Project Implementation on White gold Silica Production in Bangladesh

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LETTER OF TRANSMITTAL

To

Md. Kamruzzaman

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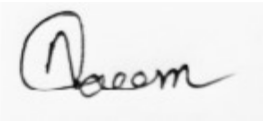
Subject: Submission **Project Implementation on White gold Silica Production Business in Bangladesh**

Respected Sir,

with great pleasure I am presenting my topic **Project Implementation on White gold Silica Production Business in Bangladesh** I listened to your instructions and followed your rules when I wrote this report. My experiences and ideas have been used to compile this report. I would especially want to thank you for your important time, wise counsel, and assistance. I've done my best to complete the report as accurately as I can. I tried to collect data from both primary and secondary sources.

As a result, I humbly ask that you accept my report and provide me with sound advice on how to go with my professional life. I also pray and hope that any errors may be graciously overlooked.



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CERTIFICATE OF APPROVAL

This is to certify that the Project **Implementation on White gold Silica Production Business in Bangladesh** the essay entitled, written by Naeemul Alam Chowdhury, satisfies a portion of the requirements for our semester final at Daffodil International University's Department of Innovation and Entrepreneurship.

I hope he has a successful Future.

Md. Kamruzzaman
Head Department of Innovation & Entrepreneurship

Daffodil International University

Acknowledgement

I must give Allah all the credit for enabling me to complete this report.

The head of the department of innovation and entrepreneurship at Daffodil International University, Md. Kamruzzaman, who oversaw my report, has my sincere appreciation. I've worked hard and diligently over the past three weeks to put this report together.

Some of my friends and industry professionals assisted me in gathering all the data.

I am very thankful to them.

Executive Summary

Sodium Silicate is a chemical compound which is widely used in formulation of cements, passive fire protection, textile and lumber processing, manufacture of refectory ceramics, production of silica gel, soap manufacture, producing paper and paperboards and so many sectors. A huge amount of sodium silicate is imported with high range remuneration to use it in all these productions. In this case, if we can produce or plant sodium silicate industry at our own country, it will be a prominent benefit for all of us. So, we can say there is a huge importance of sodium silicate industry in our country.

Sodium Silicate industry is such an environment friendly concept to move forward. The main raw material we may use is paddy husk which is a waste material from rice. Instead of wasting so many husks, we are using it as our raw material. In the making process, we will use the smoke to convert into electricity by compressing and it will save a huge amount electricity in the plant.

In this report I have explained how I am going to execute my plan in details.

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Chapter One: Introduction

1.1 Introduction

Silica, commonly known as silicon dioxide (SiO2), is a naturally occurring substance consisting of two of the elements with the greatest abundance on the planet: silicon (Si) and oxygen (O2). Quartz is the most typical type of silicon dioxide. It occurs naturally in the ground, water, plants, and animals.

A synthetic variation of amorphous silicon dioxide is precipitated silicon dioxide. Quartz sand, a crystalline form of silicon dioxide, is used to make it. Precipitated silica's physical characteristics can be changed during the production process to produce goods with a variety of performance-improving features designed for a variety of end-use applications.

Amorphous silica is precipitated silica, often known as precipitated SIO2. It has a powdery, white look. A solution containing silicate salts is precipitated to produce precipitated silica.

Amorphous silicon comes in three primary forms: precipitated silica (pyrogenic silica), silica gel, and precipitated silica (precipitated silica). The most vital silica for industrial usage is precipitated silica. Precipitated silica, like pyrogenic and pyrogenic silica, is not microporous.

Figure 1: Silica

1.2 Objective of the Study

This Study aims to produce Silicate in Bangladesh.

- To know the Silicate, Produce in Bangladesh
- To understand the opportunities of Silicate production
- To know the fundraising guidelines about this Business

1.3 Methodology

To prepare the report, I have collected the necessary information:

- ❖ Primary Data
    - Conduct interview over phone calls with sustainable energy and agro resources limited
- ❖ Secondary Data
    - Visit different Silicate Production business website
    - Different newspaper and journal

1.4 Limitation of the Study

- Lack of time
- Faced Difficulties in finding information about Bangladesh Perceptive
- Many internet portals see have access restriction

Chapter Two: Sodium Silicate business in Bangladesh

2.1 Implement Sectors

Silica that means white gold. This is called Silicon dioxide. It is used as a raw material in making soaps, Ceramics, Paper, paper boards, water purifiers, garments, petroleum and metal.

Figure 2: Ceramic

Figure 3: Paper

Figure 4: paper Boards

Figure 5: Garments

Figure 6: Oil Refinery

Figure 7: Water treatment plant

2.2 Market demand of Sodium Silicate in Bangladesh

The annual demand for sodium silicate in Bangladesh has exceeded approximately 2000 metric tons. At the rate at which the industry is growing the demand will increase.

