
- Current Business Models
 - CAPEX
 - OPEX
 - Industry Structure for open access solar projects
- Emerging Business Models
 - Aggregator
 - Solar as a Service
 - Proposed Green Term Ahead Market

6. PROJECTIONS FOR C&I SOLAR MARKET

- Impact of COVID-19 on
 - Power Demand
 - C&I Solar Demand

- Projected APPC Rates
- Power Demand Projections
- Banking Provision
- State-wise Addressable C&I Solar Potential
- State-wise Projected Capacity in the C&I Solar Segment
 - High Growth-Scenario
 - Medium Growth-Scenario
 - Low Growth-Scenario

SECTION II: STATE FOCUS**7. STATE PROFILES**

- Andhra Pradesh
- Chhattisgarh
- Haryana
- Gujarat
- Karnataka
- Madhya Pradesh
- Maharashtra
- Rajasthan
- Tamil Nadu
- Telangana
- Uttarakhand
- Uttar Pradesh
- List of Open Access Solar Projects

SECTION III: KEY PROJECTS AND MARKET PLAYERS**8. CURRENT PROJECTS AND PLANNED SOLAR CAPACITY IN THE C&I SEGMENT**

- Overview
- Commercial Segment
 - Airports
 - Mass Transit Systems
 - Ports
 - Indian Railways
 - Others
- Industrial consumers
 - Key operational projects
 - Upcoming projects
- Impact of Covid-19 on
 - Supply chain
 - Projects under construction
 - New projects/tenders
 - Equipment costs
 - Project financing

9. KEY DEVELOPER PROFILES

- Amplus Solar (PETRONAS Group)
- Azure Power
- CleanMax Solar
- Cleantech Solar
- Fourth Partner Energy
- ReNew Power
- SunSource Energy
- Tata Power Solar

The report is available in a PDF format.

SECTION I: MARKET TRENDS, IMPACT OF COVID-19 AND FUTURE OUTLOOK

- 1. SECTOR SIZE AND GROWTH**
 - Capacity Trends
 - Generation Trends
 - Trends in PLF
 - Analysis of Existing Coal-based Capacity: By sector; Location; Size of units; Type of coal
- 2. RECENT POLICY AND REGULATORY DEVELOPMENTS**
 - LC Mechanism
 - Phase II of Pilot Scheme for Power Procurement
 - Recommendations of HLEC for Resolution of Stressed Assets
 - Update on Coal Washing
 - Update on Coal Emission Norms
 - Allowing use of Coal Linkage for Short-term Power Procurement
 - Other Developments
- 3. IMPACT OF COVID-19**
 - Impact on: Power Demand; Coal Supply and Demand; Coal-based Generation; Under Construction Capacity, New Bids and Financing; Input Costs and Supply Chain; Coal-based Power Generation Revenues
 - Relief Measures Announced/Expected
 - Key Recommendations Based on Industry Interactions
- 4. PROJECT PIPELINE ASSESSMENT IN LIGHT OF COVID-19**
 - Overall Project Pipeline
 - Analysis of Upcoming Capacity: Stage (Under construction, stalled, approved); By Sector; By Expected CoD; By Size; By Technology (subcritical, supercritical, ultra-supercritical); By Location
 - Current status of capacity under consideration
 - Expected Time and Cost Overruns in Upcoming Projects
 - Stalled Projects
 - Issues and Concerns
 - Top Upcoming Projects
- 5. FUTURE OUTLOOK**
 - Capacity Addition Projections by 2024
 - Power Demand Projections
 - Outlook for: Fuel Supply; Capacity Utilisation and PLFs; Generation Tariffs; Stressed Assets
 - Emission Norms Compliance
 - Impact of Renewables on Coal-based Power
 - Role of Coal-based Plants in Grid Balancing
 - Market Opportunities for: Project Developers; Financers; Equipment Providers
- 6. FOCUS ON EMISSION CONTROL**
 - Trends in Emissions from Coal-based Plants
 - Overview of Environmental Standards
 - Key Identified Technologies
 - Plans and Current Status
 - Impact on Cost of Generation
 - Issues and Challenges
- 7. FLEXIBILISATION OF OPERATIONS**
 - Load Pattern Analysis and Forecast
 - Flexible Generation Options for Coal-based Plants
 - Equipment Modifications to Enhance Flexibility
 - Cost Implications
 - The Experience So Far
 - Key Issues and Challenges
- 8. COAL SUPPLY AND OUTLOOK**
 - Coal Reserves
 - Coal Production and Supply
 - Trends in Coal Imports
 - Update on Coal Mining Auctions
 - Reforms to Enhance Domestic Coal Production: Commercial Coal Mining; Recent Policy Changes
 - Demand from Power Plants

- Availability of Coal with Power Plants
- Update on Coal Linkages
- E-auction and Captive Volume and Trends
- Pricing Trends

9. UPDATE ON STRESSED ASSETS

- Stressed Coal-based Power Projects
- Key Reasons Causing Stress
- Measures to Revive Stressed Assets
- Impact of COVID-19 on IBC
- Restructuring Options
- Challenges and Workable Solutions

SECTION II: PLANT PERFORMANCE, TARIFFS AND COSTS

10. ANALYSIS OF OPERATIONAL PLANTS

- Size of Plants and Units
- State-wise and Sector-wise Profile
- Subcritical, Supercritical and Ultra-supercritical Units
- Age of Units
- Boiler and Turbine Makes
- PLF Trends

11. RENOVATION AND MODERNISATION

- Age Profile of Thermal Units
- Key Drivers
- Experience so Far
- Potential Plants for R&M
- Potential Plants for Closure
- Issues and Challenges

12. TARIFFS AND PRICES

- Factors Affecting Cost of Generation and Tariffs
- Tariff Trends
- Tariff Trends in PPAs
- Tariff Discovered under Case 1 and 2 Bids
- Short-term Power Prices on Exchanges
- E-bidding under DEEP

13. GENERATION COSTS

- Trends in Fixed and Variable Costs
- Trends in Other Costs
- Cost Comparison with Other Fuel Options
- Generation Cost of New Plants
- State-wise Marginal Cost
- Future Outlook

SECTION III: PROFILES OF GENERATION COMPANIES

14. PROFILES OF KEY COAL-BASED POWER PRODUCERS

- Central Sector Players: NTPC Limited; Damodar Valley Corporation; NLC India Limited
- State Sector Players: Maharashtra State Power Generation Company; 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; Singareni Collieries Company Limited
- Private Sector Players: 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; CLP India Private Limited; GVK Energy Limited; Nabha Power Limited; Vedanta Limited; Bajaj Energy Limited; ACB (India) Limited; Jaiprakash Power Ventures Limited; DB Power Limited; KSK Energy Venture Limited; Hindustan Powerprojects; CESC Limited; Sembcorp Energy India Limited

The report is available in a PDF format.

Table of Contents

EXECUTIVE SUMMARY

1. SECTOR SIZE AND GROWTH

- Hydro Power Potential and Development: Basin-wise; Region-wise
- Installed Capacity Addition Trends
- Sector and Utility-wise Additions
- Hydro Power Generation Trends
- Share of Hydro Power in Electricity Generation Mix
- Small-hydro Power Capacity
- Pumped-hydro Storage Capacity
- Key Barriers to Development

2. IMPACT OF COVID-19

- Impact on
 - Overall Power Sector
 - Power Demand and Generation
 - Hydro Power Generation Revenues
 - New Bids and Projects
- Relief Measures for Power Generation Plants
- Key Recommendations Based on Industry Interactions

3. RECENT DEVELOPMENTS

- Updates on Key Projects
- Key Agreements Signed
- Impact of COVID-19 on Under-construction Capacity
- Amendments to Electricity Act, 2003
 - Purchase of Electricity from Hydro Power Sources
 - Penalties for Non-compliance of Hydropower Purchase Obligation
- Other Key Developments

4. IMPACT OF NEW HYDRO POWER POLICY

- Key Features of Approved Policy Measure
- Capacity Benefit Analysis
- Tariff Rationalisation
- Hydropower Purchase Obligation
- Impact on Tariff Competitiveness
- Impact on Cost of Generation
- Key Challenges
- Industry Perspective

5. UPCOMING PROJECT PIPELINE

- Capacity Under Construction
- Analysis of Upcoming Projects by
 - Year of Commissioning
 - Ownership
 - Unit Size
 - Location
 - Equipment-make
 - Type
 - Projects Under Planning, Survey and Investigation
 - Upcoming Capacity for Pumped Storage
- Stalled Capacity

6. FUTURE OUTLOOK AND PROJECTIONS

- Installed Capacity Projections
- Costs and Tariff Outlook
- Policy and Regulatory Outlook
- Investment Outlook
- Equipment Projections
- O&M Needs and Requirements
- Risks and Challenges

7. PROJECTED ROLE IN LOAD BALANCING AND STORAGE

- Hydro under FRAS
- Balancing Requirements for Renewable Integration

- Technical and Non-technical Barriers
- Technologies and Solutions Available
- Cost Comparison of Storage Technologies
- The Way Forward

8. PLANT PERFORMANCE ANALYSIS

- Installed Capacity Analysis: By Project Size; Player; Equipment Make; State; Age
- Generation Trend: Historical Trend; Inter-plant Comparison; Inter-developer Comparison
- Operating Availability Analysis
- Trends in Outages
- Renovation and Modernization

9. ANALYSIS OF STALLED CAPACITY

- Current Stalled Capacity
- Key reasons for Slippages
- Time and Cost Overruns
- Mitigation Strategies and Policies

10. INVESTMENT SCENARIO AND STRESSED ASSETS

- Key Funding Sources and Recent Financings
- M&A Deals
- Cost Overruns of Stressed Assets
- Measures to Revive Stressed Assets
- Impact of Reclassification to Renewables on Financial Viability
- Investment Needs and Requirements
- Innovative Funding Mechanisms
- Key Challenges

11. COST, TARIFFS AND VIABILITY

- Project Cost Trends
- Trends in Tariffs
- Tariff Norms for 2020-24
- Return Analysis of Hydro Power Projects
- Key Issues and Concerns

12. CROSS-BORDER COLLABORATIONS

- Overview
- Existing Power Ties
- Status on Upcoming Project in Nepal
- Status on Upcoming Project in Bhutan
- Existing and Proposed Transmission Interconnections

13. PROFILES OF KEY DEVELOPERS

- Central Sector Players: BBMB; NHPC; SJVNL; NHDC; THDC; NEEPCO; NTPC; DVC
- State Sector Players: Karnataka Power Corporation Limited; Maharashtra State Power Generation Corporation; Telangana State Power Generation Corporation; Tamil Nadu Generation and Distribution Corporation; Odisha Hydro Power Corporation; Kerala State Electricity Board; Andhra Pradesh Power Generation Corporation; Sardar Sarovar Narmada Nigam Limited; Uttarakhand Jal Vidyut Nigam Limited; Teesta Urja Limited
- Private Sector: JSW Energy; Tata Power Company Limited; JP Power Ventures; AHPC
- Others: Malana Power Company Limited; Gati Infrastructure; Everest Power Private Limited; Dans Group; Sneha Kinetic Power Projects Limited

The report is available in a PDF format.

EXECUTIVE SUMMARY

1. POWER SECTOR MARKET OVERVIEW

- Power Demand and Supply Trends
- Fuel-wise Power Generation
- Retail Power Market Structure
 - HT Industrial Segment
 - LT Industrial Segment
 - Commercial Segment
 - Residential Segment
 - Agricultural Segment
- Key Recent Developments
- Overall Power Tariff Trends
- Trends in National Average Power Purchase Cost
- Issues and Challenges

SECTION I: HT INDUSTRIAL CONSUMERS MARKET

2. MARKET OVERVIEW

- Historical Trends
 - Sale of Power to HT Consumers
 - Share of HT Consumers in Total Power Sales
- 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
- Trends in Short-term Retail Power Trading

SECTION II: LT INDUSTRIAL CONSUMERS MARKET

4. MARKET OVERVIEW

- Historical Trends
 - Sale of Power to LT Consumers
 - Share of LT Consumers in Total Power Sales
- Outlook and Projections

5. 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

SECTION III: COMMERCIAL CONSUMERS MARKET

6. MARKET OVERVIEW

- Historical Trends
 - Sale of Power to Commercial Consumers
 - Share of Commercial Consumers in Total Power Sales
- Outlook and Projections

7. TARIFF TRENDS

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

SECTION IV: RESIDENTIAL CONSUMERS MARKET

8. MARKET OVERVIEW

- Historical Trends
 - Sale of Power to Residential Consumers
 - Share of Residential Consumers in Total Power Sales
- Outlook and Projections

9. TARIFF TRENDS

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

SECTION V: AGRICULTURAL CONSUMERS MARKET

10. MARKET OVERVIEW

- Historical Trends
 - Sale of Power to Agricultural Consumers
 - Share of Agricultural Consumers in Total Power Sales
- Outlook and Projections

11. TARIFF TRENDS

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

The report is available in a PDF format.

EXECUTIVE SUMMARY

1. POWER SECTOR OVERVIEW AND INDUSTRY STRUCTURE

- Trends in power generation
- Fuel-wise share in power generation
- Energy Consumption Trends
- Discom Consumer Mix
- Key recent developments
- Current Power procurement models
- Industrial power procurement Trends
- Existing generation scheduling procedure

SECTION I: TRENDS IN DISCOM POWER PROCUREMENT

2. LONG-TERM PPAs

- Tariff Trends in PPAs Before Competitive Bidding/Under cost-plus mechanism
- Tariff Trends in Case I and Case II Bidding
- Trends in PPAs with CPSUs

3. SHORT/MEDIUM TERM PPAs

- Trends in Short/Medium-term PPAs
- Procurement of Aggregate Power/Pilot Schemes I and II
- Trends from DEEP Portal

4. POWER TRADING AT EXCHANGES

- Overview
- Day-ahead Market
- Term-ahead Market
- Major Buyers and Sellers
- Trends in Volume of Power Procured/Sold by Discoms

SECTION II: OPTIONS FOR INDUSTRIAL POWER

5. INDUSTRIAL POWER PROCUREMENT

- Grid Power Procurement
 - HT Industrial Power Procurement trends
 - LT Industrial Power Procurement Trends
 1. HT Industrial Tariff Trends
 2. LT Industrial Tariff Trends
- Captive Power Generation
 - Overview
 - Distribution of Tracked Captive Capacity
 1. Generation Cost Analysis of Captive Power Plants
 2. Upcoming Captive Capacity
- Open Access
 - Trends in Open Access Charges
 - Policy and Regulatory Scenario in Key States
 1. Landed Cost of Open Access Sourced Power
- Procurement From Power Exchanges
 - Trends in Open Access Consumers
 - Open Access Power Volumes
 - Price Trends in Open Access

SECTION III: SOURCE-WISE COST OF POWER

6. COST OF WIND AND SOLAR POWER

- Wind and Solar Energy Generation Trends
- Tariff Trends
- Capital Cost Structures

- Trends in Overall Cost of Renewable Power to Discoms
- Tariff and Capital Cost Outlook
- REC Trading and Pricing Trends

7. COST OF COAL-BASED POWER

- Key Trends in Coal-based Power Segment
- Coal Price Trends
 - Domestic Coal Price Trends
 - E-auction Based Pricing
 - Imported Coal Pricing
- Capital Cost Trends
- Opex Trends
- Trends in Overall Cost of Power Generation
- Tariffs of Coal-based Power Stations
- Ministry of Power's Scheme for Flexibility in Generation and Scheduling
- Impact of Stringent Environmental Regulations on Cost of Power
- Tariffs Discovered Under Recent PPA Auctions Pilot Scheme
- Capacity Outlook and Projections

8. COST OF NATURAL GAS-BASED POWER

- Natural Gas-based Power Generation Trends
- Natural Gas Price Trends
- Capital Cost Trends
- Opex Trends
- Trends in Overall Cost of Power Generation
- Tariffs of Natural Gas-based Power Stations
- Capacity Outlook and Projections (2019-20 to 2024-25)

9. COST OF HYDRO-BASED POWER

- Hydropower Generation Trends
- Capital Cost Trends
- Tariff Trends
- Outlook and Projections (2019-20 to 2024-25)

SECTION IV: EVOLUTION OF POWER PROCUREMENT MARKET

10. PEAKING POWER AND ANCILLARY SERVICES

- Management of Peaking Power
- Re-designing Ancillary Services Market

11. SCED OF ISGS

- Overview
- Pilot project Regulations by CERC
- Methodology by POSOCO
- Pilot project findings and cost savings
- Outlook

12. OUTLOOK AND FUTURE TRENDS

- Outlook for Total Cost of Power Generation
- Evolving Power Procurement Model
- Future Cost Management Strategies
- Impact of Increasing Renewable Energy Capacity
- Key Issues and Challenges

The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY	7. COST ECONOMICS, SYNERGIES AND RETURNS
2. RENEWABLE ENERGY POTENTIAL IN INDIA	- Capex and Opex
- Market Potential by Source	- Cost and Infrastructure Synergies
- Source-wise Capacity	- Tariffs Discovered under Recent Tenders
- Generation Analysis	- Return Analysis
- Key Recent Developments	- Cost and Return Comparison with Pure-play Solar and Wind Projects
- Growth Drivers	
- Issues and Challenges	8. OUTLOOK AND PROJECTIONS
3. WIND SOLAR HYBRIDS OVERVIEW	- Future Growth Drivers
- State-wise Potential Estimated by NIWE	- Potential Risks
- Current Status	- Tariff Outlook
- Key Growth Drivers	- Installed Capacity Projections
- Policy and Regulatory Developments	- Investment Requirements
• Central level	
• State level	9. KEY CASE STUDIES
- Issues and Challenges	- Kavithal, Karnataka - Hero Future Energies
- Industry Perspective	- Kudgi, Karnataka - NTPC
4. PROJECT PIPELINE	- Red Lake Falls, Minnesota, US - Juhl Energy
- Announced Tenders	- Wheatridge, Oregon, US - NextEra and PGE
- Auctioned Projects	- La Plana, Zargosa, Spain - Siemens Gamesa
- Cancelled Projects	- Parc Cynog, Wales, the UK - Vattenfall
5. PPA TERMS AND STRUCTURING	- Haringvliet, the Netherlands - Vattenfall
- Key Terms	- Kennedy Energy Park, Queensland, Australia - Windlab and Eurus
- Tariff Structures	
- Metering Arrangements	10. OTHER RENEWABLE ENERGY HYBRID MODELS
- Treatment of Infrastructure	- Solar-natural gas Hybrids
- Payment Security Mechanism	- Solar-hydro Hybrids
- Legal Terms	- Wind-hydro Hybrids
- Legal Perspective	- Solar-wind-hydro Hybrids
6. ROLE OF STORAGE	
- Upcoming Wind-Solar Storage Projects	
- Policy Developments	
- Future Outlook	

The report is available in a PDF format.

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>2. POTENTIAL AND OVERVIEW</p> <ul style="list-style-type: none"> - Introduction - Market Potential - Current Capacity - Key Benefits - Growth Drivers - Policy and Regulatory Scenario - Global Scenario - Risks and Challenges - Insights <p>SECTION I: FLOATING SOLAR</p> <p>3. Current Projects, Pipeline and Case Studies</p> <ul style="list-style-type: none"> - Introduction - Installed Projects - Project Pipeline <ul style="list-style-type: none"> • By NTPC • By SECI • By Other Agencies - Case Studies <ul style="list-style-type: none"> • 2 MW project at Mudasarlova reservoir in Vishakhapatnam • 500 kWp project at Banasura Sagar reservoir in Wayanad • 100 kWp plant at NTPC Kayamkulam in Kerala • 100 kWp plant at IOCL Panipat in Haryana • 10 kW project in New Town, Kolkata <p>4. COST ECONOMICS, TARIFFS AND IRRS</p> <ul style="list-style-type: none"> - Capital Cost Break-up - Capital Cost Trends - Cost Comparison - O&M Cost Trends - Tariffs Trends - Project Returns - Sensitivity Analysis <p>5. TECHNOLOGY AND SUPPLIER ECOSYSTEM</p> <ul style="list-style-type: none"> - Application and Key Components - Float Characterisation - Technology Types <ul style="list-style-type: none"> • Liquid Solar Array • HDPE Floating Platform 	<ul style="list-style-type: none"> • Solar Island • Floating Grid • Polyculture-based Platform • Tracking Type Floating Solar <ul style="list-style-type: none"> - Key Suppliers - Domestic Manufacturing of Floats <p>6. OUTLOOK AND PROJECTIONS</p> <ul style="list-style-type: none"> - Future Growth Drivers - Perceived Challenges - Projections <p>SECTION II: CANAL-BASED SOLAR</p> <p>7. CURRENT PROJECTS, PIPELINE AND CASE STUDIES</p> <ul style="list-style-type: none"> - Canal-top Projects - Current Spread - Operational Canal-top Projects - Canal-top Project Pipeline - Canal-bank Projects - Current Spread - Installed Canal-bank Projects - Case Studies <ul style="list-style-type: none"> • 1 MW Canal-top in Vadodara, Gujarat • 10 MW canal-top and 5 MW canal-bank in Gujarat • 2.5 MW projects each on Sidhwan and Ghaggar Branch Canals in Punjab • 6 MW canal-top set up by Cochin International Airport Limited <p>8. COST ECONOMICS, TARIFFS AND IRRS</p> <ul style="list-style-type: none"> - Capital Cost Break-up - Cost Trends of Canal-top Projects - Cost Comparison with Ground-mounted Plants - State-wise Cost Trends - State-wise Tariff Trends - O&M Cost Trends - Project Returns - Sensitivity Analysis <p>9. OUTLOOK AND PROJECTIONS</p> <ul style="list-style-type: none"> - Future Growth Drivers - Perceived Challenges - Projections
--	---

The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY

PART A - MARKET TRENDS AND OUTLOOK

2. POWER SECTOR OVERVIEW

- Demand and Supply
- Historical Power Analysis
- Future Projections
- Key Growth Drivers and Trends
- Outlook

3. TRANSMISSION SEGMENT ANALYSIS

- Growth in Transmission Line Length, Growth in Transformer Capacity, Trends in Network Reliability, Recent Developments, Recent M&A Deals, TBCB Update, Investment Projections, New Project Pipeline, Issues and Concerns

4. DISTRIBUTION SEGMENT ANALYSIS

- Sector Size and Growth
- Performance under UDAY
- Key Recent Policy and Regulatory Reforms
- Utility Capex Plans
- Growth Drivers
- Issues and Concerns

5. GOVERNMENT INITIATIVES SUPPORTING T&D EQUIPMENT MARKET .

- 24x7 Power for All
- IPDS
- 175 GW Renewable Energy by 2022
- Central and State Initiatives for Smart Metering
- Green Energy Corridor Projects
- Mission 41K for Rail Electrification
- Smart Grid Initiatives and Smart Cities Mission
- Interstate and Intra-state TBCB Opportunities
- National Mission on E-Mobility

6. RECENT CONTRACTS AND AWARDS

- Recent Transmission And Distribution Awards
- Announced and Upcoming Bids
- Other Ongoing Tenders

7. EQUIPMENT MARKET OUTLOOK AND PROJECTIONS

- Key Growth Drivers
- Network Addition Projections
- Projected Capex of Transmission and Distribution Companies
- T&D Equipment Market Projections
- Projected Investments
- Future Outlook

PART B - TRANSMISSION EQUIPMENT ANALYSIS AND PROJECTIONS (Till 2023-24)

8. SWITCHGEAR

- Overview
- Technology Trends and Advances
- Key Players
- Projections for Substations
- Potential for Digitalisation and Automation
- Projections for Switchgear

9. TRANSMISSION TOWERS

- Overview
- Emerging Technology Trends
- Recent Trends and Advances in Construction
- Key Players
- Transmission Line Length Projections
- Projected Demand for Towers
- Issues and Challenges

10. CABLES AND CONDUCTORS

- Overview
- New Technologies and Designs
- Underground Cabling: Experience and Outlook

- Key Players
- Projected Demand for Overhead Conductors
- Projected Demand for Underground Cables
- Potential For Reconductoring and Replacement

11. POWER TRANSFORMERS

- Overview
- New Technologies and Advances
- Key Players
- Projections for Transformation Capacity
- Projected Demand for Power Transformers
- Issues and Challenges

12. INSULATORS

- Overview
- New Technologies and Advances
- Key Players
- Projected Demand for Insulators

13. REACTIVE POWER EQUIPMENT

- Overview
- Technology Trends
- Key Players
- Projected Additions
- Bus Reactors
- Line Reactors
- Dynamic Compensation Equipment

PART C - DISTRIBUTION EQUIPMENT ANALYSIS AND PROJECTIONS (Till 2023-24)

14. DISTRIBUTION CONDUCTORS AND CABLES

- Overview, New Technologies and Advances, Utility Initiatives, Key Players, Projected Distribution Line Length Additions, Projected Demand for Cables and Conductors, Potential for Reconductoring and Replacement

15. DISTRIBUTION TRANSFORMERS

- Overview
- New Technologies and Advances
- Key Players
- Projections for Distribution Transformer Capacity (till 2023-24)
- Projected Demand for Distribution Transformers (till 2023-24)

16. DISTRIBUTION SWITCHGEAR

- Overview
- Recent Trends and Advances
- Key Players
- Projected Demand for Switchgears (till 2023-24)

17. SMART METERS

- Overview, Growth Drivers, Smart Meters, Prepaid Meters, Net Meters, Utility Initiatives, Projected Demand for Smart Meters (till 2023-24)

18. KEY EQUIPMENT MANUFACTURER AND SUPPLIER PROFILES

- ABB, Aditya Birla Insulators, Apar Industries Limited, BHEL, CG Power and Industrial Solutions Limited, Diamond Power and Infrastructure Limited, Finolex Cables Limited, GE T&D India Limited, KEC International Limited, LS Cable and Systems, Kalpataru Power Transmission Limited, KEI Industries Limited, Kirloskar Electric Company Limited, Schneider Electric Infrastructure Limited, Toshiba T&D India Private Limited, Delton Cables Limited, Genus Power Infrastructures Limited, Cable Corporation of India, Itron, Landis & Gyr, L&T, Siemens Limited, Sterlite Power Transmission Limited, Skipper Limited, Transformers & Rectifiers (India) Limited, Voltamp Transformers Limited, WEG Industries (India) Private Limited, Star Delta Transformers Limited, United Transformers Limited, Other Manufacturers

The report is available in a PDF format.

