

Production of Glass Fiber.

Investment Opportunities in Composites Industry



Introduction

Glass fiber also called fiberglass. It is material made from extremely fine fibers of glass. Fiberglass is a lightweight, extremely strong, and robust material. Although strength properties are somewhat lower than carbon fiber and it is less stiff, the material is typically far less brittle, and the raw materials are much less expensive. Its bulk strength and weight properties are also very favorable when compared to metals, and it can be easily formed using molding processes.



Glass fiber is manufactured from various raw materials, namely, silica sand, alumina, limestone, clay, and boric acid. There are different types of glass fiber, like E-glass and S-glass, depending on the mechanical properties. E-glass has high mechanical properties and it is used in armor applications.



Types of Glass Fiber

As to the raw material glass used to make glass fibres, the following types of glass fiber:

- 1. A-glass: With regard to its composition, it is close to window glass. It is mainly used in the manufacture of process equipment.**
- 2. C-glass: This kind of glass shows better resistance to chemical impact.**
- 3. E-glass: This kind of glass combines the characteristics of C-glass with very good insulation to electricity.**
- 4. AE-glass: Alkali resistant glass.**

Generally, glass consists of quartz sand, soda, sodium sulphate, potash, feldspar and a number of refining and dyeing additives. The characteristics, with them the classification of the glass fibres to be made, are defined by the combination of raw materials and their proportions. Textile glass fibres mostly show a circular.

Glass fibres can be used as a reinforcing agent for different types of vegetable oil-based polymer composites because of their availability, low cost, high strength and chemical resistance. Different types of silicate glass fibres are used in the preparation of polymer composites, but lime-alumina-borosilicate (E-glass) glass fibre is the most widely used. It can be used as chopped strand mat, ribbon and woven fabrics. Although it exhibits high strength (tensile strength 3.45 kN mm^{-2}), creep and chemical resistance, its specific gravity (2.5) is relatively high, which limits its uses in many advanced applications where light weight is important.

Glass fibers are useful because of their high ratio of surface area to weight. However, the increased surface area makes them much more susceptible to chemical attack. By trapping air within them, blocks of glass fiber make good thermal insulation, with a thermal conductivity of the order of 0.05 W/ (mK).

