

# Entrepreneur India



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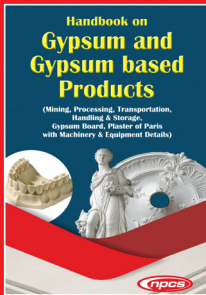
## About Us

NPCS is a well-known technical consultancy that focuses on Project Reports Compilation, and we have been following a tight system and procedure to assure only top quality in accordance with our clients' expectations in this rapidly increasing and changing market. We've created the list of the top projects to start your own business startups.

## Handbook on Gypsum and Gypsum Based Products

(Mining, Processing, Transportation, Handling & Storage, Gypsum Board, Plaster of Paris with Machinery & Equipment Details)

₹ 2,275/- US\$ 200-



Gypsum is chemically known as calcium sulfate dihydrate and it contains calcium and sulfur, which is bound to oxygen and water. Gypsum is an abundant mineral and takes various forms including alabaster, which is a material, used in decoration and construction. This is a non-toxic mineral and it can be helpful to humans, animals, plant life, and the environment. The majority of gypsum produced is used to manufacture gypsum board or building plasters and it is used in many other ways.

Gypsum products are used in dentistry, medicine, homes, and industry. In homes, gypsum plaster is used to make walls; in industry, it is used to make molds. Three types of gypsum products are plaster, stone, and high-strength or improved stone. The Gypsum and the Gypsum products are used for construction purposes. It is also used in industry for making pottery, moulds etc. It is used by orthopedics to make plaster casts and helps the dentist for the cast preparation, models and dies, impression material, investment material, mounting of Casts, as a mold material for processing of complete dentures etc.

The global gypsum board market size is anticipated to exhibit a CAGR of 11.9% in terms of revenue. Increasing utilization of gypsum boards in decorative and partitioning applications in residential constructions is anticipated to drive the market. The demand for gypsum boards is driven by the residential sector, where the product is widely used in multi-family constructions for room partitioning. Durability and lightweight coupled with easy handling of the product are some of the factors anticipated to propel the demand.

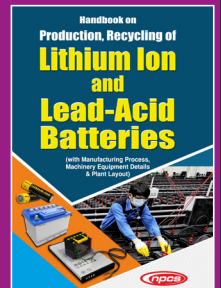
The major contents of the book are Mining, Processing, Transportation, Handling & Storage, Gypsum Board, Plaster of Paris for gypsum, Plant Layout, Process Flow Chart and Diagram, Plant & Machinery Suppliers and Photographs of Machineries.

This book is one-stop guide to one of the fastest growing sector of the Gypsum and Gypsum based Products, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on gypsum and gypsum based Products. It serves up a feast of how-to information, from concept to purchasing equipment.

## Handbook on Production, Recycling of Lithium Ion and Lead-Acid Batteries

(Mining, Processing, Transportation, Handling & Storage, Gypsum Board, Plaster of Paris with Machinery & Equipment Details)

₹ 2,995/- US\$ 250-



India is one of the world's largest battery manufacturers. Furthermore, there is an increase in global demand for batteries, and Indian battery producers are preparing to satisfy this need. The Indian battery sector has grown by 25% year over year and is expected to increase even more in the future. Batteries, such as Sealed Maintenance Free (SMF), lead-acid, or lithium-ion batteries, now power virtually everything else on the world.

The global battery market was worth USD 108.4 billion and is predicted to increase at a CAGR of 14.1%. The increasing demand from the automotive application is responsible for the market's rise. Rechargeable batteries are utilised in non-rechargeable batteries and electric vehicles in the automobile industry. The rising global popularity of consumer electronics is expected to increase the use of lithium-ion batteries as a product category. Portable electronics, such as LCD displays, smartphones, tablets, and wearable devices like fitness bands, are in high demand, increasing market growth. Because of technical developments in terms of increased efficiency, cost-effectiveness, and product innovation, the market is predicted to rise significantly. Battery demand is likely to be driven by strict emission requirements imposed by government agencies in industrialized countries such as the United States and the United Kingdom, as well as an increasing focus on fuel efficiency.

The demand for lithium-ion batteries is predicted to increase by more than 500 percent in the future. Many predictions suggest that demand will outpace supply, virtually assuring a price increase. All of the businesses in this field have unique opportunities to invest in the future of energy storage and transportation.

The global lithium-ion battery market size was valued at USD 53.6 billion and is expected to grow at a compound annual growth rate (CAGR) of 19.0%. The market's expansion can be ascribed to the rising demand for lithium-ion batteries in electric vehicles (EVs) and grid storage, since they provide high-energy density and lightweight solutions. The market size is expected to grow due to an increase in the registration of electric vehicles.

The global lead-acid battery industry is growing significantly across the globe and it is likely to register a CAGR of 5.2% during the forecast period. Growing SLI applications in the automobile sector, increase in renewable energy output, and rising demand for energy storage devices are some of the causes driving up demand for lead-acid batteries. As the telecom industry expands in nations like the United States, Brazil, India, and the United Kingdom, there is a growing demand for UPS systems as a backup power source, resulting in a higher usage of lead-acid batteries as a cost-effective energy source.

The book covers a wide range of topics connected to Batteries, as well as their manufacturing processes. It also includes contact information for machinery suppliers, as well as images of equipments.

A complete guide on Production, Recycling of Lithium Ion and Lead-Acid Batteries manufacture and entrepreneurship. This book serves as a one-stop shop for everything you need to know about the Battery manufacturing industry, which is ripe with opportunity for manufacturers, merchants, and entrepreneurs. This is the only book that covers Production, Recycling of Lithium Ion and Lead-Acid Batteries in depth. From concept through equipment procurement, it is a veritable feast of how-to information.

**B**lood collection tubes, urine and stool containers are essential items used in healthcare facilities for sample collection and analysis. Blood collection tubes are used to draw blood samples from patients for diagnostic testing and laboratory analysis. Urine and stool containers are used to collect samples of urine and feces for analysis and testing. These products are made of high-quality materials to ensure the samples collected are not contaminated and remain intact during transportation to the laboratory. Blood collection tubes, urine and stool containers are available in different sizes, types, and materials to suit various sample collection needs.

#### Why Is There A Demand For These Products?

The use of blood collection tubes, urine containers, and stools is a major factor in the demand for these products. Accurate testing and diagnosis are more crucial than ever due to the rise in the occurrence of illnesses, disorders, and infections. For the collection and transportation of specimens for analysis, containers for urine, stools, and blood collection tubes are necessary. They enable a secure and sanitary sample collection and guarantee its integrity, enabling precise testing and diagnosis. The market for these items has also been boosted by the rising importance of

## Start Production of Blood Collection Tubes, Urine and Stool Containers

preventative healthcare and routine checkups. Blood Collection Tubes, Urine and Stool Containers are required for a wide range of tests, including blood sugar, cholesterol, kidney function, liver function, and infectious diseases, making them an essential component of any diagnostic laboratory.

#### Global Market Outlook

The global specimen containers market size was valued at USD 2.0 billion in 2021 and is expected to expand at a compound annual growth rate (CAGR) of 4.85% from 2022 to 2030. The major factors driving the market are increasing prevalence of chronic disease, the rising number of trauma cases and accidents, and technological advancements. Moreover,

demand for specimen containers from diagnostic laboratories, academic and research institutes, healthcare facilities, and other end-use applications for the transport and collection of patient samples including sputum and urine will create significant opportunities in the near future.

#### Conclusion

An excellent business opportunity is to start a company that sells urine, feces, and blood collection tubes. This market might be a reliable source of income due to the rising demand for these products in the healthcare sector.

