

## Commercialisation Of Algerian Natural Gas In The European Market: Reality And Prospects

تسويق الغاز الطبيعي الجزائري في السوق الأوروبي: الواقع والآفاق

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### Abstract:

Algeria has been working to strengthen the position of its gas industry in the gas market nationally and internationally, with a particular focus on the European market. The study aims to analyse the development of Algerian gas exports and the effect they will have on the European gas market from 2000 to 2020, as well as to highlight the evolution of European demand forecasts for 2040. The research found that Algeria faces strategic options including abandoning long-term contracts, liberalizing the European market, adapting export policies, and fostering cooperation.

**Keywords:** Natural gas, European gas market, strategic options, Algerian natural gas exports.

**JEL Classification Codes:** Q35, Q42, Q43, L95.

### ملخص:

تعمل الجزائر على تعزيز مكانة صناعة الغاز في سوق الغاز وطنيا ودوليا، مع التركيز بشكل خاص على السوق الأوروبية. وتهدف الدراسة إلى تحليل تطور صادرات الغاز الجزائرية وتأثيرها على سوق الغاز الأوروبي من 2000 إلى 2020، فضلا عن تسليط الضوء على تطور توقعات الطلب الأوروبي لعام 2040. وخلصت الدراسة إلى أن الجزائر تواجه خيارات استراتيجية من بينها والتخلي عن العقود الطويلة الأجل، وتحرير السوق الأوروبية، وتكييف سياسات التصدير، وتعزيز التعاون.

**كلمات مفتاحية:** غاز طبيعي، سوق الغاز الأوروبي، خيارات إستراتيجية، صادرات الجزائر من الغاز

الطبيعي.

**تصنيفات JEL:** Q35، Q42، Q43، L95.

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## **1. INTRODUCTION**

Natural gas is the least polluting fossil energy compared to other similar energies. It has become a competitive source of oil on the global energy market due to recent developments in gas production technology, such as CCGTs (Combined Cycle Gas Turbines). This is owing to several causes, the most significant of which is gas's reputation as an environmentally friendly fuel(Mekhelfi A, 2014). Global proven natural gas reserves rose by about 1.5 quadrillion cubic feet between 2000 and 2020, contributing to rising global gas demand(BP, 2021).

World reserves peaked at just over seven quadrillion cubic feet in 2019, with 38% in the Middle East. The rise in oil prices from 17.97\$/barrel in 1999 to 140 \$/barrel in 2008 to 80 \$/barrel in 2021 adds a factor to certain countries' decision to switch from oil to gas use(S, Dale, 2019).

The three EU "Gas Directives" (1998, 2003, and 2009) liberalised Europe's domestic natural gas market over time. These directions may cause significant structural changes that require actors to rethink their strategies(Senouci B, 2012)..

Algeria is a principal external natural gas supplier to the European Union. As a significant player in this market. Algeria must make many commercial and strategic decisions, the outcomes of which will influence the location and future structure of Algerian gas sales in the European market.

Indeed, approximately 90% of Algeria's natural gas exports go to the European market(Mekhelfi A, 2014). This trend is only expected to continue as demand rises and domestic supply falls in the region. In light of these shifts in the European gas market, a key question arises, the solution to which we aim to provide here:

***What are the prospects for the Evolution of Algerian natural gas exports to the European market?***

Our research intends to examine the Evolution of Algerian gas exports and their impact on the European gas market. This is achieved by, **initially**, a broad overview of the global natural gas market. **Then**, we study the deregulation of the European natural gas market and the reorganisation of

the European gas industry. **Lastly**, we explore the strategic possibilities for the value of Algerian gas in light of the market shifts currently occurring in the European gas market.