Table of Contents

<p>EXECUTIVE SUMMARY</p> <p>1. MARKET OVERVIEW</p> <ul style="list-style-type: none"> - Size and Growth <ul style="list-style-type: none"> • By Year • By Segment • By State - Key Stakeholders - Rooftop Policies and Incentives <ul style="list-style-type: none"> • Central Level • State Level - Growth Drivers - Barriers and Challenges - Future Outlook <p>2. SEGMENT-WISE ANALYSIS</p> <ul style="list-style-type: none"> - Introduction - Commercial and Industrial <ul style="list-style-type: none"> • Commercial • Industrial - Government and Institutions - Residential <p>3. PROJECT PIPELINE</p> <ul style="list-style-type: none"> - Tender Results: Issued by SECI and Other Agencies - Ongoing and Announced Tenders by Central Level Agencies - Ongoing and Announced Tenders by State Level Agencies <p>4. METERING REGULATIONS AND THEIR IMPLEMENTATION</p> <ul style="list-style-type: none"> - Emerging Metering Arrangements - Implementation Experience - Key Features of Metering Policies across States - Key Issues and Challenges <p>5. TARIFFS, COST ECONOMICS AND BUSINESS MODELS</p> <ul style="list-style-type: none"> - Capital cost breakdown - Solar Equipment Price Trends - Capital cost trends - O&M Price Trends - Rooftop Solar Tariffs - Rooftop Solar Tariffs vs. Grid tariffs - Project Cost Economics <ul style="list-style-type: none"> • Project Returns - Business Models <ul style="list-style-type: none"> • Developer-led Business Models • Utility-led Business Models • Case Studies <p>6. IMPACT ON DISCOMS</p> <ul style="list-style-type: none"> - Impact on Demand - Impact on Revenue 	<ul style="list-style-type: none"> - Impact on Grid - State Discom's Approach - Case Studies <p>7. FINANCING TRENDS, INSTRUMENTS AND STRUCTURES</p> <ul style="list-style-type: none"> - Debt and Equity Options - Emerging Financing Models for Rooftop Solar - Recent Financings <ul style="list-style-type: none"> • Equity Deals • Green, Masala and Municipal Bonds • Domestic Commercial Loans/ NBFCs • Funding by Government and Development Institutions • Multilateral/Bilateral Financing • IPOs • Others - Risks and Challenges - Future Investment Requirement <p>8. ADDRESSABLE MARKET FOR ROOFTOP SOLAR BY 2024-25</p> <ul style="list-style-type: none"> - Power Demand Outlook - Growth in Share of Rooftop Solar - Addressable Solar Market <ul style="list-style-type: none"> • By Segment • By State - Solar Demand Outlook <ul style="list-style-type: none"> • Low Scenario • Medium Scenario • High Scenario <p>9. ROOFTOP SOLAR EQUIPMENT MARKET OUTLOOK (Up to 2024-25) ..</p> <ul style="list-style-type: none"> - Modules - Solar Inverters - Mounting Structures - Other Key BoS equipment <p>10. KEY PLAYERS</p> <ul style="list-style-type: none"> - Azure Power - Fourth Partner Energy - CleanMax Solar - Amplus Solar - Cleantech Solar - SunSource Energy - ReNew Power - Tata Power Solar
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The report is available in a PDF format.

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

Table of Contents

1. MARKET OVERVIEW, KEY TRENDS AND RECENT DEVELOPMENTS . . .

There is a rising popularity among developers, especially renewable energy players, to go for third-party direct sale agreements. States of Karnataka, Tamil Nadu, Andhra Pradesh and Telangana in the southern region of India and Rajasthan, Punjab and Haryana in the northern region of the country are fast catching up with open access transactions. But there are significant challenges in the growth of this segment, especially those pertaining to discoms' resistance to let go of their high-end consumers.

- Size and Growth of Open Access-based Power Projects
- Renewable Energy-based Open Access Projects: Year-wise Trends, Source-wise Share
- Participation of Open Access Consumers in the REC Market: Volume Trends, Price Trends
- Leading States
- Key Growth Drivers
- Tariff Trends in Open Access through Solar and Wind
- Key Issues and Challenges

2. IMPACT OF AMENDMENTS IN ELECTRICITY ACT, 2003

- Amendments Pertaining to Open Access for Renewables
- Likely Impact on Growth of Open Access-based PPAs
- Unaddressed Issues
- Industry Experts' Opinions and Recommendations

3. EXISTING OPEN ACCESS POLICY AND REGULATORY SCENARIO

The policy and regulatory framework in this space is currently highly dispersed and varied across states, and is not even stable over the years. There is always a risk of open access charges changing year on year, making it a risky proposition to invest in.

- Overview of Open Access Charges and Losses: For Solar Projects, For Wind Projects
- Model Regulations for Intra-state Open Access and Group Captive
- State-wise Orders of Open Access/Group Captive
- State-wise Implementation Status Overview
- State-wise Power Demand and Supply Overview
- RPO Trajectory for Open Access Consumers
- Key Issues and Challenges

4. INDUSTRY STRUCTURE AND BUSINESS MODELS

The industry structure in the renewable open access segment has been emerging gradually with more number of players entering into this space. Project developers and investors are currently cautious of investing significantly in this segment, but the trend is now changing.

- Power sale options: Bilateral, Collective, REC
- Industry Structure
- Key Players and Capacities: Solar Segment, Wind Segment
- Risks and Concerns

5. TERMS OF THIRD-PARTY POWER SALE CONTRACTS

It is important for both the buyers and sellers to clarify and list out their expectations and accordingly draw up the commercial power sale contract as per the applicable regulatory framework in the respective state.

- Time Period
- Extension Provision
- Tariff and Escalations

- Provision for Changes in Regulatory Charges
- Penalties
- Legal Terms

6. ROLE OF ENERGY BANKING, F&S AND DEVIATION SETTLEMENT MECHANISM

Energy banking will play a key role in the success of solar and wind power-based open access projects. Banking is presently allowed by SERCs upon the levy of a banking charge, which differs in magnitude across states.

Rules around energy banking are specified in different types of documents in various states. Additionally, various attributes of the energy banking framework also differ across states.

- State-wise Energy Banking Mechanism for Open Access Projects: Banking Charge, Banking Period, Buy-back Rate, Restrictions on Time of Injection, Withdrawal of the Banked Energy, Other Attributes (seasonality constraints, buy-back rates, accounting for RPO, etc.)
- State-wise Emerging Energy Banking Framework
- State-wise Forecasting and Scheduling
- Deviation Settlement Charges

7. STATE PROFILES

This chapter will include profiles of Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Telangana, Uttar Pradesh, Chhattisgarh, Haryana, Delhi, Punjab, etc.

- Open Access Charges and Exemptions for Solar and Wind Power: Transmission Losses, Distribution Losses, Wheeling Charges, Cross Subsidy Surcharge, Additional Surcharge, Reactive Energy Charges, Standby Charges, Banking of Surplus Solar Power, Scheduling of Power, Energy Metering
- Key Players and Capacities: Overall Solar, Solar Open Access, Overall Wind, Wind Open Access
- Landed Cost and Return Analysis
- Process and Approvals for Open Access Projects
- Key Industrial and Corporate Clusters: Existing, Upcoming

8. PROJECTED OPEN ACCESS MARKET

Over 2 GW of green power is being sold to big corporates through direct agreements and the trend is northbound as more and more corporates and industries are joining in the race. The business case for renewable energy based open access is getting stronger with the decreasing cost of green power and increasing cost of thermal power.

- Short-term (2019-23) and Long-term (2024-28) Projections
- Renewable-based Open Access Capacity Projections
- Open Access Projected Tariff and Pricing Trends
- IRR Projections
- Future Growth Drivers
- Expected Market Restraints

EXPERT OPINION

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

The report is available in a PDF format.

Table of Contents

EXECUTIVE SUMMARY

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

1. T&D INDUSTRY OVERVIEW

The T&D industry has been growing steadily with investments being made in system strengthening and capacity additions. This chapter gives an overview of the T&D industry and will focus on:

- Growth and Size of Existing T&D Networks
- Recent T&D Network Additions
- Projected T&D Network Additions
- Projected Capex (till 2022-23)
- Future Outlook
- Issues and Challenges

2. MARKET SIZE AND GROWTH FOR UNDERGROUND CABLES

Most of India's T&D network continues to be strung overhead across the country; however, concerns about reliability and quality of supply are making utilities gradually replace their networks with underground lines. This chapter gives an overview on the new and emerging utility requirements in the underground cabling segment and will cover the following:

- Experience so far in T&D Networks
- Emerging Utility Requirements
 - Transmission
 - Distribution
- Major Projects Commissioned
 - Transmission
 - Distribution
- Major Projects Awarded/Under Construction
 - Transmission
 - Distribution
- Key Recent Tenders
- Issues and Challenges

3. RECENT TRENDS AND ADVANCES

Well-designed and well-installed underground cable systems are expected to have a service life of 30-40 years. Utility providers, transmission companies and cable manufacturers are hence, looking for new technologies and solutions to respond to new grid challenges. This chapter looks at the new and promising technologies, designs and solutions for underground cable networks.

- Design, Laying and Construction Processes
- Product and Technology Trends
- Market Trends and Developments (JVs/Acquisitions/Partnership Deals)
- Pricing and Cost Trends

4. OPPORTUNITIES UNDER KEY CENTRAL/STATE GOVERNMENT PROGRAMMES

Underground cables are an important part of several central government initiatives for improving T&D networks under IPDS. This chapter provides the details of plans and targets of works proposed to be taken up under various schemes.

- Snapshot of Key Government Programmes (IPDS, Green Energy Corridors, State Government Initiatives, etc.)
- Physical Targets for UG Cabling Works
- Funding Availability for UG Cabling Projects
- Issues and Concerns

5. OPPORTUNITIES UNDER SMART CITIES MISSION

The Smart Cities Mission offers significant opportunities for underground cabling in key cities. Some cities such as Indore, Belagavi, Dharamshala, Lucknow, Kanpur and Tirupati are implementing projects for setting up underground cabling network for utilities such as electric wires, water pipelines, stormwater drains, sewers and telecommunication cables. This chapter provides the details of plans and targets of works proposed to be taken up under various schemes.

- Snapshot of the Mission
- Physical Targets for UG Cabling Works
- Projects Completed so Far in Key Cities
- Projects Under Construction/ Awarded
- Proposed Projects
- Issues and concerns

6. OUTLOOK AND PROJECTIONS (till 2022)

This chapter will give a snapshot of the investments and physical targets proposed for underground cabling networks by transcos and discoms. The information presented in this chapter is based on both primary and secondary information collected from transcos and discoms.

- Growth Drivers for UG Cabling
- Expected Demand for UG Cables
- Plans and Targets of Utilities by Segment
 - Transmission
 - Distribution
- Budgeted Capital Expenditures on UG Cabling
- Future Outlook

7. LEADING PLAYERS

This chapter primarily focuses on the profiles of key vendors and technology providers for underground cabling. Each profile covers the following information:

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

The report is available in a PDF format.

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.

Segment Analysis, Trends and Outlook

Table of Contents

<p>1. EXECUTIVE SUMMARY</p> <p>SECTION A: MARKET OVERVIEW, TRENDS AND OUTLOOK</p> <p>2. CURRENT SCENARIO</p> <ul style="list-style-type: none"> - 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 <p>3. ENABLING POLICY FRAMEWORK</p> <ul style="list-style-type: none"> - 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 <p>4. FUTURE OUTLOOK AND MARKET OPPORTUNITIES</p> <ul style="list-style-type: none"> - MNRE's Targets - Key Growth Drivers - Capacity Addition Outlook - Investment Projections - City-wise Potential and Opportunities - Market Opportunities - The Way Forward <p>5. ANALYSIS OF OPERATIONAL PROJECTS</p> <ul style="list-style-type: none"> - 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 <p>6. ECONOMICS AND FINANCING</p> <ul style="list-style-type: none"> - 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 	<p>SECTION B: SEGMENT ANALYSIS</p> <p>7. MSW-BASED POWER PROJECTS</p> <ul style="list-style-type: none"> - 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 <p>8. INDUSTRIAL WASTE-BASED POWER PROJECTS (INCLUDING CAPTIVE OFF-GRID)</p> <ul style="list-style-type: none"> - 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 <p>9. BIOGAS PROJECTS</p> <ul style="list-style-type: none"> - 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 <p>10. BIO-CNG PROJECTS</p> <ul style="list-style-type: none"> - 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
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The report is available in a PDF format.

Table of Contents

1. EXECUTIVE SUMMARY	8. IMPACT ON INDUSTRY STRUCTURE
2. WIND SECTOR OVERVIEW	- Trends in Market Share
- Capacity Addition Trends	- Emerging Project Developers Landscape
- Yearly Targets and Achievements	- Impact on Manufacturing Industry
- State-Wise Capacity Growth Trends	- Industry Structure post-Competitive Bidding
- Key Milestones And Developments	- Industry Consolidation
- Impact Of Competitive Bidding On Capacity Addition	9. CHANGING COST ECONOMICS
- Emerging Growth Drivers	- Wind Tariff Trends
- Emerging Areas of Opportunity	- Tariffs Determined Through Competitive Bidding
- Key Issues And Challenges	- Average Power Purchase Cost
3. POLICY AND REGULATORY FRAMEWORK	- REC Price and Volume Trends
- Key Features Of Competitive Bidding Guidelines For Wind Projects	- Return on Investment Analysis and Comparison
- State-wise Competitive Bidding Policies And Guidelines	10. FINANCING OF COMPETITIVELY BID PROJECTS
- Renegotiation Of Older PPAs	- Change in Project Costs Post-Competitive Bidding
- Policy And Regulatory Needs And Outlook	- Key Sources of Funds
4. EXPERIENCE OF COMPLETED WIND TENDERS	- Emerging Sources of Financing for Wind Power Developers
- Bidding Processes And Overall Experience	- Financing Outlook
- Result Analysis Of SECI Tranche I To IV Tenders	11. IMPACT ON CAPACITY ADDITION AND INVESTMENT
- Result Analysis Of State-Wise Tenders	- Future Growth Drivers
5. UPCOMING WIND TENDERS	- Impact on Capacity Addition Outlook
- Key Features Of Upcoming tenders	- Impact on Investment Requirements
- Key Issues and Challenges	- Key Risks and Challenges
6. RISKS AND CHALLENGES	
- Policy And Regulatory Risks	
- Legal Challenges	
- Financing-Related Issues	
7. ALTERNATIVE WIND POWER SELLING OPTIONS	
- Renewable Energy Certificates (REC)	
- Open Access	
- Sale On Power Exchanges	
- Pros And Cons For Alternative Power Sale Options	

The report is available in a PDF format.

Table of Contents

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.

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)
- Kendrapara 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.

(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> <p><i>The report is available in a PDF format.</i></p>
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Recent Progress, Upcoming Opportunities and Future Projections

Table of Contents

PART I

SECTION I: SECTOR ANALYSIS, OPPORTUNITIES AND OUTLOOK

1. SECTOR PROGRESS AND KEY TRENDS

- Traffic Growth (Past Five years); Existing Capacity and Utilisation Analysis; Project Award and Completion Trends (2020-21 to 2021-22); Efficiency Trends; Key Recent Developments; Policy & Regulatory Initiatives; Maritime Vision 2030; Impact of Covid-19 on Traffic, Ongoing Projects and New Bids, Investments and Deals, Developers; Investment Requirements and Targets under NIP; Risks and Challenges; Sector Outlook

2. OUTLOOK AND KEY PROJECTIONS (Till 2026-27)

- Traffic Projections; Capacity Addition Projections; Investment Projections; Project Award and Completion Targets; Policy Outlook

3. PROJECT PIPELINE ANALYSIS

- Assessment of Project Pipeline; Port-wise Analysis: Major and Non-Major Ports; Analysis by Stage of Development; Analysis by: Ownership, Brownfield versus greenfield, Coast, State, Completion Period; Analysis of Upcoming Projects; Top Upcoming Projects in Terms of Investment

4. INVESTMENT AND MARKET OPPORTUNITIES (Till 2026-27)

- Investment Opportunities Under: National Infrastructure Pipeline, National Monetisation Pipeline, Mega Programmes
- Market Opportunities for: Project Developers, EPC Contractors, Financiers/Investors, Technology Providers and Equipment Suppliers, Others - Construction Material Suppliers, Consultants & Survey Firms

5. MAJOR PORTS AUTHORITIES ACT, 2021

- Salient Features; Expected Impact; Stakeholder/Industry Viewpoint; Unaddressed Issues

6. FINANCING TRENDS AND PPP EXPERIENCE

- Key Funding Sources; Recent Deals and Transactions; Private Sector Experience; Experience So Far; Issues and Concerns; Future Potential

SECTION II: PROGRESS AND OPPORTUNITIES UNDER MEGA PROJECTS

7. SAGARMALA PROGRAMME

- Targets and Key Components; Progress under Four Components; Project Awards and Completion; Investment Requirements & Funding; Future Targets and Timelines; Big Ticket Opportunities; Upcoming Tenders & Contracts; Issues and Challenges

8. JAL MARG VIKAS & 106 NEW NATIONAL WATERWAYS

- Project Overview and Progress So Far; Project Awards and Completion; Investment Requirements & Funding; Future Targets and Timelines; Issues and Challenges

9. FOCUS ON KEY UPCOMING GREENFIELD PORTS

- Capacity & Infrastructure; Current Status & Key Milestones; Investment Requirements & Funding; Capacity Addition Plans & Targets; Future Opportunities for Key Stakeholders; Key Issues & Challenges

SECTION III: TRENDS IN CAPACITY ADDITION & COMMODITY-WISE TRAFFIC

10. TRAFFIC TRENDS & ANALYSIS

- Growth Trends (2016-17 to 2021-22); Export and Import Traffic Analysis; Coast-wise and Region-wise Traffic Analysis; Port-wise Traffic Analysis

11. CAPACITY TRENDS & ADDITIONS

- Overall Analysis; Capacity Addition Trends (2016-17 to 2020-21); Coast-wise Capacity Analysis; Region-wise Capacity Analysis; Capacity Addition Plans in Near-Term; Upcoming Contracts & Tenders

12. COAL

- Trends in Coal Traffic (2016-17 to 2020-21); Trends in Capacity Additions and Utilisation Levels (2016-17 to 2020-21); Performance of Commodities in 2021-22; Upcoming Projects & Investments; Issues & Challenges; Future Projections

13. IRON ORE

- Trends in Iron Ore Traffic (2016-17 to 2020-21); Trends in Capacity Additions and Utilisation Levels (2016-17 to 2020-21); Performance of Commodities in 2021-22; Upcoming Projects & Investments; Issues & Challenges; Future Projections

14. POL

- Trends in POL Traffic (2016-17 to 2020-21); Trends in Capacity Additions and Utilisation Levels (2016-17 to 2020-21); Performance

of Commodities in 2021-22; Upcoming Projects & Investments; Issues & Challenges; Future Projections

15. CONTAINERS

- Trends in Container Traffic (2016-17 to 2020-21); Trends in Capacity Additions and Utilisation Levels (2016-17 to 2020-21); Performance of Commodities in 2021-22; Upcoming Projects & Investments; Issues & Challenges; Future Projections

16. FERTILISERS

- Trends in Fertiliser Traffic (2016-17 to 2020-21); Trends in Capacity Additions and Utilisation Levels (2016-17 to 2020-21); Performance of Commodities in 2021-22; Upcoming Projects & Investments; Issues & Challenges; Future Projections

17. EFFICIENCY INDICATORS AND FINANCIAL PERFORMANCE

- Key Efficiency Indicators; Key Financial Performance Indicators

18. TRENDS IN PORT CHARGES AND TARIFFS

- Port Logistics Costs; Shipping Operating Costs; Existing Port Tariffs/Charges; Recent Tariff Revisions; Tariff Guidelines for Major Ports; Issues and Concerns; Recommendations to Lower Port Tariffs/Charges

SECTION IV: FOCUS ON KEY SEGMENTS

19. PORT CONNECTIVITY

- Current Trends in Mode of Evacuation of Cargo; Experience so Far; Investment Requirements; Upcoming Projects and Tenders; Impact of DFC on Rail-Port Connectivity; Key Issues and Challenges

20. INLAND WATERWAYS

- Existing Infrastructure; Traffic Trends; Recent Developments; Indo-Bangladesh Protocol; International Agreements for Use of Waterways; Key Ongoing and Upcoming Projects; Key Issues and Concerns; Traffic Projections (till 2030); Investment Requirements; New Opportunities; Segment Outlook

21. COASTAL SHIPPING

- Overview; Traffic Trends; Key Government Schemes and Initiatives; Industry Structure and Key Players; Fleet Size of Indian Shipping Industry; Recent Developments; Growth Drivers; Key Issues and Concerns; Traffic Projections (till 2026-27); Segment Outlook

22. PORT MODERNISATION & DIGITALISATION

- Ease of Doing Business Initiatives; Technology & Equipment Providers; Digital Solutions & Initiatives; Nex-Gen Technologies (AI, ML, Robotics, etc.)

23. NEW OPPORTUNITY AREAS

- Roll-on, roll-off (Ro-ro); Cruise Shipping; Port-led Industrial Cities; LNG Terminals; Renewable Energy; Multi-modal Logistics Parks; Free Trade Warehousing Zones; Shipbuilding and Ship-repair

PART II

SECTION V: KEY PROFILES

24. MAJOR PORT PROFILES

- Overview; Chennai Port; Cochin Port; Deendayal Port (erstwhile Kandla Port); Jawaharlal Nehru Port Trust; Kamarajar Port; Syama Prasad Mookerjee Port (erstwhile Kolkata Port); Mumbai Port; Mormugao Port; New Mangalore Port; Paradip Port; V.O. Chidambaranar Port; Visakhapatnam Port

25. NON-MAJOR PORT PROFILES

- Overview; Angre Port, Maharashtra; Dahej Port, Gujarat; Dhamra Port, Gujarat; Dighi Port, Maharashtra; Gangavaram Port, Andhra Pradesh; Gopalpur Port, Odisha; Hazira port, Gujarat; JSW Jaigarh Port, Maharashtra; Kakinada Seaports, Andhra Pradesh; Karaikal Port, Puducherry; Kattupalli Port, Tamil Nadu; Krishnapatnam Port, etc.

