

**PROPOSAL—TECHNO-ECONOMIC FEASIBILITY REPORT
FOR EPOXY RESIN MANUFACTURING**



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Reliance Industries Limited (RIL) is one of the well-known brands involved in manufacturing and sales of diverse range of products including polymers, aromatics, elastomers etc. globally. The company cater customers and various industries viz., healthcare, automotive, packaging, etc. across 70 countries worldwide.



The company's total production capacity of PE, PP and PVC is 2.3, 2.9 and 0.7 million MT per annum respectively as of 2021. The company has 6 state-of-the-art manufacturing facilities for polymers production. A total of 2.1 MMT was exported in FY 2020-21 across the entire polyester chain. In addition, RIL has maintained its market share in the domestic polyester market despite difficult market conditions due to COVID-19. Significant PX and Benzene exports in 1H FY 2021 helped maintain the operating rate of aromatics plants.

Reliance Industries Ltd intends to undertake a market study and understand technical commercial feasibility for entering epoxy resin manufacturing. The company proposes to produce epoxy resin and vinyl ester resin in Gujarat, India.

The scope of the study is to assess the product historical and forecast demand-supply, market size, market players, techno-economic evaluation, CAPEX-OPEX, trading concept, imports/exports, pricing, logistics and overview of the proposed plant's competitive positioning.

TechSci Research is submitting this proposal covering scope of work, methodology, timelines and other details.

Background

Need for the Epoxy Resin and Vinyl Ester Resin Market

- India has emerged as a leading economy in world and has an average growth rate of around 7% in last decade. The manufacturing sector plays a crucial role in Indian Economy and chemical manufacturing amongst it is a crucial sector which spread its roots across wide range of end use industries. According to index of Industrial production (IIP) the chemical industry already returning to pre-Covid level, the industry is expected to grow at a CAGR of about 9.2% by 2025.
- In terms of Manufacturing Competency, India is the fifth largest producer of cars and textiles. Also, as per Consumer Electronics and Appliance Manufacturers Association (CEAMA) electronic production constitute around 3% of Global Electronic production.
- Epoxy resin is a reactive polymer or prepolymer containing epoxide group. Vinyl ester resin is a resin produced by esterification of epoxy resin with acrylic or methacrylic acids. These compounds possess various properties such as corrosion resistance, high thermal stability, high mechanical strength, high chemical and environmental resistance, durability, adhesion etc. owing to these properties, epoxy resins find application in several areas including paints and coatings, adhesives, composites, electronic encapsulation, and others.
- Major end use industries for epoxy resins include building and construction, automotive, general industrial, consumer goods, wind power, aerospace, marine, etc.

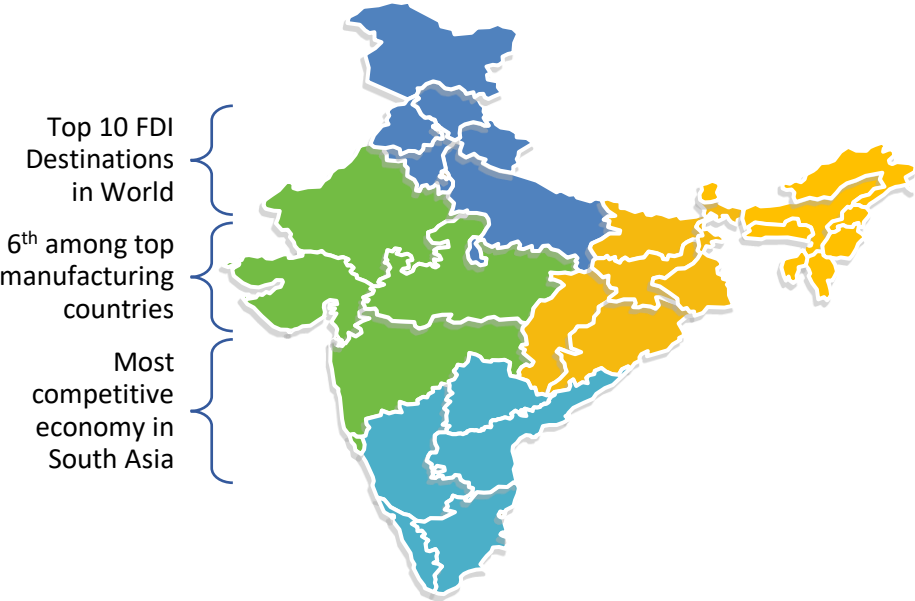
Factors Driving the growth of Epoxy Resin and Vinyl Ester Resin.

