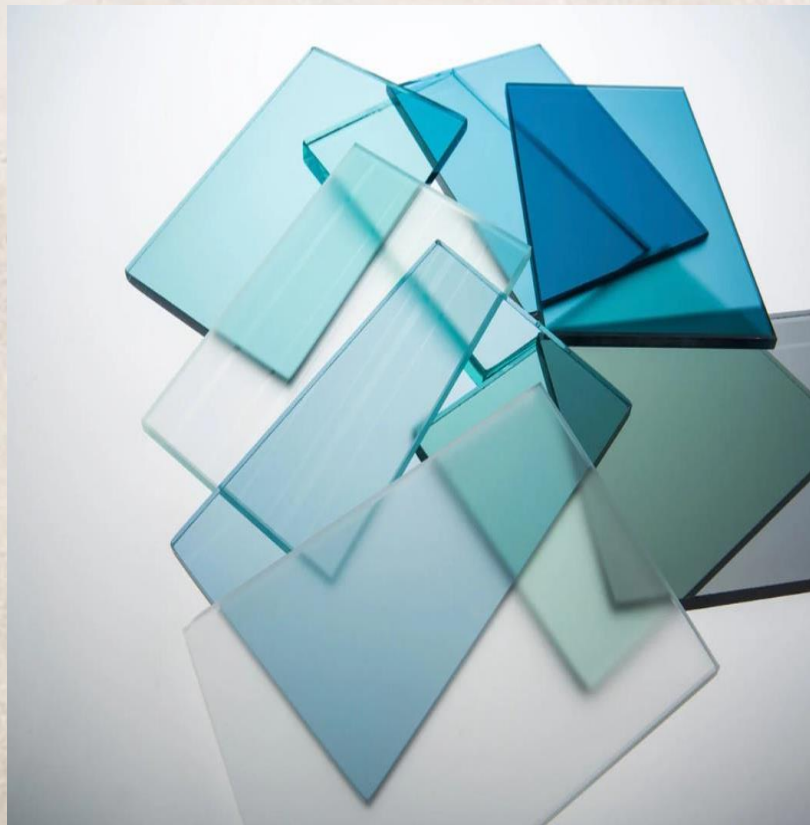




**Central Department of Feasibility Studies  
and Investment Costs Estimation**

**General Department of Economic Feasibility Studies**

## **Summary of a Preliminary Feasibility Study on Manufacturing Glass Panels**



**February 2024**

# **INVEST IN EGYPT**

**GAFI Translation Department**

# The Outcomes of a Preliminary Feasibility Study on Manufacturing Glass Panels

## The Chemical Industries Sector\*

### Project General Description

- Glass is an amorphous solid composed mainly of silicon oxide, but can also contain other substances such as soda and lime.
- A glass factory project is currently considered one of the most important investment opportunities, as the demand for all types of glass has increased recently due to its multiple types and frequent uses.
- Egypt has the components needed for the glass industry, as it has the largest stock of white sand, which is one of the most important requirements for glass production. In the past, Egypt used to export white sand as a raw material at a very cheap price, and then import it after being manufactured and shaped into glass products with billions of dollars.
- The Ministry of Trade and Industry is always working to restore leadership to Egyptian glass, as a report from the Export Council for Building Materials, Refractory & Metallurgy Industries (ECBM) revealed that the volume of exports of glass and its products has increased significantly in the recent period. Currently, there is a project of a partnership between the government and the private sector to establish a complex for the production of soda ash (sodium carbonate) and its derivatives. Sodium carbonate is the main raw material in glass production, representing about 30% of the total production cost, it is imported from India, China and Turkey, and its rise leads to an increase in the prices of glass products locally and globally. It is expected that the production of such complex exceeds the volume of local consumption so that the rest will be exported. The establishment of this factory contributes to transforming Egypt into a regional centre for glass manufacturing in the Middle East due to the availability of the main raw material needed to manufacture glass, other than the economic returns, as there is nothing like it in the Arab world, despite the presence of many glass factories in the Arab region. The aforementioned will serve the local industry, by providing foreign currencies and increasing exports.