2.3 How Sodium Silicate is Made in Bangladesh

However, the good news is that for the 1st time in the history of the country, white gold silica is Being Produced from rice husks an organization called sustainable energy and agro resources limited. Is producing silica in chilarang village of Thakurgaon sadar Upazila. A waste is found after processing rice from paddy. The name of that waste is husk. It is known that 70-80 % silica is obtained by burning the husk to ashes. It can be commercially marketed by making sodium silicate by difficult digestion. First a certain amount of rice husk ash is measured and digested with baking soda and stirred continuously. The digestion Process is carried out at a temperature of 100-150 degrees Celsius Runs 1-2 hours. The smoke that comes out of here is used to generate electricity without leaving it outside. With this electricity power is supplied to the whole unit. According to silica production, the market demand is much higher. The company said it would try to meet market demand by increasing production in the short Term. It will change people lives. And it will be environment friendly.

2.4 Benefits of Sodium silicate Business

Starting a new sodium silicate manufacturing company has several advantages. A natural mineral known as hydrated sodium calcium alum inosilicate is used to make sodium silicate, a white powder. It's utilized in industrial paints and coatings, fireproofing materials, and the creation of fiberglass insulation in addition to being a great water-proofing agent for cement.

Due to the absence of aluminum in its structure, sodium silicate is often referred to as alkyl silicate or sodium aluminate. This compound serves as a water-proofing agent for a variety of materials, including polyvinyl alcohol, cement, mortar, and aqueous coatings. Typically, it creates hydrated silica gel that is easily mixed into any desired substance and is fusible. However, the majority of this material is made in Europe and the US. And Recently new competitor is Bangladesh.

Chapter Three: MY Business plan about Sodium Silicate

3.1 Business plan

This is due to the abundance of the natural mineral that makes up sodium silicate in this area. This is our today's arrangement with silica. Despite the huge amount of raw material for making sodium silicate (silica) in the country, a lot of foreign currency is Being spent every year to import sodium silicate. If the project of Making silica in the soil of the country is implemented demand of 55-60 percent sodium silicate of the country can be met.

I have selected a proposed land at Shenbagh, Noakhali for my plan. The reason behind choosing this land is, there are so many rice mills around the land and we can get so many rice husks from there. Already I have consulted with the owner of few rice mills. In addition, I have plan to make a proper deal with them on arranging the rice husks from their mills. So that I can run my project very well. After fixing the land I have to make sure how would I process the husk into coals. To do so I have to manage the boiler machine. We all know that we can get sodium silicate after processing the husks 70-80%. It is to mention that we can produce electricity by compressing the smoke will be produced through the process. This is a huge benefit to run my business and environmental issue. This reusable and productive part of the plan make this project so much impactful and thoughtful to me.

As I have plan for the project but I need more manpower and engineer to work with machines, I have to hire engineers to control and use the machines or boilers. I would like to suggest 4 or 5 machines to execute the plan. Within the all the process I may need around 4 crores for funding. I can make a project loan to invest this amount as funding.

Silicate business is a very important for our country. Every year we have to import a good amount of silicate for different usage. If we become successful to produce these then it will be huge benefit for the economy of our country. So, I can say it is an ideal project.

3.2 Proposed Land

Bangladesh is an agricultural country and for the best output, we should choose the rural areas for our project where we can get our raw material rice husks easily. Among all the district, Noakhali is a very mentionable one where we may find many paddy fields and from there, we can collect the wastes or husks with a sufficient amount to run our project. For our project, I would like to suggest Shenbag, Noakhali area for the appropriate land. It will be very beneficial for us to have raw products and give profitable result. Also, for the farmers it will be a very helpful opportunity. We can work together with collaboration and this communication in business will bring the lost brightness of out agriculture.

Figure 8: Proposed Land

3.3 Market and Industry trends

The increased demand for sodium silicate as an adhesive agent in electrode coatings is probably going to be good for the industry's expansion. It can chemically combine with electronic coatings before hardening, enhancing the coating's general endurance. Additionally, it offers great flux action on the welding rod cover. Because of this, it is projected that the demand for sodium silicate for welding applications would positively impact the growth of the sector.

In the upcoming years, it's expected that a growing demand for the soluble silicates used in soil treatment and soil stabilization would have an influence on the industry's growth. Additionally, it

is projected that the sector would increase as a result of the growing need for sodium silicates in textiles for the production of colors and peroxide bleach.

The expansion of the paper industry is expected to be impacted by the growing need for sodium silicate as an adhesive or bonding agent. In the next eight years, it's expected that demand for sodium silicate will increase due to the rising need for coating, coating, and size applications.

One of the main byproducts of sodium silicate is precipitated silica, which has several applications in the production of silicone rubber composites. It brings down the overall cost of silicone elastomers. Additionally, it improves the tensile strength, fatigue resistance, and strength of elastomers, which is expected to gain a sizable market share in the elastomer sector.