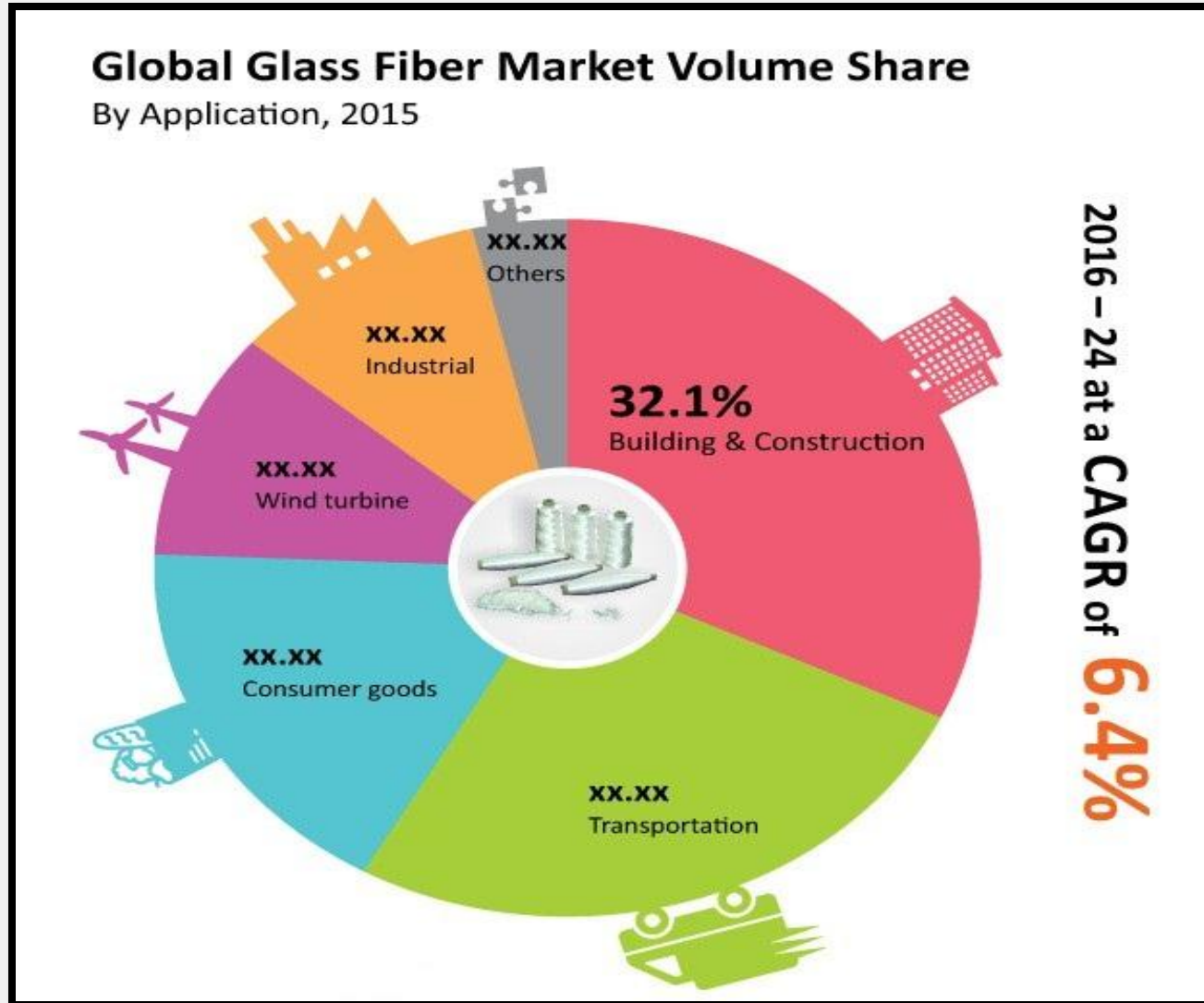
Indian glass fiber market is set to grow substantially in the next five years. The glass fiber industry in India is mainly driven by its domestic consumption by government, NGOs, and civic bodies. The Indian government use glass fiber in their defense segment and some projects may have more than 50% glass fiber materials used in them.



Though the glass fiber industry slowed down during recession, it has gained momentum after 2011. According to market forecasts, India glass fiber market is expected to reach 754 million pounds (\$752.7 M) by 2018.

The fiberglass market was estimated at USD 13.95 Billion in 2017 and is projected to reach USD 18.75 Billion by 2022, at a CAGR of 6.1% between 2017 and 2022. The fiberglass market is growing due to the extensive use of fiberglass in the construction industry, use of fiberglass composites by the automotive industry for enhanced performance, and an increasing number of wind turbine installations.

Global Glass Fiber Market Volume Share



The global glass fiber market is promising with opportunities in the end use industries such as transportation, construction, pipe and tank, electrical and electronics, wind energy, and consumer goods, tanks, printed circuit boards, wind blades, and automotive parts.

Emerging trends, which have a direct impact on the dynamics of the glass fiber industry, include cost optimization and performance enhancement of glass fibers.



Glass fiber is primarily used as a composite in construction industry. It is highly used in building materials owing to the properties, such as lightweight, fire resistant, anti-corrosive, and exhibits excellent strength. It has been widely used in the construction industry for non-structural elements, like facade panels, piping, and channels. This material is very good in making shapes on the front of any building and it is less dense than steel. Therefore, the usage of glass fiber is increasing in construction industry, which is fueling the demand during the forecast period.

Glass fiber is the most widely used reinforcing material in composites across the globe and accounts for a more than 90% share of reinforcement materials used in fiber reinforced plastics.

Glass fiber offers qualities such as low weight, high strength, and impact resistance when compared its substitutes. Demand for glass fiber is high in end-use applications such as building and construction, transportation, consumer goods, industrial and wind turbine.