26. KEY PLAYERS

- Adani Ports and Special Economic Zone Limited; APM Terminals; Essar Ports Limited; DP World; GMR Group; JM Baxi; JSW Infrastructure and Logistics Limited; Larsen & Toubro Limited; etc.

SECTION VI: DATABASE OF KEY PROJECTS

The database includes upcoming projects (ongoing and planned) in the sector with details on project name, segment/component, cost, capacity, location, implementing agency, current status, mode of implementation, etc.

The report is available in a PDF format.

Table of Contents

SUMMARY AND INSIGHTS

SECTION I: MARKET ANALYSIS, PROJECTIONS, OUTLOOK AND OPPORTUNITIES

1. TRENDS, DEVELOPMENTS AND OUTLOOK

- Network Size and Growth; Ridership Trends; Investment Trends and Budgetary Outlays; Key Recent Developments; Policy Initiatives and Impact; Impact of Covid-19 on: Ridership and Operations, Revenues, Capacity Addition and Capex Plans; Growth Drivers; Investment Projections; Risks and Challenges; Upcoming Opportunities; Future Outlook

2. ANALYSIS OF NETWORK, RIDERSHIP & REVENUE (Past five years)

- Trends in Network Addition; Growth in Ridership; Fare Trends; Financials of Key Metro Rail Corporations; Fare Box & Non-fare Box Revenue Trends

3. KEY PROJECTIONS

- Projected Network Addition; Projected Ridership; Projected Investment; Sector Outlook

4. PROJECT PIPELINE (Till 2026-27 and beyond)

- Upcoming Projects; Analysis by Forms of Mass Transit; Analysis by Stage of Development; Analysis By Mode of Implementation; Analysis By Alignment; Analysis By Expected Completion; Key Upcoming Tenders

5. MARKET OPPORTUNITIES

- Opportunities for: EPC Contractors, Private Developers, Consultants, Financiers, Rolling Stock Suppliers, System Suppliers, Station Designers, Technology Providers; Big-ticket Opportunities to Look Out For

6. METROLITE AND METRONEO

- Market Size; Growth Drivers; Standards and Specifications; Key Operating Features; Cost Economics and Analysis; Ongoing and Upcoming Projects; Key Collaborations; Major Vendors; Issues and Challenges; Projected Market Size

7. INVESTMENT AND FINANCING TRENDS

- Trends in Funding Sources; Key Sources of Revenue; New Revenue Streams; Innovative Funding Options (Land Value Capture, TOD Policy, Deferred Capex, Bonds, etc.); Cost Components and Project Economics; PPP Experience and Potential; Investment Outlook

8. NEW AND EMERGING OPPORTUNITIES

- Focus on Integrated Mobility; Transit Oriented Development; Real Estate and Commercial Development; First and Last-Mile Connectivity; Solar Energy Use and Solar Rooftops; Train leasing and O&M Outsourcing; Technology and Digital Solutions; Others

SECTION II: SEGMENT ANALYSIS: TRENDS, INNOVATIONS, OUTLOOK AND OPPORTUNITIES

9. ROLLING STOCK

- Segment Size and Growth; Nature of Fleet and Specifications; Trends in Technology Deployment; Trends in Production and Supply; Competitive Landscape and Key Players; Recent Contracts; Key Open Tenders; Growing Role of Indian Players; Existing and New Manufacturing Facilities; Procurement and Upgrade Plans; Segment Forecasts and Opportunities

10. SIGNALING, TRAIN CONTROL AND TELECOMMUNICATIONS

- Size and Growth; Technologies and Systems in Use; New Innovations; Recent Developments; Competitive Landscape and Key Players; Contracts Awards; Open Tenders; Segment Forecast and opportunities

11. FARE COLLECTION AND NEXT-GEN TICKETING SYSTEMS

- Size and Growth; Specifications of Systems in Use; Level of Integration and Interoperability; Innovations in Fare Media (NCMC, contactless ticketing, mobile wallets, etc.); Competitive Landscape and Key Players; Contract Awards; Open Tenders; Key Trends and Developments; Plans for Deployment of Advanced Fare Media; Segment Forecasts and Opportunities

12. CONSTRUCTION: ELEVATED AND AT-GRADE STRUCTURES

- Size and Growth; Per-km Construction Cost; Prevalent Methods and Techniques; Key Trends; Key Contractors and Market Share; Best Practices; Recent Contracts; Open Tenders; Outlook and Opportunities

13. CONSTRUCTION: METRO TUNNELS

- Size and Growth; Recent Developments; Analysis of TBM Market; Key Players and Market Share; Best Practices; Recent Contracts; Open Tenders; Outlook and Opportunities

14. TRACTION AND E&M

- Size and Growth; Specifications of Traction and E&M Systems; Emerging Electrification Requirements; Energy Consumption and Expenditure; Energy Conservation Initiatives; Key Players; Recent Contracts; Open Tenders; Segment Forecasts and Opportunities

15. STATION DESIGN AND DEVELOPMENT

- Size and Growth; Recent Contracts; Key Players; Upcoming Opportunities under Elevators, HVAC Systems, Public Information Display Systems, Safety and Accessibility Aspects, Others; Open Tenders; Segment Forecasts and Opportunities

SECTION III: PROJECT FOCUS: DETAILED PROFILES OF OPERATIONAL AND UPCOMING METRO RAIL PROJECTS (PHASE-WISE)

16. OPERATIONAL AND UNDER CONSTRUCTION PROJECTS

- Agra Metro Rail Project; Ahmedabad-Gandhinagar Metro Rail Project Phase I; Ahmedabad-Gandhinagar Metro Rail Project Phase II; Bengaluru Metro Rail Project Phase I; Bengaluru Metro Rail Project Phase II; Bengaluru Metro Rail Project Phase 2A; Bhopal Metro Rail Project; Chennai Metro Rail Project Phase I; Chennai Metro Rail Project Phase I Extension; Chennai Metro Rail Project Phase II; Delhi Metro Rail Project Phase I and II; Delhi Metro Express Line; Delhi Airport Express Line Extension; Delhi Metro Rail Project Phase III; Delhi Metro Rail Project Phase IV; Rapid Metro Rail Project Gurgaon Phase I and II; Hyderabad Metro Rail Project Phase I; Indore Metro Rail Project (Phase I); Jaipur Metro Rail Project Phase I; Kanpur Metro Rail Project Phase I; Kochi Metro Rail Project Phase I; etc.

17. UPCOMING PROJECTS (Announced, approved and under bidding projects); Coimbatore Metro Rail Project

- Dehradun-Haridwar-Rishikesh Light Rail Project; Greater Noida – Jewar Airport Metro Rail Project; Gurgaon-Manesar-Bawal Metro Rail Project; Old Gurugram-New Gurugram Metro Rail Project; Gurgaon-Faridabad Metro Rail Project; Guwahati Metro Rail Project Phase I; Navi Mumbai Metro Rail Project Phases II, III & IV; Vijayawada Light Rail Project; Gorakhpur Light Rail Project; Hyderabad Metro Rail Project Phase II; Jaipur Metro Rail Project - Phase II; Kochi Metro Rail Project Phase II; Mumbai Metro Rail Project Line 8; Mumbai Metro Rail Project Line 10; Mumbai Metro Rail Project Line 11; Mumbai Metro Rail Project Line 12; Mumbai Metro Rail Project Line 14; Nagpur Metro Rail Project- Phase II; Noida-Greater Noida Metro Rail Project (Aqua Line Extension); Swargate to Khatrapati Shivaji Maharaj Metro Corridor; Pune Metro Rail Project Line III Extension; Bengaluru Metro Project Phase III; Thane Metro Rail Project; Visakhapatnam Metro Rail Project Phase I; etc

The report is available in a PDF format.

Recent Trends, New Opportunities and Future Outlook

Table of Contents

SUMMARY AND INSIGHTS

SECTION I: SECTOR ANALYSIS, OPPORTUNITIES, PROJECTIONS AND OUTLOOK

- 1. SECTOR TRENDS AND DEVELOPMENTS**
 - Sector Size and Growth; Key Trends; Growth Drivers; Policy Initiatives; Recent Developments; Impact of Covid-19 on: Traffic and revenues, Projects (Announced, Ongoing, and Under Bidding), Capacity Addition and Capex Plans; Risks and Challenges; Future Targets
- 2. TRAFFIC AND CAPACITY ANALYSIS**
 - Traffic Trends; Impact of COVID-19 on Traffic Volumes during 2021-22 versus 2020-21; Inter-Airport Comparison; Capacity Utilisation Trends; Recent Capacity Additions; Additional Capacity Requirement by 2026-27 and beyond
- 3. PROGRESS AND POTENTIAL: PUBLIC ASSET MONETISATION**
 - Progress and experience; Targets under National Monetisation Pipeline; Upcoming Opportunities; Key Timelines
- 4. FOCUS ON MEGA GREENFIELD AIRPORTS: NAVI MUMBAI, JEWAR AND MOPA**
 - Progress and Current Status; Recent Contracts; Opportunity Areas; Key Challenges
- 5. SECTOR PROJECTIONS AND DEMAND FORECASTS**
 - Traffic: Passenger and Cargo; Capacity: Passenger and Cargo; Investment: Passenger, Cargo and Other Aviation Infrastructure; Expected Capacity Addition: Brownfield, Greenfield, Terminal Infrastructure; Targets under Vision 2040: Passengers, Cargo, Airports, Aircraft, Revenue
- 6. PROJECT PIPELINE ANALYSIS**
 - Upcoming Project: By 2022-23, 2024-25, 2026-27; Analysis by Type: Greenfield Airports, Brownfield Airports, Airside Infrastructure, Others; Analysis by Stage of Development: Planned/Announced, Approved, Under Construction/Awarded, Under Bidding; Analysis by Mode of Implementation: EPC, PPP; Top Investible Projects; Projects Awaiting Clearances/Land Acquisition/Financial Closure
- 7. INVESTMENT AND MARKET OPPORTUNITIES**
 - Opportunities Under: Acquisition/Privatisation, Greenfield Project Development, Brownfield Project Development, Operations and Maintenance, Commercial Development, City-side/Aerotropolis Development, Fuels Farms; Market Opportunities for: Project Developers, EPC Contractors, Financiers/Investors, Equipment/Technology Providers, Material Suppliers, Consultants; Big-ticket Opportunities to Look Out For
- 8. OPERATIONAL AND FINANCIAL PERFORMANCE OF KEY PLAYERS**
 - Airports Authority of India, Traffic Performance, Recent Capacity Addition, Key Completed Projects, Financial Performance, Capex Targets and Investment Plans, Capacity Expansion Plans; Private Operators' Performance: Project Portfolios, Operational Performance, Financial Performance, Recent Deals and Transactions, Future Plans
- 9. UPDATE ON REGIONAL CONNECTIVITY SCHEME**
 - Progress and Experience So Far; Operationalised Airports/Airstrips; Airline Experience, Route Viability and Issues Faced; Upcoming Airports/Airstrips/Water Aerodromes; Future Plans and Targets

- 10. FINANCING AND INVESTMENT TRENDS**
 - Debt Market Trends; Private Equity Trends; M&A Deals; Recent Financial Closures; Other Financial Developments; Key Risks and Projected IRRs; Impact of Key Recent Regulations

SECTION II: FOCUS ON KEY SEGMENTS

- 11. CARGO INFRASTRUCTURE DEVELOPMENT**
 - Existing Capacity; Operational Facilities; Recent Capacity Additions; New Initiatives and Developments; Upcoming Projects, Future Capacity and Investment Targets; Segment Outlook and Opportunities
- 12. EQUIPMENT: COMMUNICATION, NAVIGATION AND SURVEILLANCE**
 - Current Infrastructure; Recent Trends and Advancements; Key Suppliers; Procurement Targets; Investment Plans for Procurement; Key Growth Drivers; Upcoming Opportunities for Equipment Suppliers
- 13. MAINTENANCE, REPAIR AND OVERHAUL**
 - Currently Scenario; Demand for MRO; India as a Potential MRO Hub; Government Initiatives; Upcoming Projects and Opportunities; Future Outlook
- 14. PASSENGER FACILITATION: ROLE OF TECHNOLOGY & DIGITAL SOLUTIONS**
 - Recent Trends and Advancements; Use Cases at Key Airports; Key Solutions Deployed at Airports: E-boarding Systems, In-line Baggage Screening Systems (ILBS), Self-check-in kiosks, Biometric systems, Digi-Yatra, AirSewa 2.0, E-gates, Safety and Video Surveillance Solutions; Technology Plans at Key Airports

SECTION III: PROJECT PROFILES (BROWNFIELD AND GREENFIELD)

- 15. KEY OPERATIONAL/COMPLETED AIRPORTS**
 - Indira Gandhi International Airport (IGIA), Delhi; Chhatrapati Shivaji International Airport (CSIA), Mumbai; Kempegowda International Airport, Bengaluru; Chennai International Airport, Tamil Nadu; Netaji Subhash Chandra Bose International Airport (NSCIA), Kolkata; Rajiv Gandhi International Airport, Hyderabad; Cochin International Airport, Kerala; Kazi Nazrul Islam Airport, West Bengal; Pakyong Airport, Sikkim; Kannur Airport, Kerala; Sindhudurg Airport, Maharashtra; Shirdi Airport, Maharashtra; Orvakal Airport, Andhra Pradesh; Gulbarga/Kalaburagi Airport, Karnataka; Darbhanga Airport, Bihar; Rourkela Airport, Odisha; Rupsi Airport, Assam; Kushinagar Airport, Uttar Pradesh
- 16. UPCOMING AIRPORTS**
 - Bhogapuram Airport, Andhra Pradesh; Dholera Airport, Gujarat; Hassan Airport, Karnataka; Deoghar Airport, Jharkhand; Dagadharthi Airport, Andhra Pradesh; Dabra Airport, Madhya Pradesh; Bijapur Airport, Karnataka; Shimoga Airport, Karnataka; Karaikal Airport, Puducherry; Mandi Airport, Himachal Pradesh; Purandar Airport, Maharashtra; Kalyani Airport, West Bengal; Holongi Airport, Arunachal Pradesh; Rajkot Airport, Gujarat; Sabarimala Airport, Kerala; Parandur Airport, Tamil Nadu; Sriperumbudur Airport, Tamil Nadu; Ayodhya Airport, Uttar Pradesh; Other Greenfield & RCS Airports

The report is available in a PDF format.

Table of Contents

SUMMARY AND KEY INSIGHTS**SECTION I: SECTOR ANALYSIS, OPPORTUNITIES AND OUTLOOK****1. SECTOR PROGRESS AND KEY TRENDS**

- Network Growth; Traffic and Earnings Trends; Project Awards; Project Completion; Key Recent Developments; Impact of Covid-19 on; Investment Requirements; Risks and Challenges; Sector Outlook

2. OUTLOOK AND KEY PROJECTIONS (Till 2026-27)

- Growth Drivers; Network Addition Projections; Traffic Projections; Investment Projections; Completion Targets; Opportunities for Private Participation; Material Demand Projections; Equipment Demand Projections

3. INVESTMENT AND MARKET OPPORTUNITIES (Till 2026-27)

- Investment Opportunities Under: National Infrastructure Pipeline; Mega Programmes; National Monetisation Pipeline; Track Construction; Rolling Stock; Signalling & Telecommunication
- Market Opportunities for: Project Developers; EPC Contractors; Financiers/Investors; Technology Providers; Equipment and Construction Material Suppliers; Consultants

4. PROJECT PIPELINE ANALYSIS

- Assessment of Project Pipeline; Analysis by Segment; Analysis by Stage of Development; Analysis by Region; Analysis by State; Analysis by Completion Period; Analysis of Upcoming Projects

SECTION II: PROGRESS AND OPPORTUNITIES UNDER MEGA PROGRAMMES**5. DEDICATED FREIGHT CORRIDORS: ONGOING AND PLANNED**

- Progress So Far & Key Milestones; Financing Experience & Funding Options; Targets & Timelines; New Technologies & Solutions; Update on New Corridors; Upcoming Opportunities; Upcoming Contracts & Tenders; Investment Requirements & Traffic Projections

6. HIGH SPEED RAIL SYSTEMS

- Progress So Far & Key Milestones; Financing Structure; Targets & Timelines; New Technologies & Solutions; New Corridors/Sections Identified; Issues & Challenges; Upcoming Contracts & Tenders; Investment Requirements

7. STATION INFRASTRUCTURE REDEVELOPMENT

- Progress So Far & Key Milestones; Financing Experience & Funding Options; Targets & Timelines; New Technologies & Solutions; Upcoming Opportunities; Issues & Challenges; Upcoming Contracts and Tenders; Investment Requirements

8. REGIONAL RAPID TRANSIT SYSTEM

- Progress So Far & Key Milestones; Financing Experience & New Funding Options; Targets & Timelines; New Technologies & Solutions; Upcoming Opportunities; New Corridors/Sections Identified; Issues & Challenges; Upcoming Tenders and Investment Requirements

9. NEW SUBURBAN RAIL SYSTEMS

- Progress So Far & Key Milestones; Targets & Timelines; New Technologies & Solutions; Issues & Challenges; Upcoming Contracts & Tenders; Investment Requirements

SECTION III: TRENDS IN OPERATIONAL AND FINANCIAL PERFORMANCE**10. IR'S FINANCIAL PERFORMANCE**

- Growth Trends; Capital Expenditure; Operating Ratio; Impact of Covid-19 on IR's Revenue & Expenditure in 2021-22; Cost Trends; Revenue Trends; Revenue Surplus; Recovery Trend & Revival Strategies; New Funding/Revenue Sources; Asset Monetisation Plan

11. FREIGHT TRAFFIC AND EARNINGS

- Key Trends (2016-17 to 2020-21); Impact of Covid-19 on Monthly Traffic & Earnings in 2021-22; Commodity-wise Trends in Freight Traffic and Earnings; Initiatives for Improving Freight Traffic; Freight Traffic Projections; Segment Outlook

12. PASSENGER TRAFFIC AND EARNINGS

- Key Trends (2016-17 to 2020-21); Impact of Covid-19 on Monthly Traffic & Earnings in 2021-22; Suburban and Non-Suburban Traffic and Earnings Analysis; Class-wise Traffic and Earnings Analysis; Initiatives for Improving Passenger Amenities; Revival Strategies; Passenger Traffic Projections

13. EFFICIENCY INDICATORS

- Efficiency Indicators for Freight Operations

- Passenger Km Per Route Km
- Line Capacity and Utilisation
- Staff Utilisation Indicators
- New Initiatives & Future Plans

SECTION IV: FOCUS ON KEY SEGMENTS**14. TRACK CONSTRUCTION: PROGRESS SO FAR**

- Current Size and Growth Trends (2016-17 to 2020-21)
- Key Completed Projects
- Ongoing Projects
- Equipment & Material Trends

15. OPPORTUNITIES IN TRACK CONSTRUCTION

- Network Expansion Plans & Targets
- Projects Proposed in 2021-22
- Zone-wise Plans & Targets
- Demand Projections
- Future Investment Requirements and Key Upcoming Contracts

16. ROLLING STOCK: CURRENT FLEET, PRODUCTION CAPACITY & FUTURE PRODUCTION PLANS

- Growth Trends versus Targets (2016-17 to 2020-21)
- Production Plans & Targets
- New Trains and Coaches Introduced
- Innovation in Designs & Components
- Actual Production versus Target (2016-17 to 2020-21)
- Future Investment Requirements
- Upcoming Production Units and Investment Requirements
- Make in India & Atmanirbhar Bharat

17. SIGNALLING AND TELECOMMUNICATION

- Current Size and Growth Trends (2016-17 to 2020-21)
- Zone-wise Plans & Targets
- Expenditure Trends (2016-17 to 2020-21)
- New Technologies & Innovation
- Opportunities under Make in India & Atmanirbhar Bharat
- Equipment Demand Projections (till 2026-27)
- Upcoming Tenders and Contracts
- Future Investment Requirements (Till 2026-27)

18. RAILWAY ELECTRIFICATION

- Growth Trends versus Targets (2016-17 to 2020-21); Projects Completed and Proposed in 2021-22; Zone-wise Electrification; Targets & Plans for Railway Electrification and Net Zero Carbon Emission; Investment Requirement and Upcoming Opportunities; Upcoming Tenders and Contracts; Trends in Energy Consumption and Expenditure; Initiatives to Reduce Traction and Non-Traction Consumption; Transmission Network; New Captive Power Plants; Current Renewable Capacity – Solar and Wind; Ongoing Renewable Capacity; Upcoming Renewable Capacity; Other Key Initiatives and Developments; Future Outlook

SECTION V: KEY PROFILES**19. PROFILES OF ZONAL RAILWAYS**

- Central Railway; East Coast Railway; East Central Railway; Eastern Railway; North Central Railway; North Eastern Railway; Northeast Frontier Railway; Northern Railway; North Western Railway; South Central Railway; South East Central Railway; South Eastern Railway; Southern Railway; South Western Railway; West Central Railway; Western Railway

20. KEY PSU PROFILES

- Container Corporation of India Limited; Dedicated Freight Corridor Corporation of India Limited; High Speed Rail Corporation of India Limited; Indian Port Rail Corporation Limited; Indian Railway Finance Corporation Limited; Indian Railway Catering and Tourism Corporation Limited; Iacon International Limited; Konkan Railway Corporation Limited; Mumbai Railway Vikas Corporation Limited; National High Speed Rail 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

SECTION V: DATABASE OF KEY PROJECTS

The database includes upcoming projects (ongoing and planned) in the sector with details on project name, segment/component, cost, capacity, location, implementing agency, current status, mode of implementation, etc.

The report is available in a PDF format.

EXECUTIVE SUMMARY

SECTION I: SECTOR ANALYSIS, OPPORTUNITIES AND OUTLOOK

1. SECTOR PROGRESS AND KEY TRENDS

- Network Growth (Past Five years); Project Award and Completion Trends (2016-17 to 2021-22); Traffic and Toll Revenue Trends; Key Recent Developments; Impact of Covid-19 on: Investment Requirements; Risks and Challenges; Sector Outlook

2. OUTLOOK AND KEY PROJECTIONS (Till 2026-27)

- Network Addition Projections; Traffic and Toll Revenue Projections; Investment Projections; Project Award and Completion Targets; Expected Mix of Implementation Models (HAM, BOT, EPC); Material & Equipment Demand Projections; Policy Outlook and Impact

3. INVESTMENT AND MARKET OPPORTUNITIES (Till 2026-27)

- Investment Opportunities Under:; Market Opportunities for:

4. PROJECT PIPELINE ANALYSIS

- Assessment of Project Pipeline:; Analysis by Segment (NH, SH, State Roads, Expressways, Bridges, Tunnels, Flyovers, etc.); Analysis by Stage of Development; Analysis by Ownership; Analysis by State; Analysis by Mode of Implementation; Top Upcoming Projects in Terms of Investment

The detailed project pipeline will be provided in the dataset with parameters like length, cost, implementing agency, developer, contractor, current status, expected COD, etc.