#### PROJECT COST ESTIMATE

<b>CAPACITY:</b>	
<i>Blood Collection Tubes</i>	: 32,000 Pcs. Per Day
<i>Urine Collection Containers</i>	: 32,000 Pcs. Per Day
<i>Stool Collection Containers</i>	: 32,000 Pcs. Per Day
<b>Plant &amp; Machinery</b>	: ₹ 1214 Lakhs
<b>Cost of Project</b>	: ₹ 2294 Lakhs
<b>Rate of Return</b>	: 28 %
<b>Break Even Point</b>	: 48 %

**P**roducts made from biodegradable maize starch are a recent invention that provides a solution to the environmental issues that traditional plastic products raise. They are formed of maize starch, a renewable resource, which is converted into granules and used to manufacture a variety of goods, including bags, plates, and cups. These goods spontaneously degrade and are entirely biodegradable, leaving no toxic residue in their wake. This is in contrast to conventional plastics that can take hundreds of years to decompose, the use of biodegradable corn starch products is becoming increasingly popular due to the rising awareness of environmental concerns. They are ideal for various industries, including the food industry, where the use of non-biodegradable plastic plates, cups, and bags can have a significant environmental impact, and often leave behind toxic chemicals that pollute the environment.

#### Benefit of Starting This Business

There are many benefits to starting a business that offers biodegradable corn starch products. First and foremost, this is a market that is growing rapidly. As consumers become more environmentally conscious, they are seeking out alternatives to traditional plastic products. This means that demand for biodegradable corn starch products is only going to increase in the coming years. Additionally, this is a business that is good for the planet. Traditional plastic products can take hundreds of years to decompose, leading to a huge amount of waste in landfills and oceans.

## Setup Unit of Biodegradable Corn Starch Granules, Bags, Plates & Cups

#### Indian Market Prospects

In recent years, environmental awareness and interest in sustainable products have grown in India. As a result, there has been an increase in demand for items containing biodegradable corn starch in India. India, which has a population of nearly 1.3 billion, has a sizable market for biodegradable goods. The Indian government has also promoted the use of environmentally friendly goods and established a number of plastic usage reduction measures.

#### Global Market Prospects

The demand for eco-friendly and sustainable products has been increasing rapidly in recent years. This has led to a surge in the biodegradable corn starch granules, bags, plates, and cups market globally. The global market size of biodegradable products was valued at USD 3.4 billion in 2020 and is expected to grow at a CAGR of 16.1% from 2021 to 2028. The driving factors behind this growth include increasing environmental concerns, government regulations on

single-use plastic, and growing awareness of the negative impact of non-biodegradable products on the environment. Moreover, the pandemic has led to a higher demand for disposable, hygienic, and biodegradable products.

#### Conclusion

Entrepreneurs who want to support sustainable development while capitalizing on the expanding market need might consider starting a firm that produces biodegradable corn starch granules, bags, plates, and cups. Businesses that invest in biodegradable corn starch products not only help the environment, but also position themselves in a lucrative sector that is expanding. Both the environment and the business benefit from this.

#### PROJECT COST ESTIMATE

<b>CAPACITY:</b>	
<i>Biodegradable Corn Starch Granules</i>	: 2 MT Per Day
<i>Biodegradable Corn Starch Bags</i>	: 2 MT Per Day
<i>Biodegradable Corn Starch plates</i>	: 2 MT Per Day
<i>Biodegradable Corn Starch Cups</i>	: 2 MT Per Day
<b>Plant &amp; Machinery</b>	: ₹ 440 Lakhs
<b>Cost of Project</b>	: ₹ 1427 Lakhs
<b>Rate of Return</b>	: 29 %
<b>Break Even Point</b>	: 47 %

**Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :**

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**T**issue paper is a lightweight, soft and thin paper that is used for a wide range of applications such as cleaning, wiping, drying, and packaging. The texture and absorbent quality of tissue paper make it suitable for personal hygiene, medical applications, and even for art and craft projects. Tissue paper is available in various forms such as facial tissue, toilet tissue, napkins, paper towels, and specialty papers like crepe paper and gift wrapping paper. The demand for these different types of tissue papers has been fueled by changing lifestyles, rising health awareness, and an increasing preference for hygiene and cleanliness.

#### Manufacturing Process Technological Advancements

These technological breakthroughs have made the tissue paper industry more profitable and competitive than ever before. Investors looking to enter into the tissue paper sector should be encouraged by the

## Start Unit of Tissue Paper

industry's commitment to innovation and advancement. As long as there is a significant demand for tissue paper, the sector will continue to invest in R&D to keep up with the newest technical advancements and stay ahead of the competition.

#### Indian Market Outlook

The Indian tissue paper market is expected to continue growing at a steady pace in the coming years. The market size is projected to reach USD 7.56 billion by 2027, with a CAGR of 7.7% from 2020 to 2027. This growth can be attributed to the increasing adoption of tissue paper products in both residential and commercial sectors. Additionally, the Indian government's initiatives to promote cleanliness and sanitation,

such as the Swachh Bharat Abhiyan (Clean India Mission), have further fueled the demand for tissue paper products. These initiatives have created awareness about the importance of maintaining personal hygiene and cleanliness, driving the demand for facial tissues, toilet tissues, and other tissue paper products.

#### PROJECT COST ESTIMATE

CAPACITY	
Tissue Paper	: 20 MT Per Day
Plant & Machinery	: ₹ 497 Lakhs
Cost of Project	: ₹ 2101 Lakhs
Rate of Return	: 27 %
Break Even Point	: 59 %

#### Global Market Outlook

The global tissue paper market size was valued at USD 20.86 billion in 2021 and is expected to expand at a compound annual growth rate (CAGR) of 3.3% from 2022 to 2028. This is attributable

to the rising responsiveness to hygiene and cleanliness. Also, the growing awareness about sanitation and personal care is likely to boost the market demand. Increasing government initiatives regarding the development of environment-friendly and green sustainable consumer products are anticipated to drive the demand for biodegradable tissue paper products. The growing demand for facial tissues and wet wipes among millennials in this region is also expected to drive the growth of this market in the coming years. Also, an increasing chain of hotels and restaurants is propelling the growth of this market as paper tissues are widely utilized during the serving of food in hotels.

#### Conclusion

The tissue paper industry is highly fragmented, which means there is plenty of opportunity for new players to enter the market and carve out their niche. With the right investment and marketing strategy, there is a great chance for new businesses to grow and thrive in this industry.

**R**ecycled polyester fiber is made by recycling post-consumer PET bottles. PET stands for polyethylene terephthalate, the most common form of plastic used in beverage containers.

When the bottles are recycled and processed, they turn into a fiber that can be woven into fabric. This fabric is remarkably durable and has excellent wicking properties. Recycled polyester fibers are used extensively in industries where durability and stain-resistance are important, such as clothing manufacturing, upholstery, carpeting, and automotive interiors. The process of making recycled polyester fiber from used PET bottles requires only four key steps: grinding, washing, melting and spinning into fibers. The process of creating recycled polyester fiber starts by collecting used plastic bottles. This material is then heated and stretched into a continuous strand, which is then spun into yarn that can be woven into fabric.

#### Uses and Applications

- **Textile and Apparel:** This is one of the largest industries that utilizes recycled polyester fiber. The material is used to manufacture a wide range of clothing, including t-shirts, jackets, and sportswear.
- **Industrial Applications:** Recycled polyester fiber can also be used in various industrial

## A Business Plan for Recycled Polyester Fiber from Used PET Bottles

• **Personal Protective Equipment (PPE):** Recycled polyester fiber can be used in the manufacture of protective clothing such as surgical masks, gowns, and other types of PPE.