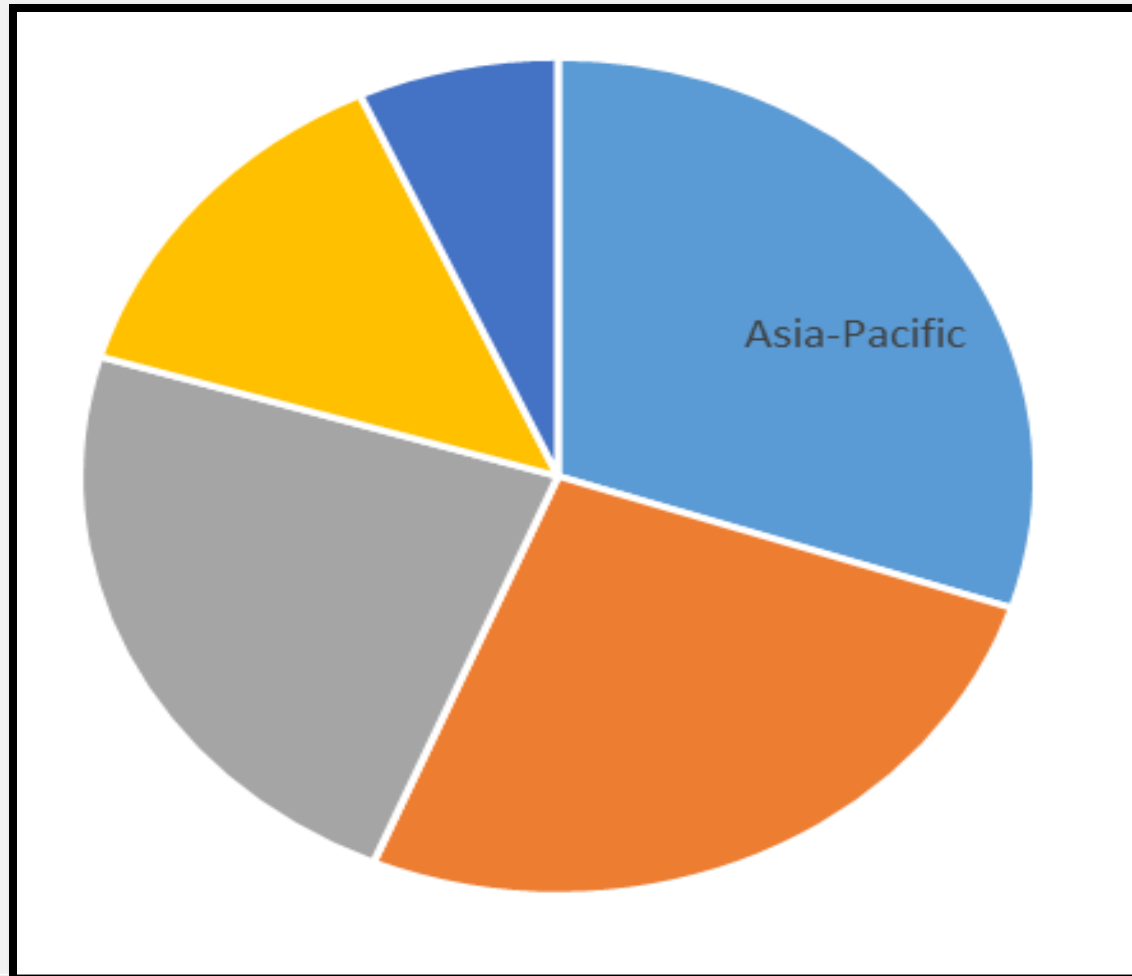
Glass fiber comprises many extremely fine fibers of glass and is amorphous in nature. Glass fiber can also be used as a reinforcement material in plastic. Silicon dioxide, calcium dioxide, aluminum dioxide, and boron oxide are the key raw materials used in the production of glass fibers.



Glass fiber is used in mats and fabrics as it offers corrosion resistance and thermal and electrical insulation. It is used in construction, aerospace tooling, automotive, electronics, and wind energy industries because of its excellent mechanical properties such as high tensile strength, stiffness, dimensional stability, thermal conductivity, and chemical resistance. Glass fiber reinforced concrete (GFRC) is a high-performance building material that is used in the construction industry. Owing to its low weight, high strength-to-weight ratio, and excellent durability, it is used in the automotive and wind energy industries.