The market stands out for having a very high level of integration. A crucial raw ingredient required in the production of the product is soda ash, which is supplied by companies that make sodium silicate. Additionally, a sizeable fraction of sodium silicate, particularly liquid sodium silicate, is utilized by the producers to create downstream goods such precipitated silica gels and zeolites to satisfy rising customer demand.

Due to the fast expansion of end-user industries including automotive, oil, and gas as well as paper, textiles, and oil & gas across the continent, Asia Pacific, notably China, is anticipated to stay a significant market participant. To boost their market position, large manufacturers from developed economies are anticipated to expand their sales networks throughout growing regions including the Middle East, Africa, and Asia Pacific.

3.4 My mission and vision

My mission will be to produce sodium silicate to meet the needs of the country, export it outside the country and generate electricity from its fumes. The majority of masonry goods can benefit from treating concrete with sodium silicate compounds. It aids in reducing porosity in stucco, concrete, and plaster. The result also aids in lessening water penetration. For many years, sodium silicate has also been utilized as an egg preservation. The environment will be protected.

Chapter Four: Marketing plan and Competitors

4.1 Media Marketing

A great instrument for reaching a big audience with a message is the mass media. In the example of a Bangladeshi firm making sodium silicate, the business may utilize the media to publicize their goods and pique interest in them. The business might create television commercials, newspaper ads, or social media postings that many people would view. They might also collaborate with bloggers and other internet influencers to spread their message.

4.2 Social Media Marketing

Targeting social media sites like Facebook, Instagram, and TikTok to promote brands, build target audiences, increase website traffic, and boost sales. uploading companies all activities. Despite the fact that B2B enterprises aim to sell their goods to other companies, B2B marketing is still based on interpersonal connections. Social media has always been used to foster the development of these connections, but last year, its significance increased.

B2B marketers wanted a way to communicate with prospects and partners without attending physical events. They discovered that social media channels were the best way to do this. It will help to build awareness. Companies may convey their narrative across a variety of channels, explain why they offer the services they do, and keep audiences informed with tales about their clients and employees. By publishing videos, news, statistics, and intriguing trends, they may generate significant dialogue and interaction inside their target industry. These techniques not only help you establish trust with potential clients, but they may also help you generate leads. By publishing videos, news, statistics, and intriguing trends, they may generate significant dialogue and interaction inside their target industry. These techniques not only help you establish trust with potential clients, but they may also help you generate leads. Social networking is a fantastic resource for discovering people's interests and issues. By addressing issues, companies have the chance to promote thought leadership by using social media. Create tutorials, seminars, and other helpful material so that customers will trust your brand as a reliable source of information.

4.3 Local Competitors

The number of producers of Sodium Silicate in our Country is less. White gold silica is being produced from rice husks for the first time in the nation's history by a company named Sustainable Energy and Agro Resources Limited. produces silica at the Thakurgaon Sadar Upazila village of Chilarang. There are Many local importers and they import Sodium Silicate. Due to low production in our country we have to import from abroad. Here some details how Sustainable Energy and

Agro Resources Limited Produce Sodium Silicate. Following paddy rice processing, waste is discovered. Husk is the name of that garbage. It is understood that burning the husk to ashes yields 70–80% of the silica. By creating sodium silicate, which requires challenging digestion, it may be commercially sold. A specified quantity of rice husk ash is first measured, then it is digested with baking soda while being continually mixed. The temperature range for the digesting process is between 100 and 150 degrees Celsius. 1-2 hours long. Without letting it go outside, the smoke that comes out of here is used to create power. The entire apparatus is powered by this electricity.

4.4 International Competitors

PQ Corporation, Occidental Petroleum Corporation, Tokuyama Corporation, Nippon Chemical Industrial, BASF, Kiran Global Chem Limited, Sinchem Silica Gel, Shijiazhuang Shuanglian Chemical Industry, IQE Group, and CIECH are a few of the market's top competitors. So, they are the international Competitors. The global sodium silicate market is divided into regions, states, and applications. The worldwide sodium silicate market has been divided into two categories based on state: solid sodium silicate and liquid sodium silicate. Due to its simple and inexpensive transportation and storage, solid sodium silicate is anticipated to have the lion's share of the market over the projection period. The detergents, precipitated silica, construction, pulp & paper, water treatment, metal casting, food preservation, and others segments make up the worldwide sodium silicate market. Due to the increasing demand for sodium silicate in the production of detergents, the detergent segment is anticipated to dominate over the projected period. The market has been divided geographically into the Asia-Pacific region, North America, South America, the Middle East & Africa, and Europe. Due to the rising demand for sodium silicate from the detergent producers, Asia-Pacific is anticipated to lead the market over the forecast period. Due to increased demand for detergents and rising demand for precipitated silica from the tire and rubber sector, the global sodium silicate market is anticipated to reach USD 11 billion by 2027, expanding at a CAGR of over 3% during the forecast period. The growing demand for wastepaper recycling is another element driving up sodium silicate consumption. However, it is anticipated that sodium-related side effects may restrict market expansion.