- *To make India a global hub for Electronic Manufacturing with Government incentive schemes like Modified Incentive Special Scheme (M-SIPS) and Electronic Development Fund (EDF).*
- *Global shifts in trade policies owing to US-China trade war and Global shift in sentiments due to Covid-19 pandemic and looking for another Manufacturing Hub in Asia Pacific.*
- *National Infrastructure Pipeline (NIP) unveiled by central government has an investment budget of 1.4 USD trillion targeting 24% on renewable energy, 19% on road & highway, 16% on urban infrastructure and 13% on railway.*
- *Under the smart city mission, total of 5,956 housing projects is to be completed by 2025.*

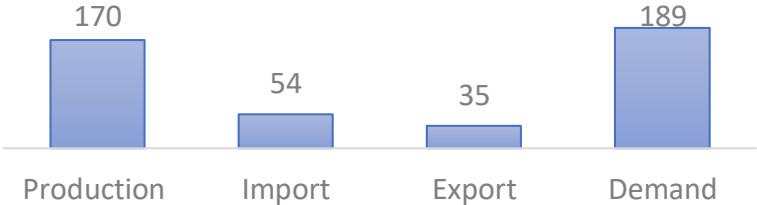
Background

India Chemical Industry Outlook

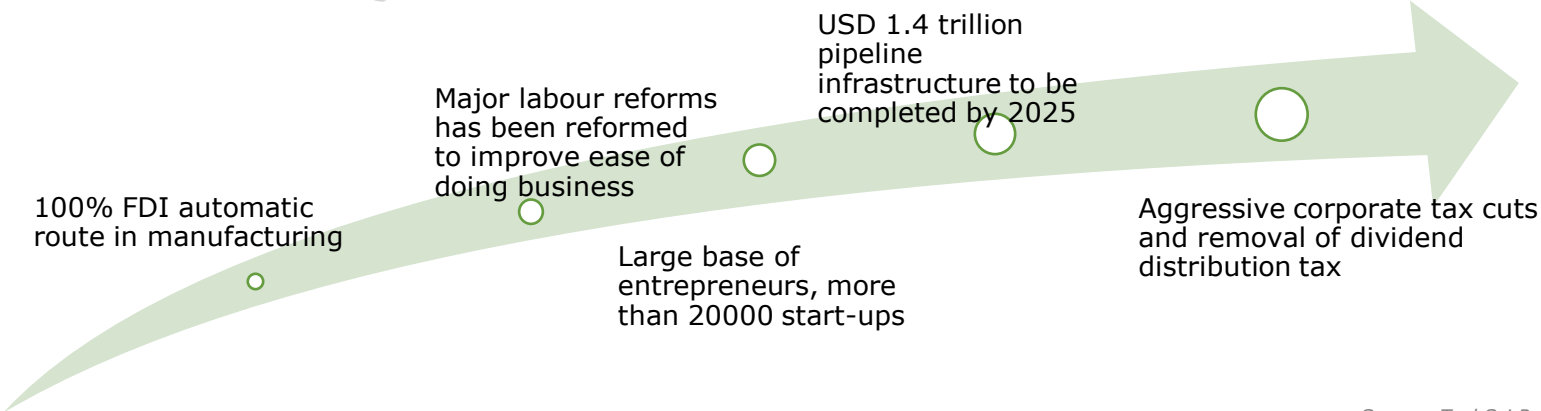
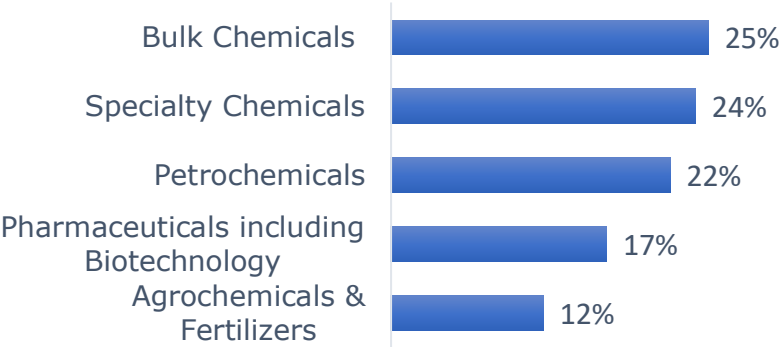
Demographic Dividends, low per capita consumption, increasing export demand and government initiatives are key growth drivers



India Chemical Industry Market (USD Billion), FY2020



Sector Wise Demand



Epoxy resins are a type of thermosetting resins used in a plethora of industrial applications. Depending on the raw material used, Epoxy resins are of different types including diglycidyl ether bisphenol A (DGBEA) which is formed by reacting epichlorohydrin (ECH) with bisphenol A, diglycidyl ether bisphenol F (DGBEF), epoxy phenol novolac (EPN) which are produced by reacting epichlorohydrin with novolac, aliphatic epoxy resins which are formed by epoxidation of double bond, halogenated epoxy resins, and others. The selection of the reactants, the mixing ratio, stoichiometry, and the curing process usually determines the properties of the epoxy resins, like its adhesion to other materials, its mechanical strength, its thermal and chemical resistance or its dielectric strength. Epoxy can be used either in solid or liquid in state depending on its applications. To produce hard, infusible, and rigid epoxy materials, the resin is cured with a hardener such as (primary and secondary) amines. Epoxy resins can cure at temperatures between 5 deg C and 150 deg C, depending on the curing agent being used.

