



Catalogue of Research Reports on Infrastructure Sectors

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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.

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Opportunities for Suppliers, Developers and Investors

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This section will have chapters pertaining to the solar power project pipeline, investment requirements and capacity outlook for 30 African countries like 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 chapter will provide information on:

- Solar power potential
- Growth of solar power capacity
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- DESCO
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- Others

(Each profile would cover the company's current infrastructure, financial performance, operational performance, key projects, contact details of key personnel, among others)

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

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

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

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EXECUTIVE SUMMARY

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

1. T&D INDUSTRY OVERVIEW

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

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

2. MARKET SIZE AND GROWTH FOR UNDERGROUND CABLES

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

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

3. RECENT TRENDS AND ADVANCES

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

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

4. OPPORTUNITIES UNDER KEY CENTRAL/STATE GOVERNMENT PROGRAMMES

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

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

5. OPPORTUNITIES UNDER SMART CITIES MISSION

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

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

6. OUTLOOK AND PROJECTIONS (till 2022)

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

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

7. LEADING PLAYERS

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

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

The report is available in a PDF format.

Changing Landscape, Growing Role of Digitisation and New Opportunities

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1. EXECUTIVE SUMMARY

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

2. MARKET OVERVIEW

In the initial years of solar power development in India, O&M was often coupled with EPC and performed by the same vendors, but of late, solar O&M has emerged as a separate market with its own landscape, trends and dynamics. This chapter will cover the following areas:

- ❖ Current size of the solar O&M market
- ❖ Market size by segment
 - Utility-scale, Rooftop, Canal-top & floating solar
- ❖ Key growth trends and drivers
- ❖ O&M Evolution - Reactive to Predictive Analysis
 - Applications in solar O&M, Cost and time savings
- ❖ Emerging Role of Energy Storage
- ❖ Key issues and concerns

3. COST TRENDS

The cost of O&M services has been declining over the past few years and the downward trend is expected to continue. The cost composition itself is changing due to greater automation and use of advanced tools. This chapter will cover the following areas:

- ❖ Solar O&M cost trajectory (2012-18)
- ❖ Cost breakup analysis
 - Vehicles and logistics, Equipment and tools, Overheads, Personnel/ Manpower, Digital, Others
- ❖ Cost projections (2019-24)
 - Business model evolution, Key cost considerations, Impact of scale, Impact of energy storage, Future cost estimates

4. EMERGING O&M BUSINESS MODELS

Globally, there has been a rise of third party solar O&M service providers. As more sophisticated and structured approach emerges in the solar O&M market, third party providers are able to deliver more value to solar investors and owners. This chapter will cover the following areas:

- ❖ Capex-based
- ❖ Profit-sharing
- ❖ Fixed cost
- ❖ O&M extensions
- ❖ Others

5. TERMS OF O&M CONTRACTS

It is important for both developers and O&M service providers to clarify and list out their expectations and accordingly draw up a long-term contract. An effective contract will result in higher plant efficiencies. This chapter will cover the following areas:

- ❖ Time periods
- ❖ Product warranties
- ❖ Performance guarantees/SLAs
- ❖ Penalties
- ❖ Ownership
- ❖ Legal terms

6. GRID MANAGEMENT BY O&M PLAYERS

As the government becomes stricter in its implementation of forecasting, scheduling and deviation settlement mechanism regulations, grid management will become a key component of O&M players. Integration of energy storage on to existing plants will lead to a greater O&M play. This chapter will cover the following areas:

- ❖ Forecasting and scheduling
- ❖ Deviation settlement management
- ❖ Integration of energy storage into existing plants
- ❖ Cost implications
- ❖ Experience so far

7. O&M COMPANY PROFILES

A large number of O&M focused players are coming up, some as hive-offs from existing EPC companies and others as independent specialists. This chapter will have 5-8 profiles of key O&M players in India covering the following:

- ❖ Project portfolio
- ❖ Service offerings
- ❖ Technology tie-ups
- ❖ On-ground experience
- ❖ In-pipeline capacity
- ❖ Etc.

8. DIGITALISATION AND AUTOMATION AT PLANT LEVEL

Digitalisation and automation will play a key role in providing efficient O&M services, thereby changing the current O&M cost composition, which is currently dominated by manpower expenses. New technologies are being adopted for improving asset lifecycle management, predictive maintenance, remote sensing and control, cloud computing, and use of drones for visual imaging. A number of companies have also already started using robotics for cleaning modules. This chapter will cover the following areas:

- ❖ Emerging role, applications and use case for the following
 - Manpower and material management, Automated monitoring and big data analytics, Robotics, drones and wearables
- ❖ Growing role of artificial intelligence
 - Machine learning applications, AI field assistants and predictive analytics, Existing use cases
- ❖ Key technology providers
- ❖ Industry Perspective
(Views of key personnel from the solar O&M industry and technology providers on the growing role of AI, robotics and data analytics)

9. KEY CHALLENGES, BEST PRACTICES AND CASE STUDIES

The lack of attention given to O&M practices is one of the primary challenges that the segment is facing. If the plant is not maintained properly, developers can lose up to 15 per cent of the returns. This chapter will cover the following areas:

- ❖ O&M challenges matrix
- ❖ Best practices (Globally and in India)
- ❖ Case studies (This will cover successes and failures of various technologies, business models and strategies adopted by O&M players)

10. PROJECTED O&M MARKET SIZE (FROM 2019-20 TO 2024-25)

The total addressable market for solar PV O&M is expected to reach 30 GW in 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

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10. BIO-CNG PROJECTS

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

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

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(January 2018)

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The report will be available in a PDF format.

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Each profile will cover details on terminal infrastructure, capacity available, traffic handled, recent technological developments, and steps taken in light of Covid-19.

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Each profile will cover details on current infrastructure, services offered, operational and financial performance, steps taken in light of Covid-19, and future plans.

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Each profile will cover details on current infrastructure, services offered, operational and financial performance, steps taken in light of Covid-19, and future plans of each company

The report will be available in a PDF format.

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The report is available in a PDF format.