5. PROGRESS UNDER BHARATMALA AND EXPRESSWAY DEVELOPMENT (Past 5 Years)

- Projects Completed; Projects Under Construction; Projects Awarded; Investment Requirements; Future Network Targets; Upcoming Tenders

SECTION II: IMPLEMENTATION MODELS AND KEY PLAYERS

6. BIDDING TRENDS AND ANALYSIS

- Impact of MCA Amendments; Recent Bidding Trends; Average Number of Bidders (HAM and EPC); Average Discounts Quoted for EPC Projects; Average Premiums Quoted for HAM Projects; Projected Impact of Aggressive Bidding on Projects; New Players and Portfolios

7. HYBRID ANNUITY MODEL (HAM)

- Overall Progress and Experience; Project Award and Completion; Key Players and Their Portfolios; Big-ticket Upcoming Projects; Opportunities at the State-level; Issues and Challenges; Future Outlook

8. EPC AND SUB-CONTRACTING MARKET

- Overall Progress and Experience; Project Award and Completion; Key Contractors and their Portfolios; Key Sub-contractors and their Portfolios; Big-ticket Upcoming Projects; Issues and Challenges; Future Outlook

9. TOLL-OPERATE-TRANSFER (TOT) MODEL

- Bundles Awarded and Experience; Trends in Valuations; Upcoming Bundles; Risks and Challenges; Opportunities for Long-term Investors; Future Outlook

10. OPERATIONS, MAINTENANCE AND TOLLING

- Progress and Experience; ETC and FASTag Deployment; Key Players and Their Portfolio; Major Technology Initiatives; Opportunities for O&M Players; Future Outlook

11. ANALYSIS OF KEY DEVELOPERS/CONTRACTORS (2018-19 to 2021-22)

- Project Portfolio; Growth in Order Books; Length Commissioned in Last Three Years; Recent Project Awards; Key Developments; Revenues and Profitability; Planned Capex; Future Plans and Strategies

SECTION III: INVESTMENT SCENARIO AND TRENDS

12. FINANCING AND INVESTMENT TRENDS

- Trends in Financial Closures; Trends in Bank Credit; NHAI's Market Borrowings; Private Equity Deals; Multilateral Development Banks Funded Projects; Funding by InVits/IDFs; Stresses Assets and Resolution Strategies; Other Funding Avenues; Key Risks; Investment Outlook

13. ASSET ACQUISITION/MONETISATION TRENDS

- Overall Trends (Past Five Years); Analysis By: Project Stage, Investor Type, Project Value; Top Deals; Key Exits; Historical and Expected Returns; Opportunities under National Monetisation Pipeline; Opportunities under NHAI's Upcoming InVIT

SECTION IV: FOCUS ON ROAD EQUIPMENT AND MATERIALS

14. ROAD EQUIPMENT TRENDS AND PROJECTIONS

- Overall Market Size and Growth; Equipment-wise Size and Growth; Covid-19 Impact on Demand, Supply and Pricing; Rental and Leasing Market; Key Equipment Manufacturers; Demand Projections (Till 2026-27); Future Outlook

15. MATERIAL MARKET TRENDS AND PROJECTIONS (Cement, Steel, Bitumen)

- Market Size and Growth (Demand and Supply); Pricing Trends; Covid-19 Impact on Prices; Recent Developments; Demand Projections (Till 2026-27); Future Outlook

16. OTHER KEY MATERIALS (Geosynthetics, Fly Ash & Plastic Waste)

- Consumption Trends; Application Areas; Key Projects (Completed and Ongoing); Government Initiatives; Key Suppliers; Future Growth Drivers; Constraining factors

SECTION V: PROGRESS AND OPPORTUNITIES IN THE STATE ROADS DEVELOPMENT

17. INTER-STATE ANALYSIS

- Network Size and Growth; Trends in Budgetary Outlays; Trends in Investments; Projected Investment (By 2026-27); Network Addition Projections (By 2026-27); Upcoming PPP Projects (By 2026); Progress under PMGSY (Rural Roads); Top 15-20 States (Based on Upcoming Projects)

18. PROFILES OF KEY STATES

- Andhra Pradesh; Bihar; Chhattisgarh; Delhi; Gujarat; Haryana; Himachal Pradesh; Jammu and Kashmir; Jharkhand; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Odisha; Rajasthan; Tamil Nadu; Telangana; Uttar Pradesh; Uttarakhand; West Bengal; Northeastern States

(For each state we will cover the network size and growth, key completed and under construction projects, project pipeline, recent policy changes, and other key developments)

SECTION VI: PROFILES OF KEY PLAYERS

- Adani Transport Limited; Afcons Infrastructure Limited; Ashoka Buildcon Limited; Bharat Road Network Limited; Dilip Buildcon Limited; Gammon Infrastructure Projects Limited; Gawar Constructions Limited; Gayatri Projects Limited; GR Infraprojects Limited; H.G Infra Engineering Limited; Hindustan Construction Company Limited; IRB Infrastructure Developers Private Limited; J Kumar Infraprojects Limited; KNR Constructions Limited; Larsen and Toubro Limited; MBL Infrastructures Limited; MEP Infrastructure Developers Limited; NCC Limited; Oriental Structural Engineers Limited; Patel Infrastructure Limited; PNC Infratech Limited; Reliance Infrastructure Limited; Sadbhav Engineering Limited; Sadbhav Infrastructure Project Limited; etc.

This section will cover operations, financial performance, recent developments, project portfolio, and future plans of key players

The report will be available in a PDF format.

Table of Contents

SECTION I: CURRENT SCENARIO, NEW GROWTH AREAS AND KEY PROJECTIONS**1. INDUSTRY TRENDS AND DEVELOPMENTS**

- Macroeconomic Scenario; Size and Growth of Key Segments; Key Players; Top Trends in the Sector; Recent Developments; Logistics Ease Across Different States (LEADS) Survey Outcomes; Impact of Infrastructure Status and GST; Modal Transportation Mix: Current and Expected; Emerging Needs and Requirements; Role of Technology and Automation; Issues and Challenges; Outlook and Projections (2021-22 to 2025-26)

2. IMPACT OF COVID-19 ON OPERATIONS, INVESTMENTS AND FUTURE PLANS

- Progression of Logistics Market post Covid-19 First Wave; Expected Impact of the Second Wave; Impact on Operations; Impact on Investments and Business Viability; Impact on Future Plans of Key Players; Strategies and Mitigation Measures; Emerging Opportunity Areas; Key Takeaways from Industry Discussions

3. DRAFT NATIONAL LOGISTICS POLICY: EXPECTED IMPACT AND INDUSTRY EXPECTATIONS

- Key Objectives; Focus Areas; Industry Response and Expectations; Expected Timelines

4. KEY PROJECTIONS (2021-22 TO 2025-26)

- Freight Traffic Projections; Warehousing Demand and Supply Projections; Projected Demand for Temperature Controlled Warehousing; Expected Capacity Addition

5. FUTURE OUTLOOK AND MARKET OPPORTUNITIES

- Growth Drivers; Policy Outlook; Investment Projections; Emerging Growth Areas and Requirements; Impact and Timelines of Mega Projects (DFC, DMIC, N.Ws, Jal Marg Vikas Project, Freight Corridors, etc.); Top Upcoming Projects; Market Opportunities for: Logistics Service Providers, Warehouse Developers, Equipment Manufacturers, Technology Solution Providers, E-commerce Players, Others; Industry Responses and Views on Sector's Outlook

6. INVESTMENT AND FUNDING SCENARIO

- Trends in Investments and Fund Raising; Recent Deals and Transactions; Key Successful Exits; Historical and Expected Returns; Upcoming Opportunities for Investors; Risks in Light of Covid-19; Investment Outlook

7. LOGISTICS STARTUPS: OPERATIONS, PERFORMANCE AND PLANS

- Profiles of Key Startups: Areas of Operations; Fund Raising Activity; Business Strategies; Investment Opportunities; Expansion Plans; Future Outlook

This chapter will cover profiles of 10-15 top start-ups in the logistics industry

8. TECHNOLOGY AND AUTOMATION REQUIREMENTS

- Current Technology Deployment; Trends in Automation; Emerging Needs and Initiatives in Light of Covid-19; Key Examples of Supply Chain Automation; Smart Warehousing Tools; Deployment of Logistics Robots in the Indian Market; Cost Effectiveness of Key Technology Solutions; Key Players; Future Outlook; Opportunities for Technology Providers

SECTION II: FREIGHT SEGMENT: RECENT TRENDS, NEW INITIATIVES AND OPPORTUNITIES**9. RAILWAYS**

- Size and Growth; Network Size; IR's Freight Traffic and Earnings; Commodity-wise Freight Trends; Government Freight-related Initiatives; Impact of Covid-19 on Operations; Planned Capacity Addition and Upcoming Projects; Outlook and Market Opportunities; Investment Requirement; Short, Medium and Long-term Freight Traffic Projections (2021-22 to 2025-26)

10. ROADS

- Segment Size and Growth; Key Projects/Programmes/Initiatives; Trends in the Trucking Industry; Impact of Covid-19 on Operations; Pricing Trends; Technology Disruptions; Planned Capacity Addition; Upcoming Projects; Key Issues; Outlook and Market Opportunities; Investment Requirement; Short, Medium and Long-term Freight Traffic Projections (2021-22 to 2025-26)

11. PORTS, COASTAL SHIPPING AND IWT

- Traffic Trends; Government Schemes and Initiatives; Impact of Covid-19 on Operations; Upcoming Projects; Market Opportunities; Maritime India Vision 2030; Future Outlook; Investment Requirement; Key Issues and Challenges; Freight Traffic Projections (2021-22 to 2025-26)

12. AIR CARGO

- Size and Growth; Cargo Infrastructure at AAI Airports; Existing Capacity; Recent Capacity Additions; Impact of Covid-19 on Operations; Key Initiatives; Ongoing Projects; Planned Capacity Addition; Upcoming Projects and Investment Requirement; Outlook and Market Opportunities; Short, Medium and Long-term Freight Traffic Projections (2021-22 to 2025-26)

13. EXPRESS LOGISTICS

- Segment Size and Growth; Emerging Trends; Business Models; Industry Landscape; Impact of Covid-19; Emerging Needs and

Requirements; Key Trends and Developments; Issues and Challenges; Sector Outlook and Projections

SECTION III: WAREHOUSING INFRASTRUCTURE: TRENDS, INITIATIVES, PLANS & OPPORTUNITIES**14. AGRICULTURAL WAREHOUSING**

- Size and Growth; Government Schemes and Initiatives; Key Trends and Developments; Market Structure and Key Players; Impact of COVID-19 on Demand and Rentals; Growth Drivers; Key Issues and Challenges; Warehousing Projections; Outlook and Projections

15. INDUSTRIAL WAREHOUSING

- Size and Growth; Key Trends and Developments; Market Structure and Key Players; Impact of COVID-19 on Demand and Rentals; Smart Warehouses; Growth Drivers; Key Issues and Challenges; Outlook and Projections

16. SILO STORAGE

- Segment Scenario and Trends; Size and Growth; Government Schemes and Initiatives; Construction of Steel Silos; Key Issues and Challenges; Outlook and Projections

17. LIQUID AND GAS STORAGE

- Size and Growth; Key Trends and Developments; Key Growth Drivers; Key Issues and Challenges; Outlook and Projections

SECTION IV: TEMPERATURE CONTROLLED LOGISTICS: GAPS, NEW OPPORTUNITIES AND FUTURE OUTLOOK**18. COLD STORAGES**

- Size and Growth; Government Schemes and Initiatives; Key Trends and Developments; Demand for Palettised Cold Storages; Market Structure and Key Players; Key Challenges; Outlook and Projections

19. COLD CHAIN AND REEFER CONTAINERS

- Segment Size and Growth- Cold Chain Industry; Reefer Container Train Services; Reefer Container Port Services; Reefer Facilities at Airports; Key Government Schemes and Initiatives; Key Trends and Developments; Impact of Covid-19 and Induced Demand; Market Structure and Key Players; Growth Drivers; Issues and Challenges; Future Outlook and Projections

20. OPPORTUNITIES IN PHARMA LOGISTICS

- Current Infrastructure Gaps; Growth Drivers; Government Schemes and Initiatives; Plans of Key Players; Expected Demand; Key Challenges; Outlook and Projections

SECTION V: LOGISTICS INFRASTRUCTURE: TRENDS, REQUIREMENTS & OPPORTUNITIES**21. CONTAINER FREIGHT STATIONS (CFSS)/ INLAND CONTAINER DEPOTS (ICDs)**

- Size and Growth; Key Trends and Developments; Impact of Direct Port Delivery on CFSS/ICDs; Market Structure and Key Players; Growth Drivers; Upcoming Projects; Key Issues and Challenges; Outlook and Projections

22. LOGISTICS PARKS/MULTI-MODAL LOGISTICS PARKS

- Size and Growth; Key Trends and Developments; Market Structure and Key Players; Growth Drivers; Upcoming Projects and Investments; Key Issues and Challenges; Segment Outlook

23. FREE TRADE WAREHOUSING ZONES

- Size and Growth; Key Trends and Developments; Market Structure and Key Players; Growth Drivers; Upcoming Projects and Investments; Key Issues and Challenges; Segment Outlook

SECTION VI: SUPPLY CHAIN MANAGEMENT: MARKET ANALYSIS AND OPPORTUNITIES**24. VALUE ADDED SERVICES: PACKAGING & LABELING AND INVENTORY MANAGEMENT**

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

25. 3PL, 4PL AND REVERSE LOGISTICS

- Market Size and Growth; Recent Trends; Demand Drivers; Competitive Landscape; Major Players; Key Issues and Challenges; Growth Outlook on 3 PL Verticals - No; Future Outlook; Demand Projections

26. FREIGHT FORWARDING

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

SECTION VII: DEMAND FROM USER INDUSTRIES**27. KEY END USER INDUSTRIES**

- Food Processing; Healthcare; Pharmaceutical; Automobiles; E-commerce; Electronics; Chemicals; Textiles; Engineering Goods; Brick and Mortar Retail; Cement; Steel

Each of the above industries will include size and growth, trends and developments, logistics and warehousing needs and requirements, and industry outlook.

The report is available in a PDF format

SUMMARY AND INSIGHTS

SECTION I: TRENDS, ANALYSIS, NEW OPPORTUNITIES AND FUTURE PROJECTIONS

- 1. MARKET TRENDS AND CURRENT SCENARIO**
 - Macroeconomic Indicators, Trade Performance, Trends in Level of Containerisation, New Growth Areas, Role of Technology, Digitisation and Automation, Policy Changes and Expected Impact: GST Regime and E-way Bill; National Logistics Policy; Cabotage Law Relaxation and DPD Scheme; Revised Tariff Guidelines for Private Terminal Operators; Freight Any Kind (FAK) Tariff Regime for Rail Containers, Experience with the Logistics Data Bank System, Issues and Challenges, Outlook for Container Volumes
- 2. IMPACT OF COVID-19 ON VOLUMES, CAPACITY ADDITION PLAN AND INVESTMENT**
 - Impact on Container Volumes, Impact on Projects and Capacity Addition Plans, Invocation of Force Majeure and Contract Renegotiation, Impact on Input Costs and Supply Chain, Impact on Operator Revenues, Impact on Investments, Relief Measures & Recovery Strategies, Post Covid-19 Outlook
- 3. INTER-MODAL ANALYSIS: ROADS, RAILWAYS, COASTAL SHIPPING AND INLAND WATERWAYS**
 - Current Share, Comparative Cost Estimates, Overall Traffic Trends, Government's Targets to Achieve an 'Optimal Modal Mix', Traffic and Capacity Analysis: By Mode; Region; Origin and Destination; Type of Containerised Commodity
- 4. EXPECTED IMPACT OF DEDICATED FREIGHT CORRIDOR ON CONTAINER MOVEMENT**
 - Project Scope & Features, Progress So Far & Key Milestones, Financing Experience & Funding Options, Disruptions/Delays due to COVID-19, Targets & Expected Timelines, Future Benefits, Pricing strategies, New Freight Corridors Identified, Upcoming Contracts & Tenders, Traffic Projections, Commissioning
- 5. OPPORTUNITIES, OUTLOOK AND PROJECTIONS (Till 2025-26)**
 - Growth Drivers, Policy and Regulatory Outlook, Investment Projections, Expected Capacity/Network Additions, Emerging Growth Areas, Traffic Projections by Mode, Key Upcoming Projects, Big-ticket Opportunities to Look Out For: 2021 and Beyond
- 6. INVESTMENT TRENDS AND RETURNS: CONTAINER AND ALLIED INFRASTRUCTURE**
 - Trends in Investment, Key Recent Deals and Transactions: Private Equity; Mergers and Acquisitions; IPOs, Key Successful Exits, Historical and Expected Rates of Returns, Outlook and Opportunities for Investors, Risks in Light of Covid-19
- 7. INFRASTRUCTURE DEVELOPMENT UNDER OTHER KEY PROGRAMMES**
 - Sagarmala Programme, Bharatmala Pariyojana, Jal Marg Vikas Project, Delhi-Mumbai Industrial Corridor, Others: 106 New NWS; Kaladan Multi-Modal Transit Transport Project

SECTION II: CONTAINER MOVEMENT: SEGMENT ANALYSIS, TRENDS & OPPORTUNITIES

- 8. PORTS**
 - Traffic Trends: Major Ports; Non-major Ports; Export-Import; Coast; Transshipment Traffic; Terminal, Trends in Capacity Addition & Utilisation Levels, Global Container Shipping Scenario, Impact of Direct Port Delivery Scheme, Initiatives to Improve Port Container Traffic in Light of COVID-19, Upcoming Projects & Investments, Issues & Challenges, Outlook and Projections (Till 2025-26)
- 9. ROADS**
 - Size and Growth, Existing Infrastructure, Upcoming Projects and Planned Capacity Addition, Cost of Container Movement, Connectivity to Container Handling Ports, Trucking Industry

Overview, Market Structure and Key Players, Issues and Challenges, Outlook and Projections

10. RAILWAYS

- Traffic Trends, Share of Container in IR's Freight Traffic and Earnings, Trends in Earnings, Port-rail Connectivity to Container Handling Ports, Recent Developments/Initiatives, Initiatives to Improve Rail Container Traffic in Light of COVID-19, Container Train Operators: Industry Structure; Current Infrastructure, Upcoming Projects and Planned Capacity Addition, Issues and Challenges, Outlook and Projections (Till 2025-26)

11. COASTAL SHIPPING AND INLAND WATERWAYS

- Size and Growth, Growth of coastal and inland container traffic, Government Schemes and Initiatives, Impact of Covid-19, Issues and Challenges, Outlook and Projections (Till 2025-26)

SECTION III: OTHER LOGISTICS INFRASTRUCTURE FOR CONTAINER MOVEMENT

12. COLD STORAGES AND REEFER CONTAINERS

- Segment Size and Growth- Cold Chain Industry, Reefer Container Train Services, Reefer Container Port Services, Reefer Facilities at Airports, Key Government Schemes and Initiatives, Key Trends and Developments, Impact of Covid-19 and Induced Demand, Market Structure and Key Players, Growth Drivers, Issues and Challenges, Future Outlook and Projections

13. CONTAINER FREIGHT STATIONS (CFSS)/ INLAND CONTAINER DEPOTS (ICDS)

- Size and Growth, Key Trends and Developments, Impact of Direct Port Delivery on CFSS/ICDs, Market Structure and Key Players, Growth Drivers, Upcoming Projects, Key Issues and Challenges, Outlook and Projections

14. LOGISTICS PARKS/MULTI-MODAL LOGISTICS PARKS

- Size and Growth, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Upcoming Projects and Investments, Key Issues and Challenges, Segment Outlook

15. FREE TRADE WAREHOUSING ZONES

- Size and Growth, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Upcoming Projects and Investments, Key Issues and Challenges, Segment Outlook

SECTION IV: KEY PROFILES

16. KEY PORT CONTAINER TERMINALS

- Snapshot of Key Container Terminals, Profiles of Key Container Terminals, Adani CMA Mundra Terminal, Adani Ennore Container Terminal, Adani Hazira Container Terminal, Adani International Container Terminal, Adani Mundra Container Terminal, APM Terminals Mumbai, APM Terminals Pipavav, Bharat Mumbai Container Terminal (Phase I), Bharat Kolkata Container Terminal, Chennai Container Terminal Limited, etc.

17. PROFILES OF 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, etc.

18. PROFILES OF KEY ROAD TRANSPORT OPERATORS

- Transport Corporation of India Limited, Allcargo Logistics Limited, Mahindra Logistics Limited, Future Supply Chain Solutions Limited, Associated Road Carriers Limited, Coastal Roadways Limited, Darcl Logistics, East West Freight Carriers Private Limited, SICAL Logistics, Gati KWE, Patel Roadways, TVS Southern Roadways Limited, DRL Logistics Private Limited, VRL Logistics Limited, Others

The report is available in a PDF format.

Table of Contents

EXECUTIVE SUMMARY	- Government Schemes/Initiatives
	- Key Trends and Developments
	- Market Structure and Key Players
	- Key Issues and Challenges
	- Outlook and Projections
SECTION I: CAPACITY GROWTH, EMERGING TRENDS AND KEY PROJECTIONS	
1. SEGMENT OVERVIEW	
- 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 (2024-25)	
2. NEW INITIATIVES AND CAPACITY ADDITION PLANS	
- Key Budget 2020 Announcements	
- Viability Gap Funding for Warehouse Development	
- Warehouse Infrastructure Fund	
- National Cold Storage Grid by the Railways	
- National Warehousing Grid	
- Kisan Rail through PPPs - Refrigerated Coaches in Express and Freight Trains	
- Mapping & Geo-Tagging of Storage Facilities by NABARD (Warehouses & Cold Storages)	
- Advanced Storage Solutions	
- Village Storage Scheme	
3. MARKET OUTLOOK AND PROJECTIONS (Till 2025-26)	
- Policy and Regulatory Outlook	
- Investment Projections	
- Warehousing and Storage Projections	
- Key Upcoming Projects	
- Big-ticket Opportunities to Look Out For: 2020 and Beyond	
4. INVESTMENT SCENARIO	
- Trends in Investment	
- Key Recent Deals and Transactions: Private Equity, Mergers and Acquisitions, IPOs	
- Key Successful Exits	
- Upcoming Opportunities for Investors	
- Risks and Returns	
- Investment Outlook	
SECTION II: STORAGE INFRASTRUCTURE: SEGMENT ANALYSIS, OPPORTUNITIES AND PROJECTIONS	
5. AGRICULTURAL WAREHOUSING	
- Size and Growth	
- Government Schemes/Initiatives	
- Key Trends and Developments	
- Private Entrepreneurs Guarantee (PEG) Scheme	
- Market Structure and Key Players	
- Growth Drivers	
- Key Issues and Challenges	
- Outlook and Projections	
6. INDUSTRIAL WAREHOUSING	
- Size and Growth, Key Trends and Developments, Market Structure and Key Players, Smart Warehouses, Growth Drivers, Key Issues and Challenges, Outlook and Projections	
7. COLD STORAGES, COLD CHAIN AND REEFER CONTAINERS	
- Size and Growth: Pack Houses/Integrated Pack Houses, Reefer Vans, Bulk Coolers, Individually Quick Frozen Units, Chilling/Freezing Infrastructure	
8. SILO STORAGE	
- Size and Growth	
- Government Schemes/Initiatives	
- Key Trends and Developments	
- Construction of Steel Silos	
- Key Issues and Challenges	
- Outlook and Projections	
9. LIQUID STORAGE: CRUDE OIL AND PETROLEUM	
- Size and Growth	
- Key Trends and Developments	
- Key Growth Drivers	
- Key Issues and Challenges	
- Outlook and Projections	
10. GAS STORAGE: DOMESTIC GAS AND LNG	
- Size and Growth	
- Key Trends and Developments	
- Key Growth Drivers	
- Key Issues and Challenges	
- Outlook and Projections	
SECTION III: WAREHOUSING/STORAGE MODELS	
11. CONTAINER FREIGHT STATIONS (CFSS)/ INLAND CONTAINER DEPOTS (ICDS)	
- 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	
12. LOGISTICS PARKS/MULTI-MODAL LOGISTICS PARKS	
- Size and Growth, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Upcoming Projects and Investments, Key Issues and Challenges, Segment Outlook	
13. FREE TRADE WAREHOUSING ZONES	
- Size and Growth, Key Trends and Developments, Market Structure and Key Players, Growth Drivers, Upcoming Projects and Investments, Key Issues and Challenges, Segment Outlook	
SECTION IV: KEY CUSTOMERS: EVOLVING STORAGE NEEDS AND REQUIREMENTS	
14. MAJOR CONSUMER SEGMENTS	
- Grain Storage, Food Processing, Pharmaceutical, Automobiles, Electronics, Chemicals, Textiles, Engineering goods, Brick and mortar retail, FMCGs	
15. FOCUS ON E-COMMERCE & THIRD PARTY LOGISTICS	
- Size and Growth, Key Players, Key Trends and Developments, Growth Drivers, Warehousing Needs and Requirements, Key Issues and Challenges, Outlook and Projections	

The report is available in a PDF format

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 covers 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 includes 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 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.