Epoxy Resin have various properties such as corrosion resistance, high thermal stability, high mechanical strength, high chemical and environmental resistance, durability, adhesion etc. owing to these properties, epoxy resins find application in several areas including paints and coatings, adhesives, composites, electronic encapsulation, and others. Major Application industries for epoxy resins include building and construction, automotive, general industrial, consumer goods, wind power, aerospace, marine, and others.

The Indian Epoxy Resins market is highly fragmented. Some leading companies in the India epoxy resins market are Aditya Birla, Atul Ltd. 3M, Covestro AG, Hexion, Huntsman International LLC, Dhunseri Petrochem & Tea Ltd., Clariant Chemicals India Ltd. and others.

Growing investments by the India economy in the construction industry is anticipated to propel the demand for Epoxy resins in the medium- to long-term. Growing demand and the introduction of newer grades is further leading to expansion of the application areas.

Scope of Work



S. No.	Contents
1.	Executive Summary (Brief insight about the company and project)
1.1.	Overview of the Company
1.2.	Brief Profile of Board of Directors
1.3.	Brief Project summary
1.4.	Key Highlights of The Project
2.	Product Profile (Product profile of each of the epoxy resin - Bisphenol-A and Bisphenol-F epoxy resin, cycloaliphatic epoxy resins, dimer acid modified epoxy resin and multifunctional epoxy resins (Epoxy phenol Novolac resins and Epoxy cresol Novolac resins))
2.1.	Product Overview (Introduction and Characteristics)
2.2.	Production Routes and Related Details ((Analysis of all major production routes from secondary literature such as annual report, journal, patent documents and investor presentation)
2.3.	Properties & Applications (Analysis of properties and application of all available grades of Epoxy Resin)
2.4.	End of Life and Sustainability (Health, Safety & Environment (HSE) Aspects of the proposed project)
3.	Market Outlook and Relevance of the Project
3.1.	Demand Supply Outlook – Global Ester Resin Market
3.1.1.	Capacity By Company (Company wise plant capacities (Covered up to 70%installed capacity, last five years and forecasted up to 2030) firm planned capacities and speculative capacities. List of major planned expansions and closures for global market)
3.1.2.	Capacity By Location / Country (This section covers country wise plant capacity for last five historic years and forecasted up to 2030)
3.1.3.	Capacity By Process / Technology (This section covers production process and technology licensor wise major capacities operated around the globe)
3.1.4.	Production (Actual production company wise for five years historic period and forecasted production up to 2030)
3.1.5.	Operating Efficiency (Annual capacity utilization rate of installed capacities in percentage)
3.1.6.	Demand By Type (This section will provide the overall demand of Epoxy resin subsystem into standard epoxy resin and specialized type of epoxy resin)
3.1.7.	Demand By Grade (This report will cover all major grades including halogenated grade including liquid/solid/solution
3.1.8.	Demand By Sales Channel (Direct, Indirect) (Company sales to end users via Direct Route or through Traders/ Distributor)
3.1.9.	Demand By Application (Segment-wise derivation for product demand profile based on past user industry data, capacity utilization & year-wise growth rates)
3.1.10.	Sales By Company (Company share (Volume sold by the major companies, 2020 Actual and 2021 Estimated)

S. No.	Contents
3.2. Demand Supply Outlook – Regional Market	.
3.2.1. Capacity By Company	
3.2.2. Capacity By Location / Country	
3.2.3. Capacity By Process / Technology	
3.2.4. Production	
3.2.5. Operating Efficiency	
3.2.6. Demand By Type	
3.2.7. Demand By Sales Channel	
3.2.8. Demand By Country (Quantitative analysis of Major Country wise Demand of Epoxy Resin)	
3.2.9. Sales By Company (Company share in terms of volume sold by the major companies, 2020 Actual and 2021 estimated)	
3.3. Market Dynamics (Expected Growth, Key Market Drivers And Challenges During The Forecast Period)	.
3.4. Market Trends and Developments (Commercial factors trending in Epoxy resin including but not limited to trade philosophy, economic policies, cost competitiveness driving import / export / consumption)	
3.5. Technology Evaluation (This section assesses the all-existing technologies with licensor and process details. It will also analyze all upcoming technology which may impact the demand of product)	
3.6. Pricing Analysis (Grade Wise monthly pricing analysis for five different location including India with long term forecasting)	.
3.7. Value Chain Analysis (Margin and Channel Partner analysis from Feedstock of the product to the final end- use consumption by various end user industries)	
3.8. Cost of Production (Fixed & Variable Cost – By Technology)	
3.9. Customer Analysis (Top 25 Customer containing information about their annual consumption, supplier, price, grade, end use application for which product is purchased)	
3.10. Global Foreign Trade Analysis (Import and Export By Value and Volume by Top 10 Countries)	
3.11. Global Demand-Supply Gap (Regional Demand Supply Gap emanating till 2030)	
3.12. Suggested Capacities (Ideal Product Mix and capacity recommendation)	