#### Global Market Outlook

The Recycled Polyester Fiber market revenue was Million USD in 2016, grew to Million USD in 2020, and will reach Million USD in 2029, with a CAGR of during 2020-2029. PET bottles are the most common form of plastic used for soft drinks and water. In the United States alone, we throw away about 2.5 million tons of plastic every year, and about half of this is in the form of PET bottles that can be recycled into fiber for clothing. This same process has already been done in countries like Japan and Italy which have a high recycling rate. However, recycled polyester fiber can be created by turning old plastic bottles into a raw material for production. This will create jobs and reduce waste in our landfills!

#### Conclusion

Recycling plastics is not just a great way to make use of the 10.3 billion tons of plastic that are currently in existence but also a lucrative opportunity for entrepreneurs. In fact, recycled polyester fiber from used PET bottles could be worth as much as \$1 billion annually, which means there are plenty of opportunities to entrepreneur and invest in this business.

#### PROJECT COST ESTIMATE

CAPACITY	
Recycled Polyester Fiber	: 5,000 Kgs. Per Day
Plant & Machinery	: ₹ 68 Lakhs
Cost of Project	: ₹ 552 Lakhs
Rate of Return	: 27 %
Break Even Point	: 54 %

applications. These include manufacturing automotive parts, insulating materials, and geotextiles.

- **Packaging:** RPET is also used in making various packaging materials. It can be molded into containers, trays, and even blister packaging for a variety of products.
- **Bags and Accessories:** Many companies are turning to recycled polyester fiber to produce bags and other accessories.

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**P**aracetamol is a popular over-the-counter pain reliever and fever reducer medication that is widely used across the globe. Also known as acetaminophen, paracetamol has become an integral part of many people's medicine cabinets. It is available in various forms, including tablets, capsules, powders, and liquid suspensions. The drug's active ingredient works by blocking the production of prostaglandins, which are substances responsible for causing pain and inflammation. As a result, paracetamol provides effective relief from aches and pains, such as headaches, toothaches, menstrual cramps, and muscle soreness.

#### Advantages of Launching This Business

- **Government Support:** To lessen reliance on imports, several governments promote domestic manufacture of necessary medications like paracetamol.
- **Growing Health Consciousness:** People are becoming more proactive and aware of their health, which has encouraged self-medication for mild conditions. This pattern may increase demand for OTC medications like paracetamol.
- **Brand-Building Potential:** Although paracetamol is a generic medication, there is a chance to brand it with dependability, quality, or other desirable qualities.

## Start Paracetamol Manufacturing Unit

**Diverse Product Options:** Selling paracetamol in tablet form is only one aspect of the industry's operations. Paracetamol is available in many different forms, such as syrup, suppository, and injectable.

#### Indian Market Outlook

The India paracetamol market is expected to grow at an impressive rate during the forecast period on account of the growing awareness among the consumers pertaining to pain management. Additionally, paracetamol is used as an active

#### PROJECT COST ESTIMATE

CAPACITY	
Paracetamol Powder	: 7 MT Per Day
Plant & Machinery	: ₹ 274 Lakhs
Cost of Project	: ₹ 779 Lakhs
Rate of Return	: 27 %
Break Even Point	: 64 %

pharmaceutical ingredient (API) for manufacturing several generic and OTC drugs. This is expected to positively influence the market growth through FY2026. Furthermore, the widespread use of paracetamol in treating a range of conditions including headache, muscle pain, fever, arthritis, cold and cough, backache, toothache, among others is further expected to fuel the market growth over the next few years.

#### Global Market Outlook

Paracetamol Market size was valued at US\$ 1.60 Bn. in 2022 and the total Paracetamol revenue is expected to grow at 4.4% from 2023 to 2029, reaching nearly US\$ 2.20 Bn. paracetamol belongs to the analgesics group of medicines commonly known as a pain killer, and antipyretics i.e. fever-reducing agents are expected to dominate the market in 2029. The recommendation of paracetamol by doctors helps to boost the market growth for acute pain and ache. Headache and Cold is the second largest application responsible for paracetamol market growth.

#### Conclusion

Paracetamol is a trusted and effective pain reliever and fever reducer that is widely used and trusted by consumers around the world. Its affordable price, widespread availability, and minimal side effects make it a popular choice for managing common aches and pains. With its booming business, it's clear that paracetamol is here to stay.

**A**luminium extrusion is the process of transforming raw aluminium into finished products through the use of specialized machines that force molten aluminium through a die, resulting in the formation of a desired shape. Extrusion can create a variety of shapes including hollow or solid profiles, complex shapes, and flat or curved panels. This process has become increasingly popular in recent years for a number of reasons. Due to its great adaptability and toughness, aluminum is perfect for a variety of uses, including building, transportation, and consumer goods. Second, the extrusion process is incredibly efficient and economical, enabling the production of vast numbers of high-quality goods at a cheap cost.

#### The Advantages of Aluminium Extrusions

- **Lightweight:** One of the lightest commercial metals, aluminum weighs only one-third as much as steel.
- **Resistance to Corrosion:** Aluminum is highly corrosion-resistant and naturally produces a protective oxide coating, making it particularly advantageous for applications requiring resistance to the elements and other harsh situations.
- **Ease of Assembly and Fabrication:** Aluminum extrusions are easily formed into the desired shapes through cutting, machining, and fabrication.

tion. Simple techniques like screws, bolts, rivets, or even welding can be used to join them.

crack under pressure, aluminum can flex under stresses and rebound after being struck.

#### Indian Market Outlook

India's market for aluminium extrusions is driven by several factors, including rapid urbanization and the need for modern construction methods. With an increase in disposable income, consumers have more purchasing power, and they demand high-quality construction materials that meet the latest standards. The country's growing infrastructure also plays a significant role in driving the demand for aluminium extrusions. With new highways, air-

## Start Aluminium Extrusion Plant

ports, and commercial projects being developed across the country, there is a greater need for efficient, durable, and lightweight building materials.

#### Global Market Outlook

The global aluminum extrusion market size was valued at USD 87.84 billion in 2021 and is expected to expand at a compound annual growth rate (CAGR) of 7.5% from 2022 to 2030. The automotive & transportation sector is witnessing an increase in aluminum content in internal combustion as well as Electrical Vehicles (EVs), which is likely to boost the market growth over the forecast period. Aluminum has excellent malleability, which makes it easy to produce shapes using the extrusion process. In the automotive & transportation sector, aluminum shapes are used in chassis, roof rails, panels, transmission housings, and engine blocks for trucks, cars, boats, and railways. Demand for structural components is increasing in vehicles to make them lighter.

#### Conclusion

The market for aluminum extrusion is expanding and showing no signs of slowing down. It has established itself as a mainstay in many industries and shown to be a dependable option for producers because to its distinctive features and rising demand. The aluminum extrusion business will surely be important in influencing the globe as it transitions to a more sustainable future.

#### PROJECT COST ESTIMATE

CAPACITY	
Aluminium Extruded Products	: ₹ 10 MT Per Day
Plant & Machinery	: ₹ 234 Lakhs
Cost of Project	: 901 Lakhs
Rate of Return	: 26 %
Break Even Point	: 52 %

#### Non-Magnetic:

An important characteristic for electronics and high-voltage applications is the non-magnetic nature of aluminum.

#### Resilience:

In contrast to polymers, which can

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**B**aby & Adult Diapers and Sanitary Napkins are essential products that provide comfort, convenience, and hygiene for individuals of different age groups. Baby diapers are designed for infants and toddlers who are not yet potty trained. They are typically made of a soft, absorbent material and come in different sizes to fit the weight and age of the child. Adult diapers, on the other hand, are specifically designed for adults who experience incontinence or other medical conditions that require the use of diapers. They serve the same purpose as baby diapers, providing protection against leaks and keeping the wearer dry and comfortable.