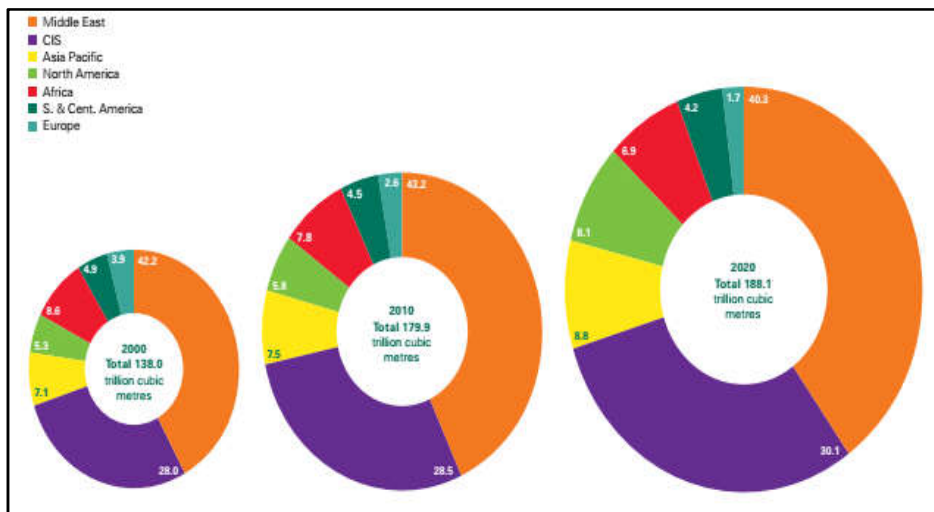
## **2. OVERVIEW OF THE WORLD NATURAL GAS MARKET**

### **2.1 World gas reserves and production**

#### **2.1.1 location of proven natural gas reserves in the world**

At the end of 2020, the proven reserves of Natural Gas in the world amounted to 6.64 quadrillion cubic feet, and they have been increasing continuously since 2000, the date on which they were estimated at 5.15 quadrillion cubic feet. Nevertheless, gas reserves remain highly concentrated in a few countries since three countries own more than half: Russia, Qatar, and Iran, respectively, holding 24.3%, 17.3%, and 12.5%. In terms of regional distribution, the two regions, the Middle East and Russia have more than two-thirds (2/3) of the world's reserves. Next come Africa and Asia/Oceania, which hold more or less significant quantities, representing shares of 7.6% and 8.2% of world reserves, respectively. Finally, both Americas have relatively small amounts, about 4.1% for Central/South America and 6.3% for North America. Finally, Europe with a percentage of 30.5%(BP, 2021).

**Figure 1.** Distribution of proven natural gas reserves in the world at the end of 2020 (%)



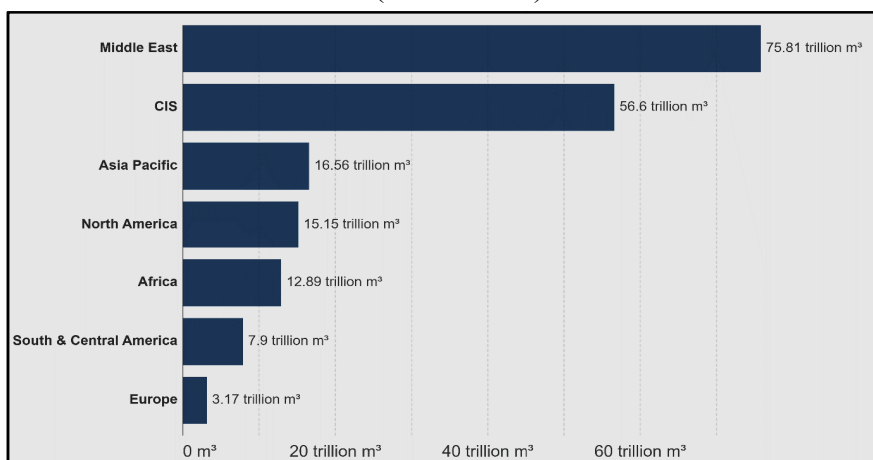
Source:BP, Statistical Review of World Energy, June 2021.

#### **2.1.2 Evolution of Gas reserves in the world**

The world's gas reserves have been growing rapidly in recent years, at

around 8.2% between the end of 2010 and the end of 2020. This would be enough to supply the world's demand for gas for between 50 and 60 years, but the exploitation of unconventional gas, particularly shale gas, is likely to change these numbers. This increase is mainly due to the revaluation of existing fields and the discovery of new fields. In the Middle East, the increase was the strongest, i.e., a percentage of 17.5%, due in part to the revaluation of reserves in Qatar. It allows this region to occupy first place, with a share of 24.7% in world reserves at the end of 2020. Reserves in the Asia/Oceania zone increased by 7% over the same period, main thanks to discoveries. Most of the large fields discovered recently have been updated in this zone. Finally, Africa recorded, lasting from 2000 to 2020, an increase in its gas reserves of 3% under the impetus of discoveries made in Nigeria, Egypt, and Angola(BP, 2021).