S. No.	Contents
4.	Project Description (Evaluation of global leading capacities on the basis available literature)
4.1.	Type of Project
4.2.	Magnitude of The Operation (Recent Capex reported in various journals for similar projects)
4.3.	Setup Related Details
4.3.1.	Target End-Use Applications (Grade wise application details of vinyl ester resin)
4.3.2.	Plant Process-description (Evaluation of major process commercially available for licensing)
4.3.3.	Process Flow Diagram (Details of existing process and prospective uses in various sectors)
4.3.4.	Technology Licensor (Identification of major technology along with process chemistry, licenses awarded)
4.3.5.	Major Equipment List (List of major equipment's in terms of value and importance)
4.3.6.	Utilities Overview (Cooling Water System, DM Water Plant, Compressed Air System, power, steam & effluent processing details)
4.3.7.	Waste generation, Management, and disposal
4.3.8.	Raw Materials Required (Detailed list of all major raw materials used for the manufacturing of vinyl ester resin)
5.	Economic Evaluation (Initial economic evaluation to understand investment, capex and opex with +/- 20% accuracy)
5.1.	Estimated Investment
5.2.	Fixed Cost & Variable Cost Analysis (Production Cost Analysis) – This section will provide total cost analysis to keep business running. Variable cost should include specific consumption & unit prices of Raw material, byproduct, cat-chem, utilities & packaging - technology wise for different grades)
5.3.	Machinery & Equipment Cost Analysis (Overview)
5.4.	Annual Cost of Production
5.5.	Payback Period calculation (This chapter will provide both simple and discounted pay back period on best effort basis)
5.6.	Project Sensitivity Analysis (On best effort basis, this section will evaluate project sensitivity in terms of annual revenue, investment / capex or feedstock prices)

S. No.	Contents
6.	Project Schedule (Commissioning of the plant capacities in different phases based on demand supply situation and economy of scale
7.	Project and Business Risk on setting up epoxy resin plant in West Region of India (Analysis of all prevailing geo-political and socio-economic factors which will lower its profit or lead to fail)
8.	Strategic Recommendations
8.1.	Market Penetrations Strategies
8.1.1.	Recommendations for setting up facilities for production of considering the returns of investments and economic scale
8.1.2.	Expected Growth, Key Market Drivers And Challenges During The Forecast Period
8.1.3.	Observation on project cost, viability and sensitivity on fluctuation in feedstock and product prices
9.	Annexures



RESEARCH METHODOLOGY

- Investment information for the ISBL Unit will be sourced from published literature and will be adjusted it for the timeline and the location factors. ISBL costs pertain to the Process Plant only and exclude the costs for support utilities and off-site facilities.
- Investment evaluation of facilities will comprise the support utilities and off-site facilities required for the successful operation of the Plant. Since the Plant under reference is a part of the Refinery and Petrochemical Complex, the costs will be reflected based on setting-up of Integrated Utilities & Off-site Facilities to achieve the economies of scale for the overall venture. Specific dedicated utilities and off-site facilities required for the unit will be highlighted in the respective Investment Cost sections.
- An assessment will be made for the likely import component based on the materials of construction and type of equipment.
- TechSci Research will visit the proposed site of Reliance Industries Ltd for evaluation and planning.
- Following factors will be considered for techno economic evaluation study of Epoxy Resin:
 - Available technologies as per information available in public domain
 - Three-year average price for products/raw materials
 - Recent Capex reported in various journals for similar projects.
 - Patent information available in public domain.
 - Size of plants currently in operation / implementation.
 - Technical parameters of specific consumptions for major raw-materials, utilities, chemicals and catalysts, etc.
 - Specific on-site facilities for environment regulations.