EXECUTIVE SUMMARY

SECTION I: SECTOR ANALYSIS, PROJECTIONS, AND OUTLOOK

1. SECTOR OVERVIEW AND KEY TRENDS

- Historical Size and Growth: By Volume, Value; Key Sector Trends
- Recent Developments; Key Players; Policy and Regulatory Developments; Government Initiatives; Impact of Covid on: Projects, Commodity Prices, Production and Demand, Mining Companies; Issues and Challenges; Future Outlook

2. PROJECT PIPELINE AND MARKET OPPORTUNITIES (Till 2026-27)

- Overall Pipeline
- Top Upcoming Projects
- Pipeline Analysis: By Mineral, Stage of Development, Type, State, Ownership
- Market Opportunities for: MDOs and Contractors, Equipment Providers, Mine Design Consultants, Technology Providers

The detailed project pipeline will be provided in the dataset with parameters like location, current status, project type (greenfield/brownfield), capacity, implementing agency, cost (on a best effort basis), etc.

3. FUTURE OUTLOOK AND KEY PROJECTIONS (Till 2026-27)

- Growth Drivers; Forecasts of Growth in the Next Five Years; Demand Projections for Minerals; Supply Projections of Key Minerals; Investment Projections; Upcoming Blocks for Auction

4. END-USE MARKET SIZE AND GROWTH (Till 2026-27)

- Power Generation; Cement; Steel; Aluminum; Infrastructure (Roads, railways, transmission lines, etc.); New and emerging segments (Battery energy storage system, electric vehicles, etc.)

5. EXPLORATION AND INVESTMENT TRENDS

- Current Exploration Area and Spending; Recent Initiatives and Structural Reforms; Foreign Participation and FDI Trends; Recent Investments by Mining Companies; Future Capex Plans of Mining Companies; Partnerships and Joint Ventures; Underground Mining Trends and Potential; Issues & Challenges; Future Exploration Target

6. MINERAL AUCTION UPDATE

- Summary of Auctions so Far; Commercial Coal Mining; Non-Coal Mineral Auctions; Issues and Challenges; Future Outlook

SECTION II: MINERAL ANALYSIS, MARKETPLACE AND PROJECTIONS

9. COAL

- Coal Reserves; Domestic Production; Coal Imports and Sourcing Countries; Pricing Trends; Recent Policy Changes and Developments; Upcoming Projects and their Status; Demand Projections (till 2026-27); Supply Projections (till 2026-27)

10. IRON ORE

- Reserves; Production; Exports and Imports; Price Trends; Recent Developments; Key Players; Investment Plans; Upcoming Projects and their Status; Blocks on Auction; Outlook and Projections (till 2026-27)

11. LIGNITE

- Reserves; Production; Exports and Imports; Price Trends; Recent Developments; Key Players; Investment Plans; Upcoming Projects and their Status; Blocks on Auction; Outlook and Projections (till 2026-27)

12. LIMESTONE

- Reserves; Production; Exports and Imports; Price Trends; Recent Developments; Key Players; Investment Plans; Upcoming Projects and their Status; Blocks on Auction; Outlook and Projections (till 2026-27)

13. BAUXITE

- Reserves; Production; Exports and Imports; Price Trends; Recent Developments; Key Players; Investment Plans; Upcoming Projects and their Status; Blocks on Auction; Outlook and Projections (till 2026-27)

14. COPPER

- Reserves; Production; Exports and Imports; Price Trends; Recent Developments; Key Players; Investment Plans; Upcoming Projects and their Status; Blocks on Auction; Outlook and Projections (till 2026-27)

15. LEAD AND ZINC

- Reserves; Production; Exports and Imports; Price Trends; Recent Developments; Key Players; Investment Plans; Upcoming Projects and their Status; Blocks on Auction; Outlook and Projections (till 2026-27)

16. BATTERY MINERALS

- Reserves; Production; Exports and Imports; Price Trends; Recent Developments; Key Players; Investment Plans; Upcoming Projects and their Status

17. OTHER KEY MINERALS (Rare Earth Minerals, Magnesite, Dolomite, Quartz, Silica Sand, Kaolin)

- Reserves; Production; Exports and Imports; Price Trends; Key Mining Companies; Outlook

SECTION III: EQUIPMENT MARKET SIZE AND FORECASTS

18. MARKET SIZE AND GROWTH

- Equipment Market Segmentation; Market Size of Key Equipment; Growth in the Past Five Years; Equipment Productivity Levels; Equipment Utilization Levels; Recent Developments; Covid Impact Analysis; Key Players; Issues and Challenges

19. OUTLOOK AND FORECASTS (Till 2026-27)

- Growth Drivers; Constraining Factors; Equipment Procurement Plans of Key Mining Companies; Projections of Key Equipment; Top Future Trends
- Market Opportunities

SECTION IV: LEADING PLAYERS

20. 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; KIOCL Limited; NMDC Limited; Vedanta Limited; Steel Authority of India Limited; Tata Steel Limited; Hindustan Copper Limited; Hindustan Zinc Limited
 - Others
- Each profile will Cover data and information on: Operational Performance; Project Portfolio/Key Projects; Financial Performance; Expansion Plans; Etc.

21. PROFILES OF KEY MDOs

- Adani Enterprises; NCC-BGR joint venture; Lanco Infratech Limited; Brahmaputra Group; EMIL; Thriveni Earthmovers; SMASL; JMS MSPL; Montecarlo Mining Limited; DilipBuildcon Limited; Aurobindo Reality and Infrastructure Private Limited; Fairmine Carbons Private Limited; Stratatech Mineral Resources Private Limited; Chowgule and Company Private Limited
- Others

The report is available in a PDF format.

Table of Contents

SUMMARY AND KEY INSIGHTS

SECTION I: ANALYSIS, OUTLOOK AND OPPORTUNITIES

1. SECTOR SIZE, TRENDS AND DEVELOPMENTS

- Size and Growth; Emerging Trends; Contracting Practices and Standards; Project Awards and Completion; Recent Developments (in the past 15 months); Impact of Covid-19 on Project Implementation & Completion; Technology Trends & Advancements; Innovations in Equipment & Materials; Risks and Challenges; Segment Outlook

2. PROJECT PIPELINE ANALYSIS (Till 2026-27)

- Upcoming Projects: By 2022-23, 2024-25, 2026-27; Analysis by Stage of Development: Announced, Approved, Awarded, Under Bidding, Under Construction; Analysis by Segment: Hydropower, Roads & Highways, Railways, Metro, Water & Wastewater, Irrigation, Caverns; Analysis by Region & State; Analysis by Completion Period; Top Upcoming Projects in terms of Investment; Key Upcoming Tenders

3. FUTURE OUTLOOK AND MARKET OPPORTUNITIES (Till 2026-27)

- Growth Drivers; Projected Investments; Completion Targets (Medium Term and Long Term); Market Opportunities for: Project Developers, EPC Contractors, TBM Suppliers, Technology Providers, Equipment Providers, Construction Material Suppliers, Consultants/PMCs; Technology Outlook

SECTION II: SEGMENT ANALYSIS: CURRENT SIZE, UPCOMING PROJECTS AND OPPORTUNITIES

4. METRO RAIL TUNNELS

- Size and Growth; Key Completed Projects; Key Ongoing Projects; Technology Trends & Advancements; Major Players; New Tenders/Contracts; Upcoming/Planned Projects

5. ROADS & HIGHWAY TUNNELS

- Size and Growth; Key Completed Projects; Key Ongoing Projects; Technology Trends & Advancements; Major Players; New Tenders/Contracts; Upcoming/Planned Projects

6. RAILWAY TUNNELS

- Size and Growth; Key Completed Projects; Key Ongoing Projects; Technology Trends & Advancements; Major Players; New Tenders/Contracts; Upcoming/Planned Projects

7. HYDRO TUNNELS

- Size and Growth; Key Completed Projects; Key Ongoing Projects; Technology Trends & Advancements; Major Players; New Tenders/Contracts; Upcoming/Planned Projects

8. IRRIGATION, WATER SUPPLY AND SEWERAGE TUNNELS

- Size and Growth; Key Completed Projects; Key Ongoing Projects; Technology Trends & Advancements; Major Players; New Tenders/Contracts; Upcoming/Planned Projects

9. UNDERGROUND CAVERNS

- Size and Growth; Key Completed Projects; Key Ongoing Projects; Technology Trends & Advancements; Major Players; New Tenders/Contracts; Upcoming/Planned Projects

SECTION III: FOCUS ON TECHNOLOGY, EQUIPMENT AND MATERIALS

10. TBM TECHNOLOGY

- Current Market Size; TBM Types; Trends & New Advancements; Current Deployment Trends (Key Projects): Completed, Ongoing; Issues and Constraints; Segment Outlook

11. NATM TECHNOLOGY

- Current Market Size; Trends & New Advancements; Current Deployment Trends (Key Projects): Completed, Ongoing; Issues and Constraints; Segment Outlook

12. DRILL AND BLAST METHOD

- Current Market Size; Trends & New Advancements; Current Deployment Trends (Key Projects): Completed, Ongoing; Issues and Constraints; Segment Outlook

13. MICRO-TUNNELLING TECHNOLOGY

- Current Market Size
- Trends & New Advancements
- Current Deployment Trends (Key Projects): Completed, Ongoing
- Issues and Constraints
- Segment Outlook

14. EQUIPMENT MARKET TRENDS & PROJECTIONS

- Current Market Size; Types of Equipment; Rental and Leasing Market; Impact of Covid-19 on Supply & Availability; Innovations and Advancements; Major Players/Suppliers; Issues and Challenges; Demand Projections (till 2026-27)

15. TUNNEL SAFETY & MEP SYSTEMS

- Trends & Advancements in : Smart Safety & Security Initiatives, Electrical & Mechanical Systems, HVAC Systems
- Select Case Studies/Best Practices
- Key Learnings
- Issues & Challenges
- Segment Outlook

16. MATERIAL MARKET TRENDS AND PROJECTIONS

- Types of Materials Used (steel, cement, anchors, explosives, admixtures, etc.)
- Recent Innovations (Fibre & rock reinforcement, geosynthetics, etc.)
- Noteworthy Initiatives & Best Practices
- Issues & Challenges
- Demand Projections for Key Materials (Till 2026-27)

SECTION IV: KEY PLAYERS: OPERATIONAL AND FINANCIAL PERFORMANCE

17. PROFILES OF KEY PLAYERS

- Abir Infrastructure Private Limited; Afcons Infrastructure Limited; Gammon Infrastructure Projects Limited; Hindustan Construction Company Limited; IRCON International Limited; ITD Cementation; J Kumar Infraprojects Limited; L&T Construction; Navayuga Engineering Company Limited; NCC Limited; Patel Engineering Limited; SEW Infrastructure Limited

This chapter will cover operations, financial performance (wherever available), recent developments, project portfolio and future plans of each company

SECTION V: DATABASE OF KEY PROJECTS

The database is a compilation of upcoming projects in the segment with details on project name, sector/segment, length, location, cost, implementing agency, current status, mode of implementation, etc

- Under Construction
- Awarded
- Under Bidding
- Approved
- Announced
- Planned

The report will be available in a PDF format.

Table of Contents

EXECUTIVE SUMMARY

SECTION I: TRENDS, IMPACT OF COVID-19, PROJECT PIPELINE AND UPCOMING OPPORTUNITIES

1. MARKET OVERVIEW

- Size and Growth; Demand from Infrastructure and Housing; Recent Trends; Evolving Contracting Practices; New Construction Practices and Techniques; Key Government Initiatives and Recent Policy Changes; Union Budget 2021 Announcements for the Construction Industry; Investment Requirements under National Infrastructure Pipeline; Issues and Challenges; Outlook and Opportunities (till 2025-26)

2. IMPACT OF COVID-19 ON PROJECTS AND CONTRACTORS

- Impact on Projects: Pace of Construction, Expected Time Overruns (Short Term and Medium Term). Raw Material and Equipment Availability, Input Costs, Labour Supply
- Impact on Contractors: Order Books, Capex Plans, Stressed Assets, Financial Performance, Contract Renegotiations and Dispute Resolution

3. PROJECT PIPELINE ANALYSIS

- Assessment of Project Pipeline: Short Term (2021-22), Medium Term, Long Term; Analysis by Sector; Analysis by Stage of Development; Analysis by Ownership; Analysis by Region; Analysis by Investment; Top Upcoming Projects in Terms of Construction Opportunity in 2021-22; Projects Awaiting Clearances/Land Acquisition/Financial Closure

4. FUTURE OUTLOOK AND MARKET OPPORTUNITIES (2021-22 and Beyond)

- Growth Drivers; Sector-wise Upcoming Construction Opportunities; Equipment Demand Projections; Material Demand Projections; Market Opportunities For; Post Covid-Outlook

5. FINANCING NEEDS AND CHALLENGES

- Financing Scenario; Emerging Funding Sources; Working Capital Requirements; Current Stance of Investors and Lenders; Stressed Assets and M&A Opportunities; Financing Needs and Requirements; Key Risks and Challenges

SECTION II: CONSTRUCTION DEMAND FROM KEY SECTORS - OPPORTUNITIES AND KEY PROJECTIONS

6. ROADS

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Recent Project Awards and Completions; Expected Investments and Capacity Addition (Highway Widening, State Roads, Bridges, Flyovers, Elevated Roads and Expressways); Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

7. RAILWAYS

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Recent Project Awards and Completions; Expected Investments and Capacity Addition (New Lines, Stations, Doubling, Track Construction, etc.); Focus on DFCs: Future Corridors and Opportunities; Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

8. AIRPORTS

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Recent Project Awards and Completions; Expected Investments and Capacity

Addition (Greenfield and Brownfield); Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

9. URBAN TRANSPORT

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Expected Investments and Capacity Addition (Metro Rail, Monorail, Light Rail, BRTS); Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

10. PORTS

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Recent Project Awards and Completions; Expected Investments and Capacity Addition; Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

11. POWER

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Expected Investments and Capacity Addition; Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

12. WATER AND WASTE

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Expected Investments and Capacity Addition; Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

13. IRRIGATION

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Expected Investments and Capacity Addition; Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

14. TUNNELS

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Expected Investments and Capacity Addition; Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

15. HOUSING

- Sector Snapshot; Overall Construction Progress; Key Trends; Major Players; New Initiatives to Fastrack Construction; Expected Investments and Capacity Addition; Opportunities under Affordable Housing; Construction Opportunities in 2021-22; Issues and Challenges; Post-Covid Construction Outlook

SECTION III: EQUIPMENT AND MATERIAL MARKET: TRENDS AND DEMAND PROJECTIONS (2021-22 to 2025-26)

16. EQUIPMENT

- Market Size and Trends; Production and Sales; Emerging Equipment Requirements; Rental and Leasing Market; Major Players; New Products and Innovations; Growth Drivers; Demand Forecasts for 2021-22; Demand Forecasts Beyond 2021-22

17. MATERIALS: CEMENT, STEEL, BITUMEN AND OTHERS*

- Market Size and Production Trends; Demand-Supply Scenario; Existing Capacity and Utilisation; Pricing Trends; Projected Capacity Addition; Emerging and New Requirements; Growth Drivers; Supply Forecasts (2021-22 and Long Term); Demand Forecasts (2021-22 and Long Term)

**Other Materials will include geosynthetics, aggregates, fly ash, coir geotextiles, and plastic waste*

The report will be available in a PDF format.

Table of Contents

EXECUTIVE SUMMARY

SECTION I: SEGMENT ANALYSIS AND GROWTH DRIVERS

1. MINING SECTOR OVERVIEW AND KEY TRENDS

- Size and Growth: Mineral Reserves; Mining Gross Value Added; Mineral Trade Deficit; FDI in Mining
- Mineral Laws Amendment Act, 2020
- Union Budget 2020-21
- Key Issues and Challenges
- Future Outlook and Projections
- Viewpoint of Different Stakeholders

2. EQUIPMENT MARKET SIZE AND GROWTH

- Key Mining Equipment Used
- Current Market Size of Key Equipment
- Growth in the Past Five Years
- Equipment Productivity Levels
- Equipment Utilisation Levels
- Impact of COVID-19 on the Mining Equipment Market
- Recent Developments Impacting the Equipment Market
- Key Players
- Issues and Challenges

3. EQUIPMENT MARKET OUTLOOK AND PROJECTIONS

- Key Growth Drivers
- Impact of Mineral Law Ordinance 2020
- Equipment Procurement Plans of Mining Companies
- Mining Project Pipeline
- Equipment Outlook and Projections (till 2024-25)

4. KEY CONSUMING SEGMENTS

- Coal: Segment Size and Growth; Equipment Application and Usage; Growth Drivers; Key Challenges; Projected Demand for Mining Equipment (till 2024-25)
- Key Non-Coal Minerals (Metallic and Non-metallic): Segment Size and Growth; Equipment Application and Usage; Growth Drivers; Key Challenges; Projected Demand for Mining Equipment (till 2024-25)

5. MINING TECHNIQUES AND TECHNOLOGY TRENDS

- Surface Mining
- Underground Mining
- Sustainability and Clean Mining Practices
- Mine Planning and Design
- Emerging Technologies
- Issues and Challenges
- Key Case Studies
- Techniques and Lessons to be Learned

SECTION I: SEGMENT ANALYSIS AND GROWTH DRIVERS

6. LEADING 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
- Tata Hitachi Construction Machinery Company Private Limited
- Volvo India Private Limited

7. DRILLING, EXCAVATION AND EXTRACTION EQUIPMENT

- Overview
- Recent Trends and Advancements
- Key Equipment Manufacturers
- Demand Drivers
- Projected Demand for Key Equipment (drills, hydraulic shovels, etc)

8. LOADING

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections for Excavators (2020-25)
 - Number and Value Terms
 - Type of Mineral (coal versus non-coal)

9. HAULAGE

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections for Dumpers (2020-25)
 - Number and Value Terms
 - Type of Mineral (coal versus non-coal)

10. CRUSHING, PULVERISING AND SCREENING EQUIPMENT

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections (2020-25)
 - Number and Value Terms
 - Type of Mineral (coal versus non-coal)

11. AUXILIARY AND SUPPORT EQUIPMENT

- Equipment Overview
- Recent Trends and Advances
- Demand Drivers
- Major Players
- Market Projections (2020-25): Number and Value Terms; Type of Mineral (coal versus non-coal)

The report is available in a PDF format.

SECTION I: SECTOR ANALYSIS, OPPORTUNITIES AND OUTLOOK

1. WATER SECTOR OVERVIEW

- Size and Growth: Municipal, Industrial; Emerging Trends; Policy & Regulatory Developments; City-Level Initiatives; Technology Trends & Advancements; Trends in Water Supply Sources: Surface & Groundwater, Treated Wastewater, Desalinated Water; Issues and Challenges

2. OUTLOOK AND KEY PROJECTIONS (Till 2026-27)

- Network Addition Projections: Municipal, Industrial, Wastewater Treatment, Recycle & Reuse, Desalination; Investment Projections; Project Award and Completion Targets under Key Government Programmes; Opportunities for Private Participation; Material & Equipment Demand Projections; Future Outlook

3. PROJECT PIPELINE ANALYSIS

- Assessment of Project Pipeline: Short Term (By 2022-23), Medium Term (By 2025-26), Long Term (2026 and Beyond); Analysis by Segment: Municipal, Industrial, Wastewater Treatment, Recycle & Reuse, Desalination; Analysis by Stage of Development: Under Construction, Awarded, Bidding, Announced, Proposed/Planned; Analysis by State; Analysis of Upcoming Projects; Top Upcoming Projects in Terms of Investment

4. INVESTMENT AND MARKET OPPORTUNITIES (Till 2026-27)

- Investment Opportunities Under: National Infrastructure Pipeline, Key Government Programmes; Market Opportunities for: Project Developers, EPC Contractors, Financiers/Investors, Equipment Providers, Pipe Manufacturers, Consultants/PMCs

SECTION II: MUNICIPAL SEGMENT: CURRENT STATE, OUTLOOK AND OPPORTUNITIES

5. SEGMENT SIZE AND GROWTH

- Municipal Water Demand; Emerging Trends; Policy and Regulatory Developments; Tariff Structure; Urban Water Supply Sources; Consumption Pattern; Investment Requirements

6. GOVERNMENT PROGRAMMES: PROGRESS AND OPPORTUNITIES

- Jal Jeewan Mission; Atal Mission For Rejuvenation and Urban Transformation; Smart Cities Mission; Namami Gange Mission; Swachh Bharat Mission

7. 24x7 WATER SUPPLY: EXPERIENCE, CHALLENGES & OPPORTUNITIES

- Experience So Far; Pilot Projects & Case Studies; City-wise 24x7 Water Supply Projects; Case Studies: Implementation Experience & Lessons Learnt; Key Completed & Ongoing Projects; Key Planned & Announced Projects; Segment Outlook

8. NETWORK OPERATION & MAINTENANCE

- Current Practices; Emerging Trends; Digitalisation in Network Management; Case Studies and Best Practices; Major Players; Segment Outlook

9. NRW & METERING PRACTICES

- City-wise NRW Levels; Current Meter Deployment; Best Practices and Key Initiatives; Meter Demand Projections; Future Plans

SECTION III: INDUSTRIAL SEGMENT: CURRENT STATE, OUTLOOK AND OPPORTUNITIES

10. SEGMENT SIZE AND GROWTH

- Industrial Water Demand; Key Consumers; Emerging and Recent Trends; Water Supply Sources; Tariff Structure; Regulatory Developments; Investment Requirements; Segment Outlook

11. THERMAL POWER SEGMENT: CURRENT DEMAND AND FUTURE PROJECTIONS

- Current Water Consumption; Sources of Water Supply; Effluent Generation & Treatment; Net Water Consumption; Key Water Management Initiatives; Capacity Expansion Plans; Projected Water Demand

12. TEXTILE INDUSTRY: CURRENT DEMAND AND FUTURE PROJECTIONS

- Current Water Consumption; Sources of Water Supply; Effluent Generation and Treatment; Net Water Consumption; Key Water Management Initiatives; Capacity Expansion Plans; Projected Water Demand

13. PAPER & PULP INDUSTRY: CURRENT DEMAND AND FUTURE PROJECTIONS

- Current Water Consumption; Sources of Water Supply; Effluent Generation and Treatment; Net Water Consumption; Key Water Management Initiatives; Capacity Expansion Plans; Projected Water Demand

14. STEEL SECTOR: CURRENT DEMAND AND FUTURE PROJECTIONS

- Current Water Consumption; Sources of Water Supply; Effluent Generation and Treatment; Net Water Consumption; Key Water Management Initiatives; Capacity Expansion Plans; Projected Water Demand

15. CEMENT SECTOR: CURRENT DEMAND AND FUTURE PROJECTIONS

- Current Water Consumption; Sources of Water Supply; Effluent Generation and Treatment; Net Water Consumption; Key Water Management Initiatives; Capacity Expansion Plans; Projected Water Demand

16. OIL REFINERIES: CURRENT DEMAND AND FUTURE PROJECTIONS

- Current Water Consumption; Sources of Water Supply; Effluent Generation and Treatment; Net Water Consumption; Key Water Management Initiatives; Capacity Expansion Plans; Projected Water Demand

17. TANNERIES: CURRENT DEMAND AND FUTURE PROJECTIONS

- Current Water Consumption; Sources of Water Supply; Effluent Generation and Treatment; Net Water Consumption; Key Water Management Initiatives; Capacity Expansion Plans; Projected Water Demand

SECTION IV: DESALINATION MARKET

18. TRENDS AND DEVELOPMENTS

- Current Capacity (Municipal and Industrial); Emerging Trends; Key Ongoing Projects; Cost Economics & Viability; Major Players and Portfolios; Treatment Technologies and Deployment; Select Case Studies; Outlook & Projections (till 2026-27)

19. FUTURE POTENTIAL AND UPCOMING CAPACITY

- Growth Drivers; Planned Capacity; Investment Requirements; Future Potential

SECTION V: WASTEWATER TREATMENT AND REUSE

20. SEGMENT SIZE AND GROWTH

- Current Size and Growth; Notable trends and Developments; City-Level Initiatives and Best Practices; Regulations, Standards and Norms; New Advancements and Innovations; Treatment Technologies and Deployment; Major Players and Portfolios; Risks and Challenges; Outlook and Projections (till 2026-27)

21. UPCOMING CAPACITY AND FUTURE PLANS

- Growth Drivers; Upcoming Wastewater Treatment Capacity; Future Plans and Initiatives for Recycle and Reuse; Regulatory Outlook; Top Upcoming Projects; Investment Requirements

SECTION VI: DATABASE OF KEY PROJECTS

The database includes upcoming projects (ongoing and planned) in the sector with details on project name, segment/component, cost, capacity, location, implementing agency, current status, mode of implementation, etc.