Sanitary napkins, also known as pads, are products designed for menstruating individuals. They are made of a soft, absorbent material that is worn in the underwear to collect menstrual flow. Sanitary napkins come in various sizes and thicknesses to cater to different flow levels and personal preferences.

#### Manufacturing Process

The manufacturing process of Baby & Adult Diapers and Sanitary Napkins involves several steps to ensure the production of high-quality products that meet the hygiene and comfort needs of the users. Firstly, the raw materials are carefully selected and sourced. For diapers, these materials typically include absorbent cores, top sheets, back sheets, elastic waistbands, and closure systems. Sanitary napkins, on the other hand, consist of absorbent cores, leak-proof back sheets, adhesive wings, and soft covers. Once the raw materials are ready, they go through various processing stages. The absorbent cores are formed by combining fluff pulp, superabsorbent polymers, and other additives. This mixture is then compressed and shaped into the desired form. The top sheets and back sheets are prepared separately, often by bonding different layers of non-woven fabric. Elastic waistbands and closure systems are added to diapers to ensure a snug fit. After the individual components are prepared, they are assembled using specialized machinery. The absorbent core is placed between the top sheet and back sheet, and the different

## Baby & Adult Diaper and Sanitary Napkins Manufacturing Business

layers are sealed together. Adhesive wings are attached to the sanitary napkins to secure them in place. The finished products then go through quality control measures, including checking for defects and ensuring proper absorbency levels.

#### Global Market Outlook

The Global Diaper (Baby and Adult Diaper) Market was valued at USD 67.16 Billion in 2020 and the market size will reach USD 94.87 Billion by the end of 2028, growing at a CAGR of 4.37% during 2021-2028. The increasing awareness among the population for baby hygiene, the growing number of females working percentage, and the rise in the geriatric population are the key factors fueling the growth of the market. The market is expected to witness sustained growth due to factors like population growth, rising disposable income, changing lifestyles, and growing environmental consciousness. As a result, there are ample opportunities for businesses in this industry to expand their operations and cater to the increasing demand worldwide.

#### Conclusion

The business opportunities in this industry are vast. Entrepreneurs and investors can explore various avenues, such as manufacturing, distribution, and retail. The demand for private-label products is also on the rise, creating opportunities for companies to offer customized products for retailers or e-commerce platforms. Moreover, the demand for eco-friendly and sustainable diapers and sanitary napkins is growing rapidly, opening up new possibilities for businesses that prioritize environmental consciousness.

#### PROJECT COST ESTIMATE

##### CAPACITY:

<b>Baby Diapers (4 Pcs.)</b>	<b>: 84,000 Pkts Per Day</b>
<b>Adult Diapers (4 Pcs.)</b>	<b>: 18,000 Pkts Per Day</b>
<b>Sanitary Pads (8 Pcs.)</b>	<b>: 48,000 Pkts Per Day</b>
<b>Plant &amp; Machinery</b>	<b>: ₹ 2356 Lakhs</b>
<b>Cost of Project</b>	<b>: ₹ 4201 Lakhs</b>
<b>Rate of Return</b>	<b>: 29 %</b>
<b>Break Even Point</b>	<b>: 41 %</b>

## Setup Plant of Calcium Silicate Blocks

**C**alcium silicate blocks are a type of construction material composed of cement, sand, and silica, with calcium silicate serving as the major binding agent. Calcium silicate bricks are a popular alternative to traditional building materials such as clay bricks and concrete blocks. These blocks offer exceptional thermal insulation capabilities, making them appropriate for constructions in harsh climates. Because calcium silicate blocks have a high compressive strength, they are extremely sturdy and long-lasting. They are also resistant to fire, termites, and fungi, making them a popular choice for high-risk construction projects.

#### Advantage of Calcium Silicate Blocks

- **High Strength and Durability:** Calcium Silicate Blocks are incredibly strong and durable, making them ideal for high-stress areas in construction projects.
- **Fire and Water Resistant:** Calcium Silicate Blocks have excellent fire and water-resistant properties, which make them ideal for use in areas that are prone to water damage or fires.
- **Energy Efficient:** Calcium Silicate Blocks have a low thermal conductivity, which makes them highly energy-efficient.
- **Low Environmental Impact:** Calcium Silicate Blocks are made from natural materials, which makes them environmentally friendly.

#### Indian Market Outlook

The calcium silicate blocks industry has witnessed remarkable growth in India in recent years. The rise in construction activity in the country, coupled with the growing

demand for eco-friendly building materials, has fueled the demand for calcium silicate blocks. One of the primary drivers of this growth has been the Indian government's push towards sustainable building practices and initiatives like "Housing for All." Calcium silicate blocks are seen as a sustainable solution, as they are made from natural materials and can be recycled.

#### PROJECT COST ESTIMATE

##### CAPACITY

<b>Calcium Silicate Blocks</b>	<b>: 100 Sq.Mt. Per Day</b>
<b>Plant &amp; Machinery</b>	<b>: ₹ 82 Lakhs</b>
<b>Cost of Project</b>	<b>: ₹ 408 Lakhs</b>
<b>Rate of Return</b>	<b>: 27 %</b>
<b>Break Even Point</b>	<b>: 62 %</b>

#### Global Market Outlook

The Calcium Silicate Blocks industry is experiencing a surge in demand globally, with a projected CAGR of 4.3% between 2021 and 2026. This is largely driven by the growing need for durable and sustainable building materials. Calcium Silicate Blocks are eco-friendly and offer superior fire resistance and thermal insulation, making them ideal for both commercial and residential construction projects. The Asia-Pacific region is expected to be the fastest-growing market, driven by rapid urbanization and government initiatives to promote sustainable infrastructure development.

#### Conclusion

Starting a calcium silicate blocks business can be a profitable venture for entrepreneurs. The growing demand for eco-friendly and sustainable building materials, high-profit margins, ease of manufacturing are some of the reasons why the calcium silicate blocks market is attractive for entrepreneurs. With the right strategy, entrepreneurs can establish themselves in this market and enjoy success in the long run.

**Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :**

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## L-Glutamic Acid and Monosodium Glutamate Manufacturing Business

**L**-glutamic acid and monosodium glutamate (MSG) are two closely related substances that are frequently utilized in the food industry as flavor enhancers. L-glutamic acid is an amino acid, a substance found naturally in a variety of foods like cheese, beef, and mushrooms. It is a building block of protein. L-glutamic acid and sodium hydroxide are combined to produce monosodium glutamate, which is glutamic acid's sodium salt. MSG and L-glutamic acid are both commonly used in cookery.

### Uses and Applications

#### L-Glutamic Acid

- **Nutritional Supplements:** L-Glutamic Acid can be used as a supplement to support various metabolic processes.
- **Neurotransmitter:** In the nervous system, L-Glutamic Acid acts as a neurotransmitter and plays a key role in cognitive functions.
- **Pharmaceuticals:** It may be used in specific pharmaceutical formulations.

#### Monosodium Glutamate (MSG)

- **Cosmetic Industry:** MSG has been made use of as a humectant in cosmetics, though this is less usual.
- **Medical Uses:** Sometimes, MSG has been looked into for its potential healing usages, yet the data are restricted.
- **Food Preservation:** It is sometimes used in canned and frozen foods to help preserve flavor.