**Figure 2.** Evolution of Proved natural gas reserves worldwide in 2020 by region (Trillion M3)



**Source:**BP, Statistical Review of World Energy, June 2021.

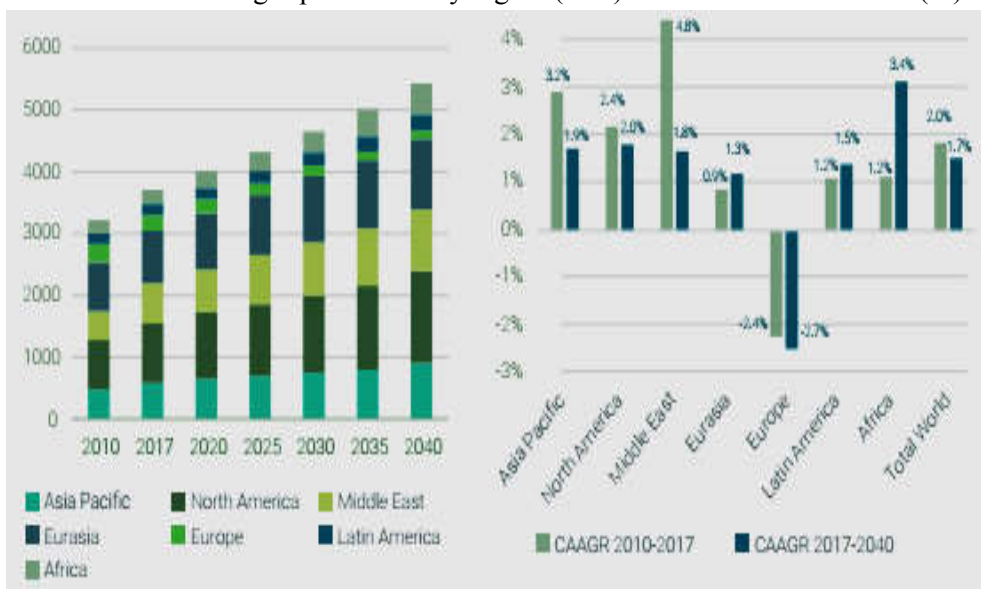
### **2.1.3 evolution of natural gas production**

More than 3700 bcm((bcm): Billion cubic meters of natural gas) of natural gas were produced worldwide in 2017, an increase of almost 100 bcm over 2016. A loss of almost 35 billion cubic meters (bcm) was concealed by this overall gain in nations like the Netherlands, the United Kingdom, Peru, Indonesia, Thailand, Vietnam, and Mexico. Significant production gains in China, Iran, Norway, and Australia more than compensated for this loss(BP, 2021).

Except for Europe, historical data indicates that all areas have increased their gas output in recent years (from 2010 to 2017), with the Middle East showing the highest yearly growth rate at 4.8 % and the Asia Pacific region coming in second at 3.2 %. Iran, Qatar, and Saudi Arabia have contributed to an increase in Middle Eastern gas production of 80 bcm, 53 bcm, and 19 bcm, respectively. China and Australia led the increase in the Asia Pacific area, contributing more than 55 bcm apiece to total production (BP, 2021).

Global marketed gas output is expected to increase by around 1717 bcm throughout the forecast period, reaching over 5420 bcm in 2040, which is about 50 bcm more than our prior prediction, according to the most recent GECF GGM data (The GECF Global Gas Model (GGM) is a unique long-term energy-forecasting model developed in house at the GECF Secretariat). The overall growth relative to the present value is around 46.3 % or an average yearly growth rate of 1.7 % (GECF, 2022).