The report is available in a PDF format.

Table of Contents

EXECUTIVE SUMMARY

1. SECTOR OVERVIEW AND KEY DEVELOPMENTS

- Urbanisation and Demographic Trends; Policy and Regulatory Framework (Central and State); Progress under PMAY; Impact of Key Government Initiatives; Growth Drivers; Private Sector Experience and Potential; Key Players; Issues and Challenges; Future Outlook

2. MARKET SIZE AND GROWTH

- Market Size by: Income Category (EWS, LIG, MIG); Type of Project (Government, Private, PPP); By Location (Metro, Non-metro)
- Current Stock and Demand of Low Income (EWS/LIG) Housing
- Trends in New Launches and Pricing
- Trends in Sales and Available Inventory

3. COVID-19 IMPACT IN 2021 AND OUTLOOK FOR 2022

- Impact in 2021 on: Market Demand; Supply and Sales of Affordable Homes; New Launches; Pricing; Financing and Investment
- Coping Strategies by Developers
- Budget Announcements 2022-23
- Market Outlook for 2022-23

4. DEMAND AND SUPPLY PROJECTIONS (Till 2026-27)

- Housing Demand Projections; Housing Supply Projections; Land Requirement; Projections for Material and Equipment Requirements; Sector Outlook (Medium-term and Long-term)

5. PROJECT PIPELINE AND MARKET OPPORTUNITIES

- Overall Pipeline
- Analysis by: Ownership; State; Stage of Development
- Opportunities for: Developers/Contractors; Financiers/Investors; Equipment and Material Providers

6. TOP UPCOMING MARKETS

The chapter will focus on the top 8-10 cities in the affordable housing segment and will identify the top cities with the maximum ongoing and upcoming projects. For each of the cities we will cover:

- Residential Market Activity; Share of Affordable Housing in Total Housing Launches; Key Players; Upcoming Projects; Recent Developments to Boost Affordable Housing; Outlook for the Affordable Segment

7. PROGRESS UNDER GOVERNMENT PROGRAMMES

- PMAY Urban: Progress so Far (Physical and Financial); Completed and Ongoing Projects; Investment Requirement; Future Targets and Timelines
- PMAY Rural: Progress so Far (Physical and Financial); Completed and Ongoing Projects; Investment Requirement; Future Targets and Timelines
- Progress and Opportunities under Smart Cities Mission
- Progress under Lighthouse Cities

8. INVESTMENT AND FINANCING TRENDS

- Current Financing Scenario
- Key Funding Sources: Bank Credit; Priority Sector Lending; Private Equity/Institutional Investors; Bond Market Transactions; National Housing Bank; Housing Finance Companies/AHFCs; Multilateral Funding Agencies; Others (ECBs/FDI/CLSS, HUDCO, Co-Operative Housing Groups)
- New Funding Sources (REIT Structures etc.)
- Investment Projections
- Risks and Project IRRs

9. ANALYSIS OF HOUSING FINANCE COMPANIES

- Share of HFCs in Loans
- Portfolio Composition and Growth of HFCs
- Distribution Networks and Geographical Presence
- Key Initiatives of HFCs
- Operational and Financial Analysis of Key HFCs: Disbursements and Loan Portfolios; Ticket Size; NPAs; Income and Profitability indicators; Interest Margins; Return on Equity and Average Loan Assets; Others

10. RENTAL HOUSING MARKET AND IMPACT OF COVID

- Size and Growth; Model Tenancy Law; Impact of Covid-19; ARHCs: Overview, Implementation Strategy, Progress so Far; Emerging Practices - Co-living and Student Housing; Global Scenario; Issues and Challenges; Opportunities and Outlook

11. MATERIALS AND EQUIPMENT MARKET

- Size and Growth of the Equipment Market; Key Technologies in Use; Government Impetus on Technology Adoption; Focus on Green Technologies; Trends in Construction Costs; Trends in Material Costs; Demand Drivers; Outlook and Projections

12. PRIVATE SECTOR EXPERIENCE AND OUTLOOK

- Experience so Far; Project Economics - Cost Components, Profit Margins, IRRs; Key Announcements, Launches and Investments; Progress under PPP Policy; Progress under AHP PMAY (Urban); Incentives under State-Policies; Key Challenges; Industry Expectations; Upcoming Opportunities

13. KEY PRIVATE PLAYER PROFILES

- Arihant Superstructures; Design Build Serve; Mahindra Lifespaces; Panvelkar Group; Provident Housing; Shapoorji Pallonji; Sheltrex; Signature Global; SNG Group; Tata Housing

Each profile will include information on company operations and overview, project portfolio - completed & ongoing, upcoming projects, financial performance & future plans

14. INTER-STATE COMPARISON

- Current Infrastructure; Existing Housing Stock; Condition of the Housing Stock; Affordable Housing Scenario; Housing Shortage; Budgetary Allocation; Key Initiatives and Future Plans

15. KEY STATE PROFILES

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

Each state profile will give an overview of the housing scenario, role of key agencies and housing boards, state policy on affordable housing, new initiatives and incentives, and ongoing and upcoming housing schemes/projects.

DATA SET

The data set will cover state-wise upcoming and under construction private sector projects, on projects under the ARHC scheme, projects under Smart Cities Mission and key projects announced under the PMAY scheme.

- For the private sector projects, we will cover parameters like state, city, agency/developer, status (under construction/upcoming), expected completion timeline, configuration and number of units.
- For the ARHC projects, we will cover parameters like state, city, implementing agency, number of houses available and current status.
- For Projects under Smart Cities, we will cover parameters like state, city, implementing agency and current status.
- For key projects announced under PMAY scheme, we will cover parameters like state, cost, mode and project status.

The report will be available in a PDF format.

KEY INSIGHTS AND THE ROAD AHEAD

SECTION I: MARKET ANALYSIS, IMPACT OF COVID-19, UPCOMING CAPACITY AND FUTURE OUTLOOK

1. MARKET TRENDS AND DEVELOPMENTS

- Market Size and Growth
- Notable Trends: Municipal & Industrial
- Policy & Regulatory Developments
- Project Awards and Completion (in the Past 15-18 months)
- Technology Trends & Advancements
- Risks and Challenges
- Market Outlook

2. IMPACT OF COVID-19 IN 2021-22

- Impact on Pace of Construction
- Expected Impact on:
 - Ongoing/Under Construction Projects
 - Under Bidding Projects
 - New Project Announcements
- Impact on Input & Labour Supply
- Impact on Contractors
 - Order Books
 - Capex Plans
 - Financial Performance
- Impact on Government Funding
- Impact on Land Acquisition, Clearance and Financial Closure
- Mitigation Measures

3. DESALINATION MARKET FORECAST 2021-26

- Growth Drivers
- Projections for Upcoming Capacity
 - Municipal
 - Industrial
- Investment Projections
- States with Highest Upcoming Capacity
- Post-Covid Outlook

4. PROJECT PIPELINE & MARKET OPPORTUNITIES

- Assessment of Project Pipeline
 - Short Term (2021-22)
 - Medium Term
 - Long Term
- Analysis by Type: Municipal and Industrial
- Analysis by Stage of Development
- Analysis by Ownership
- Analysis by Region
- Analysis by Investment
- Top Upcoming Projects in 2021-22
- Market Opportunities for
 - Contractors
 - Project Developers
 - Equipment Providers
 - Technology Providers
 - Financiers and Investors
 - Consultants

5. ECONOMICS OF DESALINATION PLANTS

- Trends in Capex & Opex
- Desalination Plant Cost Structure
- Trends in Production Costs
- Trends in Land & Carbon Footprint

- Costs for Waste Brine/Solids Disposal
- Potential for Solar Desalination
- Energy Consumption & Cost Optimisation
- Returns & Project IRRs

6. TREATMENT TECHNOLOGIES

- Types of Technology: Membrane and Thermal
- Key Features (Capital cost, land requirement, production cost, plant performance, quality of treatment, etc.)
- Current State of Deployment
- New Trends & Advancements
- Emerging Technologies in Light of Covid
- Upcoming Opportunities
- Issues and Challenges

7. EQUIPMENT MARKET

- Market Size and Trends
- Major Players
- Sourcing Options
- Emerging Equipment Requirements
- Advancements in Pumps & Pumping System
- New Products and Innovations
- Issues and Challenges
- Future Demand Projections (Till 2026)

SECTION II: LEADING STATES AND PLAYERS

8. KEY STATE PROFILES: UPCOMING CAPACITY AND INVESTMENT

- Andhra Pradesh
- Gujarat
- Karnataka
- Kerala
- Maharashtra
- Odisha
- Tamil Nadu
- Telangana
- West Bengal

9. KEY STATE PROFILES: UPCOMING CAPACITY AND INVESTMENT

- Aquatech Systems Asia Private Limited
- Doshion Veolia Water Solutions
- Hitachi Zosen Corporation
- Hyflux Engineering (India)
- IDE Technologies
- ION Exchange
- National Institute of Ocean Technology
- Suez Water Technologies & Solutions
- Thermax
- VA Tech Wabag

SECTION III: DATABASE OF KEY PROJECTS

- Completed
- Ongoing/Under Construction
- Under Tendering
- Planned/Proposed/Announced

Each project provides information on the scope of work, location, cost, capacity, mode of implementation, implementing agency, developer/contractor, current status, expected date of completion, etc.

The report is available in a PDF format.

Table of Contents

KEY INSIGHTS AND THE ROAD AHEAD

SECTION I: CURRENT CAPACITY, MARKET TRENDS, UPCOMING PROJECTS AND KEY PROJECTIONS

1. MARKET OVERVIEW AND KEY TRENDS

- Growth in Past Five Years: Sewage Generation, Treatment Capacity, Treatment-Generation Gap
- Notable Trends
- Government Initiatives
- Impact of Covid-19 on Projects & Investments
- Policy & Regulatory Developments
- Project Awards and Completion (in the Past 15-18 months)
- Union Budget 2021-22: Key Announcements & Impact
- Technology Trends & Advancements
- Risks and Challenges
- Market Outlook

2. ANALYSIS OF OPERATIONAL CAPACITY

- State-wise Distribution of STPs: Installed Treatment Capacity, Operational Treatment Capacity
- Technology-wise Distribution of STPs: Installed Treatment Capacity, Operational Treatment Capacity
- Inter-City Comparison of Treatment Capacity
- Key STPs Operationalised in the Past 15-18 months
- Existing Sewer Line Network
- Existing Pumping Capacity
- Capacity for Energy Generation
- Current Recycle and Reuse Capacity

3. SEWAGE TREATMENT MARKET FORECASTS 2021-26

- Growth Drivers
- Sewage Generation Projections
- Projections for Upcoming Capacity
- Investment Projections
- States with Highest Upcoming Capacity

4. PROJECT PIPELINE & MARKET OPPORTUNITIES

- Assessment of Project Pipeline: Short Term (2021-22), Medium Term, Long Term
- Analysis by Type: Treatment Facilities, Pumping Stations, Pipelines, Recycle and Reuse
- Analysis by Stage of Development
- Analysis by Ownership
- Analysis by Region
- Analysis of Investment
- Top Upcoming Projects in 2021-22
- Market Opportunities for: Contractors, Project Developers, Equipment Providers, Technology Providers

5. OPPORTUNITIES UNDER MEGA PROGRAMMES

- Jal Jeevan Mission
- Namami Gange Mission
- Atal Mission for Rejuvenation and Urban Transformation
- Smart Cities Mission
- Swachh Bharat Mission

For each of the programmes we will cover programme mission & scope, investment requirements, financing sources, current status, key completed projects, upcoming tenders, key investment destinations, targets and timelines, etc.

6. NEW REVENUE MODELS: HAM AND ONE-CITY ONE-OPERATOR

- Progress & Experience So Far; Capex Requirements; Scope for PSP; Revenue Model; Key Completed and Ongoing Projects; Upcoming Contracts and Tenders; Major Players and Portfolio; Investment Opportunities; Advantages and Constraints; Future Outlook

7. DECENTRALISED SEWAGE TREATMENT SYSTEMS

- Existing Capacity; Costs & Benefits; Key Ongoing Projects; Key Upcoming Projects; Constraining Factors; Future Potential

8. MARKET FOR WASTEWATER RECYCLE AND REUSE

- Current Capacity; Standards and Norms for Reuse; Regulatory Developments; Relevant Technologies; Case Studies & Lessons Learnt; Issues and Challenges; Future Potential

9. TRENDS IN TREATMENT TECHNOLOGIES

- Types of Technology
- Key Features (Capital cost, land requirement, production cost, plant performance, quality of treatment, etc.)
- Current State of Deployment
- Technologies for Energy Generation from Sewage
- New Trends and Advancements
- Upcoming Opportunities
- Issues and Challenges

10. FOCUS ON O&M AND AUTOMATION

- Current Practices & Digital Solutions Deployed
- New O&M Models; Opex Requirements
- Instrumentation and Automation
- Case Studies and New Initiatives
- Potential for Nex-Gen Technologies; Issues and Challenges

11. EQUIPMENT TRENDS & PROJECTIONS

- Market Size and Recent Trends
- Major Players
- Emerging Equipment Requirements
- New Products and Innovations
- Issues and Challenges
- Future Demand Projections (2021-26)

SECTION II: ANALYSIS OF KEY CITIES: CURRENT INFRASTRUCTURE, UPCOMING CAPACITY AND INVESTMENTS

12. PROFILES OF KEY CITIES

- Ahmedabad; Bengaluru; Chandigarh; Chennai; Delhi; Ghaziabad; Gurugram; Hyderabad; Jaipur; Kochi; Kolhapur; Kolkata; Mumbai; Nagpur; Pune; Surat; Visakhapatnam; Udaipur; Others

Each city profile will include information on wastewater generation, current treatment capacity, sewerage network, policies & regulations, ongoing projects, government funding, active tenders, investment requirements, upcoming projects, etc

13. MAJOR PLAYERS: PROJECT PORTFOLIO, PERFORMANCE AND PLANS

- Areas of Business; Current Capacity; Recent Developments; Key Completed Projects; Key Ongoing Projects; Financial Performance; Future Plans

This chapter will cover profiles of 10-15 top project developers/EPC contractors in the sewerage sector

DATABASE OF KEY PROJECTS

- Completed
- Ongoing/Under Construction
- Under Tendering
- Planned/Proposed/Announced

The database will have information on project scope, cost, capacity, network length, location, implementing agency, ownership, EPC contractor/developer, current status, date of commencement of construction/month of award, and expected date of completion.

The report will be available in a PDF format.

KEY TAKEAWAYS AND THE ROAD AHEAD

SECTION I: EMERGING TRENDS, NEW INITIATIVES, IMPACT OF COVID-19 AND FUTURE PROJECTIONS

1. SECTOR SIZE AND GROWTH

- Sector Snapshot
- Growth in Wastewater Generation
- Growth in Treatment Capacity
- Trends in Capacity Additions
- Current Wastewater Recycling Capacity
- Network Expansion Plans & Targets
- Issues and Challenges
- Sector Outlook

2. IMPACT OF COVID-19 IN 2021-22: OPERATIONS, NETWORK ADDITION & INVESTMENTS

- Impact on Wastewater Generation
- Impact on Plant Operations
- Impact on Project Execution
- Impact on Capacity Addition & Investments
- Government Initiatives and Plans
- Project Delivery and Implementation

3. FUTURE OUTLOOK AND KEY PROJECTIONS

- Growth Drivers
- Projected Network Addition in Treatment Capacity
- Potential for Recycle and Reuse
- Emerging Technologies in Light of Covid-19
- Investment Projections (till 2026)
- Post-Covid Outlook

4. PROJECT PIPELINE & MARKET OPPORTUNITIES

- Assessment of Project Pipeline
 - Short Term (2021-22)
 - Medium Term
- Analysis by Type: Municipal & Industrial
- Analysis by Stage of Development
- Analysis by Ownership
- Analysis by Region
- Analysis by Investment
- Top Upcoming Projects
- Market Opportunities for
 - Contractors
 - Project Developers
 - Equipment Providers
 - Technology Providers
 - Consultants

5. MUNICIPAL WASTEWATER: TREATMENT CAPACITY & REUSE PRACTICES

- Wastewater Generation
- Treatment Capacity
- Recycle & Reuse Practices
- Government Programmes
- City-level Initiatives
- New Technologies & Innovations
- Capacity Expansion Plans
- Investment Requirements
- Issues and Challenges

6. INDUSTRIAL EFFLUENT: TREATMENT CAPACITY & REUSE PRACTICES

- Effluent Generation
- Standard and Norms
- Existing Treatment Capacity
- Industries Effluent Management Practices
- Recycle & Reuse Initiatives
- New Technologies & Innovations
- Capacity Expansion Plans and Investment Requirements
- Issues and Challenges

7. EMERGING TRENDS IN TREATMENT TECHNOLOGIES

- Types of Technology
- Key Features
- Current State of Deployment
- New Trends & Advancements
- Upcoming Opportunities
- Issues and Challenges

8. EQUIPMENT MARKET

- Market Size and Trends
- Major Players
- Sourcing Options
- Emerging Equipment Requirements
- New Products and Innovations
- Issues and Challenges
- Future Demand Projections (2021-26)

SECTION II: KEY CITY PROFILES AND MAJOR PLAYERS

12. CITY-LEVEL INITIATIVES: UPCOMING CAPACITY AND INVESTMENTS

- Ahmedabad; Bengaluru; Chandigarh; Chennai; Delhi; Ghaziabad; Gurugram; Hyderabad; Kochi; Kolkata; Mumbai; Nagpur; Pune; Surat; Visakhapatnam; Udaipur

13. PROFILES OF MAJOR PLAYERS

- Hindustan Construction Company Limited
- Ion Exchange
- Larsen & Toubro Limited
- Ramky Infrastructure Limited
- SPML Infra Limited
- Suez India
- The Indian Hume Pipe Company Limited
- Thermax Limited
- Triveni Engineering
- UEM India Private Limited
- VA Tech Wabag
- Veolia India Private Limited
- Voltas Limited
- Vishvaraj Environment Private Limited
- WOG Technologies
- Siemens Water

SECTION III: DATABASE OF KEY PROJECTS

- Completed
- Ongoing/Under Construction
- Under Tendering
- Planned/Proposed/Announced

Each project provides information on the scope of work, location, cost, capacity, sewer network, mode of implementation, implementing agency, developer/contractor, current status, expected date of completion, etc.

The report is available in a PDF format.

Table of Contents

KEY TAKEAWAYS AND THE ROAD AHEAD	8. COST ECONOMICS, TARIFFS AND RETURNS
SECTION I: OVERVIEW, OUTLOOK AND OPPORTUNITIES	- Tariffs and User Charges; Cost Economics; Capex and Opex Requirements; Market for Residues; Returns and Revenue Potential; New Reforms and Initiatives; Issues and Concerns
1. MARKET SIZE, TRENDS AND DEVELOPMENTS	9. LEADING PLAYERS: PROJECT PORTFOLIO AND FUTURE PLANS
- MSW Generation and Growth in the Past Five Years	- Industry Structure; Major Players (Domestic and Global); Key Completed Projects; Key Ongoing Projects; Financial Performance; Industry Concerns and Expectations; Future Plans
- Institutional Framework	10. EQUIPMENT MARKET: CURRENT SIZE & EMERGING REQUIREMENTS
- Recent Policy and Regulatory Developments	- Size and Growth; Type of Equipment; Key Players & Products; Innovations and Advancements; Future Demand Projections; Issues and Challenges
- Project Completions	SECTION II: SEGMENT ANALYSIS: CURRENT INFRASTRUCTURE, UPCOMING OPPORTUNITIES AND TECHNOLOGY DEPLOYMENT
- Recent Contract Awards	11. COLLECTION AND TRANSPORTATION
- Projects Approved/Announced	- Current Practices; Expenditure on Solid Waste Management; Swachh Survekshan Results; Type of Transportation Infrastructure Deployed (e-rickshaws, carts, trucks, etc.); Smart Initiatives at the City Level; New Trends and Advancements; Key Completed and Ongoing Projects; Upcoming Contracts/Tenders; Issues and Concerns; Segment Outlook
- Notable Trends	12. TREATMENT AND PROCESSING
- Government Initiatives	- Status of Waste Processing; Relevant Treatment Technologies; Smart Initiatives at the City Level; New Trends and Advancements; Key Completed and Ongoing Projects; Upcoming Contracts/Tenders; Issues and Challenges; Segment Outlook
- Risks and Challenges	13. DISPOSAL, RECYCLE AND REUSE PRACTICES
- Future Outlook and Projections (till 2025-26)	- Current Practices; Smart Initiatives at the City Level; New Trends and Advancements; Key Completed and Ongoing Projects; Upcoming Contracts/Tenders; Issue & Challenges; Segment Outlook
2. COVID-19 IMPACT ASSESSMENT: PROJECTS, INVESTMENTS AND OPPORTUNITIES	SECTION III: NEW FOCUS AREAS AND OPPORTUNITIES
- Impact of COVID-19 on: Project Delivery and Implementation; Labour and Raw Material Availability; Input Cost	14. BIOMEDICAL WASTE MANAGEMENT
- Focus on Biomedical Waste Management	- Biomedical Waste Generation; Recent Policy Developments; Collection and Treatment Infrastructure; Treatment, Processing and Disposal Practices; Cities' Response to COVID-19; Other City-level Initiatives; Innovations & Advancements; Issues & Challenges; Segment Outlook
- Investment Landscape and Outlook	15. WASTE-TO-ENERGY: CURRENT CAPACITY AND FUTURE POTENTIAL ..
- City-level Initiatives & Mitigation Measures	- Existing Capacity; Relevant Treatment Technologies; Government Initiatives; Revenue Stream and Cost Recovery; Green Fuels; Existing Biogas and BioCNG Capacity; Market Potential & Opportunities; Completed WtE Projects; Key Ongoing Plants; Issues and Challenges; Segment Outlook
- New & Emerging Technology Requirements	16. INTEGRATED SOLID WASTE MANAGEMENT
- Government Relief Measures	- Salient Features; Experience So far; Government Initiatives; Key City Level Initiatives; Upcoming Projects & Tenders; Key Benefits; Issues and Challenges; Segment Outlook
- Future Growth Strategies	SECTION IV: DATABASE OF KEY PROJECTS
3. REALISTIC ASSESSMENT OF PROJECT PIPELINE	<i>The database will provide a detailed list of completed, ongoing and announced/planned/proposed projects in the sector including door-to-door collection and transportation projects, treatment and processing facilities, WtE plants, biomedical waste treatment facility, landfill development and disposal facilities with details on scope, location, cost, capacity, funding sources, implementing agency, contractor (wherever available), current status, expected date of completion, etc.</i>
- Project Pipeline by: Region; State; Stage of Development; Ownership; Completion Period	<i>The report will be available in a PDF format.</i>
- Expected Capacity Addition: MSW Treatment Capacity; WtE Capacity	
- Top 50 Upcoming Projects	
4. OUTLOOK, PROJECTIONS AND MARKET OPPORTUNITIES	
- Growth Drivers	
- Investment Requirements	
- Key Projections (till 2025-26)	
- Market Opportunities: EPC Contractors; Private Developers; Technology Providers & System Integrators; Equipment Suppliers (Loaders, compactors, smart bins, etc.); Material Suppliers; Consultants	
- Top Upcoming Cities	
- Future Outlook	
5. KEY GOVERNMENT PROGRAMMES: PROGRESS SO FAR AND UPCOMING OPPORTUNITIES	
- Smart Cities Mission: Mission Scope; Mission Cities; Smart Waste Management; Investment Requirements & Sources of Funds; Progress So Far; Key Completed Projects; Key Ongoing Projects; Upcoming Contracts & Tenders	
- Swachh Bharat Mission: Vision and Objectives; Mission and Targets Set; Investment Requirements & Sources of Funds; Funds Disbursement; Progress So Far; Key Completed Projects; Key Ongoing Projects; Upcoming Contracts & Tenders	
6. INTER-CITY COMPARISON: ANALYSIS OF KEY CITIES	
- MSW Generation; Collection & Transportation Infrastructure; Treatment & Disposal Practices; O&M and Asset Management Practices; Key Ongoing Projects; Planned/Upcoming Projects; WtE Initiatives; Operational Constraints	
7. FINANCING EXPERIENCE AND PPP POTENTIAL	
- Experience So Far	
- Sources of Funding: Budgetary Allocations; State Grants; Multilateral Funds; Private Equity; Internal Revenue; Financial Institutions	
- Innovative Funding Options (Municipal Bonds, etc.)	
- PPP Experience and Outlook: Experience So Far; Formats and Models; Key Revenue Sources; Key Completed Projects; Key Ongoing Projects; Upcoming Projects	
- Risks and Challenges	
- Investment Outlook	