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- Traffic Analysis: Major and Non-Major Ports, Existing Capacity and Utilisation Analysis, Efficiency Trends, Policy Framework: Evolution and Gaps, Project Awards and Completion, Recent Developments (in the past 15 to 18 months), Government Initiatives in the Light of Covid-19, Maritime Vision 2030, Investment Requirements and Targets under NIP, Risks & Challenges, Traffic Projections, Future Outlook

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

- Impact on Traffic: Major and Non-Major Ports, Progress made by Projects Since April 2020, Impact on Project Delivery & Supply Chain, Impact on Investments, Overall Impact on Capacity Addition, Relief Measures & Recovery Strategies

3. PROJECT PIPELINE ANALYSIS: RE-ASSESSMENT OF OPPORTUNITIES IN LIGHT OF COVID-19 (Till 2025-26)

- Realistic Assessment of Project Pipeline, Port-wise Analysis: Major and Non-Major, Analysis by Stage of Development, Analysis by Ownership, Analysis by Coast, Region & State, Analysis by Completion Period, Top Upcoming Projects in terms of Investments, Projects Awaiting Clearances/Land Acquisition/Financial Closure, Big-ticket Opportunities to Look Out For, Upcoming Contracts & Tenders

4. FUTURE OUTLOOK, PROJECTIONS AND MARKET OPPORTUNITIES (Medium and Long Term)

- Growth Drivers, Expected Capacity Addition in 2020-21, Traffic Projections (till 2025-26), Mega/Big Ticket Projects under Construction, Project Award and Completion Targets, Investment Requirements (Medium-term and Long-term), Market Opportunities, Policy Outlook, Post-Covid Sector Outlook

5. SAGARMALA PROGRAMME: PROGRESS AND OPPORTUNITIES

- Targets & Key Milestones, Progress under Four Components, Trends in Project Awards and Completion, Overall Impact of Covid, Balance for Award, Investment Requirements & Funding, Recent Contracts, Future Targets, Big Ticket Opportunities, Upcoming Tenders

6. FOCUS ON KEY UPCOMING GREENFIELD PORTS

- Key Features, Current Status & Key Milestones, Investment Requirements, Capacity Addition Plans & Targets, Future Opportunities for Key Stakeholders, Key Issues and Challenges

This chapter covers detailed profiles of Astaranga, Azhikkal, Beypore, Bhavanapadu, Chudamani, Dahej, Devbhumi Dwarka, Kulpi, Machilipatnam, Nargol, Ponnani, Kakinada, Ramayapatnam, Rewas, Riverine Port on River Mahanadi, Subarnarekha, Tadadi, Tajpur, Vijaydurg, Vizhinjam and Yogayatan

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- Ease of Doing Business Initiatives, Digital Solutions & Initiatives, Future Technologies in the Post-Covid World

8. INVESTMENT TRENDS AND PPP EXPERIENCE

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10. CAPACITY TRENDS AND EXPECTED ADDITIONS

- Capacity Addition Trends (2015-16 to 2019-20), Impact of Covid-19 on Capacity Addition Plans in 2020-21, Upcoming Contracts & Tenders, Recovery Trend & Revival Strategies

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12. IRON ORE

13. POL

14. CONTAINERS

15. FERTILISERS

- Chapters 10 to 14 will cover the following:
 - Trends in Commodity-wise Traffic (2015-16 to 2019-20), Trends in Capacity Additions & Utilisation Levels (2015-16 to 2019-20), Impact of Covid-19 on Performance of Commodities in 2020-21, Recovery Trend & Revival Strategies, Upcoming Projects & Investments, Issues & Challenges, Future Projections

16. EFFICIENCY INDICATORS & FINANCIAL PERFORMANCE

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21. EMERGING FOCUS AREAS

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- Chennai Port, Tamil Nadu, Cochin Port, Kerala, Deendayal Port, Gujarat (erstwhile Kandla Port), Jawaharlal Nehru Port Trust, Maharashtra, Kamarajar Port, Tamil Nadu, Kolkata Port, West Bengal, Mumbai Port, Maharashtra, Mormugao Port, Goa, New Mangalore Port, Karnataka, Paradip Port, Odisha, etc.

Each profile provides information on current infrastructure, traffic & capacity analysis, vessel traffic, efficiency and financial performance, ongoing & upcoming projects, etc.

23. KEY NON-MAJOR PORT PROFILES

- 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, etc.

Each profile provides information on current infrastructure, traffic & capacity analysis, ongoing & upcoming projects, etc.

SECTION V: DATABASE OF KEY PROJECTS

The database is a compilation of 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.

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A comprehensive excel-based database of ongoing and upcoming projects in the railways sector. Each project provides information on:

- Scope, Project Cost, Current Status, Segment (Tracks, S&T, Tunnels, Bridges, DFC, HSR, RRTS, Suburban rail, Station redevelopment, Rolling Stock, Electrification, etc.), Mode of Implementation (PPP or EPC), Contractor/Developer, Consultant, Funding Sources (wherever available), Expected Network Addition, Expected Completion Date

The report is available in a PDF format.

Sector Analysis, Impact of Covid-19 on Project Pipeline, Investments and Capacity Addition

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The report is available in a PDF format.

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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.

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<p>1. EXECUTIVE SUMMARY</p> <p>SECTION I: MARKET OVERVIEW AND OUTLOOK</p> <p>2. OVERVIEW</p> <ul style="list-style-type: none"> - 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 <p>3. GROWTH DRIVERS</p> <ul style="list-style-type: none"> - Key Trends - Focus on Emission Control - Strengthening of Public Transport - Government's Subsidy Scheme - Rising Oil Imports - Smart Cities Mission <p>4. OUTLOOK AND MARKET OPPORTUNITIES</p> <ul style="list-style-type: none"> - Procurement Plans of Transport Undertakings - Key Upcoming Bids and Tenders - Future Demand Projections - Market Opportunities <ul style="list-style-type: none"> ● Bus Manufacturers ● Battery Manufacturers ● Other Component Suppliers <p>5. COMPETITIVE LANDSCAPE</p> <ul style="list-style-type: none"> - Key Players (Indian and Global) <ul style="list-style-type: none"> ● Company Profile ● Operational Fleet of Clean Buses ● Future Plans ● Key Milestones ● Recent Collaborations/JV/Technology Partner - Current Market Shares 	<p>SECTION II: SEGMENT FOCUS</p> <p>6. HYBRID BUS MARKET</p> <ul style="list-style-type: none"> - 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 <p>7. ELECTRIC BUS MARKET (BATTERY OPERATED)</p> <ul style="list-style-type: none"> - 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 <p>8. GAS-BASED BUS MARKET (CNG, LNG, BIOGAS)</p> <ul style="list-style-type: none"> - 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
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The report is available in a PDF format.