**Figure 3.** Global natural gas production by region (bcm) and associated CAAGR (%)



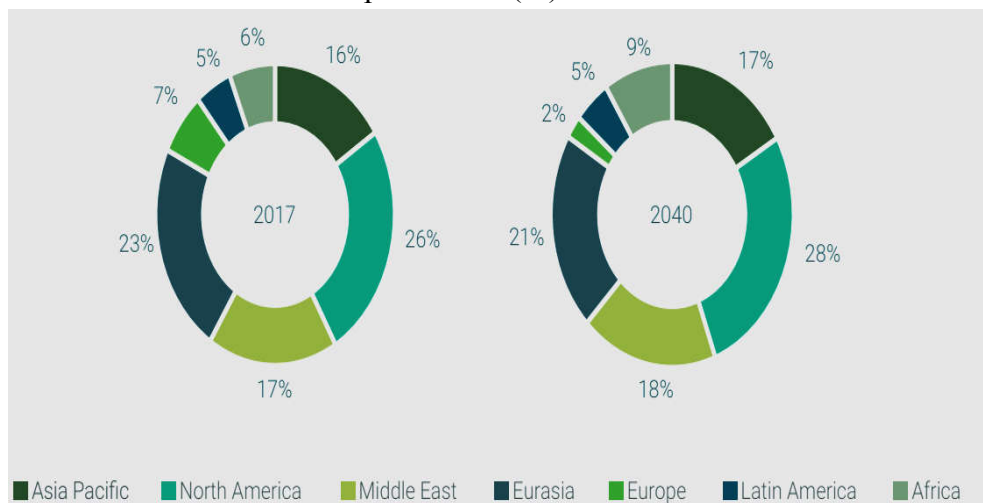
**Source:**GECF Secretariat based on data from the GECF GGM, 2018.

Only the European Union exhibits negative natural gas output growth in historical and projected data. The three major natural gas producers in Europe—Norway, the Netherlands, and the United Kingdom—are predicted to drop their combined annual gas production by about 100 bcm by 2040, which will reduce Europe's contribution to global gas production from 07%

in 2017 to 02% in 2040 (GECF, 2022). (See Figure 4).

Figure 4 also shows that by 2040, the production of all gases will increase in North America, the Middle East, Asia Pacific, and Africa.

**Figure 4.** Current and future outlook of the regional share in global gas production (%)



**Source:**GECF Secretariat based on data from the GECF GGM

The top three global producers of natural gas at the moment are the US, Russia, and Iran. By 2040, this ranking is anticipated to hold steady, in line with our earlier prediction. Together, these massive gas producers will raise output by more than 820 bcm, or over 48% of the anticipated total worldwide incremental volume by 2040. They will also keep up their exploratory efforts(GECF, 2022).

China is expected to increase its natural gas production by 213 bcm by 2040, ranking third in absolute volume over the projection period.

The production of natural gas will reduce by more than 55 bcm in Norway, Uzbekistan, and the Netherlands during the projection period, respectively(GECF, 2022).

## **2.2 Organization of the international trade in natural gas**

That global production amounted to 3.8 trillion cubic meters in 2020, the share of Arab countries in gas production in the same year amounted to 584 billion cubic meters, and the total production of OPEC(OPEC: Organization of the Petroleum Exporting Countries) amounted to 324.5 billion cubic meters. Global production formed from International trade in

natural gas represented only about 30%. Depending on the distance and the natural obstacles (mainly maritime) which separate the production from that consumption, natural gas is transported through a gas pipeline or LNG(LNG: Liquefied natural gas) carrier(OPEC, 2020).

### **2.2.1 Gas exchanges through the Gas pipeline**

The gas pipeline remains today the most important means of gas exchange, with a volume of 452.2 billion cubic meters; for the year 2020, it was exchanged through a gas pipeline, i.e., a share of 48.1% of the gas exchanged in the world. One meter in diameter, a gas pipeline carries approximately 20 billion m<sup>3</sup> of gas per year, the equivalent of the energy produced by twenty units of 1,300 MW power stations(OPEC, 2020).

### **2.2.2 Gas exchanges through LNG carriers**

Part of the production of natural gas processed on leaving the deposit goes through the liquefaction plant. This process brings the gas from its gaseous state to a liquid state (which reduces its volume by an average of 600 times) by liquefaction at 162 °C and storing it in a metal tank. The LNG liquefied natural gas is loaded into an LNG carrier at the end of the maritime journey. An LNG terminal receives the gas from the ship, stores it until needed, and then re-gasifies and injects it into the buyer country's land-based transportation network. We can divide gas exchanges through LNG carriers into two basins: Pacific Basin and Atlantic Basin. Indeed, the Pacific basin includes the countries bordering the Pacific and South Asia, and the Atlantic basin includes Europe, North and West Africa, and North America. Statistics indicate that global production amounted to 3.8 trillion cubic meters in 2020, that the share of Arab countries in gas production in the same year amounted to 584 bcm, and that the total production of OPEC amounted to 324.5bcm. The share of non-Arab OPEC members was 337 bcm(OPEC, 2020).