Category	Representative set of information developed
Manufacturers	<ul style="list-style-type: none"> • Market Size Of Domestic and global market For Target Products, Market Size And Segment Shares By Application, By Region, Market Trends, Drivers, Challenges And Opportunities, Challenges To Operate In The Business • Historic And Forecast Demand • Existing Capacities And Forecast Additions • Demand-Supply Gap • New Entrants/Tie-ups/Mergers & Acquisitions/Recent Developments • Market Dynamics, Competitive Rivalry , Value Chain • Risk And Business Opportunity To Operate In The Sector, Rate Of Return, Profitability, Entry-exit Barriers
Consumers (Domestic & International)	<ul style="list-style-type: none"> • Current Consumption, Consumption Preferences • Pricing-FOB, Ex-Factory, Taxes, Duties,
EPC Contractor, Equipment Suppliers	<ul style="list-style-type: none"> • IBSL Facilities Design, Cost – Fixed and Variable Cost
Technology Licensors	<ul style="list-style-type: none"> • Technology Evaluation • Cost of Production • Suggested Capacity • Sourcing of equipment's, raw material, additives
Government Agencies & Industry Associations	<ul style="list-style-type: none"> • Policy And Regulatory Assessment, Incentives, Government Schemes, Key Challenges, Upcoming Schemes Etc. • Duties and Taxes • Incentives • Free Trade Agreement • Industry Dynamics, Challenges Being Faced By The Industry
Industry Experts	<p>Combination Of All Above Data-points/ Information</p> <p>Emerging Application</p>

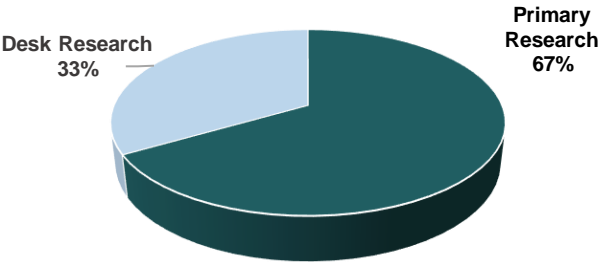
The recommended methodology for this study will be Primary Research followed by exhaustive Secondary Research.

TechSci Research will design interview questionnaires each type of participant such as manufacturers (domestic and international), end-users, traders, government organisations and industry experts. The objective of these questionnaire would be to understand the market size, demand-supply gap, product pricing, emerging trends and competitor analysis in the market as per the scope. For future demand projection and export potential will be analyzed.

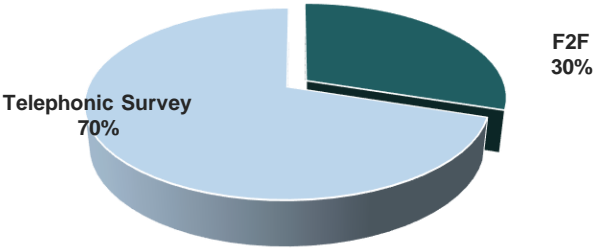
Post receiving feedback / approval from client on questionnaires, TechSci Research will start executing the surveys across said target audience. TechSci Research will also conduct mock surveys across target respondents to check the feasibility of the questionnaires and to address the challenges faced, if any, while conducting the surveys and in data collection.

TechSci Research will source the list of leading players across participants category then, primary research surveys will be conducted with the identified companies, and they will also be asked for their other competitors in the market. By this way if we may have missed any target company due to limitations of secondary research then we will be able to identify that company and then survey them as well.

Research Contribution



Survey Mode



TechSci Research will execute primary surveys. In addition, exhaustive secondary research will be done using various credible sources such as company annual reports, white papers, investor presentations, financial reports, international trade associations, etc.

Below mentioned is the number of surveys that would be targeted

Product	Suppliers	Government Agencies/ Industry Associations, Industry Experts	Customers	EPC Contractor, Technology Licensors	Total
India	10	5	50	5	70
Global	15	10	65	10	100
Total					170

TechSci Research will perform periodical checks on data being collected through surveys with logic checks and analyze survey results in MS Excel/SPSS and data generated through its proprietary database.

TechSci Research will also use data triangulation technique to fill the gaps and to present the more meaning picture of the market.

TechSci Research will deliver the final comprehensive project report in detailed PowerPoint Presentation format along with the support documents.

We do multiple interviews in one organisation at different levels (Mid-Senior) and departments (Strategy, Sales, Marketing, Production, etc)

The timelines for Market Assessment, Technical & Financial Feasibility will be 4 weeks from signing of Contract.

- A. Market Assessment: TechSci Research will submit the market assessment report to client by the end of 7th day.
- B. Technical & Financial Feasibility: TechSci Research will submit the technical & financial feasibility report to client by the end of 5th Week.

Weeks	1	2	3	5
Project Initiation				
Project kickoff meeting with key stakeholders				
Content and report generation				
Primary interviews Data collection & research				
Market, Demand Supply & Gap Estimation				
Technology Evaluation				
Economic Evaluation				
Report writing				
Analysis & Deliverable				
Final deliverable				

Note:

The above-mentioned timelines do not include time required by Client's management for approval of questionnaires, feedback on interim reports, setting up meetings between Client and TechSci Research because it would depend upon the availability of Client's management.