Glass Fiber Market: Revenue Share (%), Global, 2017



Marine and automotive industries are among the key consumers of glass fibers owing to the need for impact resistance and lightweight materials. As glass fibers are lightweight and impact resistance in nature, they are being incessantly employed in the automotive and marine industries. They are the primary reinforcement materials in the marine composited. Glass fibers such as e-glass fibers are employed in the manufacturing of glass fiber reinforced plastics (GFRPs). Glass fiber reinforced plastics have features such as durability, high strength to weight ratio, and weather resistance, which are necessary for materials being used in the manufacturing of marine and automobile components.

Glass fibers account for over 90% of the reinforcements that are used in the manufacturing of composites across the globe. There is an increased demand for glass fiber composites in the aerospace, automotive, wind energy, and construction & infrastructure applications, owing to their lightweight, high inherent strength, weather-resistant finish, and variety in surface textures offered by them. As the demand for glass fiber composites is increasing across the globe, several companies are investing in setting up their glass fiber composites manufacturing plants in the emerging economies such as China, India, etc. One of the major composite manufacturing companies, Owens Corning (U.S.), signed a strategic alliance with two China-based glass fiber manufacturing companies, namely, Xingtai Jinniu and Taishan Fiberglass in 2013 to enhance its supply of customized glass fiber reinforcements in the Asia-Pacific region.

In 2017, the glass fiber market reached 2.5 billion pounds in terms of volume of composites materials produced.

Machinery Photographs

Automatic Batching System





Automatic Control System



Wire Drawing & Auxiliary Equipment

Project at a Glance

PROJECT AT A GLANCE				(` in lacs)			
COST OF PROJECT				MEANS OF FINANCE			
Particulars	Existing	Proposed	Total	Particulars	Existing	Proposed	Total
Land & Site Development Exp.	0.00	140.00	140.00	Capital	0.00	3290.24	3290.24
Buildings	0.00	1113.60	1113.60	Share Premium	0.00	0.00	0.00
				Other Type Share			
Plant & Machineries	0.00	10217.90	10217.90	Capital	0.00	0.00	0.00
Motor Vehicles	0.00	20.00	20.00	Reserves & Surplus	0.00	0.00	0.00
Office Automation Equipments	0.00	212.50	212.50	Cash Subsidy	0.00	0.00	0.00
Technical Knowhow Fees & Exp.	0.00	280.00	280.00	Internal Cash Accruals	0.00	0.00	0.00
Franchise & Other Deposits	0.00	0.00	0.00	Long/Medium Term Borrowings	0.00	9870.72	9870.72
Preliminary& Pre-operative Exp	0.00	10.00	10.00	Debentures / Bonds	0.00	0.00	0.00
Provision for Contingencies	0.00	1000.00	1000.00	Unsecured Loans/Deposits	0.00	0.00	0.00
Margin Money - Working Capital	0.00	166.96	166.96				
TOTAL	0.00	13160.96	13160.96	TOTAL	0.00	13160.96	13160.96

Project at a Glance

Year	Annualised		Book Value	Debt	Divide nd	Retained Earnings		Payout	Probable Market Price	P/E Ratio	Yield Price/ Book Value
	EPS	CEPS	Per Share		Per Share	Per Share				No.of Times	
	`	`	`	`	`	%	`	%	`		%
1-2	3.91	9.51	13.91	24.00	0.00	100.00	3.91	0.00	3.91	1.00	0.00
2-3	6.04	10.83	19.95	18.00	0.00	100.00	6.04	0.00	6.04	1.00	0.00
3-4	8.21	12.31	28.15	12.00	0.00	100.00	8.21	0.00	8.21	1.00	0.00
4-5	10.38	13.90	38.53	6.00	0.00	100.00	10.38	0.00	10.38	1.00	0.00
5-6	12.53	15.55	51.07	0.00	0.00	100.00	12.53	0.00	12.53	1.00	0.00