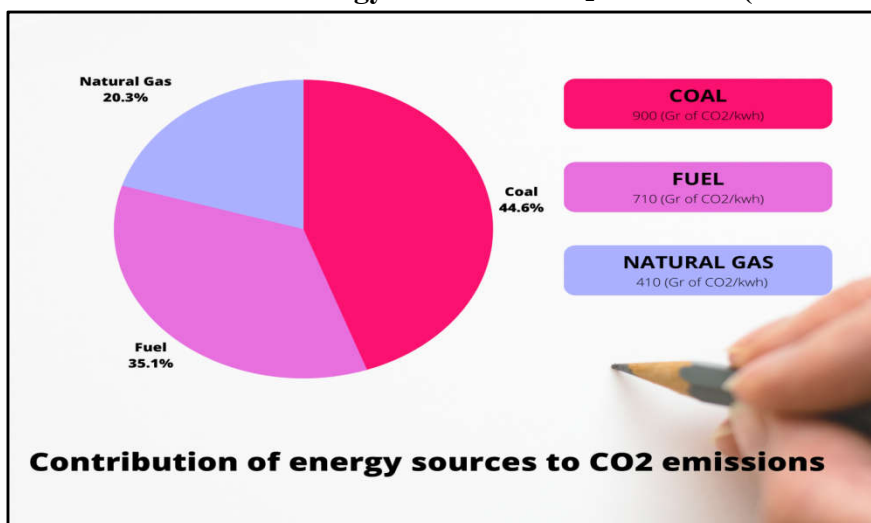
## **2.3 The reasons for the current development of the world demand for Natural Gas**

### **2.3.1 Natural gas is a clean energy source**

Natural Gas is generally considered "clean" energy because its combustion emits few polluting fumes. Such as Sulfur Oxides (SO<sub>x</sub>) or nitrogen (N) and little carbon dioxide (CO<sub>2</sub>) compared to that of other fossil

fuels: 40 to 50 % less than coal and 25 to 30 % less than oil. Nevertheless, the graph below shows the contribution of fossil energy resources to CO<sub>2</sub> emissions, knowing that CO<sub>2</sub> accounts for over 80% of greenhouse gas emissions, and its share has been increasing since 1990(Hansen J-P, Jean T, Alain J, & and Jacques P, 2019).

**Figure 5. Contribution of energy sources to CO<sub>2</sub> emissions (Gr of CO<sub>2</sub>/Kwh)**



**Source:**Contribution of energy sources to CO<sub>2</sub> emissions(Hansen J-P, Jean T, Alain J, & and Jacques P, 2019, p. 253)

Compared to power plants using other fossil fuels, natural gas-fired power plants cost less and release less pollution into the atmosphere. As an indication, electricity produced from natural gas costs, according to the International Energy Agency report 2020, 1000 \$/kW. Coal is 3,800 \$/kW, and nuclear is 6,000 \$/kW (Hansen J-P, Jean T, Alain J, & and Jacques P, 2019).

### **2.3.2 Diversity of use of Natural Gas**

Natural gas is a flexible energy source and raw material. Environmental considerations should encourage natural gas consumption. This section illustrates how natural gas (NG) helps economic growth. Domestic, commercial, agricultural, and electricity generation are the categories.

Home applications consume most natural gas. The latter can cook, dry, heat, and cool. Residential appliances are also modified to use natural gas



safely and efficiently. Restaurants, hotels, medical equipment, and workplaces use natural gas most commercially.