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2. IMPACT OF COVID-19 ON PROJECTS AND CONTRACTORS

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- 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

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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

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13. IRRIGATION

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- 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

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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*

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**Other Materials will include geosynthetics, aggregates, fly ash, coir geotextiles, and plastic waste
The report will be available in a PDF format.*

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- Recent Developments
- Mining Techniques and Practices
- Technology Trends
- Private Sector and MDO Experience
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- Future Outlook

2. IMPACT OF COVID-19 ON THE MINING SECTOR

- Impact on: Production of Coal and Coal Offtake; Production of Non-coal Minerals; Mineral Demand; Pricing; Exports and Imports; Performance of Mining Companies
- Time Overruns in Mine Projects
- Impact on Contracting Market
- Impact on Supply chain
- New Investment Avenues being Explored
- Mitigation Strategies

3. PROPOSED REFORMS UNDER MMDR AMENDMENT ACT AND ITS IMPACT

- Proposed Amendments: Enhancing Private Participation; Defining Illegal Mining; Removing Distinction between Captive and Non-captive Mines; Moving Towards Auction Regime; Developing a National Mineral Index; Etc.
- Expected Impact on the Industry: Production; Exploration; Private Investments and FDI
- Impact on Coal Mining
- Impact on Other Minerals
- Industry Recommendations

4. EXPLORATION TRENDS AND TARGETS

- Current Exploration Area and Spending, Recent Initiatives, Capex Plans of Mining Companies, Participation from Foreign Players, Future of Underground Mining, Issues and Challenges, Future Exploration Targets

5. FUTURE OUTLOOK AND KEY PROJECTIONS (2025-26)

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6. PROJECT PIPELINE AND MARKET OPPORTUNITIES

- Overall Pipeline
- Top Upcoming Projects
- Pipeline Analysis: By Mineral; Stage; State; Ownership
- Market Opportunities for: Mine Developers and Contractors; Equipment Providers; Mine Design Consultants; Technology Providers

7. COMMERCIAL COAL MINING: EXPERIENCE AND OUTLOOK

- Auctions conducted so far, Bidding Response and Experience, Auction Plan for 2021-22, Impact on Coal Mining PSUs, Issues and Challenges, Future Outlook

8. UPDATE ON MINERAL AUCTIONS

- Summary of Auctions so Far: Year-wise and State-wise Analysis (Last Five Years); Mineral-wise Analysis; Type of Licenses; Statutory Payments (Royalty, DMF and NNET)
- Key Issues and Challenges
- Upcoming Auctions

SECTION II: ANALYSIS OF KEY MINERALS, MARKETPLACE AND FUTURE OUTLOOK

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 2025-26), Supply Projections (till 2025-26)

10. IRON ORE

- Reserves, Production, Exports and Imports, Price Trends: Recent Updates, Recent Developments, Key Players, Investment Plans, Upcoming Projects and their Status, Blocks on Auction, Outlook and Projections (till 2025-26)

11. LIGNITE

- Reserves, Production, Exports and Imports, Price Trends, Recent Developments, Key Players, Upcoming Projects: Status and Investments, Outlook and Projections (till 2025-26)

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 2025-26)

13. BAUXITE

- Reserves, Production, Exports and Imports, Price Trends, Recent Developments, Key Players, Upcoming Projects and their Status, Mineral Outlook and Projections (till 2025-26)

14. COPPER

- Reserves, Production, Exports and Imports, Price Trends, Recent Developments, Key Players, Investment Plans, Upcoming Projects and their Status, Outlook and Projections (till 2025-26)

15. LEAD AND ZINC

- Reserves, Production, Exports and Imports, Price Trends, Recent Developments, Key Players, Investment Plans, Upcoming Projects and their Status, Outlook and Projections (till 2025-26)

16. OTHER KEY MINERALS (BATTERY MINERALS, REAR EARTH MINERALS, MAGNESITE, DOLOMITE, QUARTZ, SILICA SAND, KAOLIN, ETC.)

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

SECTION III: LEADING PLAYERS

17. 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

(Each mining player will cover operational performance, financial performance, project portfolio, and future plans and strategies)

The report is available in a PDF format.

KEY TAKEAWAYS AND THE ROAD AHEAD

SECTION I: MARKET ANALYSIS, COVID-19 IMPACT ASSESSMENT, OUTLOOK AND OPPORTUNITIES

1. MARKET SIZE, TRENDS AND DEVELOPMENTS

- Size and Growth, Emerging Trends, Project Awards and Completion, Recent Developments (in the past 15 months), Technology Trends and Advancements, New Equipment & Innovations, Investment Requirements (till 2025-26), Risks and Challenges, Segment Outlook

2. IMPACT OF COVID-19 ON PROJECTS, INVESTMENTS & CAPEX PLANS

- Progress made by Projects since April 2020: Projects that have Resumed Construction Work; Projects Awarded; Projects Facing Supply Chain Issues; Projects Facing Funding Delays; Project that have Progressed to Construction Post Award; Bid Postponements; Under Bidding Projects; Invocation of Force Majeure and Contract Renegotiation
- Impact of Covid-19 on Key Players: Project Portfolios and Order Books; Project Costs, Payments and Delivery; Planned Capex & Future Plans
- Impact on Investments
- Overall Impact on Capacity Addition
- Relief Measures & Recovery Strategies