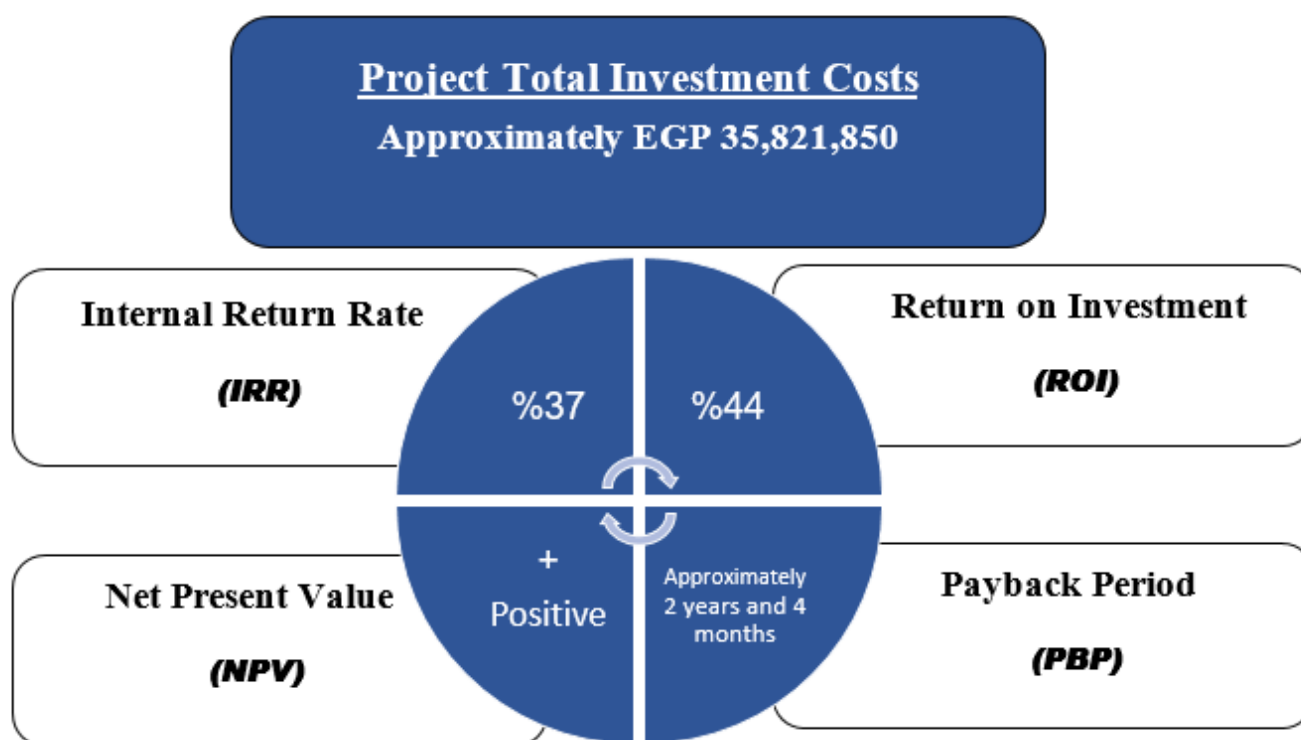
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\* The data mentioned in this study are preliminary, estimated, and indicative material retrieved from the competent authorities for the purposes of promoting the investment opportunities available at GAFL. Accordingly, they may not be used before banks, the judiciary, or any other government entity or any third party.