#### Indian Market Outlook

The Indian L-Glutamic Acid market is expected to grow at a CAGR of 5.5% during the forecast period 2018-2026. The market growth is attributed to the increased demand for L-Glutamic Acid in the food industry, specifically in

the production of soups, snacks, and sauces. The demand for Monosodium Glutamate in India is expected to increase due to the growing preference for processed food products. L-Glutamic Acid and Monosodium Glutamate have a significant market demand in India, which is the second largest producer and consumer of MSG in the world. The Indian market for L-Glutamic Acid and Monosodium Glutamate has seen a steady growth over the years due to its application in the food and beverage industry as a flavor enhancer.

#### Global Market Outlook

The global market size for L-Glutamic Acid is projected to reach \$4.5 billion by 2022, growing at a CAGR of 7.8% from 2017 to 2022. Similarly, the global market size for Monosodium Glutamate is expected to reach \$6.8 billion by 2025, growing at a CAGR of 5.1% from 2020 to 2025. The increasing demand for convenience foods, processed foods, and savory snacks is driving the growth of the L-Glutamic Acid and Monosodium Glutamate market.

#### Conclusion

The L-Glutamic Acid and Monosodium Glutamate business offers a range of benefits for entrepreneurs, including a stable market, versatile applications, and cost-effective production. These factors make this industry a viable and lucrative option for entrepreneurs looking to invest in a new venture.

### PROJECT COST ESTIMATE

CAPACITY:	
L-Glutamic Acid	: 50 MT Per Day
Monosodium Glutamate	: 15 MT Per Day
Plant & Machinery	: 867 Lakhs
Cost of Project	: 2590 Lakhs
Rate of Return	: ₹ 28 %
Break Even Point	: ₹ 51 %

## Setup Unit of Light Weight Bricks (EPS Bricks)

**L**ight weight bricks, also known as EPS bricks or foam bricks, are building materials made of expanded polystyrene (EPS), which is a lightweight and durable plastic material. EPS bricks are made by combining tiny polystyrene beads with a special steam heating process. The result is a highly durable and fire-resistant product that offers superior insulation and stability for construction. Due to their excellent thermal insulation and soundproofing properties, EPS bricks are popular among builders, architects, and homeowners. They can be used in the construction of residential and commercial buildings, as well as for external cladding and interior wall insulation. EPS bricks are easy to install, lightweight, and can be cut and shaped to fit any building design. They are also affordable and require less labor to install, making them a cost-effective option for many construction projects.

### Benefits of Light Weight Bricks (EPS Bricks)

- **Lightweight:** As their name suggests, EPS bricks are much lighter than traditional construction materials like concrete or clay bricks. This lighter weight can make transportation, handling, and installation quicker and easier, saving time and labor costs.
- **Insulation Properties:** EPS bricks have excellent thermal and acoustic insulation properties. This can help to keep buildings warmer in winter and cooler in summer, reducing the need for artificial heating and cooling, leading to significant energy savings.
- **Fire Resistant:** EPS bricks are made with fire-retardant material which can slow the spread of fire and contribute to safer construction.
- **Speed of Construction:** Because they are lightweight and easy to

handle, the construction process using EPS bricks can be faster than traditional methods, saving time and thus reducing costs.

#### Indian Market Outlook

The Indian market for Light Weight Bricks (EPS Bricks) has been growing steadily in recent years, as the construction industry continues to adopt eco-friendly and sustainable building materials. With increasing urbanization and a focus on affordable housing, Light Weight Bricks have become a popular choice among builders and developers. Light Weight Bricks are also fire-resistant and have excellent sound-proofing properties, making them an ideal choice for commercial buildings, hospitals, and schools.

#### Global Market Outlook

The global Light Weight Bricks market size was valued at USD 10.92 billion in 2020 and is expected to reach USD 14.46 billion by 2027, growing at a CAGR of 3.8% during the forecast period. This growth is fueled by the increasing use of these bricks in residential and commercial construction projects due to their lightweight and insulating properties. Moreover, the demand for Light Weight Bricks is expected to grow further due to the ongoing urbanization and the increasing need for affordable housing.

#### Conclusion

If you have the passion and entrepreneurial spirit, then starting a Light Weight Bricks manufacturing business can be a great opportunity to contribute to sustainable construction practices while earning good profits.

### PROJECT COST ESTIMATE

CAPACITY	
EPS Light Weight Bricks	: 200 Cu.Mt. Per Day
Plant & Machinery	: ₹ 25 Lakhs
Cost of Project	: ₹ 737 Lakhs
Rate of Return	: 26 %
Break Even Point	: 31 %

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**C**arton boxes, also known as corrugated boxes, are commonly used in packaging and shipping due to their durability and lightweight. They are made up of a layer of corrugated material between two layers of cardboard, which provides strength and cushioning. The corrugated layer also provides insulation against heat and moisture. Carton boxes come in a wide range of sizes and shapes to accommodate various products and purposes. From small boxes for individual items to larger ones for bulk products, they are a versatile packaging solution that can be tailored to the specific needs of each customer. In addition to being a practical choice for packaging and shipping, carton boxes are also an eco-friendly option. They are made from recycled materials and are fully recyclable after use. This makes them an ideal choice for companies and individuals who prioritize sustainability and environmental responsibility.

#### What Material Are Used?

- 1. Corrugated Paperboard** – This is the most common type of paperboard used in carton box manufacturing. It consists of a fluted sheet of paper sandwiched between two flat sheets of paper. The fluted sheet adds strength and rigidity to the box, while the flat sheets provide a smooth surface for printing.
- 2. Solid Bleached Sulfate (SBS) Paperboard** – This is a premium paperboard used in the production of high-end carton boxes. SBS paperboard has a bright white surface and a glossy finish, which makes it ideal for printing graphics and designs.
- 3. Coated Unbleached Kraft (CUK) Paperboard** – This type of paperboard is made from unbleached kraft pulp that is coated with a layer of clay. CUK paperboard has a natural, rustic look and is often used in the production of eco-friendly packaging.

#### Uses and Application

- Packaging:** This is the most common use of carton boxes. They are used for packaging goods of different sizes and shapes, including food, electronics, clothing, books, and more. They provide protection and ease of transportation for products.
- Crafts and DIY Projects:** On a smaller and more personal scale, carton boxes can be repurposed for various crafts and DIY projects, like creating organizers, playhouses for kids, or even for gardening purposes.
- Industrial Uses:** In industries, carton boxes are used not only for packaging but

## Carton Boxes Manufacturing Business

also as a part of manufacturing processes, such as a core in paper production or forming molds in various industries.

- Waste Management:** Carton boxes are often used for waste segregation and management in both domestic and commercial settings.

#### Indian Market Outlook

The India corrugated boxes market size reached US\$ 6.5 Billion in 2022. Looking forward, IMARC Group expects the market to reach US\$ 12.3 Billion by 2028, exhibiting a growth rate (CAGR) of 10.8% during 2023-2028. Corrugated boxes are disposable containers manufactured with different layers and widely available in different sizes, colors, designs, text, and graphics. They are lightweight, highly durable, safe, secure, and resistant to shock, moisture, and sudden temperature changes. They are cost-effective, eco-friendly, recyclable, and increase customer satisfaction. They provide more cushion or support for weighted materials to enhance protection as compared to cardboard boxes.

#### Global Market Outlook

Corrugated box market is growing with a CAGR of 5.8% in the forecast period of 2021 to 2028 and expected to reach USD 237,989.25 thousand by 2028. Corrugated box products are designed to give an extreme protection to the goods such as fragile, heavy, bulky, or high-value products in storage and transit. Different types of liners are used in the corrugated cardboard to provide the strength such as kraft liners, test liners, and chip liner. Corrugated paperboard also acts as the cushion for the product in transit.

Corrugated packaging products are 100% renewable and cost-effective in nature and used to replace wood and metal packaging.