Project at a Glance														
Year	D. S. C. R.			Debt / Equity - Deposits Debt	Equity as-Equity	Total Net Worth	Return on Net Worth	Profitability Ratio					Assets Turnover Ratio	Current Ratio
	Individual	Cumulative	Overall					GPM	PBT	PAT	Net Contribution	P/V Ratio		
	(Number of times)			(Number of times)		%	%	%	%	%		%		
Initial				3.00	3.00									
1-2	1.38	1.38		1.73	1.73	1.83		32.70%	16.91%	15.68%	6501.69	79.21%	0.65	0.73
2-3	1.56	1.46		0.90	0.90	0.98		40.01%	28.74%	20.74%	7585.22	79.21%	0.75	1.37
3-4	1.80	1.57	1.81	0.43	0.43	0.49		44.98%	37.09%	24.67%	8668.82	79.21%	0.80	2.17
4-5	2.10	1.68		0.16	0.16	0.21		48.41%	43.15%	27.74%	9752.42	79.21%	0.81	3.12
5-6	2.48	1.81		0.00	0.00	0.04		50.80%	47.62%	30.14%	10836.02	79.21%	0.79	15.54

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Project at a Glance

BEP

BEP - Maximum Utilisation Year	5
Cash BEP (% of Installed Capacity)	30.71%
Total BEP (% of Installed Capacity)	39.88%
IRR, PAYBACK and FACR	
Internal Rate of Return .. (In %age)	22.32%
Payback Period of the Project is (In Years)	2 Years 4 Months
Fixed Assets Coverage Ratio (No. of times)	2.132

Major Queries/Questions Answered in the Report?

- 1. What is Glass Fiber Manufacturing industry ?**
- 2. How has the Glass Fiber Manufacturing industry performed so far and how will it perform in the coming years ?**
- 3. What is the Project Feasibility of Glass Fiber Manufacturing Plant ?**
- 4. What are the requirements of Working Capital for setting up Glass Fiber Manufacturing plant ?**

- 5. What is the structure of the Glass Fiber Manufacturing Business and who are the key/major players ?**
- 6. What is the total project cost for setting up Glass Fiber Manufacturing Business?**
- 7. What are the operating costs for setting up Glass Fiber Manufacturing plant ?**
- 8. What are the machinery and equipment requirements for setting up Glass Fiber Manufacturing plant ?**

9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up Glass Fiber Manufacturing plant ?

10. What are the requirements of raw material for setting up Glass Fiber Manufacturing plant ?

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Reasons for Buying our Report:

- **This report helps you to identify a profitable project for investing or diversifying into by throwing light to crucial areas like industry size, market potential of the product and reasons for investing in the product**
- **This report provides vital information on the product like it's characteristics and segmentation**
- **This report helps you market and place the product correctly by identifying the target customer group of the product**

- **This report helps you understand the viability of the project by disclosing details like machinery required, project costs and snapshot of other project financials**
- **The report provides a glimpse of government regulations applicable on the industry**
- **The report provides forecasts of key parameters which helps to anticipate the industry performance and make sound business decisions**

Our Approach:

- **Our research reports broadly cover Indian markets, present analysis, outlook and forecast for a period of five years.**
- **The market forecasts are developed on the basis of secondary research and are cross-validated through interactions with the industry players**
- **We use reliable sources of information and databases. And information from such sources is processed by us and included in the report**

Scope of the Report

The report titled “Market Survey cum Detailed Techno Economic Feasibility Report on Glass Fiber.” provides an insight into Glass Fiber market in India with focus on uses and applications, Manufacturing Process, Process Flow Sheets, Plant Layout and Project Financials of Glass Fiber project. The report assesses the market sizing and growth of the Indian Glass Fiber Industry. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line. And before diversifying/venturing into any product, they wish to study the following aspects of the identified product:

- **Good Present/Future Demand**
- **Export-Import Market Potential**
- **Raw Material & Manpower Availability**
- **Project Costs and Payback Period**

We at NPCS, through our reliable expertise in the project consultancy and market research field, have demystified the situation by putting forward the emerging business opportunity in the Glass Fiber sector in India along with its business prospects. Through this report we have identified Glass Fiber project as a lucrative investment avenue.