SECTION I: SECTOR ANALYSIS, RECENT DEVELOPMENTS AND UPCOMING PROJECTS

- 1. TRENDS, DEVELOPMENTS AND MISSION UPDATE**
 - Smart Cities Mission; Notable Trends; Recent Developments; Budget 2020-21: Key Announcements & Likely Impact; Technology Trends & Advancements; Startups & MoUs; Issues and Challenges; Smart Cities Mission 2.0; Future Outlook
- 2. PROJECT ANALYSIS: COMPLETED & OPERATIONAL PROJECTS**
 - Overall Progress: Snapshot; Overall Progress: State-wise Scenario; Project Analysis; Inter-City Comparison; Select Operational Projects; Challenges and Mitigation Strategies in Key Cities
- 3. PROJECT PIPELINE**
 - By Stage of Development; By Segment; By Mode of Implementation; By Region and State; By City; By Period of Completion; Top 20 Upcoming Projects
- 4. IMPACT OF COVID-19**
 - Overall Project Pipeline; Under Construction Projects; Under Bidding Projects; Announced Projects; Input Costs; Financing; Supply Chain; Force Majeure; Smart Cities Response to COVID-19
- 5. RECENT INITIATIVES TO FASTTRACK IMPLEMENTATION**
 - 20-20 Model; Ease of Living Index; Municipal Performance Index; International Partnerships & Lessons Learnt; Citizen Participation
- 6. FUTURE OUTLOOK AND MARKET OPPORTUNITIES**
 - Growth Drivers; Investment Projections; Opportunities for Stakeholders; Future Outlook
- 7. TOP 15 INVESTMENT DESTINATIONS**
 - Snapshot; City-wise Analysis of: Strength and Weaknesses; Project Portfolio; Investment Requirements; Segment-wise Analysis; Key Upcoming Projects; Market Opportunity Across Segments
- 8. NEW & INNOVATIVE FUNDING STRATEGIES**
 - Key Sources of Funding; Municipal Bond Market: Key Issuances and Future Plans; Credit Ratings of ULBs; Fund Release & Utilisation (By State and City); Investment Outlook & Future Funding Strategies; Risks and Challenges
- 9. POTENTIAL FOR PRIVATE SECTOR PARTICIPATION**
 - Experience So Far; State-level Statistics; State level Statistics: Projects Tendered and Work Orders Issued; Business & Revenue Models; Key Projects: Completed and Ongoing; Select Case Studies & Key Lessons; Future Prospects & Potential; Key Upcoming Projects

SECTION II: IMPLEMENTATION EXPERIENCE, UPCOMING PROJECTS AND OPPORTUNITIES

- 10. TOP 20 SMART CITIES**
 - Snapshot; Key Focus Areas (Mobility, Energy, Governance, Water & Waste, etc.) & Infrastructure Development; Investment Plans & Key Funding Sources; Progress So Far & Key Achievements; Fund Allocation & Disbursements; Key Completed Projects; Key Ongoing Projects; Technology & Smart Initiatives; Key Upcoming Projects; Recent Tenders; Issues & Mitigation Measures
- 11. FAST TRACK (13 CITIES) AND ROUND II CITIES (27 cities)**
 - Snapshot; Key Focus Areas (Mobility, Energy, Governance, Water & Waste, etc.) & Infrastructure Development; Investment Plans & Key Funding Sources; Progress So Far & Key Achievements; Fund Allocation & Disbursements; Key Completed Projects; Key Ongoing Projects; Technology & Smart Initiatives; Key Upcoming Projects; Recent Tenders; Issues & Mitigation Measures
- 12. ROUND III (30 CITIES) AND ROUND IV CITIES (10 cities)**
 - Snapshot; Key Focus Areas (Mobility, Energy, Governance, Water & Waste, etc.) & Infrastructure Development; Investment Plans & Key Funding Sources; Progress So Far & Key Achievements; Fund Allocation & Disbursements; Key Completed Projects; Key Ongoing

Projects; Technology & Smart Initiatives; Key Upcoming Projects; Recent Tenders; Issues & Mitigation Measures

- 13. GREENFIELD SMART CITIES**
 - GIFT City; Aurangabad Industrial City; Palava; Lavasa; Dholera; Vikram Udyogpuri; Integrated Industrial Township Greater Noida Ltd.
- 14. NON-MISSION SMART CITIES**
 - Greater Mumbai (MCGM Area); Smart Bandra Kurla Complex (BKC) Project; Virar-Alibaug Multi Modal Corridor; Amravati; Delhi (Non-NDMC Area); Others

SECTION III: SEGMENTS IN FOCUS: NOTEWORTHY INITIATIVES, NEW TECHNOLOGIES AND ADVANCEMENTS

- 15. Smart Mobility**
 - Overview and Key Thrust Areas; Technology Solutions; Current State of Infrastructure in Smart Cities; Noteworthy Initiatives/Projects; Select Case Studies & Technologies Deployed; Key Learnings; Issues & Challenges; Key Completed Projects; Upcoming Projects; Recent Tenders; Segment Outlook
- 16. SMART ENERGY AND SMART GRIDS**
 - Overview and Key Components; Technology Solutions; Current State of Infrastructure in Smart Cities; Noteworthy Initiatives/Projects; Select Case Studies & Technologies Deployed; Issues & Challenges; Key Projects; Key Completed Projects; Recent Tenders; Key Learnings; Segment Outlook
- 17. SMART WATER AND WASTE**
 - Key Thrust Areas; Technology Solutions; Current State of Infrastructure; Noteworthy Initiatives/Projects; Select Case Studies & Technologies Deployed; Issues & Challenges; Key Learnings; Key Completed Projects; Key Upcoming Projects; Recent Tenders; Segment Outlook
- 18. AFFORDABLE HOUSING & INTELLIGENT BUILDINGS**
 - Key Thrust Areas; Technology Solutions; Current State of Infrastructure; Noteworthy Initiatives/Projects; Select Case Studies & Technologies Deployed; Issues & Challenges; Key Learnings; Key Completed Projects; Key Upcoming Projects; Recent Tenders; Segment Outlook
- 19. SMART GOVERNANCE & COMMUNICATION**
 - Key Thrust Areas; Technology Solutions; Current State of Infrastructure in Smart Cities; Select Case Studies & Technologies Deployed; Key Learnings; Issues & Challenges; Upcoming Contracts & Tenders; Segment Outlook (till 2025-26)
- 20. SAFETY & SECURITY**
 - Key Thrust Areas; Technology Solutions; Current State of Infrastructure in Smart Cities; Noteworthy Initiatives/ Projects; Select Case Studies and Technologies Deployed; Key Learnings; Issues and Challenges; Upcoming Contracts and Tenders; Segment Outlook (till 2025-26)
- 21. NEW FOCUS AREA**
 - Healthcare; Public Amenities; City Gas Distribution; Roads & Flyovers; Others; Key Completed Projects; Key Upcoming Projects; Recent Tenders; Segment Outlook

SECTION IV: DATABASE OF KEY PROJECTS

The report will also provide a comprehensive Excel-based database of ongoing and upcoming projects across the water supply, sewerage, waste, energy, mobility, buildings, roads, safety and security, e-governance, parking, and healthcare segments.

Each project will provide information on:

- Scope; Project Cost; Type of Project (Area-based or Pan-City); Mode of Implementation; Implementing Agency; Contractor/ Developer/Technology Vendor (wherever available); Current Status; Expected Date of Completion Etc.

The report is available in a PDF format

Table of Contents

SECTION I: SMALL CELL BASICS**1. WHY SMALL CELLS - NEEDS AND BENEFITS**

- Key Drivers
 - Growth in Data Consumption
 - Technology Evolution and Advancements
 - Rising Connectivity Needs
 - Network Densification
- Benefits and Use Cases
- Coverage and Capacity Considerations
- Comparison with other Technologies
 - Wi-Fi
 - DAS

2. TYPES OF SMALL CELLS AND KEY FEATURES

- Femtocell
- Picocell
- Microcell
- Metrocell

(Technology, coverage range, end user type, energy consumption, backhaul requirements, costs, etc.)

3. REQUIREMENTS FOR 5G

- Role of Small Cells in 5G
 - Network Densification
 - Better Service Quality
 - Cost Efficiency
 - Service Proliferation
- Technology Considerations
- 5G Use Cases and Applications
- Service Provider/Operator Plans and Strategies
- Global Deployment Experience and Case Studies
- Issues and Challenges

4. BACKHAUL CONSIDERATIONS

- Backhaul Requirements
 - Wireless (mmWave, E-band, V-band)
 - Fibre-based
- Issues and Challenges

SECTION II: MARKET SEGMENTATION**5. MARKET SEGMENTATION BY OPERATING ENVIRONMENT**

- Indoor Coverage
 - Key Consumer Segments (Office and Residential Buildings, Shopping Malls, etc.)
 - Needs and Requirements (Bandwidth, Coverage, Speed, etc.)
 - Small Cell Solutions (Relevant/Appropriate)
 - Market Potential
 - Current Deployments and Use Cases
- Outdoor Coverage
 - Key Consumer Segments (Campuses, Complexes, Stadiums, Smart Cities, etc.)
 - Needs and Requirements (Bandwidth, Coverage, Speed, etc.)
 - Small Cell Solutions (Relevant/Appropriate)
 - Market Potential
 - Current Deployments and Use Cases

6. MARKET SEGMENTATION BY END USERS

- Telcos
 - Key Benefits (Coverage, Capacity, QoS)
 - Small Cell Solutions (Relevant/Appropriate)
 - Key Applications and Demand Drivers (4G, 5G, etc.)
 - Current Deployments and Future Plans
- Enterprises
 - Emerging Segments (Logistics, Education, Hospitals, BFSI, Utilities, Manufacturing, Retail, IT/ITeS, etc.)

- Key Benefits (Bandwidth, Speed, QoS, Applications, etc.)
- Small Cell Solutions (Relevant/Appropriate)
- Market Potential
- Current Deployments and Use Cases
- Residential
 - Key Benefits (Bandwidth, Speed, QoS, Applications, etc.)
 - Small Cell Solutions (relevant/appropriate)
 - Market Potential
 - Current Deployments and Use Cases
- Transport Hubs
 - Key Segments (Airport Terminals/ Railway Stations/Metro Stations, etc.)
 - Key Benefits (Bandwidth, Coverage, Speed, Applications, etc.)
 - Small Cell Solutions (Relevant/Appropriate)
 - Market Potential
 - Current Deployments and Use Cases
- Smart Cities
 - Key Requirements and Benefits (Bandwidth, Coverage, Speed, Applications, etc.)
 - Small Cell Solutions (Relevant/Appropriate)
 - Market Potential
 - Current Deployments and Use Cases

SECTION III: INDIAN MARKET SCENARIO AND OUTLOOK**7. EXPERIENCE SO FAR**

- Trends in Adoption/Current Deployment Status
- Implementation Models
- Issues in Deployment

8. BUSINESS MODELS AND MARKET PLAYERS

- Current Market Structure
- Emerging Business Models (Neutral Hosts, Infra Sharing, etc.)
- Cost Economics (Capex/Opex considerations)
- Key Players
 - Telcos
 - IP-1s/TowerCos
 - FTTH Providers
 - IBS Providers
 - Etc.

9. MARKET OUTLOOK, PROJECTIONS AND OPPORTUNITIES

- Key Demand Drivers and Market Outlook
- Projected Demand from Indoor and Outdoor Segments
- Projected Demand from End Users
- Projected Demand from 5G
- Market Projections till 2024-25
- Deployment Plans and Investments
- Issues and Challenges
- Opportunities for Technology Providers
- Opportunities for Infrastructure Providers
- Opportunities for Other Players

SECTION IV: LEADING TECHNOLOGY PROVIDERS**10. BRIEF PROFILES OF LEADING TECHNOLOGY PLAYERS**

- Airspan; AltioStar; Cisco; CommScope; Corning; Ericsson; Huawei; Ibus Networks; Parallel Wireless; Qualcomm; QuadGen Wireless; Samsung; Sercomm; Space World; STL; Mavenir; Nokia; NEC; VVDN; Z-Com; ZTE; Zyxel; etc.

(Key small cell solutions/offerings, key clients, key deals/partnerships/ collaborations, future plans, upcoming products, etc.)

The report is available in a PDF format.

Table of Contents

SECTION I: MARKET TRENDS, DEVELOPMENTS AND OUTLOOK

1. MARKET OVERVIEW AND KEY TRENDS

- Growth in OFC Network
- Consumption Trends across Key User Segments
- Demand Drivers
- Supply-side Dynamics
- Evolving Policy and Regulatory Scenario
- Emerging Trends and New Business Models
- Key Issues and Challenges
- Industry Expectations

2. IMPACT OF COVID-19 AND INDUSTRY RESPONSE

- Trends in Data Uptake and Network Usage
- Data Growth and Content Consumption
- Adoption of Virtual Collaboration and Remote Solutions
- Impact on key stakeholders: Demand for FTTH Services, Impact on OFC Manufacturers, BharatNet Project
- Post Covid-19 Outlook

3. POLICY AND REGULATORY SCENARIO

- NDCP, 2018: Policy Provisions and Objectives, Execution Timelines and Current Status, Impact on OFC Demand, Opportunities for Towercos
- RoW Rules: Key Features, Implementation Status, Charges Across Key Cities, State-wise Charges
- Key State Policies
- TRAI Recommendations and Consultations
- Policy and Regulatory Gaps
- Industry Expectations

4. 5G SCENARIO AND KEY REQUIREMENTS

- Key Considerations for 5G rollout
- OFC Requirements: Tower Site Fiberisation, Small Cell Backhaul
- Operator Readiness and Plans
- Key Use Cases
- Issues and Challenges

5. DEMAND PROJECTIONS AND OUTLOOK

- Data Consumption - Growth Trends and Forecasts
- Projected Requirements by Key User Segments
- Estimated Requirements under Government Projects and Policies
- Projected Requirements for 5G
- Future Outlook

SECTION II: KEY USER SEGMENTS AND REQUIREMENTS

6. GOVERNMENT PROGRAMMES AND INITIATIVES

- BharatNet: Project Overview and Progress, PPP mode of Implementation, Opportunities for Private Sector
- National Broadband Mission
- Defence Projects: Network for Spectrum, ASCON
- State-level Projects and Initiatives

7. TELECOM OPERATORS

- Current OFC Network Size
- Emerging Business and Monetisation Models
- Trends in ARPUs
- Analysis of Key Players: Growth in Data Traffic, FTTH Offerings, Key Contracts and Collaborations, Future Plans and Requirements

8. TOWER COMPANIES

- Trends in Towers Site Fiberisation
- Emerging Business Models

- Analysis of Key Players
- New Opportunities

9. SMART CITIES

- Key ICT-based Network Elements of a Smart City
- Key Use Cases
- Role of OFC in Smart Cities
- Current Network Infrastructure across Cities
- Role of Telcos
- Key Upcoming Contracts
- Future Plans and Upcoming Opportunities

10. FIBRE TO THE HOME

- Demand Drivers
- Current Level of FTTH Penetration
- Evolving Competitive Landscape
- Key Players (Network Size, Key Offerings, Expansion Plans, Etc.)
- Emerging Business Models
- Role of MSO/Triple Play Service Providers

11. UTILITIES - POWER, OIL & GAS AND RAILWAYS

- Role of OFC
- Emerging Models/Practices for Monetising OFC
- Profiles of Key Utilities: Network Size, Expansion Plans, Emerging Opportunities, Key Contracts

12. KEY EMERGING SEGMENTS

- Data Centres: Edge Data Centres, Hyperscale Data Centres
- Public Wi-Fi
- Enterprise Digitalisation (Healthcare, BFSI, IT/TeS, Manufacturing, etc.)

SECTION III: SUPPLY-SIDE SCENARIO

13. EVOLVING MANUFACTURING ECOSYSTEM

- Growth in Production and Manufacturing Capacity
- Domestic Sales and Export Scenario
- Policy Impetus - Focus on Make in India
- Deployment and Installation Practices
- Materials and Cost Trends
- Focus on R&D and Emerging Solutions
- Capacity Expansion Plans and Future Focus Areas
- Issues and Challenges
- Future Outlook

14. KEY SUPPLIER PROFILES

- Aksh OptiFibre Limited
- Birla Cable Limited
- CommScope
- Corning
- Finolex Cables Limited
- Himachal Futuristic Communications Limited
- HTL
- Paramount Communications Limited
- Polycab
- Reichle & De-Massari AG
- STL
- UM Cables Limited
- Uniflex Cables
- Vindhya Telelinks Limited
- West Coast Opticable

The report is available in a PDF format

Growth Drivers, Emerging Business Models and Future Outlook

Table of Contents

SUMMARY AND KEY INSIGHTS

SECTION I: TRENDS, DEVELOPMENTS, GROWTH DRIVERS AND PROJECTIONS

1. MARKET OVERVIEW AND KEY TRENDS

- Size and Growth
- Market Structure and Competitive Landscape
- Impact of Telco Consolidation and Financial Crisis
- Issues and Challenges
- Emerging Trends
- Future Outlook

2. IMPACT OF COVID-19

- Growth in Data Consumption
- Trends in Network Usage
- Demand from Non-urban Centers
- Impact on Business Operations

3. POLICY AND REGULATORY DEVELOPMENTS

- NDCP 2018
 - Policy Provisions and Objectives
 - Execution Timelines and Status
 - Opportunities for TowerCos
- National Broadband Mission
 - Provisions and Objectives
 - Execution Timelines
 - Opportunities for TowerCos
- RoW Rules
 - Key Provisions
 - Implementation Status
 - State-wise Charges
- State Policies
- TRAI's Recommendations on Enhancing the Role of IP-1s
- Policy and Regulatory Gaps
- Industry Expectations

4. EMERGING BUSINESS MODELS

- Active Infrastructure Sharing
- Neutral Hosts
- Het-Nets Provisioning and Smart Infrastructure (Fiberisation, Wi-Fi, small cells, etc.)

5. OUTLOOK AND MARKET PROJECTIONS (till 2025)

- Key Growth Drivers
- Data Consumption - Growth Trends and Forecasts
- Projected Growth in Tower Deployments
- Projected Growth in Tenancies
- Opportunities for Tower Companies
- Industry Outlook

SECTION II: NEW GROWTH AREAS

6. PREPARING FOR 5G - REQUIREMENTS AND OPPORTUNITIES

- Tower Site Fiberisation
- Micro sites
- Edge Data Centers

(Each segment will give an overview of market size, growth drivers, current status of deployment, future expansion plans and market opportunity)

7. SMART CITIES - EXPERIENCE AND OPPORTUNITIES

- Role of Telecom Infrastructure
- Applications and Use Cases
- Implementation Experience
- Existing Partnerships
- Key Completed and Ongoing Projects

- Upcoming Tenders
- Future Opportunities

8. IN-BUILDING SOLUTIONS

- Market size and adoption
- Key Solutions/Technologies: DAS; FTTH; Small Cells; Wi-Fi
- Operator Deployments and Plans
- Emerging Business Models
- Role of Towercos
- Issues and Challenges
- Opportunities and Future Outlook

9. NON-CORE BUSINESS OPPORTUNITIES

- Smart Poles (IoT sensors, public Wi-Fi)
- Digital Signage and Advertising
- EV Charging Infrastructure

(Each segment will cover market size, growth drivers, current and planned partnerships and contracts, and market opportunity)

SECTION III: TOWER DESIGN, ENERGY REQUIREMENTS AND SITE MAINTENANCE

10. TOWER DESIGNS, TECHNOLOGIES AND SOLUTIONS

- Types of Tower Structures and Key Characteristics
- Evolving Tower Designs
- Trends in Materials Used
- Deployment and Installation Models
- Global Best Practices and Lessons

11. ENERGY MANAGEMENT

- Power Consumption Trends
- Cost Structure
- Types and Nature of Energy Sources
- Energy Efficiency Strategies
- Trends in Energy Storage
- Focus on Green Energy
- Industry Initiatives
- Future Outlook

12. SITE OPERATIONS AND MAINTENANCE

- Current Practices and Models
- Key and Emerging Technology Trends (Analytics, real time monitoring, automation)
- Focus on Managed services
- Industry Initiatives and Experience
- Challenges and Way Forward

SECTION IV: PLAYER PROFILES

13. KEY PLAYERS

- American Tower Corporation
- Ascend Telecom Infrastructure
- BSNL-MTNL
- Indus Towers-Bharti Infratel
- Reliance Jio Infratel
- Reliance Infratel
- Tower Vision
- Others (GTL Infrastructure, RailTel, PowerGrid, etc.)

(Each player profile will give an overview of the company's operations, tower footprint and portfolio, focus areas, key projects, key clients, financial performance, capex and expansion plans)

The report will be available in a PDF format.

Table of Contents

SUMMARY AND KEY INSIGHTS

1. INVESTMENT TRENDS

- Overall Trends
- Analysis By Investment Type
 - Project Stage (operational, under construction, under development, stressed)
 - Platform Investments
 - Stakes in Infra Companies
 - Public Asset Disinvestment
 - Bonds
 - Infrastructure Debt Funds
 - InvITs
- Analysis By Investor Type (PE, pension/insurance fund, SWF, strategic investor)
- Analysis By Sector
- Analysis By Value
- Analysis By Country
- Historical Returns

2. PRIVATE EQUITY INVESTMENTS

- Overall Trends (Past 5 years)
- Analysis By Sector
- Analysis By Type (Asset Acquisition, Stakes in Infra Companies, platform investments, etc.)
- Top Deals
- Active PE Investors
- Key Exits
- Future Outlook

3. PENSION/INSURANCE FUND INVESTMENTS

- Overall trends
- Analysis by Sector
- Analysis by type
- Top Deals
- Active Pension/Insurance fund investors
- Future Outlook

4. SOVEREIGN WEALTH FUND INVESTMENTS

- Overall trends
- Analysis by Sector
- Analysis by type
- Top Deals
- Active Sovereign Wealth Funds
- Future Outlook

5. STRATEGIC INVESTMENTS

- Overall trends
- Analysis by Sector
- Analysis by type
- Top Deals
- Active Strategic investors
- Future Outlook

6. SECTOR-WISE TRENDS

- Sector-wise Analysis
- Investor Type
- Investment Type
- Stage of Project
- Value
- Origin of Country

7. TRENDS BY COUNTRY OF ORIGIN

- Country Rankings
- Overall Trends
- Analysis by Sector
- Analysis by Investment Type

8. PUBLIC ASSET MONETISATION OPPORTUNITIES

- Experience so Far
- Upcoming National Monetisation Pipeline

An excel data base of foreign investments in infrastructure providing the following details:

- Project Cost
- Project Stage
- Foreign Investment
- Percentage Stake
- Sector
- Investee Company
- Investor Name
- Investment Type
- Investor Type
- Etc.