#### Conclusion

The popularity of carton boxes has led to the rise of carton box manufacturing as a booming business opportunity. Entrepreneurs looking to enter the packaging industry can take advantage of this trend and start their own carton box manufacturing business. With a relatively low start-up cost and high demand, this business has the potential to be profitable and sustainable.

#### PROJECT COST ESTIMATE

CAPACITY	
Carton Boxes	: 20 MT Per Day
Plant & Machinery	: ₹ 213 Lakhs
Cost of Project	: ₹ 1023 Lakhs
Rate of Return	: 29 %
Break Even Point	: 64 %

## Setup a Dual Feed Distillery (Ethanol as Bio-Fuel)

**B**iofuels are transportation fuels such as ethanol and biomass-based diesel fuel that are made from biomass materials. These fuels are usually blended with petroleum fuels (gasoline and distillate/diesel fuel and heating oil), but they can also be used on their own. Using ethanol reduces the consumption of gasoline and diesel fuel made from crude oil, which can reduce the amount of crude oil imported from other countries.

Molasses is a one precious byproduct of sugarcane, about 1 ton of it produces 4% of molasses by the sugar processing industry in every single run. Molasses contain rich source of nutrients, and it is employed as an effective raw material for the production of organic acids especially ethanol. Ethanol is the major product obtained from the molasses by means of anaerobic fermentations using microorganisms.

Grain based distilleries to produce ethanol. However, benefits of interest

subvention scheme is to be extended to only those distilleries which are using or will be using dry milling technique to produce Dry Distillers Grain Soluble (DDGS).

Ethanol is used extensively as a solvent in the manufacture of varnishes and perfumes; as a preservative for biological specimens; in the preparation of essences and flavorings; in many medicines and drugs; as a disinfectant and in tinctures (e.g., tincture of iodine); as a fuel and gasoline additive. Ethanol has been produced from different sources in the past.

As India has very large area under sugar cultivation, we can also follow the Brazilian route (i.e. using ethanol as motor fuel) of ethanol production. It has been observed that upto 5% of the ethanol can be blended with petrol without any modification in the carburetor or the engine, provided ethanol to be anhydrous, while upto 10% of ethanol can be blended with minor adjustment in the carburetor or the engine.

#### PROJECT COST ESTIMATE

CAPACITY:	
Ethanol from Molasses	: 5.0 KL Per Day
Ethanol from Grain (Corn)	: 5.0 KL Per Day
DDGS As By Product	: 8.0 KL Per Day
Plant & Machinery	: ₹ 3723 Lakhs
Cost of Project	: ₹ 4778 Lakhs
Rate of Return	: 24%
Break Even Point	: 44%

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- » Disposable Plastic Syringes
- » Dry Fruits Processing (for Snack, Almond, Pistachio and Cashew Nut)
- » Dry Lemon Powder and Lemon Oil
- » E-waste Recycling Plant
- » Fatty Alcohol
- » Ferro Molybdenum
- » Ferro Vanadium
- » Fire Clay Bricks
- » Fruit Wine
- » Furfural from Bagasse and Corncobs
- » Hand Sanitizer Manufacturing
- » HDPE Pipes
- » Hemodialysis Blood Tubing
- » Plastic Waste Recycling Plant
- » Industrial Gases
- » Integrated Unit  
(Herbal Hair Oils, Herbal Cosmetic, Ayurvedic Pharmacy)
- » JCB Bucket Pin and JCB Tooth Nuts, Bolt and Pin Bush
- » Jute Bags, Jute Sacks, Gunny Bags
- » LPG Bottling Plant
- » Macaroni
- » Macaroni, Spaghetti, Vermicelli and Noodles
- » Magnesium Sulphate (Fertiliser Grade)
- » Collagen Powder



- » Manufacturing of Disposable Personal Protective Equipment (PPE) Kit
- » Medical Disposables: Disposable Syringes (Self Destructive) with Needles, Catheters and Mask
- » Menthol Crystal from Mentha Oil
- » Metal Cutting Wheels (TMT Bar Cutting)
- » Peanut Butter
- » Plastic Waste Recycling Plant
- » Porcelain Insulator
- » Potato Flakes
- » Potato Flakes and Pellets
- » Potato Powder
- » Potato Powder, Flakes and Pellets
- » Pouch Packing Automatic Plant -Flexible Packaging (Namkeen, Spice, Mehandi, Milk, Ghee and Zipped Pouches)
- » Pre-mix and Animal Feed (Poultry and Cattle)
- » Prestressed Concrete Sleepers
- » Production of Artemisinin from Artemisia Annua Plant
- » Latex & Nitrile Gloves
- » Tomato Puree and Fruit Concentrate With Hot Break Process
- » Protein Bar
- » Reduction of Manganese Dioxide To Manganese Oxide 42% (by Rotary Kiln)
- » Roller Flour Mill (Atta, Maida & Suji)
- » Rose Plantation & Rose Oil Extraction
- » Sanitary Napkins Activated Charcoal from Bamboo
- » Spices (Turmeric, Chilli & Masala Powder)
- » Lithium Ion Battery (Battery Assembly)
- » Latex Rubber Thread Manufacturing Plant
- » Surgical Blade & Disposable Scalpel
- » Talc from Talc Ore (Cosmetic Grade)
- » Toughened Glass (Tempered Glass) Toughened Glass
- » UPVC Pipes
- » UPVC Profiles for Doors and Windows
- » Virgin Coconut Oil
- » Wheat Flour Mill (Atta, Maida & Suji)
- » Wood Plastic Composite (WPC)
- » Workwear, Uniform Clothing for Factory (Trousers & High Visibility Long Sleeves Jackets)
- » Yeast from Molasses
- » Zinc Chloride
- » Zinc Oxide from Zinc Dross
- » Zinc Sulphate
- » Zinc Sulphate (33%, 21% & 12%)



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## Setup Plant of Activated Carbon from Bamboo

**B**amboo plants are used to produce activated carbon, a type of carbon. Bamboo is an excellent source for the manufacturing of activated carbon due to its fast growth and high carbon content. High temperatures are used to heat the bamboo to generate a porous structure, which is then used to make activated carbon. This porous structure allows the activated carbon to have a large surface area, which increases its ability to adsorb impurities and contaminants. Activated carbon from bamboo is commonly used in various industries due to its excellent adsorption capabilities. It is commonly used for water filtration, air purification, and as an ingredient in personal care products.

### Production Process of Activated Carbon

The production process of activated carbon from bamboo involves several steps to create a high-quality and effective product. First, the bamboo is harvested and cut into small pieces. These pieces are then washed and dried to remove any dirt or impurities. Next, the bamboo is carbonized, which involves heating it in a controlled environment at high temperatures. This process converts the bamboo into charcoal. The charcoal is then activated by further heating it at even higher temperatures, typically around 800 to 900 degrees Celsius. This activation process creates a porous structure within the charcoal, increasing its surface area and adsorption capabilities. Finally, the activated charcoal is crushed into a fine powder and processed into various forms, such as pellets, granules, or powder, depending on the intended application.

### Uses and Applications

- **Water Purification:** Activated carbon is commonly used in water treatment processes to remove organic compounds, chlorine, and other

impurities, thereby improving taste, odor, and safety.

- **Food and Beverage Industry:** It's used to decolorize and purify edibles like sugar, fruit juices, and alcoholic beverages.
- **Metal Extraction:** In the mining industry, activated carbon is used in the extraction of precious metals like gold and silver.
- **Industrial Manufacturing:** Activated carbon is used in various manufacturing processes to control emissions and purify raw materials. It can help to control pollution in industries such as pharmaceutical manufacturing, automotive manufacturing, and chemical processing.