	SCHEDULE OF DELIVERABLES:	
	Format	Final Report
1 st Interim	PPT/PDF	7 th Working Day
Final Report	PPT/PDF	Week 5

- TechSci Research and Client will finalize the coverage of Interim during the Project Kick-off Meeting
- Teleconference at commencement of the study, where the client will confirm the research outline and finalize dates.
- been accepted and no further clarifications are required due to which TechSci Research can move ahead with the closure of final report.
- The client can ask TechSci Research to prioritize country of research according to their requirement. TechSci Research will try its best to comply to the priorities set forth by the client in terms of delivering information.

Our communications plan consists of a series of planned communications (both written and verbal) – to make certain that all parties are kept fully informed during the course of project. In addition to these planned communications, ad-hoc communications will occur throughout the project; using email, phone, and instant message for this purpose. Contact information for the Research Consultant will be finalized during the study kick-off.

Project Kick-off: At the beginning of the project, TechSci Research will conduct a conference call with the Reliance Industries Limited, which we refer to as the Project Kick-off. The purpose of this meeting is to discuss the scope of the project thoroughly. In this discussion, we will finalize the project objective, scope, methodology, deliverable format, project schedule including any interim deliverables, and communications plan, and their schedule and process.

Project Status Report: TechSci Research will prepare an overall project update on a regular (generally once a week) basis. This will be written in email format and will include an overview of the status of the project and the immediate action points. The days and timings of the Project Status Report and subsequent Project Status Conference Calls will be decided upon during the Project Kick-off.

Project Status Conference Call: The Project Status Conference Calls are held on a scheduled basis (generally weekly) the day following receipt of the Project Status Report. During these discussions, supplier and client review the status of the project and address any issues that may have arisen.

Project Status Conference Call Summary: After each Project Status Conference Call, Supplier will send a summary of the discussion to all the participants via email.

RIL's Contact

Name	Project Role
Mr. Nikunj C Patel	E-mail: nikunj.c.patel@ril.com

TechSci Research Contact

Name	Project Role	Contact Information
Ms. Pratibha Malakar	Project Coordinator	Mob: : +91-9958299626
		Tel: +91.120.452.3948
Mr. Jaideep Kumar	Program Manager / (Research Manager)	Mob: +91-9810005304
		Tel: +91.120.452.3954
		E-mail: jaideep.kumar@techsciresearch.com

Investment Figures

ChemAnalyst estimates that total investment figures for below respective options is:

Scope	Price, INR, Excluding taxes
TECHNO-ECONOMIC FEASIBILITY REPORT FOR EPOXY RESIN MANUFACTURING	INR 18,00,000 + GST (INR Eighteen Lakh+ GST)

GST shall be applicable as per prevailing govt. norms.

The above-mentioned price includes all the elements involved in conducting project, such as project preparation, questionnaire designing, primary research, time spent on desk research, project reporting and proposal presentations and project deliverables. Site Visits are not inclusive.

PAYMENT SCHEDULE

Stages	Payment Schedule	Payment
Overall Project Scope	Initiation of the study	50%
	Final report submission	50%

Mr. Karan Chechi – Research Director, TechSci Research

Karan is the Research Director of TechSci Research Pvt. Ltd. Since 2010, along with large corporates, he has worked with foundations, nonprofit organizations/agencies, collaboratives, etc., plan and execute strategies and has worked on numerous turn-around and performance improvement studies. He is a seasoned market research and consulting professional specializing in creative and innovative strategies and methods of new market penetration, new product development, and product introductions with over a decade of experience. In a career spanning over 17 years, Karan has been instrumental in assisting both domestic and international organizations, including more than 100 Fortune 500 companies, of 100 to 10,000 people and US\$100 million to US\$1 billion+ in annual revenue. He has been assisting clients with market intelligence services, for more than a decade now, including database and market intelligence reports subscription business models.

Mr. Vikas Yadav – Assistant Vice President, TechSci Research

Vikas has an overall experience of over 18 years in the Chemical sector. He has spearheaded all activities related to research-based business and management consulting assignments. He has efficiently analyzed, and summarized data using appropriate methodologies and completed strategic & business case analysis for more than 500 projects. The nature of assignments include market assessment, market entry strategies, business performance/intelligence, cost-optimization, benchmarking, project cost estimation, business support systems, strategic partnerships/ acquisitions, etc.

Mr. Jaideep Kumar – Manager – Project Manager, TechSci Research

Jaideep has over 14 years' experience and has been associated with several projects in the field of oil & gas, chemicals, petrochemicals, agrochemicals and fertilizer and other specialized industries. He has worked on market sizing, prefeasibility, price forecasting, market entry strategy, project feasibility studies, supply chain analysis, margin analysis and product mix identification for different chemical and petrochemical projects in Indian Subcontinent. Currently, he is involved in providing cutting edge industry analysis and advisory role for entire value chain of C2, C3, C4 and aromatics, comprising commodity plastics, polymers, engineering plastics & synthetic rubbers. He has been instrumental in helping companies to develop long term, strong, scenario-based strategies that can help accelerate their transformation into high-performance businesses.