Chapter Five: Production Planning

5.1 Strategic plan

The market for sodium silicate was valued at over USD 8 billion in 2021, and it is anticipated to expand at a CAGR of 3% from 2022 to 2031. Sodium silicate is a colorless substance that can exist in either a solid, liquid, or white powder form and is completely soluble in water. The most popular uses for it are in detergents, soaps, toothpaste, ceramics, water treatment, silica gel production, and a number of other products. The rise in sodium silicate use in several end-user applications and the rising demand for detergents globally are both factors contributing to the market's expansion. The market is expanding as a result of sodium silicate's widespread availability and low cost.

However, prolonged exposure to chemical substances can pose a number of health concerns to people. The market's expansion is being constrained by the harmful effects of sodium silicate products on human health and fluctuating product costs.

COVID-19 impeded market expansion in a number of industries. Both favorable and unfavorable effects were felt by the world market for sodium silicate. The expansion of the industries that use sodium silicate is necessary for the market for that substance to increase. The pulp and paper sector are one such instance of a vertical. The makers of the pulp and paper sector had trouble obtaining the raw materials because of the global limitations and lockdown. The sodium silicate market suffered as a result of the industry's slowdown. On the other side, the epidemic led to a boom in the detergent sector because of the public's increased awareness of cleanliness and hygiene.

The market is divided into two types: liquid and solid. Of the two, the liquid segment is anticipated to have considerable development during the forecast period due to its usage in several applications and cheap cost, making it a popular choice among producers and customers. Key traits including solubility, non-toxicity, and an environmentally friendly nature are also accelerating the segment's growth.

My plan is to invest myself in this project properly with dedication. To make such project happen I have to work with patience. I will work for it make a position in the local market as soon as possible. It may take 5 years considering profits. At the first place I would like to target the garments, paper board and oil refineries industries to collaborate with our projects

5.2 Operation Plan

In my operation plan Goals, objectives, strategies, and tactics for a sodium silicate Produce firm in Bangladesh would all be covered in great depth in the operating plan. The strategy would also specify how the business intended to utilize its resources and accomplish its goals. The strategy would also list any potential threats and chances the business may encounter, along with any potential remedies. The operational strategy would also contain a schedule for execution and regular evaluations to make sure the business is on track to achieve its objectives. Recently, we just cleaned the entire area to prepare it for the factory, created a border, and controlled the road to allow for better and more efficient transit of machinery and factory construction materials.

On the other hand, we are putting the finishing touches on all of our formal documentation, including our BSTI license, legal placement document, and tin certificate. In order to build the firm, we are concentrating on everything surrounding it. Then we can deliver the equipment we bought and begin manufacturing. Our current objective is to begin production and introduce our first product line to the market. We have researched the market, and we want to use our pricing approach to gain market share.

5.3 Transportations

The location of the business, the kinds of items that need to be delivered, and the most effective and economical means of transportation should all be considered in a company's transportation strategy for Sodium Silicate products in Bangladesh. Any rules issued by the government that influence transportation should also be considered. We are bringing on a few trucks and containers for transportation and distribution network channels as we set up our plant in Noakhali.

5.4 Logistics

Transporting and distributing sodium silicate goods to apparel manufacturers, oil refineries, and other end customers are part of the logistics of a sodium silicate production firm in Bangladesh. The procurement of ingredients and raw materials, manufacture, packing, and shipment are all included in this process. Companies that manufacture SODIUM SILICATE PRODUCE in Bangladesh must also abide by laws governing hygiene and safety. To work effectively on the pre-production, production, and post-production stages, we would onboard human resources from the local labor. The logistics would affect our product line's complete supply chain.

Chapter Six: Recommendation and Conclusion

6.1 Recommendation

To entice more client Sodium Silicate business needs to communicate through a media.

- This business needs to create their website to keep the updates, contact data and marketing globally.

6.2 Conclusion

Two ingredients can be used to make sodium silicate: water and sodium compounds like soda ash or naturally occurring ammonia-based substance. The NPCS specialists have studied and estimated the size of the world market for sodium silicate. Additionally, based on both local and worldwide distribution, they did a fantastic job classifying and estimating the global market for sodium silicate. NPCS has also analyzed demand and factors that have an impact on the global market for sodium silicate in order to help startups and enterprises. The analysis identifies aggressive trends in the worldwide Sodium Silicate market, including new launches, market expansions, mergers & acquisitions, and more.

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