3. PROJECT PIPELINE ANALYSIS (Till 2025-26)

- Realistic Assessment of Project Pipeline: Short Term; Medium Term; Long Term
- Analysis by Stage of Development
- Analysis by Segment (Hydropower, Roads, Railways, Metro, Water & Wastewater, Irrigation, Caverns)
- Analysis by Region & State
- Analysis by Completion Period
- Top Upcoming Projects in terms of Investments
- Projects Awaiting Clearances/Land Acquisition/Financial Closure
- Big-ticket Opportunities to Look Out For
- Upcoming Contracts & Tenders

4. FUTURE OUTLOOK & MARKET OPPORTUNITIES (Medium & Long Term)

- Growth Drivers
- Mega/Big Ticket Projects under Construction
- Project Award and Completion Targets
- Investment Requirements (Medium-term and Long-term)
- Market Opportunities: EPC Contractors; Technology Providers; Equipment Suppliers; Construction Material Suppliers; Consultants
- Post-Covid Segment Outlook

5. CONSTRUCTION EXPERIENCE, CHALLENGES AND BEST PRACTICES

- Experience So Far
- Current Contracting Practices and Standards
- Construction Techniques and Methods
- Design & Engineering Practices
- Risks and Challenges: Contractual Challenges; Procurement (Equipment and Materials) related Issues; Manpower Issues; Safety Issues; Survey and Investigation Issues; Average Time and Cost Overruns
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- Size and Growth, Technology Trends and Advancements, Key Completed Projects, Key Ongoing Projects, Select Case Studies, Major Players, Recent Tenders/Contracts, Upcoming/Planned Projects

7. ROADS AND HIGHWAYS

- Size and Growth, Technology Trends and Advancements, Key Completed Projects, Key Ongoing Projects, Select Case Studies, Major Players, Recent Tenders/Contracts, Upcoming/Planned Projects

8. RAILWAY TUNNELS

- Size and Growth, Technology Trends and Advancements, Key Completed Projects, Key Ongoing Projects, Select Case Studies, Major Players, Recent Tenders/Contracts, Upcoming/Planned Projects

9. HYDRO TUNNELS

- Size and Growth, Technology Trends and Advancements, Key Completed Projects, Key Ongoing Projects, Select Case Studies, Major Players, Recent Tenders/Contracts, Upcoming/Planned Projects

10. IRRIGATION, WATER SUPPLY AND SEWERAGE TUNNELS

- Size and Growth, Technology Trends and Advancements, Key Completed Projects, Key Ongoing Projects, Select Case Studies, Major Players, Recent Tenders/Contracts, Upcoming/Planned Projects

11. UNDERGROUND CAVERNS

- Size and Growth, Technology Trends and Advancements, Key Completed Projects, Key Ongoing Projects, Select Case Studies, Major Players, Recent Tenders/Contracts, Upcoming/Planned Projects

SECTION III: FOCUS ON TECHNOLOGY, EQUIPMENT AND MATERIALS

12. TBM TECHNOLOGY

- Market Size and Growth, Current Deployment, TBM Types & New Advancements, Costs Analysis, Key Projects (Completed and Ongoing), Issues and Challenges, Segment Outlook

13. DRILL AND BLAST METHOD

- Market Size and Growth, Current Deployment, Trends and Advancements, Costs Analysis, Key Projects (Completed and Ongoing), Issues and Challenges, Segment Outlook

14. NEW AUSTRIAN TUNNELING METHOD

- Market Size and Growth, Current Deployment, Trends and Advancements, Key Projects (Completed and Ongoing), Issues and Challenges, Segment Outlook

15. TRENCHLESS TECHNOLOGY: MICRO-TUNNELLING AND HORIZONTAL DIRECTIONAL DRILLING

- Market Size and Growth, Current Deployment, Trends and Advancements, Key Projects (Completed and Ongoing), Issues and Challenges, Segment Outlook

16. EQUIPMENT MARKET TRENDS & FUTURE PROJECTIONS

- Market Size and Growth, Types of Equipment, Rental and Leasing Market, Impact of Covid-19 on Supply & Availability, Innovations and Advancements, Major Players/Suppliers, Issues and Challenges, Future Requirements & Projections

17. FOCUS ON MEP SYSTEMS & SMART TUNNELS

- Types of MEP Systems (power supply, tunnel ventilation, lighting, fire fighting, traffic management, etc.), New and Emerging Requirements, Trends & Advancements, Safety & Automation Solutions, Noteworthy Initiatives & Best Practices, Future Technologies in Light of Covid-19, Key Challenges & Lessons Learnt, Segment Outlook

18. NEW CONSTRUCTION MATERIALS

- Types of Materials Used (steel, cement, anchors, explosives, admixtures, etc.), Recent Innovations (Fibre & rock reinforcement, geosynthetics, etc.), Noteworthy Initiatives & Best Practices, Issues & Challenges, Segment Outlook

SECTION IV: KEY PLAYERS

19. 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 section will cover operations, financial performance (wherever available), recent developments, project portfolio, strategies being adopted in light of Covid-19 and future plans of each company)

SECTION V: DATABASE OF KEY PROJECTS

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

The report is available in a PDF format.

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- 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

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- Underground Mining
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- Mine Planning and Design
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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
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7. DRILLING, EXCAVATION AND EXTRACTION EQUIPMENT

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

8. LOADING

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- 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)

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

10. CRUSHING, PULVERISING AND SCREENING EQUIPMENT

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- 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
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The report is available in a PDF format.

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1. MARKET TRENDS AND DEVELOPMENTS

- Market Size and Growth
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- 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
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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

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 - Short Term (2021-22)
 - Medium Term
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- 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
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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 INVESTMENTS

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

Each state profile will include information on current desalination capacity, water supply scenario, policies & regulations, ongoing projects, government funding, active tenders, investment requirements, upcoming projects, etc.

9. PROFILES OF MAJOR PLAYERS

- 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
- Others

Each player profile gives information on the company overview, project portfolio (completed and ongoing projects), financial performance, future plans, etc.

The report will be available in a PDF format.