Tags

Making of Glass Fiber, Glass Fiber, Glass Fiber Manufacturing, How Fiberglass is Made, Industrial Production of Glass Fibers, Glass Fibers Composite Manufacturing Process, Fiberglass Manufacturing, Manufacture of Glass Fiber, Glass Fiber Manufacturing Process Pdf, Glass Fiber Manufacturing Process PPT, Glass Fibres Manufacturing, Properties and Applications, How is Fiberglass Made?, Glass Fibre Production, Glass-Fiber Reinforced Composites Manufacturing, Manufacture of Glass Fibre, Continuous Filament Glass Fibres (CFGF), Continuous Filament Glass Fibre Products, Types of Glass Fiber, Glass Fibers and Fiberglass, Glass Fibres Project, Glass Fiber Processing, Start a Glass Fiber Manufacturing, Fibre Glass Manufacturing Plant, Project Report on Fiberglass Manufacturing Industry, Detailed Project Report on Glass Fibre Production, Project Report on Glass Fiber Manufacturing, Pre-Investment Feasibility Study on Glass Fiber Manufacturing, Techno-Economic feasibility study on Glass Fibre Production, Feasibility report on Glass Fibre Production, Free Project Profile on Glass Fiber Manufacturing, Project profile on Glass Fibre Production, Download free project profile on Glass Fiber Manufacturing

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Our Market Survey cum Detailed Techno Economic Feasibility Report provides an insight of market in India. The report assesses the market sizing and growth of the Industry. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line.



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The detailed project report covers all aspect of business, from analyzing the market, confirming availability of various necessities such as Manufacturing Plant, Detailed Project Report, Profile, Business Plan, Industry Trends, Market Research, Survey, Manufacturing Process, Machinery, Raw Materials, Feasibility Study, Investment Opportunities, Cost and Revenue, Plant Economics, Production Schedule,



Working Capital Requirement, uses and applications, Plant Layout, Project Financials, Process Flow Sheet, Cost of Project, Projected Balance Sheets, Profitability Ratios, Break Even Analysis. The DPR (Detailed Project Report) is formulated by highly accomplished and experienced consultants and the market research and analysis are supported by a panel of experts and digitalized data bank.

We at NPCS, through our reliable expertise in the project consultancy and market research field, have demystified the situation by putting forward the emerging business opportunity in India along with its business prospects.....[Read more](#)



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Niir PROJECT CONSULTANCY SERVICES

An ISO 9001:2015 Company



www.entrepreneurindia.co

Who are we?

- *One of the leading reliable names in industrial world for providing the most comprehensive technical consulting services*
- *We adopt a systematic approach to provide the strong fundamental support needed for the effective delivery of services to our Clients' in India & abroad*



We at NPCS want to grow with you by providing solutions scale to suit your new operations and help you reduce risk and give a high return on application investments. We have successfully achieved top-notch quality standards with a high level of customer appreciation resulting in long lasting relation and large amount of referral work through technological breakthrough and innovative concepts. A large number of our Indian, Overseas and NRI Clients have appreciated our expertise for excellence which speaks volumes about our commitment and dedication to every client's success.



We bring deep, functional expertise, but are known for our holistic perspective: we capture value across boundaries and between the silos of any organization. We have proven a multiplier effect from optimizing the sum of the parts, not just the individual pieces. We actively encourage a culture of innovation, which facilitates the development of new technologies and ensures a high quality product.



What do we offer?

- *Project Identification*
- *Detailed Project Reports/Pre-feasibility Reports*
- *Market Research Reports*
- *Business Plan*
- *Technology Books and Directory*
- *Industry Trend*
- *Databases on CD-ROM*
- *Laboratory Testing Services*
- *Turnkey Project Consultancy/Solutions*
- *Entrepreneur India (An Industrial Monthly Journal)*

How are we different ?

- *We have two decades long experience in project consultancy and market research field*
- *We empower our customers with the prerequisite know-how to take sound business decisions*
- *We help catalyze business growth by providing distinctive and profound market analysis*
- *We serve a wide array of customers , from individual entrepreneurs to Corporations and Foreign Investors*
- *We use authentic & reliable sources to ensure business precision*

Our Approach

Requirement collection

Thorough analysis of the project

Economic feasibility study of the Project

Market potential survey/research

Report Compilation



Contact us

NIIR PROJECT CONSULTANCY SERVICES

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