## The Investment Opportunity and Location of the Project:

- The project can be implemented in any industrial zone licensed for establishing glass-manufacturing projects. It should be noted that the project requires sufficient space for the establishment, including large storage areas.
- **Project Location:** In accordance with the data received from relevant authorities and available on the Investment Map, the project is proposed to be established in **Abusir Bana Village, Markaz Sammanoud, Gharbia Governorate – by way of usufruct.**
- The project can also be established in any other governorate that provides the necessary conditions for project's establishment.
- **Project Surface Area:** According to the data provided by the relevant authorities and available on the Investment Map, the project can be established on a surface area ranging from 1092 m<sup>2</sup> to 2500 m<sup>2</sup>.

## The Most Important Financial Indicators of the Project



## The Outcomes of the Legal Feasibility Study

- According to the size of the project and the investments required to establish it, it is preferable for the company to be established in one of the forms of Corporations, including Joint-Stock Companies, which assist managing the project away from the equities of the owners and also achieve flexibility and ease in dealing with relevant government and tax entities in an appropriate manner. It is preferable to establish the company according to the provisions of Investment Law No. 72 of 2017 to benefit from the investment incentives provided for such type of activities.

- The glass industry is a sensitive industry that requires many legal procedures and certificates. Opening a glass factory aims to produce various glass products, and to achieve this, a number of legal steps and procedures must be followed, including obtaining the necessary certificates and permits.
- The obtainment of the necessary certificates to operate the glass factory is essential. Among such common certificates is the certificate of compliance with standard standards through the Egyptian Organization for Standardization and Quality (EOS) in order to prove that the glass factory meets the required standards in terms of quality and safety. Obtaining this certificate may require conducting tests and submitting reports stating that the factory adheres to the benchmarks.
- In case of exporting, the project must obtain an export card specifying the nature and description of the products dealt with. The project can import by itself by obtaining an import card, or through an intermediary company that undertakes, on behalf of the project, the import and customs release procedures.

## **The Outcomes of the Environmental Feasibility Study:**

- The environmental feasibility study is defined as the study that explains the degree of protection and maintenance achieved for the environment, by taking into account its absorptive capacity or its maximum capacity to withstand human activities aimed at exploiting environmental resources without the occurrence of environmental degradation or depletion on the short and long term, whether directly or indirectly.
- The glass industry depends on the use of high temperatures, and requires huge amounts of energy, and such results in harmful emissions, therefore, a place must be chosen far from residential areas and cities in order to preserve the environment and the safety of citizens.
- Therefore, there are some necessary preparations that must be taken into account before starting the project, such as equipping the factory with all means of fire prevention, as fire is constantly used in the glass factory.
- The project is classified as category (C) where it is listed at number 7 in the environmental classification projects list issued in accordance with the provisions of item no. 7 of Article 14 bis of Law No. 105 of 2015 issued on October 19, 2015 regarding the amendments on the Environment Law No. 4 of 1994 and its executive regulations amended in accordance with the decree of the Minister of Environment no. 159 of 2015. Environmental impact assessment studies must be prepared, and inspections and measurements must be carried out in accordance with the environmental classification form (C) and the requirements of the Environment Law, taking into account the fulfillment of government fees prescribed for that classification. Moreover, the project must take into account the environmental requirements for this activity due to the nature of the industry.
- It should be noted that glass is recyclable, where the glass is crushed with sand, sodium hydroxide, and limestone to manufacture new products that have identical properties with regard to glass made directly from natural resources. In some cities of the world, glass recycling programs are implemented, where containers for glass

can be found in public places. In some cases the glass is reused instead of recycled, as it is reused only by washing it.