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2. IMPACT OF COVID-19 ON AFFORDABLE HOUSING

- Impact on: Market Demand; Sales and Supply; Pricing; Financing and Investments
- Mitigation Strategies by Developers
- Government Impetus: Initiatives to Revive Demand; Initiatives to Strengthen Supply; ARHCs under PMAY

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- Announcements in Union Budget 2021-22; Update on SWAMIH Investment Fund; Impact of Past Policy Developments - Infrastructure Status, GST, CLSS, RERA Act.; Other Key Incentives; Industry Expectations & Recommendations

4. PROGRESS UNDER GOVERNMENT PROGRAMMES

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- PMAY Rural: Progress so Far - Physical and Financial; Completed and Ongoing Projects; Investment Requirement; Future Targets and Timelines
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- Progress under Lighthouse Cities

5. DEMAND AND SUPPLY PROJECTIONS (till 2025-26)

- Housing Demand Projections; Housing Supply Projections; Land Requirement; Projections for Material and Equipment Requirements; Post Covid Sector Outlook

6. PROJECT PIPELINE AND MARKET OPPORTUNITIES

- By Ownership: Central Level; State Level; Private Sector Projects
- By Stage of Development: Ongoing; Awarded; Announced; Planned/Proposed
- Upcoming Projects under Smart Cities Mission
- Opportunities for Key Stakeholders: Project Developers; EPC Contractors; Technology Providers; Material & Equipment Suppliers, etc.

7. FINANCING AND INVESTMENT SCENARIO

- 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, Co-Operative Housing Groups)
- New Funding Sources (REIT Structures, etc.)
- Investment Projections
- Risks and Project IRRs

8. RENTAL HOUSING MARKET

- Size and Growth; Policy and Regulatory Landscape; Model Tenancy Law; ARHCs; State Initiatives; Private Sector Participation; Emerging Practices - Co-living and Student Housing; Global Models; Issues and Challenges; Opportunities and Outlook

9. MATERIALS AND EQUIPMENT MARKET

- Size and Growth; Emerging Trends and Innovations; Demand Drivers; Trends in Costs; Outlook and Projections

SECTION II: PRIVATE SECTOR POTENTIAL AND OPPORTUNITIES**10. PRIVATE SECTOR EXPERIENCE AND OUTLOOK**

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

11. TOP CITIES FOR AFFORDABLE HOUSING

- Ahmedabad; Bengaluru; Chennai; Delhi NCR; Hyderabad; Kolkata; Mumbai; Pune; Others

Each city profile will include information on experience in affordable housing (completed and ongoing projects), demographic profile, state of existing infrastructure, upcoming investments, key players, opportunities etc.

12. KEY PLAYER PROFILES

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

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

SECTION III: STATE-LEVEL SCHEMES, EXPERIENCE & OPPORTUNITIES**13. INTER-STATE COMPARISON**

- Current Housing Stock and its Condition; Demand-Supply Gap; Housing Shortage; Key Initiatives; Future Plans; Top Upcoming Projects

14. 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 housingboards, state policy on affordable housing, new initiatives and incentives, and ongoing and upcoming housing schemes/projects

The report is available in a PDF format.

Wastewater Treatment and Reuse Market in India (June 2021) (Draft ToC) Price: Rs 50,000 (USD 908)

Current State, City-Level Initiatives, Emerging Technologies and Upcoming Opportunities

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

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- Growth in Treatment Capacity
- Trends in Capacity Additions (in the past 15-18 months)
 - State-wise
 - City-wise
- Growth in Sewerage Network
- Current Wastewater Recycling Capacity
- Network Expansion Plans & Targets

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

ADDITION & INVESTMENTS

- Impact on Wastewater Generation
- Impact on Plant Operations
- Impact on: Ongoing/Under Construction Projects; Under Bidding Projects; Planned/Announced Projects
- Impact on Capacity Addition & Investments
- Impact on Investments & Government Funding

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

- Growth Drivers
- Projected Network Addition: Treatment Capacity; Sewer Network
- 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; Long Term
- Analysis by Type: Municipal & 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. 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 (till 2026)
- Issues and Challenges

6. INDUSTRIAL EFFLUENT: TREATMENT CAPACITY & REUSE PRACTICES

- Effluent Generation
- Treatment Capacity

- Industries Effluent Management Practices
- Recycle & Reuse Initiatives
- New Technologies & Innovations
- Capacity Expansion Plans
- Investment Requirements (till 2026)
- Issues and Challenges

7. EMERGING 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
- 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

9. CITY-LEVEL INITIATIVES: UPCOMING CAPACITY AND INVESTMENTS .

- Ahmedabad; Bengaluru; Chandigarh; Chennai; Delhi; Ghaziabad; Gurugram; Hyderabad; Kochi; 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.

10. PROFILES OF MAJOR PLAYERS

- Hindustan Construction Company Limited
- Ion Exchange
- Larsen & Toubro Limited
- Ramky Infrastructure Limited
- Siemens Water
- 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
- Others

Each player profile gives information on the company overview, project portfolio (completed and ongoing projects), financial performance, future plans, etc.

The report will be available in a PDF format.

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SECTION I: MARKET SIZE, IMPACT OF COVID, OPPORTUNITIES AND OUTLOOK**1. WATER MARKET OVERVIEW, GROWTH, AND TRENDS**

- Size and Growth; Emerging Trends; Policy & Regulatory Developments; City-Level Initiatives & Best Practices; Technology Trends & Advancements; Sources of Water Supply (Surface & Groundwater); New Water Sources (Treated Wastewater, Desalinated Water, etc.); Issues and Challenges; Revised Outlook in Light of COVID-19

2. IMPACT OF COVID-19 ON PROJECTS AND INVESTMENTS

- Progress made by Projects Since April 2020; Impact on Supply Chain; Impact on Key Segments; Impact on Investments; Overall Impact on Capacity Addition; Relief Measures & Recovery Strategies

3. PROJECT PIPELINE ANALYSIS: RE-ASSESSMENT OF OPPORTUNITIES IN LIGHT OF COVID-19 (Till 2025)

- Realistic Assessment of Project Pipeline; Analysis by Segment (Municipal, Industrial, Desalination and Wastewater); Analysis by Stage of Development; Analysis by Ownership; Analysis by Region & State; Analysis by Completion Period; Top Upcoming Projects in terms of Investment; Upcoming Contracts and Tenders