Tata Steel Limited, is an Indian multinational steel-making company headquartered in Kolkata, West Bengal, India, and a subsidiary of the Group. It is one of the top steel producing companies globally and the second largest steel company in India

Tata Steel operates in 26 countries with key operations in India, Netherlands and United Kingdom, and employs around 80,500 people.



Project 1: Coal & Coal Tar to Chemical Products Technology & Market, Ferro Coke Production Technology & Market, Hydrogen Separation and Syn Gas Production Market

Tata Steel wanted to understand How Coal can be used to make methanol and then manufactures product such as Formaldehyde, Acetic Acid, Acetic Acid, MTBE, Olefins and then further value-added products TechSci completed the in-depth project to offer market and business insights.

The scope of work included global Market assessment, market and Technology Readiness in India at different Tier levels (Commercial, Pilot, R&D) including innovations, product applications, Feasibility to set-up plant in India, Technology providers, compliance assessment, market entry routes and supply chain, product development, intellectual property protection, technology partner search **etc.**

Project 2: Co2 and Hydrogen Capture Advisory Projects to Make various Chemicals including feasibility and business plan

Tata Steel wanted to utilize the Co2 and Hydrogen generated during the Steel making process. So that they can generate additional revenues.

TechSci completed this advisory project to create and develop business cases for the CO2 and Hydrogen capture to make various chemicals as Polycarbonate, Salicylic Acid, urea, , methane, methanol, CO, Calcium Carbonate, Ethanol, Sodium carbonates, etc, and more 10 additional products/Chemicals . The scope of services covered technologies and innovations available to capture Co2 while steel making process and utilize to make other end-products including market assessment of possible end-products, , market and technology readiness s in India at different Tier levels (Commercial, Pilot, R&D) including innovations, product applications, Feasibility to set-up integrated plant, global technology providers, compliance assessment, supply chain, product development, intellectual property protection, technology partner search, technology tie-up for making chemicals including methanol. Tata Steel is in-process to make a pilot plant to make methanol

Project 3: Carbon Fibre Feasibility Plant Set-up including Technology Agreement and Business Plan

Tata Steel wanted to enter in the business of Carbon Fibre in the global market. TechSci completed this advisory project to starting from, understanding the market potential and business case analysis, The scope of services covered technologies and innovations available to make carbon fire, , market and technology readiness in India and global market , product applications, Feasibility to set-up in the plant, location assessment, finding the right technology partner to source technology, raw material sourcing, compliance assessment, product development, intellectual property protection, technology partner search, etc. *Tata Steel is in-process to start a pilot plant to make Carbon Fibre*

Numaligarh Refinery's Business Opportunity In Sulphur, Sulphuric Acid And Its Derivatives Market

The Numaligarh Refinery in Assam in India is a refinery owned by Numaligarh Refinery Limited, a joint venture between Bharat Petroleum (61.65%, Oil India (26%) and Govt of Assam (12.35%). The Cabinet Committee on Economic Affairs had approved plans to increase the refinery's capacity to 9 million metric tonnes per year in 2019

NRL wanted to understand the India Sulphur production, import and export and hence calculate the demand-supply gap of Sulphur with analysis on market/product share by type, by mode of distribution, and by form.

TechSci collected the in-depth information and analyzed factors such as consumers of sulphuric acid and sulphur that may include fertilizer manufacturers, detergent manufacturers, etc., Sulphur and sulphuric acid manufacturing plants, installed capacities, export and import data including the detailed analysis on production, import, export of derivatives, SSP, DAP, and demand-supply scenarios

Both top down and bottom up approaches were used. Multiple employees from all value chain participants were interviewed through telephonic and face-to-face meetings in order to extract and verify collected information.

TechSci delivered the in-depth market analysis useful for NRL to make business decisions



SABIC's : Saudi Arabia Masterbatch Market and Business Opportunity Assessment

SABIC (Saudi Basic Industries Corporation)- a subsidiary of Saudi Aramco operating in petrochemicals, chemicals, industrial polymers, fertilizers, and metals wanted to know the in-depth market and business understanding of Saudi Arabia Masterbatch by Type, by application, By end-use to meet their strategic business objectives

TechSci team of industry experts monitored and analyzed various aspects of Saudi Arabia masterbatch market. The team has analyzed the outlook of various segments of this market, while considering the major influencing factors, such as rising consumption of polymer in the country, owing to booming consumer & industrial packaging sector, government initiatives to boost the real estate sector, and growing demand from automotive sector. The study included market forecasting, which enabled our client to take better decisions while planning their strategies and business decisions



GAIL (INDIA) Limited Polycarbonate Plant Pre-feasibility Study

India does not have any domestic Polycarbonate Resin capacity and the domestic natural gas marketing & distribution company, GAIL (India) Limited consulted TechSci for key decision on setting up a polycarbonate plant and to conduct a pre-Feasibility study. TechSci identified the Polycarbonate demand in India and export opportunities, analyzed the cost of setting up of the plant in India and location, evaluated technology licensing options, analyzed the complete value chain starting from the raw material of Polycarbonate to finished product applications and end use industries. Based on TechSci's recommendation, GAIL is in the process of setting up of 130 KT of Polycarbonate plant in West India.