## **The Outcomes of the Social Feasibility Study:**

- The social feasibility study aims to analyze the social benefits and costs of the various projects in order to select the projects that achieve the maximum social benefit. It is noted in this regard that the social feasibility study is concerned with additional aspects that were not concerned with any of the other feasibility studies, because it focuses on the social effects of the project, due to the project's contribution to achieving the economic and social goals of the community.
- It is necessary for a glass panels manufacturing project to provide good ventilation to the place due to harmful emissions, so hoods must be installed to help ventilate the place. Gloves and masks must be provided to the workers on an ongoing basis, in addition to protective helmets for the head, eyes and face.
- The project helps in providing new job opportunities and reduce the level of unemployment in society and helps employ different types of workers directly through working in the project itself, and indirectly through the supply and distribution chains that the project deals with, as it provides about (25) direct job opportunities, in addition to the indirect job opportunities.
- You must review the occupational safety and health standards issued by the International Labor Organization in order to know all the details related to the social impacts of this type of industry.
- In light of the above, the project is socially feasible.

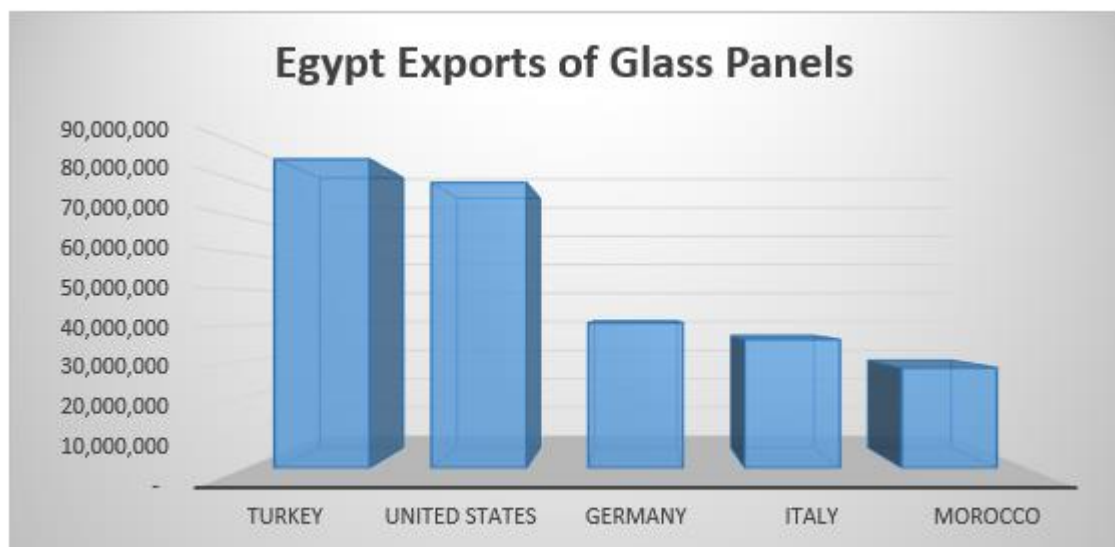
## **The Outcomes of the Market Feasibility Study, Growth Drivers and Competitiveness:**

- The project aims to produce different sizes of glass panels that can be used in glass doors, facades of large buildings, windows and others.
- The glass industry is witnessing a sustainable growth, as the demand for glass increases in all sectors, due to several factors, such as the increase in population and the growth of economies, which leads to an increased need for glass products in everyday life.
- Egypt's strategic location contributes to the ease of exporting to Asia, Africa, Europe and North America.
- One of the growth drivers and competitiveness of the project is Egypt's signing of a number of international trade agreements, including:
  - Greater Arab Free Trade Agreement (GAFTA).
  - Common Market for Eastern and Southern Africa (COMESA).
  - Agadir Free Trade Agreement

- Egypt- EU Association Agreement
- European Free Trade Association (EFTA)
- Qualified Industrial Zones (QIZ)
- The Southern Common Market (Mercosur)

### **Supply Volume:**

- According to World Bank data, Egypt exported glass valued at \$696 million in 2021, ranking it the 26<sup>th</sup> among the largest glass exporters in the world.
- The main destinations of Egypt's glass panels exports in 2021 are:
  - Turkey (\$86.5 million representing 12.4% of Egypt's total exports)
  - USA (\$80 million representing 11.5% of Egypt's total exports)
  - Germany (\$40.6 million representing 5.8% of Egypt's total exports)
  - Italy (\$35 million representing 5.1% of Egypt's total exports)
  - Morocco (\$28 million representing 4% of Egypt's total exports)