4. OUTLOOK & MARKET OPPORTUNITIES (Medium Term & Long Term)

- Growth Drivers; Demand and Supply Projections (till 2025); Future Technologies in the Post- COVID-19 World; Capacity Addition Plans; Investment Requirements (till 2025); Market Opportunities

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- Piped Water Supply Network; Emerging and Recent Trends; Urban Water Supply Sources; Consumption Patterns; Policy & Regulatory Developments; Key Completed Projects; Segment Outlook

6. KEY GOVERNMENT PROGRAMMES: CURRENT STATUS, UPCOMING PROJECTS AND OPPORTUNITIES

- Jal Jeevan Mission; Smart Cities Mission; Atal Mission For Rejuvenation and Urban Transformation; Namami Gange Mission

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

7. TARIFFS AND COSTS STRUCTURE

- Tariff Structure; Water Charges & Fees; Production Costs & O&M Expenses; Recent Tariff Reforms; Issues and Challenges

8. FINANCING AND INVESTMENT TRENDS

- Key Funding Sources; Recent Financing Trends; Potential for Private Participation; Formats and Models; Revenue Stream; Key PPP Projects: Completed and Ongoing; Key Upcoming Projects; Risks and Challenges

9. 24X7 WATER SUPPLY: EXPERIENCE, CHALLENGES & OPPORTUNITIES

- Experience So Far; Pilot Projects & Case Studies: Implementation Experience & Lessons Learnt; Key Completed & Ongoing Projects; Key Planned & Announced Projects; Upcoming Contracts & Tenders; Segment Outlook

10. METERING PRACTICES: CURRENT DEPLOYMENT AND FUTURE OUTLOOK

- Current Practices & Type of Meters Deployed; New Trends & Advancements; Case Studies & Best Practices; Demand Projections; Segment Outlook

11. NRW REDUCTION STRATEGIES & REVENUE MANAGEMENT SYSTEMS

- Current Practices & Strategies; City-wise NRW Levels; Case Studies & Best Practices; Future Plans & Initiatives; Segment Outlook

SECTION III: INDUSTRIAL WATER: SEGMENT ANALYSIS, OUTLOOK AND OPPORTUNITIES**12. SEGMENT SIZE AND GROWTH**

- Water Requirement by Industry; Emerging and Recent Trends; Water Supply Sources; Consumption Patterns; Regulatory Developments; Key Completed Projects; Segment Outlook

13. TARIFFS AND COST STRUCTURE

- Tariff Structure; Water Charges & Fees; Production Costs & O&M Expenses; Recent Tariff Reforms; Issues and Challenges

14. POWER SECTOR: DEMAND ANALYSIS AND FUTURE PROJECTIONS

- Current Water Consumption; Water Management Practices & Initiatives; Effluent Generation and Treatment; Capacity Expansion Plans; Projected Water Demand; Issues and Challenges

15. TEXTILE SECTOR: DEMAND ANALYSIS AND FUTURE PROJECTIONS

- Current Water Consumption; Water Management Practices & Initiatives; Effluent Generation and Treatment; Capacity Expansion Plans; Projected Water Demand; Issues and Challenges

16. PAPER & PULP INDUSTRY: DEMAND ANALYSIS AND FUTURE PROJECTIONS

- Current Water Consumption; Water Management Practices & Initiatives; Effluent Generation and Treatment; Capacity Expansion Plans; Projected Water Demand; Issues and Challenges

17. STEEL SECTOR: DEMAND ANALYSIS AND FUTURE PROJECTIONS

- Current Water Consumption; Water Management Practices & Initiatives; Effluent Generation and Treatment; Capacity Expansion Plans; Projected Water Demand; Issues and Challenges

18. OIL REFINERIES: DEMAND ANALYSIS AND FUTURE PROJECTIONS

- Current Water Consumption; Water Management Practices & Initiatives; Effluent Generation and Treatment; Capacity Expansion Plans; Projected Water Demand; Issues and Challenges

SECTION IV: DESALINATION MARKET: EMERGING TRENDS, COST ECONOMICS AND FUTURE POTENTIAL**19. MARKET SIZE, EXPERIENCE AND COST ECONOMICS**

- Current Capacity; Emerging Trends & Developments; Cost Components & Capex Trends; Noteworthy Projects; Industry Structure & Major Players; Planned Additions; Issues & Challenges; Segment Outlook

20. FUTURE POTENTIAL AND UPCOMING CAPACITY

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

21. TREATMENT TECHNOLOGIES: MARKET SIZE, EMERGING TRENDS AND ADVANCEMENTS

- Prevalent Treatment Technologies; Cost Economics & Viability; Current Deployment & Case Studies; New Advancements & Innovations; Issues and Challenges; Future Requirements & Outlook

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23. FUTURE REQUIREMENTS AND POTENTIAL

- Growth Drivers & Demand Potential; Availability of Treated Wastewater; Future Plans & Initiatives; Regulatory Outlook; Future Roadmap

24. SELECT CASE STUDIES AND KEY LESSONS

- Recycle/Reuse Initiatives & Best Practices; Lessons Learnt; Sources of Treated Wastewater Supply; Cost Components & Tariffs; Key Benefits & Cost Savings; Future Plans

SECTION VI: DATABASE OF KEY PROJECTS

A comprehensive excel-based database of ongoing and upcoming projects in the municipal water supply, industrial water supply, desalination and wastewater treatment segments.

Each project will provide information on:

- Scope; Project Cost; Current Status; Segment (Municipal, Industrial, Desalination, Wastewater Treatment); Mode of Implementation (PPP or EPC); Contractor/Developer; Equipment Supplier (wherever available); Funding Sources (wherever available); Expected Capacity Addition; Expected Completion Date

The report is available in a PDF format.