TOTAL S.A. South-East Asia Market Entry In LNG Mid-stream Business

Total S.A., a global integrated company, wanted to enter LNG mid-stream market in South East Asia. The company had approached TechSci Research to offer advisory solutions on setting up LNG Terminal or acquiring minority stake in the new project. TechSci evaluated the options and weighed on Cost-Benefit analysis of the project, evaluated market entry options etc. Strategic insights of TechSci helped Total to establish Joint Venture (JV) with one of India's leading LNG Player, Adani Group, bringing synergies into the gas business in India.



Representative list of clients



ABOUT PARENT ORGANIZATION

TechSci Research

Founded in 2008, we are an independent Global Market Research and India Entry Management Consulting company that helps global companies to Enter, Expand and Succeed in India. With the help of our strategic solutions and business implementation assistance, we have led many brands to enter and establish in India.

Our robust knowledge of India and its policies & regulations, advantages and challenges allows our clients to make choices that ensure long term profitability and growth. We not only help in structuring strategies for clients but also implement what we recommend.

TechSci Research is driven by a group of encouraged and young individuals who believe in delivering the Best to their clients. Our team includes of specialists from various industries and functions with strong business intelligence and problem solving skills to provide actionable solutions to our clients



WE ARE TECHSCI RESEARCH AND OUR SECTORIAL EXPERTISE



A global market research and India Entry Consulting firm focused on providing research and consulting services to its customers across the globe.

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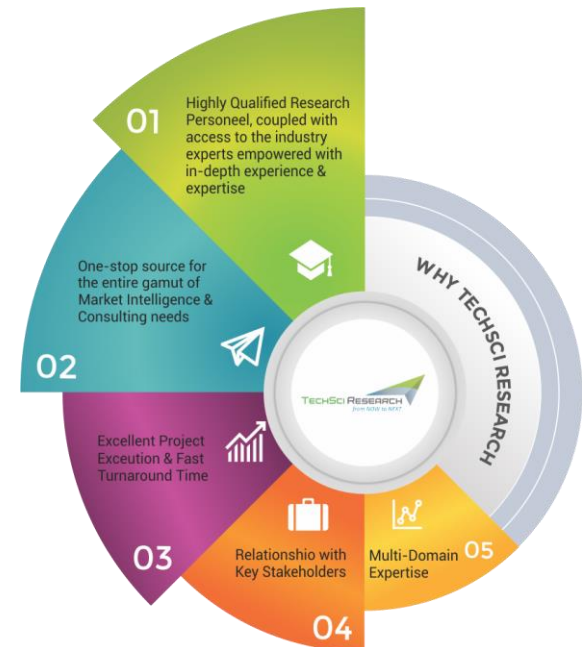
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Power

Media



It was indeed a very good experience .TechSci was able to provide us with all the details that we were looking in the study. A special thanks to the team for the strong support throughout the entire product launch journey.

*Product Development Team
DAGA GLOBAL India Pvt. Ltd.*

I am satisfied with overall performance of TechSci Research. Weekly updates before the final report were especially helpful and reassuring. Additional requests on the content of the interim and/or final reports were handled in a swift and professional manner.

*Member Board of Directors,
Osaka Gas Co. Ltd*

Thanks for a great job. We look forward to more research needs shortly for cross-verticals. We appreciate the quality of work and dedication to meet the deadline.

*Market Planning Division
Gujarat State Fertilizers and Chemicals .*

Happy with the delivery and quality. Also, the immediate response was much appreciated

Market Development Group Mitsui

TechSci team quickly understood the research scope. The table of content was very much précised and pinpointed. Openness to adjust few additional scopes on an immediate basis highlights the flavour of relationship management.

Mid-long business plan in the study was much helpful

*Infomation Centre
Haifa Group*

Very professionals and highly skilled professionals for Primary research to get ground-level data

*New product Development Team
Sumitomo Corporation*

Awards & Recognitions



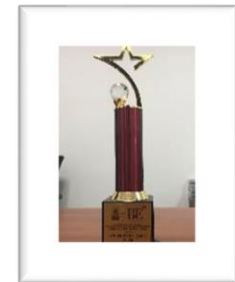
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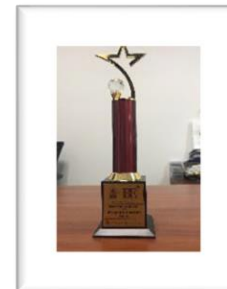
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Our research findings have been widely covered by most prestigious and credible media houses across the world.



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