

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Researchers names

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➔ **Foundations for the sustainability of the LNG supply chain in Egypt and the logistics services supporting it.**


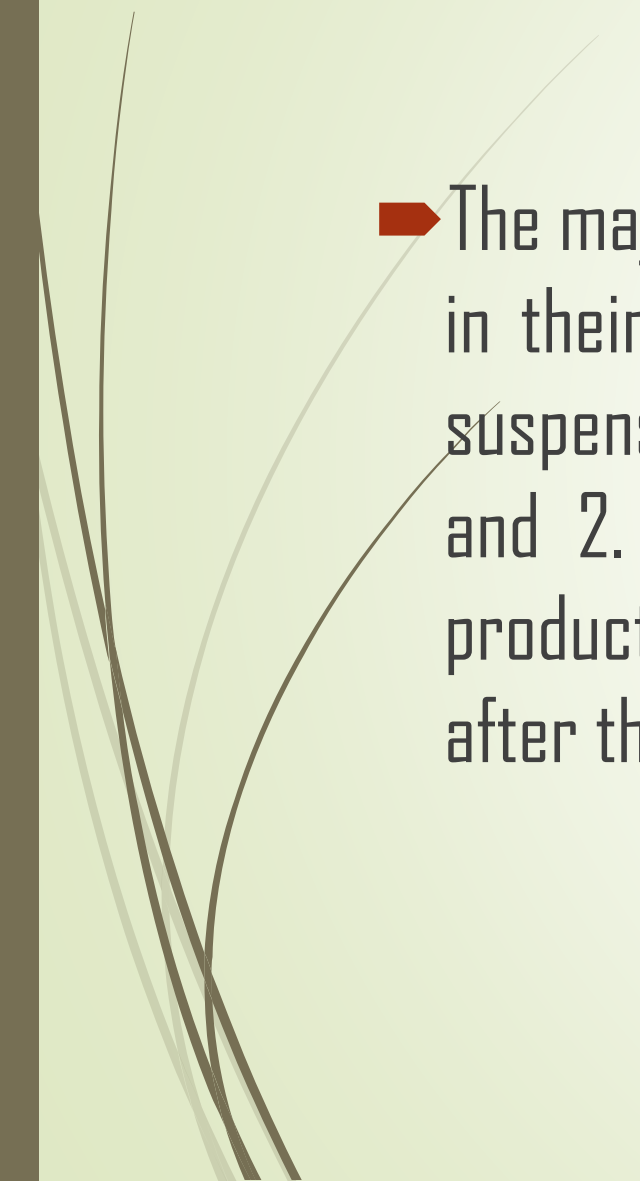
# Agenda

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1. Introduction
  2. GAP ANALYSIS
  3. Research aim and objectives
  4. Contribution
  5. Research Problem
  6. Conclusion
  7. Recommendations



# Introduction

- Natural gas has recently become the preferred fuel for many countries at the global level, whether rich or poor, due to its relatively low price and the lack of harmful emissions to the environment resulting from it compared to oil and coal, as the proportion of carbon dioxide in natural gas is 30% less than oil and 45% less than Coal

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- The major industrial countries in Europe and America face a major problem in their natural gas reserves due to the Russian-Ukrainian war and the suspension of Russian gas supplies to Europe in Nord Stream pipelines 1 and 2. Accordingly, Egypt seeks to become a regional center for the production, liquefaction and export of gas in the Middle East, especially after the discovery of the Zohr field