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- 1. SIZE AND GROWTH**
 - Sector Snapshot; Current Size and Growth; Notable Trends; Institutional Framework; Regulations, Standards and Norms; Risks and Challenges; Future Outlook and Projections (till 2025-26)
- 2. IMPACT OF COVID-19 AND OTHER RECENT DEVELOPMENTS**
 - Impact of COVID-19 on: Under Construction Projects; Contracts Awarded; Under Bidding Projects; Planned/Announced Projects; Government Programmes; Project Delivery and Implementation; Labour Availability; Input Cost; Capex Plans of Private Players; Service Providers
 - Regulatory Developments
 - Other Key Developments
- 3. PROJECT PIPELINE AND ANALYSIS**
 - Overall Project Pipeline
 - Project Pipeline Analysis: By Region; State; Ownership/Mode of Implementation; Completion Period
 - Expected Capacity Addition: By Treatment Capacity; Network Length
 - Analysis of Upcoming Projects
 - Top 50 Upcoming Projects
- 4. FUTURE OUTLOOK AND MARKET OPPORTUNITIES**
 - Key Growth Drivers
 - Investment Requirements
 - Market Opportunities: EPC Contractors; Private Developers; Technology Providers; Equipment and Material Suppliers; Pipe Manufacturers; Consultants
 - Outlook and Projections (till 2024-25)
- 5. UPDATE ON KEY GOVERNMENT PROGRAMMES**
 - Swachh Bharat Mission; Namami Gange Programme; Smart Cities Mission; Atal Mission for Rejuvenation and Urban Transformation
- 6. INTER-CITY COMPARISON: ANALYSIS OF KEY CITIES**
 - Sewage Generation; Treatment Capacity; Collection Infrastructure; Treatment Technologies Deployed; Ongoing Projects; Planned/Upcoming Projects; Recycle and Reuse Initiatives; Operational Constraints
- 7. FINANCING EXPERIENCE AND PPP POTENTIAL**
 - Key Funding Sources
 - Overall Investment Trends
 - Union Budget 2020-21: Overall Budget Allocations; Allocations under Major Urban Infrastructure Development Programs
 - Innovative Funding Options
 - PPP Experience and Potential: Formats and Models; PPP Experience (1990s-2016); PPP Experience (Post 2016)
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 - Key Ongoing Projects: Future Outlook and Potential
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- 8. NEW BUSINESS MODELS: HAM AND ONE CITY-ONE OPERATOR**
 - Salient Features and Experience So Far: HAM; One City-One Operator Model
 - Capex and Opex Requirements
 - Case Studies
 - Key Ongoing Projects
 - Upcoming Contracts and Tenders
 - Risks and Challenges
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9. COST ECONOMICS, TARIFFS AND RETURNS

- Tariffs and User Charges; Economics of STPs; Capex and Opex Requirements; Market for Byproducts; Returns and Revenue Potential; New Reforms and Initiatives; Issues and Concerns

10. LEADING PLAYERS: PROJECT PORTFOLIO AND FUTURE PLANS

- Overview: Major Players (Domestic and Global); Industry Structure
- Project Portfolio: Key Completed Projects; Key Ongoing Projects
- Financial Performance
- Industry Concerns and Expectations
- Future Plan

SECTION II: KEY FOCUS SEGMENTS: ANALYSIS AND OUTLOOK

11. DECENTRALISED SEWAGE TREATMENT

- Introduction; Salient Features; Experience So far; Project Economics; Select Case Studies; Key Advantages; Constraining Factors; Future Outlook

12. RECYCLE AND REUSE INITIATIVES

- Introduction; Current Practices; Standards and Norms for Reuse; Relevant Technologies; Key Recycle and Reuse Facilities; Case Studies and Lessons Learnt; Key Consumers of Recycled Wastewater; Issues and Challenges; Future Potential

13. INDUSTRIAL EFFLUENT MANAGEMENT

- Current Effluent Generation; Discharge Standards and Norms; Existing Treatment Facilities; Key Ongoing and Upcoming Facilities; Recycle and Reuse Practices; Case Studies and Lessons Learnt; Innovations and Advancements; Segment Outlook

14. ENERGY FROM SEWAGE

- Existing Capacity
- Energy Generation
- Relevant Technologies
- Case Studies & Lessons Learnt
- Key Upcoming Projects
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15. TREATMENT TECHNOLOGIES AND INNOVATIONS

- Sewage Treatment Technologies: Conventional Technologies; Advanced Technologies
- Comparison of Key Technologies: Cost Comparison; Performance Comparison
- Key STPs: Conventional Technologies; Advanced Technologies
- Current Capacity: Treatment Technology-wise; State-wise
- New Trends and Advancements: Case Studies
- Key Issues and Asset Management
- Segment Outlook

16. O&M AND ASSET MANAGEMENT

- Introduction; Current Practices; Opex Requirements; Cost Recovery; Instrumentation & Automation; New Initiatives; Issues & Challenges

SECTION IV: DATABASE OF KEY PROJECTS

The database will be a compilation of operational sewage treatment plants (STPs) along with details on the capacity, implementing agency and technology (wherever available). It will also provide a detailed list of ongoing and planned projects in the sector including sewage treatment facilities, sewage pumping stations, sewage pipelines, recycle and reuse facilities, and effluent treatment plants 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.

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- MSW Generation and Growth in the Past Five Years
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- Recent Policy and Regulatory Developments
- Project Completions
- Recent Contract Awards
- Projects Approved/Announced
- Notable Trends
- Government Initiatives
- Risks and Challenges
- Future Outlook and Projections (till 2025-26)

2. COVID-19 IMPACT ASSESSMENT: PROJECTS, INVESTMENTS AND OPPORTUNITIES

- Impact of COVID-19 on: Project Delivery and Implementation; Labour and Raw Material Availability; Input Cost
- Focus on Biomedical Waste Management
- Investment Landscape and Outlook
- City-level Initiatives & Mitigation Measures
- New & Emerging Technology Requirements
- Government Relief Measures
- Future Growth Strategies

3. REALISTIC ASSESSMENT OF PROJECT PIPELINE

- Project Pipeline by: Region; State; Stage of Development; Ownership; Completion Period
- 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