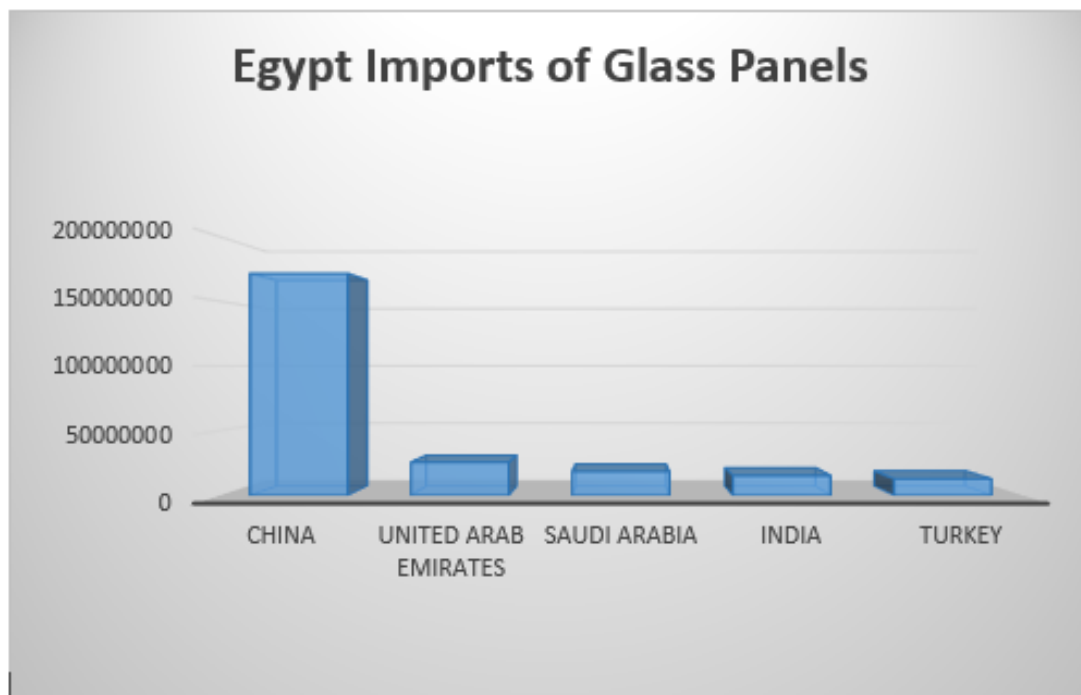


The graph is developed as per WB data of 2021

### **Demand Volume:**

- According to World Bank data, Egypt imported glass panels in 2021 worth \$303 million to occupy the rank no. 50 worldwide among glass panels importers.
- The countries from which Egypt imports glass panels can be mainly arranged as follows:
  - China (\$171 million representing 56.4% of Egypt's total imports)
  - UAE (\$25.7 million representing 8.4% of Egypt's total imports)
  - Saudi Arabia (\$18.5 million representing 6.1% of Egypt's total imports)
  - India (\$15.4 million representing 5% of Egypt's total imports)

- Turkey (\$12.9 million representing 4.2% of Egypt's total imports)



The graph is developed as per WB data of 2021

### Trade balance

- According to the above, it is clear that there is a surplus supply of glass panels, and the project will contribute to covering a part of the local market demand, in addition to the great opportunities available for the project to export to the Middle East market or the global market, provided that production meets the standard specifications and required quality.
- In 2021, the total exports of glass panels amounted to \$696 million, while the total imports reached \$303 million, resulting in a surplus in the trade balance valued \$392 million.



The graph is developed as per WB data of 2021