## the production, consumption and LNG exports in Egypt

Source: Data source: BP, 2021

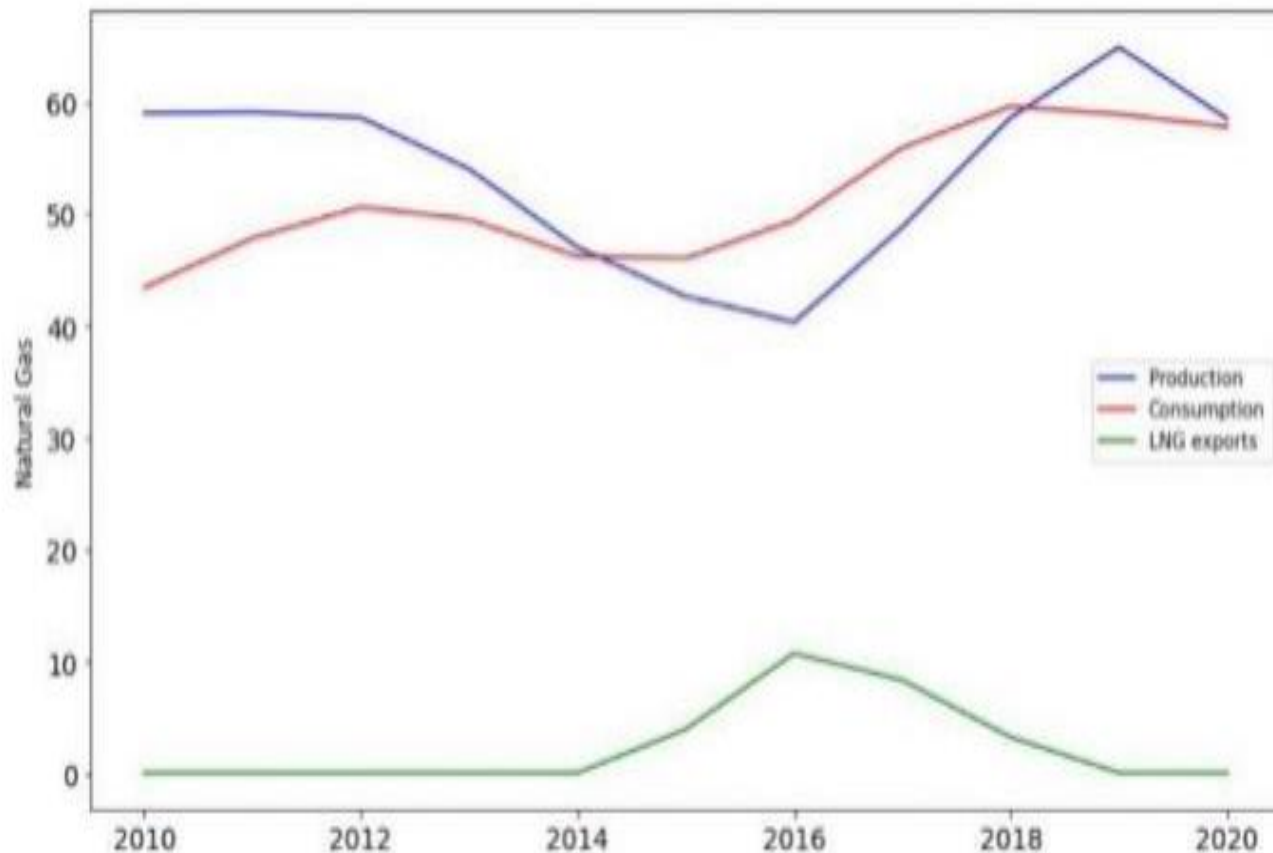


Figure 1 shows Egypt's production, consumption, and export rates of liquefied natural gas, as Egypt's exports of liquefied natural gas grew to 4.8 billion cubic meters in 2019 to many Asian and European markets from the liquefaction stations in the cities of Edku and Damietta, which are located on the Mediterranean coast the Edku plant exported about 50 shipments of liquefied natural gas to many Asian and European markets in 2019, compared to 20 shipments in 2018. Egypt plans to make major expansions in logistical activities within it, such as liquefaction, storage, technical and logistical support with the insurer, fuel, and all the necessary requirements for the rigs used in gas exploration operations within the framework of Egypt's plan to become a regional center and a focal point in the global natural gas supply chain.



## Gap Analysis

- The decrease in research papers that contributed to analyzing the current situation of the global natural gas markets from the perspective of logistics and logistics services along the supply chains of liquefied natural gas, by focusing on natural gas importers in the world as target markets that Egypt will target in the coming period, whether it is European or Asian markets.

## Research aim

- Studying the LNG supply chain in Egypt and the relevant logistical activities, including exploration, extraction, handling, storage, transportation and distribution from sources of production to places of consumption to achieve large economic returns especially after the discovery of many natural gas fields the most famous of which is the Zohr field.