8. COST ECONOMICS, TARIFFS AND RETURNS

- Tariffs and User Charges; Cost Economics; Capex and Opex Requirements; Market for Residues; Returns and Revenue Potential; New Reforms and Initiatives; Issues and Concerns

9. LEADING PLAYERS: PROJECT PORTFOLIO AND FUTURE PLANS

- Industry Structure; Major Players (Domestic and Global); Key Completed Projects; Key Ongoing Projects; Financial Performance; Industry Concerns and Expectations; Future Plans

10. EQUIPMENT MARKET: CURRENT SIZE & EMERGING REQUIREMENTS

- Size and Growth; Type of Equipment; Key Players & Products; Innovations and Advancements; Future Demand Projections; Issues and Challenges

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11. COLLECTION AND TRANSPORTATION

- 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

12. TREATMENT AND PROCESSING

- 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

13. DISPOSAL, RECYCLE AND REUSE PRACTICES

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SECTION III: NEW FOCUS AREAS AND OPPORTUNITIES

14. 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

15. WASTE-TO-ENERGY: CURRENT CAPACITY AND FUTURE POTENTIAL

- 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

16. INTEGRATED SOLID WASTE MANAGEMENT

- Salient Features; Experience So far; Government Initiatives; Key City Level Initiatives; Upcoming Projects & Tenders; Key Benefits; Issues and Challenges; Segment Outlook

SECTION IV: DATABASE OF KEY PROJECTS

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.

The report will be available in a PDF format.

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

Market Overview, Growth Drivers and Future Outlook

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- 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; Altostar; 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 will be available in a PDF format.

SECTION I: MARKET TRENDS, DEVELOPMENTS AND OUTLOOK

1. MARKET OVERVIEW AND KEY TRENDS

- Growth in OFC Network
- Consumption Trends across Key User Segments
- Date Uptake and Demand
- Supply-side Dynamics
- Evolving Policy and Regulatory Scenario
- Emerging Trends and New Business Models
- Key Issues and Challenges
- Future Outlook

2. IMPACT OF COVID-19 AND INDUSTRY RESPONSE

- Trends in Data Uptake and Network Usage
- Adoption of Virtual Collaboration and Remote Solutions
- Impact on OFC Demand and Supply: Data Growth and Content Consumption; Demand for FTTH Services; Deployment by telcos and ISPs; OFC Manufacturers
- Post Covid-19 Outlook

3. POLICY AND REGULATORY SCENARIO

- NDCP 2018: Policy Provisions and Objectives; Execution Timelines and Current Status; Impact on OFC Demand
- RoW Rules: Implementation Status; 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 (2025-26)

- Data Consumption - Growth Trends and Forecasts
- Projected Requirements by Key User Segments
- Estimated Requirements under Government Projects and Policies
- Projected Requirements for 5G
- Market Opportunities for: OFC Suppliers and Manufacturers; Technology Providers; Ancillary Market

SECTION II: KEY USER SEGMENTS AND REQUIREMENTS

6. GOVERNMENT PROGRAMMES AND INITIATIVES

- BharatNet: Overview; Progress under Phase II; State-wise Analysis; Upcoming Tenders and Purchase Orders; Implementation Roadblocks; Scope of PPP; Opportunities for Private Stakeholders
- National Broadband Mission: Progress so Far; Timelines and Targets
- Defence Projects - Network for Spectrum and ASCON: Project Overview; Progress and Current Status; Key Requirements and Emerging Opportunities
- State-level Projects and Initiatives (MahaNet, AP FibreNet, TamilNet, GujaratNet, KFON, Telangana T-Fiber, others)

7. TELECOM OPERATORS

- Current OFC Network Size
- Emerging Business and Monetisation Models
- Trends in ARPUs
- Analysis of Key Players (Bharti Airtel, Reliance Jio, Vodafone Idea and BSNL/MTNL): 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 (Infracos/netcos, neutral hosts, etc.)
- Analysis of Key Players (Indus-Bharti Infracel, ATC India, Summit Digital, TowerVision, etc.): Current Focus Areas; Key Contracts and Collaborations; Future Plans and Requirements
- New Opportunities (Small Cells, Edge Data Centers, Smart Cities, etc)

9. SMART CITIES

- Role of OFC in Smart Cities; Current Network Infrastructure across Cities; Current and Prospective Use cases; 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 Network
- Profiles of Key Utilities: Network Size; Key Contracts; Emerging Opportunities; Expansion Plans

12. KEY EMERGING SEGMENTS

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

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
- Paramount Communications Limited
- Polycab
- Reichle& De-Massari AG
- STL
- Uniflex Cables
- Vindhya Telelinks Limited
- West Coast Optilinks
- Others

(Each player profile will give an overview of the company's operations, focus areas, current production capacity, manufacturing facilities, key projects, financial performance, capex and expansion plans)

The report will be available in a PDF format.

Growth Drivers, Emerging Business Models and Future Outlook

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- Market Structure and Competitive Landscape
- Impact of Telco Consolidation and Financial Crisis
- Issues and Challenges
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2. IMPACT OF COVID-19

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- Impact on Business Operations

3. POLICY AND REGULATORY DEVELOPMENTS

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 - 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
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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
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8. IN-BUILDING SOLUTIONS

- Market size and adoption
- Key Solutions/Technologies: DAS; FTTH; Small Cells; Wi-Fi
- Operator Deployments and Plans
- Emerging Business Models
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- 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)

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10. TOWER DESIGNS, TECHNOLOGIES AND SOLUTIONS

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- Evolving Tower Designs
- Trends in Materials Used
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- 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

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- 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.

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- 3. PROJECT PIPELINE: RE-ASSESSMENT OF OPPORTUNITIES IN LIGHT OF COVID-19**
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- 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**
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- 9. CONVENTIONAL ELECTRICITY GENERATION**
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- 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**
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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

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17. SEAPORTS

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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

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- 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

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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

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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
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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
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- Upcoming Contracts and Tenders
- Expected Capacity Addition
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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

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

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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

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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

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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

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11. TRANSMISSION, DISTRIBUTION AND SMART GRID

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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

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14. RAILWAYS

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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

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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

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