- **Sewage Treatment:** It's used in sewage treatment plants to remove organic compounds and contaminants.

### Indian Market Expectation

In recent years, the Indian market has shown immense potential for the use of activated bamboo carbon in various industries. With the country's growing focus on sustainability and eco-friendly practices, businesses are increasingly looking for alternatives to traditional carbon sources. Activated

carbon from bamboo has emerged as a promising solution, thanks to its exceptional adsorption capabilities and renewable nature. The water treatment industry in India has witnessed significant growth, creating a high demand for activated carbon products. The ability of activated carbon from bamboo to effectively remove impurities and contaminants makes it a preferred choice for water filtration systems.

### Global Market Expectation

The global activated carbon market size was valued at USD 4.77 billion in 2021 and is projected to grow from USD 4.98 billion in 2022 to USD 7.73 billion in 2030, exhibiting a CAGR of 5.6% during the forecast period. Activated carbon, also known as activated charcoal, is used in various industrial applications such as gas and air cleaning, involving reusable recovery. The primary role of the product is for the adsorption of dissolved organic impurities and elimination of substances that affect the odor and taste. The adoption of Activated Carbon Injection (ACI) technology has provided cost-effective methods for the purification process. These methods are majorly used in cement kilns and power plants for reducing mercury emissions. Growing pollution on account of emissions caused during product manufacturing has been a significant factor driving the market.

### Conclusion

The market for activated bamboo carbon offers a fantastic business opportunity that blends ethical business practices with successful results. Entrepreneurs ought to benefit from this market and work toward a better, more environmentally friendly future.

### PROJECT COST ESTIMATE

#### CAPACITY

Activated Carbon	: 750 MT Per Annum
Plant & Machinery	: ₹ 196 Lakhs
Cost of Project	: ₹ 546 Lakhs
Rate of Return	: 26 %
Break Even Point	: 50 %

## Eggshell Powder

**E**gg shell is a solid waste, with production of several tons per day. Eggshell is mostly sent to the landfill with a high management cost. It is economical to transform the egg shell waste to create new values from these waste materials. The eggshell wastes could convert to a) biodiesel production as solid base catalyst to use for biodiesel production, pollutants minimization, reducing the production costs of biodiesel and making the process to produce biodiesel fully, ecologically and friendly, b) absorbent of heavy metals from wastewater as serious environmental problem in the ecosystem, c) biomaterial in order to bone tissue replacements due to the rise in the number of patients, d) fertilizer and calcium supplement as

### PROJECT COST ESTIMATE

#### CAPACITY

Eggshell Powder	: 2 MT / Day
Plant & Machinery	: ₹ 11 Lakhs
Cost of Project	: ₹ 42 Lakhs
Rate of Return	: 30%
Break Even Point	: 79%

nutrition for human, animals, plants, etc. Numbers of research articles have been included in this review, which describe a methodical growth in this subject matter.

The egg is the most nutritious

natural product. Eggs are rich in protein, vitamins and minerals. The poultry industry in India has made remarkable progress and grown into an organized and highly productive industry. Dried egg powder can be stored and transported at room temperatures. It is quite stable and has a long shelf life. There is enough scope of an egg powder manufacturing plant, with a suitable capacity. Whole egg powder is consumed in hotels, hospitals, restaurants, and military establishment etc.

The eggshell membrane powder market is expected to grow at a CAGR of ~13% during the forecast period 2019-2029. The pet food supplement industry is an emerging industry, as consumers are becoming fonder of their pets and take proper

care of their nutrition. In order to ensure that their pets get adequate nutrients, consumers prefer pet food supplements that are organic and natural, to avoid any adverse effects on pets. Egg membrane protein powder is mainly used in pet supplements to reduce bone disorders and comfort them in case of seasonal allergies. Hence, this evolving demand for pet supplements is driving the global egg membrane protein powder market.

The global eggshell membrane market is going through certain developments that are shaping its competitive landscape. These are also paving the road to growth over the forecast period. One such development is outlined below. Entrepreneurs who invest in this project will be successful.

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## Start Production of Glass Fiber Reinforced Polymer (GFRP) Rebar

**A** form of composite material called Glass Fiber Reinforced Polymer (GFRP) Rebar is created by fusing glass fibres with a polymer matrix. When employed to reinforce concrete structures, this combination produces a material that is robust, long-lasting, and corrosion-resistant. In comparison to conventional steel rebar, GFRP Rebar provides a number of benefits, including greater strength, increased flexibility, lightweight, and ease of installation.

### Benefits of Starting GFRP Rebar Industry

A novel composite material comprised of epoxy resin and glass fibre called Glass Fiber Reinforced Polymer (GFRP) Rebar provides a distinctive replacement for conventional steel rebar. Due to its many benefits, including its strength and flexibility, resistance to corrosion, low weight, and electrical insulating qualities, it has been used more and more in the building business.

Rebar made of GFRP is less expensive than rebar made of conventional steel, making it a more affordable choice for building projects. Additionally, due to its strength and corrosion resistance, it is extremely adaptable and may be used in any application or environment. The fact that GFRP rebar is 100 percent recyclable makes it an environmentally favourable option for building projects.

These elements have made the GFRP

### Global Market Outlook

At a projected CAGR of 13.0%, the size of the worldwide GFRP Rebar market is expected to increase from USD 187 million in 2021 to USD 389 million by 2027. The market is projected to benefit from rising demand for wind energy composites and expanding applications in the marine industry.

Asia-Pacific dominated the market globally, with countries like China, India, and others having the highest consumption rates.

In the building sector, glass fibre reinforced polymer (GFRP) is frequently used for non-structural components such as facades, panels, pipelines, and channels.

Due to the existence of several growing economies in the region, including Vietnam, China, Indonesia, and India, the Asia-Pacific region has grown to be a popular market for investors. Strong economic growth has led to domestic enterprises increasing their operations. Along with this, international businesses have started making inroads into these areas to seize the present chances. Due to the increased demand for commercial construction, such as offices, manufacturing facilities, buildings, warehouses, etc., these nations have seen a surge in construction activity.

### Conclusion

Construction companies are using GFRP rebar more frequently, which has led to a growth in the manufacturing sector.

There are various more elements that have fueled the expansion of the GFRP rebar sector in addition to the advantages of employing this product that have already been stated. Without further manufacturing or specialised tools, GFRP Rebar is easily cut, bent, and shaped into any shape or size.

Due to all these benefits, GFRP Rebar is growing in popularity among engineers and builders who are searching for more affordable ways to meet their reinforcement needs. With so many advantages, it's understandable why GFRP Rebar is quickly replacing traditional steel in construction projects all over the world.

rebar industry a booming one and helped GFRP rebar gain more and more traction in the building sector. The demand for GFRP rebar is rising, which has increased manufacturing and stimulated research into new products and uses. The use of GFRP rebar is anticipated to rise even more in the near future as more people become aware of its many benefits.

### PROJECT COST ESTIMATE CAPACITY

Glass Fibre Reinforced Polymer (GFRP) Bar (Size 8mm to 36 mm)	: 360,000 MT Per Annum
Plant & Machinery	: ₹ 588 Lakhs
Cost of Project	: ₹ 6097 Lakhs
Rate of Return	: 34 %
Break Even Point	: 51 %

## Growing Business of Animal Feed (Cattle, Poultry Broiler, Pig & Fish Feed)

**A**nimal feed is the food that is supplied to domestic animals, especially livestock, while they are being cared for. The two most prevalent categories are fodder and forage. Feed is commonly referred to as fodder when the word feed is used alone. Animal feed is an important aspect of the animal agricultural process, and it is usually the most expensive part. Farms typically try to save money by growing their own food, grazing their

or other grain in cow diets, for example, leads their microbiomes to become more acidic, impairing their immune systems and making cows more likely E.coli vectors. Other feeding practises, on the other hand, may be beneficial to animals. For example, feeding cows particular types of seaweed reduces methane generation, cutting greenhouse gas emissions from the meat industry.