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- Facing the dual global challenge of producing more energy while reducing waste and emissions to achieve the goals of sustainable development, in addition to the impact of the Russian-Ukrainian war on the supply of natural gas globally .
  - Implement effective strategies for optimal planning of LNG storage and sales operations, taking into account global supply and demand to increase revenues.
  - Discussing the foundations for developing the necessary infrastructure for the natural gas liquefaction stations in the cities of Edku and Damietta, and raising the efficiency of the supporting logistics services therein.

# Contribution

- The study's contribution appears in examining, analyzing and studying a chain of supply for liquefied natural gas in Egypt through interest in raising the efficiency of the performance of logistical, operational, technical and tactical activities along the chain.
- The study also seeks to raise the efficiency of liquefied natural gas storage activities in Edku and Damietta cities in specialized warehouses that apply environmental safety standards.
- The study also seeks to develop effective plans for natural gas distribution operations and measure the impact of the Russian -Ukrainian war on global gas supply sources.



# Research Problem

- The high cost of performing logistical activities along the LNG supply chain in the study area, and at the top of these activities are handling, transportation, liquefaction and storage due to the weakness of the existing infrastructure, whether liquefaction stations, storage tanks, or methods of transporting LNG from the source to consumers, whether by pipelines or natural gas ships liquefied or land trucks, which makes these logistical activities require huge financial investments that are not available, which weakens Egypt's competitiveness among the countries exporting liquefied natural gas regionally and internationally.

## Research Methodology And Analysis

- The research paper relied on a methodology based on a review that highlights the strengths on which Egypt is based in its aspirations to be a regional center for the production, liquefaction and export Egypt for its goal to be a regional gas center in North Africa in addition to reviewing the most important gas production markets in Asia and Africa and the most important gas consumption markets in Europe and America.

# Conclusion

- The study presented the most important logistics activities along the LNG supply chain.
- Demonstrate the foundations of sustainability that must be applied in all logistics activities along the chain and supporting logistics along the LNG supply chain.
- The study showed that the global LNG supply chain is subject to many factors in order to raise its efficiency and reduce the cost of performing logistical activities along the chain, the most important of which are the quality of gas and the cost of production, filtering, storing and transporting gas, flexibility and speed of response from supply sources, and reducing the time required for delivery from one place to another Production to the gas consumption market.

# Recommendations

1. Increasing production capacity by discovering more gas fields by increasing gas exploration operations in order to achieve tangible economic returns
2. Egypt 's entry into the field of building liquefied natural gas carriers to cope with the increase in the volume of gas production and the increase in global demand for gas.
3. The use of floating liquefied natural gas units that are installed on marine barges and that have the ability to withdraw and liquefy gas directly in the sea from the fields and store it directly in ships.
4. Increasing the number and capacity of liquefied natural gas receiving stations, paying attention to improving the efficiency of the infrastructure inside them.
5. Facilitating the construction of the planned project, which is a pipeline between Egypt, Greece and Cyprus, so that Egypt will be a regional center in North Africa to liquefy gas and export it to southern European countries.



6. Achieving the maximum benefit by increasing investment in gas exploration projects in the coming years in Lebanon, Jordan and Iraq and linking them to Egypt, as is the case in the new Levant project that connects Iraq, Jordan and Egypt with a pipeline to transport natural gas.

7. Egypt playing the role of the central point in the natural gas supply chain in Africa and the Middle East by receiving natural gas from other countries such as Qatar, Iraq, Jordan, Lebanon and Israel, then liquefying it and exporting it to gas consumption markets such as Europe and America.

8. Because of the discovery of shale gas in America, natural gas prices decreased globally, and therefore Egypt must search for alternative markets to export the gas produced from the Egyptian fields while providing more facilities, including long-term gas sales contracts and entering into partnerships to produce and export gas with neighboring countries such as Libya.

9. Paying attention to the infrastructure in the regions of Edku and Damietta with regard to the areas of gas extraction, storage and logistical supply in terms of insurance, fuel and all needs and services in the fields of production, liquefaction and storage of gas.



■ Thank you