12 monthly updates providing an excel sheet of deals during the month

The report is available in a PDF format.

Table of Contents

SUMMARY AND KEY INSIGHTS

PART I: TRENDS, DEVELOPMENTS AND OPPORTUNITIES

1. DEFENCE MANUFACTURING LANDSCAPE

- Overview
- Current Domestic Capacity
- Trends in Procurement - Domestic versus Foreign
- Trends in Budgetary Allocations and Spending
- Budget Highlights - 2021-22
- Trends in Expenditure - Acquisition and Modernisation
- Evolving Policy Scenario
- Trends in Exports and Imports
- Key Recent Developments
- Emerging Focus Areas: AtmaNirbhar Bharat and Focus on Indigenisation; Focus on Exports; Private Sector Participation; Role of MSMEs
- Key Contract Awards
- Issues and challenges
- Growth Drivers and Sector Outlook

2. ANALYSIS OF DEFENCE ACQUISITION PROCEDURE (DAP) 2020

- Salient Features; Amendments over DPP 2016; Potential Impact on Industry and Opportunities for Stakeholders; Key Concerns; Industry Expectations

3. FOCUS ON MAKE IN INDIA

- Current Scenario
- Funds Allocation
- Defence Production by DPSUs/OFBs
- Key Projects under Make in India
- DRDO Initiatives
- Recent Developments and their Potential Impact
- Defence Reforms for Atmanirbhar Bharat: Import Substitution; Domestic Procurement; Export Promotion, etc.
- Role of Private Sector
- Segment-wise Progress and Plans
- Upcoming Contracts

4. FUTURE OUTLOOK AND MARKET OPPORTUNITIES

- Growth Drivers
- Future and Potential Acquisitions
- Segment-wise Opportunities and Projected Investments
- Major Upcoming Contracts
- Opportunities under Make in India
- Future Outlook

5. POTENTIAL FOR PRIVATE SECTOR PARTICIPATION

- Experience so far
- Key Players - Indian and Global
- Key Private Sector Projects and their Progress
- Recent JVs and Collaborations
- Recent Developments and their Potential Impact: Disinvestment of PSUs; Relaxation in FDI/Provisions under DAP 2020; Focus under Atmanirbhar Bharat Abhiyan
- Role of MSMEs
- Key Concerns and Industry Expectations
- Upcoming Contracts and Opportunities

6. PROGRESS AND OPPORTUNITIES IN DEFENCE OFFSETS MARKET

- Indian Defence Offset Market Overview
- Current Framework
- Experience so Far: Current Status and Discharge of Obligations; Key Offset Contracts and their Performance; Policy Impact
- Key Concerns
- Amendments under DAP 2020 and their Potential Impact
- Opportunities and Outlook

PART II: SEGMENT ANALYSIS - PROGRESS AND PLANS

7. AEROSPACE

- Existing Fleet
- Trends in Expenditure and Capital Outlay
- Industry Structure and Key Players
- Key Projects and their Progress
- Recent Developments: New launches/induction; Collaborations and Tie-ups; Modernisation Initiatives; Others
- Progress under Make in India
- Emerging Trends and Focus Areas
- Upcoming Contracts
- Future Plans and Requirements

8. ARMoured AND DEFENCE LOGISTICS VEHICLES

- Current Capacity; Trends in Expenditure and Capital Outlay; Industry Structure and Key Players; Key Projects; Recent Developments; Progress under Make in India; Emerging Trends and Focus Areas; Upcoming Contracts; Segment Outlook

9. ARMS AND AMMUNITION

- Current Capacity; Trends in Expenditure and Capital Outlay; Industry Structure and Key Players; Key Projects and their Progress; Recent Developments; Progress under Make in India; Emerging Trends and Focus Areas; Upcoming Contracts; Future Plans and Requirements

10. ELECTRONICS AND COMMUNICATION SYSTEMS

- Current Capacity; Industry Structure and Key Players; Key Projects; Recent Developments; Progress under Make in India; Emerging Trends and Focus Areas; Outlook and Opportunities

11. SHIPBUILDING

- Existing Fleet; Trends in Expenditure and Capital Outlay; Industry Structure and Key Players; Key Projects and their Progress; Recent Developments; Progress under Make in India; Emerging Trends and Focus Areas; Upcoming Contracts; Future Plans and Requirements

PART III: KEY PLAYERS - MANUFACTURING INITIATIVES AND FUTURE PLANS

12. DPSUS AND OFB

- Bharat Dynamics Limited; Bharat Electronics Limited; Bharat Earth Movers Limited; Garden Reach Shipbuilders and Engineers Limited; Goa Shipyard Limited; Hindustan Aeronautics Limited; Hindustan Shipyard Limited; Mazagon Dock Shipbuilders Limited; Mishra Dhatu Nigam Limited; Corporatisation of OFB

13. PRIVATE PLAYERS

- Airbus Group India; Ashok Leyland Defence Systems; Bharat Forge Limited; BAE Systems India; Boeing India; Larsen & Toubro (L&T); Dassault Aviation; Tata Advanced Systems Limited; Mahindra Defence Systems; Thales; Others (Domestic and Foreign)

MONTHLY UPDATES

The 11 monthly updates will cover:

- Key Policy Developments
- Project Awards and Announcements
- Update on Government Initiatives/Programmes
- Recent Deals and Collaborations
- MoUs and Bilateral Agreements
- DAC Approvals for Acquisition
- Upcoming Tenders/RFPs/RFIs
- R&D and Modernisation Initiatives

The report is available in a PDF format.

EXECUTIVE SUMMARY

SECTION I: AFRICAN MARKET OVERVIEW, IMPACT OF COVID-19, INVESTMENT OUTLOOK AND NEW OPPORTUNITIES

- 1. INFRASTRUCTURE SNAPSHOT**
 - Macroeconomic Scenario; Current Infrastructure Deficit; Competitive Landscape; Infrastructure Size and Growth; Sectoral Trends and Developments; Key Technology Trends; Recent Government Initiatives in Light of Covid-19; Sector wise Proposed Investment; Risks and Challenges; Outlook and Opportunities (Till 2026-27)
- 2. IMPACT OF COVID-19 ON PROJECTS, INVESTMENTS AND CAPEX PLANS**
 - Impact on Project Execution; Expected Time and Cost Overruns (Short Term and Medium Term); Impact on Investment and Funding; Impact of the Evolving Geopolitical Landscape; Policy Response and Mitigation Strategies; Impact on Capex Plans of Key Infrastructure Players
- 3. PROJECT PIPELINE: RE-ASSESSMENT OF OPPORTUNITIES IN LIGHT OF COVID-19**
 - Overall Project Pipeline; Assessment of Project Pipeline; Project Pipeline Analysis; Top Upcoming Projects in the Region
- 4. FUTURE OUTLOOK, PROJECTIONS AND MARKET OPPORTUNITIES (Till 2026-27)**
 - Growth and Demand Drivers; Expected Capacity Additions; Upcoming Investments; Key Projections (Medium and Long-term); Sector-wise Big-Ticket Opportunities; Top 10-15 Infrastructure Investment Destinations; Post Covid-19 Outlook; Market Opportunities
- 5. FUTURE POTENTIAL FOR PPPS**
 - Current Scenario; Emerging Business Models; Sector-wise Private Investments and Experience; Key Completed PPP Projects; Key Upcoming PPP Projects and Privatisation Opportunities; Impact of Covid-19 on Revenues and Returns; Emerging Markets in the PPP Segment; Risks and Challenges; Outlook and Opportunities
- 6. EPC MARKET: EXPERIENCE AND OPPORTUNITIES**
 - Current Scenario; Key Players; Key Contracts; Sector-wise Experience; Impact of Covid-19; Mitigation Measures; Issues and Challenges; Major Investments; Market Opportunities; Short, Medium and Long-term Outlook
- 7. INVESTMENT TRENDS AND FINANCING SCENARIO**
 - Overall Trends in Infrastructure Spending; Impact of Covid-19 on Financing Landscape; Key Funding Sources; Investment Requirement and Projections; Key Risks and Challenges; Investment Outlook
- 8. FOREIGN INVESTMENT TRENDS**
 - Size and Growth; FDI Analysis; Initiatives to Encourage Foreign Investment; Proposed Foreign Investments; Participation of Overseas Equipment Manufacturers and Service Providers

SECTION II: SECTOR-WISE ANALYSIS, DEVELOPMENTS AND OPPORTUNITIES

- 9. CONVENTIONAL ELECTRICITY GENERATION**
 - Size and Growth; Emerging Trends and Developments; Impact of Covid-19; Key Completed Projects; Proposed Investments; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook
- 10. RENEWABLE ENERGY GENERATION**
 - Size and Growth; Emerging Trends and Developments; Impact of Covid-19 on Project Timelines and Financing; Technological Advancements; Key Completed Projects; Proposed Investments; New and Emerging Investment Avenues; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook
- 11. TRANSMISSION, DISTRIBUTION & SMART GRID INFRASTRUCTURE**
 - Size and Growth; Emerging Trends and Recent Developments; Impact of Covid-19; Smart Grid and Metering Initiatives; Technology Advancements; Key Completed Projects; New and Emerging Investment Avenues; Upcoming Projects; Proposed Investments & Capacity Addition Targets; Market Opportunities; Issues and Challenges; Sector Outlook
- 12. MINING**
 - Size and Growth; Emerging Trends and Developments; Impact of Covid-19 on Project Timelines and Financing; Technological

Advancements; Key Completed Projects; Proposed Investments; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook

13. OIL AND GAS: E&P, LNG AND PIPELINE INFRASTRUCTURE, REFINERY AND PETROCHEMICALS

- Size and Growth; Emerging Trends and Developments; Impact of Covid-19 on Project Timelines and Financing; Technological Advancements; Key Completed Projects; Proposed Investments; New and Emerging Investment Avenues; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook

14. ROADS

- Size and Growth; Emerging Trends and Developments; Impact of Covid-19 on Project Timelines and Financing; Technological Advancements; Key Completed Projects; Proposed Investments; New and Emerging Investment Avenues; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook

15. RAILWAYS: HEAVY RAIL INFRASTRUCTURE

- Size and Growth; Emerging Trends and Developments; Impact of Covid-19 on Project Timelines and Financing; Technological Advancements; Key Completed Projects; Proposed Investments; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook

16. URBAN TRANSPORT

- Size and Growth; Emerging Trends and Recent Developments; Impact of Covid-19 on Project Timelines and Financing; Technological Advancements; Key Completed Projects; Proposed Investments; New and Emerging Investment Avenues; Upcoming Projects; Market Opportunities; Issues & Challenges; Sector Outlook

17. SEAPORTS

- Size and Growth; Emerging Trends and Developments; Impact of Covid-19; Technological Advancements and Modernisation Initiatives; Key Completed Projects; Proposed Investments; New and Emerging Investment Avenues; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook

18. AIRPORTS

- Size and Growth; Emerging Trends and Developments; Impact of Covid-19 on Project Timelines and Financing; Key Completed Projects; Proposed Investments; New and Emerging Investment Avenues; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook

19. ICT INFRASTRUCTURE

- Overview; Size and Growth; Emerging Trends and Developments; Impact of Covid-19; New and Emerging Investment Avenues; Proposed Investments and Key Projects; Market Opportunities; Issues and Challenges; Future Outlook

20. WATER AND SANITATION

- Size and Growth; Emerging Trends and Developments; Impact of Covid-19 on Project Timelines and Financing; Technological Advancements; Key Completed Projects; Investment Analysis; New and Emerging Investment Avenues; Upcoming Projects; Market Opportunities; Issues and Challenges; Sector Outlook

SECTION III: COUNTRY-WISE ANALYSIS AND OPPORTUNITIES

- 21. TOP 10-15 INVESTMENT DESTINATIONS**
 - Macroeconomic Growth; Priority Infrastructure Sectors; Private Investment Mobilised and Experience; Ease-of-doing Business Indicators; Project Pipeline; Key Upcoming Projects; Key Successes and Failures; Challenges and Lessons Learnt; Market Opportunities; Post Covid-19 Country Outlook

22. COUNTRY PROFILES

- Economic Scenario; Infrastructure Overview; Policy Landscape; Ease of Doing Business Scenario; Budgetary Outlays; Key Commissioned Projects; Upcoming Investments; Capacity Addition Plans & Targets; Post-Covid-19 Outlook for Infrastructure Investments

This section will cover detailed profiles of 35 key countries the region.

SECTION IV: DATABASE OF KEY PROJECTS

The database will have information on project scope, cost, capacity, location, implementing agency, ownership, EPC contractor/developer, current status, date of commencement of construction/month of award, and expected date of completion.

The report is available in a PDF format

Table of Contents

KEY INSIGHTS AND THE ROAD AHEAD

SECTION I: EMERGING TRENDS, DEVELOPMENTS, NEW PROJECTS AND OPPORTUNITIES

1. IRRIGATION MARKET OVERVIEW

- Size and Growth
- Irrigation Potential
- Notable Sector Trends
- Key Government Programmes
- Funding Sources & Expenditure Trends
- Type of Irrigation Systems
- Industry Structure and Major Players
- Issues & Challenges

2. WATER DEMAND AND SUPPLY SOURCES

- Demand for Water
- Water Availability & Sources
- Recycle and Reuse Practices
- Water Supply-Demand Gap
- Irrigation Demand Outlook

3. IMPACT OF COVID-19 ON IRRIGATION SECTOR

- Impact on Government Programmes and Budgets
- Impact on Project Delivery
 - Ongoing Projects
 - New Bids/Tenders
- Impact on Labour and Raw Material Availability
- Impact on Input Cost
- Capex Plans of Major Players
- Relief Measures for Irrigation Sector
- Key Recommendations based on Industry Interactions

4. RECENT DEVELOPMENTS (in the past 12 to 18 months)

- Regulatory Developments
- New Standards and Norms
- Project Completions
- Contract Awards
- Projects Approved/Announced
- Other Key Developments

5. PROJECT PIPELINE AND ANALYSIS

- Project Pipeline by
 - Region
 - State
 - Stage of Development
 - Type of Project (Major, Medium and Minor)
 - Completion Period
- Expected Capacity Addition
- Top 50 Upcoming Projects

6. FUTURE OUTLOOK AND OPPORTUNITIES

- Key Growth Drivers
- Short-term and Long-Term Sector Outlook
 - Investment Requirements
- Market Opportunities
 - EPC Contractors
 - Pumps Manufacturers
 - Pipe Manufacturers
 - Storage System Providers
 - Meter Manufacturers
 - Technology Providers
 - Consultants

7. UPDATE ON KEY GOVERNMENT PROGRAMMES

- Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)
- Accelerated Irrigation Benefits Programme
- Bharat Nirman Programme
- Participatory Irrigation Management

- Interlinking of Rivers (ILR) Programme
- Command Area Development and Water Management
- Atal Bhujal Yojana (ABHY) - National Groundwater Management Improvement Program
- Dam Rehabilitation and Improvement Programme
- National Aquifer Mapping Program (NAQUIM)

For each of the programmes we will cover project scope, investment requirements, financing sources, current status, key completed and ongoing projects, upcoming tenders, targets and completion timelines, etc.

8. IRRIGATION TECHNIQUES AND TECHNOLOGY

- Current Deployment & Practices
- Key Irrigation Techniques (Drip, Sprinkler, Center Pivot, Pot)
- Focus on Micro Irrigation
- Notable Innovations and Advancements
- Future Outlook

9. EQUIPMENT MARKET TRENDS AND REQUIREMENTS

- Types of Equipment
- Pumps and Pumping Systems (Solar & Electric Pumps)
- Metering Practices
- Other Ancillary Equipment
- New Trends and Advancements
- Major Players
- Sourcing Options
- Segment Outlook

SECTION II: STATE IRRIGATION PLANS AND INITIATIVES

10. PROFILES OF KEY STATES

This section will cover detailed profiles of states such as Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Uttarakhand, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal

Each profile will give information on the following:

- Agriculture Overview
- Water Availability and Sources
- Irrigation Potential
- Irrigation Schemes and Programmes
 - Key Completed Projects
 - Key Ongoing Projects
 - Key Upcoming Projects
- Recent Developments & Initiatives
- Type of Projects (Major, Medium and Minor)
- Cost Structure and Water Tariffs
- Key Funding Sources
- Irrigation Techniques & Practices
- New Trends and Advancements
- Irrigation Storage Systems
- Initiatives for Improving Water Use Efficiency
- Pipes and Pumping Systems
- Major Players
- Upcoming Contracts and Tenders
- Expected Capacity Addition
- Investment Requirements
- Future Outlook
- Issues and Concerns

SECTION III: DATABASE OF KEY PROJECTS

The database is a compilation of upcoming projects (ongoing and planned) in the sector with details on scope, location, cost, capacity, funding sources, implementing agency, contractor (wherever available), current status, expected date of completion, etc.

The report is available in a PDF format

Table of Contents

SUMMARY AND INSIGHTS

SECTION I: MARKET OVERVIEW, TRENDS AND COVID-19 IMPACT ASSESSMENT

1. INFRASTRUCTURE SNAPSHOT

- Size and Growth, Current State of Infrastructure and Infrastructure Deficit, Growth Drivers, Emerging Trends, Key Sectoral Trends, Recent Policy Changes and Government Initiatives, Fiscal and Monetary Response, Mitigation Strategies, Policy Changes and Government Initiatives, Issues and Challenges, Investment Projections, Sector wise Proposed Investment & Opportunities, Future Outlook

2. IMPACT OF COVID-19 ON PROJECTS, CONSTRUCTION AND INVESTMENTS

- Expected Time and Cost Overruns (Short Term and Medium Term), Impact on Project Delivery, Impact on Investments, Capacity and Investment Outlook

3. PROJECT PIPELINE ANALYSIS

- Assessment of Project Pipeline, Analysis by Sector, Analysis by Stage of Development, Analysis by Ownership, Analysis by Country, Analysis by Investment, Top Upcoming Projects in Terms of Investment, Big-ticket Opportunities to Look Out For

4. MARKET OPPORTUNITIES AND FUTURE OUTLOOK

- Country-wise Planned Capacity Addition and Proposed Investment, Sector-wise Planned Capacity Addition and Proposed Investment, Market Opportunities, Future Outlook

5. INVESTMENT AND FINANCING TRENDS

- Infrastructure Spending, Investment Laws and Promotion Agencies, Trends in Funding Sources (Past five Years), FDI Trends and Impact of Covid-19, New and Emerging Sources of Finance, Issues and Challenges, Risks and Historical Rates of Return, Investment Outlook in the Post-Covid World

6. PRIVATE SECTOR PARTICIPATION: EXPERIENCE, CHALLENGES AND OPPORTUNITIES

- Current Scenario, Business Models, Sector-wise Private Investments, Key Completed PPP Projects, Key Upcoming PPP Projects, Key Risks and Challenges, Impact of Covid-19 on Developer Revenues, Upcoming Opportunities, Short, Medium and Long-term Outlook

7. EPC MARKET: EXPERIENCE AND OPPORTUNITIES

- Current Scenario, Key Players (Domestic and Foreign), Key Contracts, Sector-wise Experience, Impact of Covid-19, Issues and Challenges, Market Opportunities, Short, Medium and Long-term Outlook

SECTION II: SECTOR-WISE ANALYSIS, DEVELOPMENTS & OPPORTUNITIES

8. REGIONAL INFRASTRUCTURE

- ASEAN Economic Community, Master Plan on ASEAN Connectivity 2025, ASEAN Single Window, ASEAN Highway Network ASEAN Smart Cities Network, ASEAN Single Aviation Market, ASEAN Single Shipping Market, ASEAN Power Grid and Asian Super Grid, ASEAN Broadband Corridor, China's Belt Road Initiative (BRI), Key Upcoming Cross-border Projects under MPAC 2025, Proposed Investments

9. ELECTRICITY GENERATION: CONVENTIONAL

- Size and Growth, Emerging Trends and Developments, Impact of Covid-19 on Project Timelines, New Bids and Financing, Key Completed Projects, Top Upcoming Projects, Capacity Addition Targets, Technology, Costs and Tariffs, Market Opportunities, Issues and Challenges, Investment and Demand Outlook

10. RENEWABLE ENERGY

- Size and Growth, Emerging Trends and Developments, Impact of Covid-19 on Project Timelines, New Bids and Financing, Costs and Tariffs, Key Projects (Completed and Ongoing), Proposed Investments, Capacity Addition Targets, Technology Advancements, Market Opportunities, Issues and Challenges, Future Outlook and Demand Projections

11. TRANSMISSION, DISTRIBUTION AND SMART GRID

- Size and Growth, Emerging Trends and Developments, Impact of Covid-19, Smart Grid and Metering Initiatives, Recent Developments, Technology Advancements, Key Completed Projects, Top Upcoming Projects, Proposed Investments & Capacity Addition Targets, Market Opportunities, Issues & Challenges, Sector Outlook

12. OIL AND GAS: E&P, LNG AND PIPELINE INFRASTRUCTURE, REFINERY AND PETROCHEMICALS

- Size and Growth, Emerging Trends and Developments, Impact of Covid-19 on Project Timelines, New Bids and Financing, Pricing Trends, Key Projects (Completed and Ongoing), Top Upcoming Projects, Technology Advancements (Asset Monitoring and Pipeline Integrity & Safety), Proposed Investments & Capacity Addition Targets, Market Opportunities, Issues and Challenges, Sector Outlook

13. ROADS

- Size and Growth, Emerging Trends and Developments, Impact of Covid-19 on Project Timelines and Financing, Key Projects (Completed and Ongoing), Top Upcoming Projects, Technology Advancements, Proposed Investments & Capacity Addition Targets, Market Opportunities, Issues and Challenges, Sector Outlook

14. RAILWAYS

- Growth Drivers, Size and Growth, Key Trends, Recent Developments including the Impact of Covid-19 on Project Timelines, New Bids and Financing, Proposed Investments & Capacity Addition Targets, Top Upcoming Projects, Market Opportunities, Issues and Challenges, Sector Outlook

15. URBAN TRANSPORT

- Size and Growth, Clean Bus Market, Emerging Trends and Developments, Recent Developments, Impact of Covid-19 on Project Timelines, New Bids and Financing, Key Projects (Completed and Ongoing), Top Upcoming Projects, Proposed Investments & Capacity Addition Targets, Technology Advancements (Rolling Stock, Fare Collection and S&T), Market Opportunities, Issues and Challenges, Sector Outlook

16. SEAPORTS

- Size and Growth, Emerging Trends and Developments, Recent Developments, Impact of Covid-19 on ASEAN Maritime Sector, Key Completed Projects, Key Ongoing Projects, Top Upcoming Projects, Technology Advancements (Mechanisation and Modernisation), Proposed Investments and Capacity Addition Targets, Market Opportunities, Issues and Challenges, Sector Outlook

17. AIRPORTS

- Size and Growth, Emerging Trends, Recent Developments, Impact of Covid-19 on Project Timelines, New Bids and Financing, Technology Advancements (Passenger Facilitation and Cargo Handling), Tariff Trends, Key Projects (Completed and Ongoing), Top Upcoming Projects, Proposed Investments & Capacity Addition Targets, Market Opportunities, Issues and Challenges, Sector Outlook

18. WATER AND WASTE

- Size and Growth, Emerging Trends, Recent Developments, Impact of Covid-19 on Project Timelines, New Bids and Financing, Technology Advancements (Treatment, Metering & Loss Reduction and Asset Management), Costs and Tariffs, Key Projects (Completed and Ongoing), Top Upcoming Projects, Proposed Investments & Capacity Addition Targets, Market Opportunities, Issues and Challenges, Sector Outlook

SECTION III: COUNTRY PROFILES

19. COUNTRY PROFILES

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

Each country profile will cover the current economic scenario, current state of infrastructure, sector-wise size and growth, trends in budgetary allocations, mitigation strategies and relief measures to deal with the impact of Covid-19, expected capacity additions, proposed investments, and a snapshot of key completed and upcoming projects.

SECTION IV: DATABASE OF KEY PROJECTS

The database will have information on project scope, cost, capacity, location, implementing agency, ownership, EPC contractor/developer, equipment provider, current status, date of commencement of construction/month of award, and expected date of completion

The report is available in a PDF format.

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

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TELECOM

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