The animal feed business is predicted to grow at a CAGR of 4.90 percent from US\$345.434

billion in 2020 to US\$460.322 billion in 2026.

Animal feeds are products that are used to improve the health of animals. Different doses of feed are given depending on the animal. Rapid urbanisation

animals, or supplementing expensive feeds with less expensive alternatives, such as food waste from beer production.

Feed that delivers a well-balanced diet is critical to animal health. Some modern agricultural practises, such as grain-feeding cows or keeping them in feedlots, are harmful to both the environment and the animals. Increased maize

and increased meat and other end-product consumption, such as milk and eggs, in various places will fuel the animal feed market development potential over the forecast period. The feed aids in the expansion of the animal's capacities, accelerating growth and weight gain, and enhancing immunity by giving enriched nutrients with the feedstuff.

### PROJECT COST ESTIMATE

#### CAPACITY:

Cattle Feed	: 33.6 MT Per Day
Poultry Broiler Feed	: 16.8 MT Per Day
Fish Feed	: 2.8 MT Per Day
Pig Feed	: 2.8 MT Per Day
Plant & Machinery	: ₹ 160 Lakhs
Cost of Project	: ₹ 1488 Lakhs
Rate of Return	: 24%
Break Even Point	: 48%

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**P**CBs are used extensively in modern electronic products such as computers, telephones, televisions, and even smaller electronic devices such as smart watches and fitness trackers. Printed wiring boards (PWBs) are critical components that include a foundation board that supports all other parts and circuitry, as well as a patterned layer of electrical tracks printed on top.

The four major components of a printed circuit board (PCB) are:

- **Substrate (optional):** The substrate, which is usually constructed of fibreglass, is the first and most crucial phase. Fiberglass is employed in the PCB's core because it strengthens it and helps it withstand fracture. Consider the substrate to be the "skeleton" of the PCB.
- **Copper Layer:** This layer can be copper foil or a full-on copper covering, depending on the board type. Regardless of which method is utilised, the copper's function is the same: it transmits electrical signals from the PCB to the brain and muscles, just like your nervous system.
- **Solder Mask:** The solder mask, a polymer layer that protects the copper from short-circuiting when it comes into contact with the environment, is the third component of the PCB. The solder mask serves as the PCB's "skin" in this situation.
- **Silkscreen:** The silkscreen is the final component on the circuit board. Part numbers, logos, symbols, switch settings, component reference, and test locations are commonly silkscreened on the component side of the board. The silkscreen is also referred to as

Television sets, transistor sets, radios,

## Printed Circuit Board (PCBs)

amplifiers, ampligrams, stereo amplifiers, voltage stabilisers, calculators, communications equipment, power supply, public address equipment, computers, and defence and other research organisations all employ printed circuit boards.

On today's PCBs, component connection leads are commonly in the shape of a little foot. As a result, they can be immediately soldered to the copper tracks and placed on the same side. This not only saves money by avoiding costly drilling and track hookups through the board, but it also allows for the use of surface mounting devices (SMDs), which are often smaller and potentially less expensive than their traditional counterparts and allow for significantly higher component packing density.

Capacitors and resistors are the most common components found in SMD form. These are little rectangular blocks with metal caps on the ends that connect all of the interior electrodes. There are no cables connecting the components.

PCBs can be found in practically every electronic product, from consumer electronics like PCs, tablets, cellphones, and gaming consoles to industrial and even high-tech items in the strategic and medical electronics industries. Given the importance of the PCB business in the

electronics manufacturing ecosystem, an article titled 'How will the Indian PCB industry grow?' was published in the April 2016 issue of Electronics Bazaar, and included the perspectives of key industry stakeholders. The Indian market is unique in compared to the rest of the world. Because flexible circuits may reduce form factor and eliminate connectors, they are predicted to grow far faster in the worldwide market than rigid PCBs. Most Indian PCB producers, on the other hand, concentrate on single-sided, double-sided, and multi-layered PCBs with four to eight layers.

The Indian electronics industry is one of the world's fastest expanding, with domestic manufacturing exceeding \$100 billion and expected to reach \$400 billion by 2022. As a result, the PCB industry will see significant growth.

According to an ELCINA analysis, PCB consumption in the residential market is predicted to expand at a CAGR of 20.56 percent from 2015 to 2020, reaching over US\$ 6 billion by 2020, up from US\$ 2.38 billion currently.

### PROJECT COST ESTIMATE

#### CAPACITY:

<b>Multilayer High Density Interconnect PCBs</b>	<b>: 40 SqMtrs. Per Day</b>
<b>Multilayer Flex PCBs</b>	<b>: 40 SqMtrs. Per Day</b>
<b>Multilayer High Power PCBs</b>	<b>: 40 SqMtrs. Per Day</b>
<b>Plant &amp; Machinery</b>	<b>: ₹ 259 Lakhs</b>
<b>Cost of Project</b>	<b>: ₹ 594 Lakhs</b>
<b>Rate of Return</b>	<b>: 27%</b>
<b>Break Even Point</b>	<b>: 58%</b>

**A**mong the non-conventional forms of energy, Bio-Energy offers vast potential under Indian conditions, due to the wide spectrum of BIOMASS available in different agro-climatic regions of the country.

Worldwide, the energy stored in biomass through photosynthesis is approximately  $3 \times 10^{21}$  J (90% in trees) every year, which is nearly 10 times the world's annual energy use. Even through the total renewable biomass resource for energy far exceeds the world's total energy requirement, its volume exploitation remains limited because of the present low cost of fossil fuels, the heterogeneous nature of biomass, and the area over which the biomass must be collected for large-scale applications.

Biomass feed, especially agro-residues, is available in different forms, such as husks, straw, and stalks of various and numerous crops. Due to this heterogeneous nature, the utility of these materials for energy becomes limited, and energy conversion processes tend to become

## Biomass Briquettes from Bio Waste

production.

Biomass briquettes can typically provide between 3-15 per cent of the input energy into the power plant. The objective behind the move, is to reduce air pollution caused due to burning of surplus biomass residue in fields by creating an alternate market for its large-scale utilisation in power plants as well as reduce carbon emission from coal-fired power plants.

The global Biomass Briquette market is valued at 320 million US\$ in 2017 and will reach 570 million US\$ by the end of 2025, growing at a CAGR of 7.3% during 2018-2025. The global biomass briquettes market is segmented into North America, Latin America, Western Europe, Eastern Europe, the Middle East and Africa, and Asia Pacific. Of these regions, Europe and North America are expected to be key regions for the growth of this market over the forecast tenure. The utilization of the biomass briquettes production technologies is high to convert their biomass into useful energy sources.

### PROJECT COST ESTIMATE

#### CAPACITY

<b>Capacity</b>	<b>: 20 MT Per Day</b>
<b>Plant &amp; Machinery</b>	<b>: ₹ 52 Lakhs</b>
<b>Cost of Project</b>	<b>: ₹ 94 Lakhs</b>
<b>Rate of Return</b>	<b>: 20%</b>
<b>Break Even Point</b>	<b>: 73%</b>

biomass specific. Biomass briquettes are a proven way of generating energy from bio-waste. Different types of waste have been utilized in order to develop biomass briquettes. Biomass briquettes derived from Mustard, Cotton, Guar, Saw Dust and Peanut shell Agro waste could result in feasible on-site fuel

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