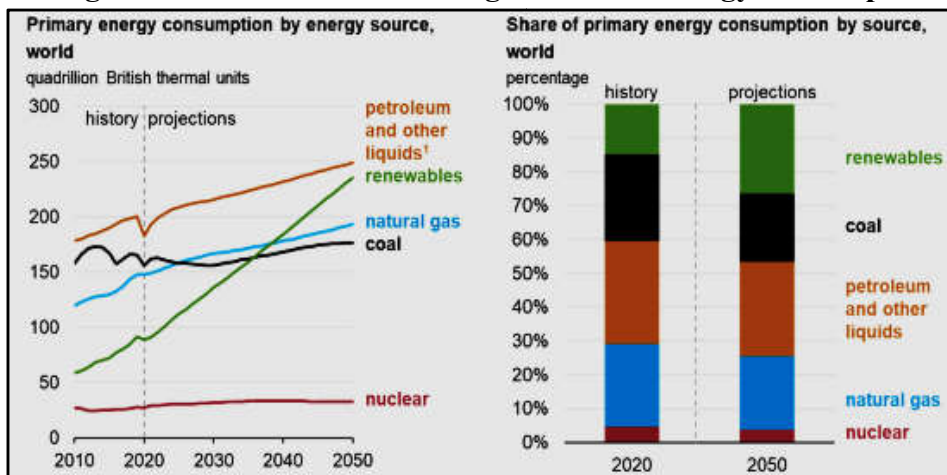
Air conditioning, cooking, and heating use commercial natural gas. Natural gas benefits from electrical sector technology, particularly combined-cycle natural gas-fired power plants(Chevalier & Jacques , 2008):

- Energy efficiency greater than 50%;
- Releases half the pollution of a coal-fired power plant;
- Modular design, therefore, the flexibility of installation and maintenance.

### 2.3.3 growth in energy consumption in highly industrialized regions

Natural gas represents the third energy source after oil and coal, with a share of 23%. According to the International Energy Agency report, natural gas is the fastest-growing fossil fuel in the New Policies Scenario, overtaking coal by 2030 to become the second-largest energy source after oil(Senouci B, 2012).

**Figure 6. The future of natural gas in world energy consumption**



**Source:**International Energy Agency (IEA), 2021.

World consumption of natural gas is divided into four major areas: North America, Russia, Western Europe, and finally, Asia-Pacific, which accounted for 82% of total consumption in 2013. According to the IEA (International Energy Agency), this consumption is mainly driven by the industrial sector, i.e., a percentage of 50%, followed by the residential sector and services with a share of 45%. In North America and Europe, the

Industrial, residential, and power generation sectors lead to natural gas consumption. As for the Asia Pacific region, gas is used mainly for electricity generation, i.e., a percentage of 50% in certain countries such as Japan and South Korea. Industry comes in second place, and in third place, we find the residential and commercial sectors(BP, 2021).

#### **2.3.4 Advantages and Constraints of Natural Gas**

➤ Ecological and economic advantages

On the international energy scene, gas is frequently considered energy with a promising future. It has considerable advantages both ecologically and economically. It is also becoming a significant element of many environmental policies(Djebbari K, & Nabila M, 2015):

- *Energy efficiency while respecting the environment:* Gas is the cleanest fossil fuel. In a world increasingly mindful of environmental issues, particularly climate change, its low carbon content and "polluting" emissions give it crucial advantages;
- *Abundant and widely accessible resources:* The world's proven natural gas reserves are growing. Gas now outnumbers oil in known reserves;
- *Gas markets that are more open and closer to customer expectations:* Natural gas is becoming more enticing to commercial and industrial customers as more flexible contractual choices are developed for natural gas consumers, including supplier choice, direct access to infrastructure, and pricing transparency and competition.

➤ Constraints of Natural Gas

We mention the most important the following points(Djebbari K, & Nabila M, 2015):

- *Heavy investments:* The investments to be made for the exploitation and processing of gas are very high, the cost of transport also being five times higher than that of oil.
- *The artificial price of natural Gas:* The price of natural gas is indexed to the price of oil. It is, therefore, even more "artificial" than the latter.
- *The delicate storage of Natural Gas:* Natural gas storage is delicate; natural gas can only be liquefied at very high pressure and shallow temperature. This principle is only used in specific factories.

### **3. The Liberalisation Of The European Natural Gas Market And The Restructuring Of The European Gas Industry**

#### **3.1 The process of liberalisation of the European natural gas market**

##### **3.1.1 The objectives of the liberalisation of the European market**

By merging established producers and new suppliers and developing short-term transactions, European gas market liberalisation attempts to create internal and external competition based on a unified gas market. Under competitive pressure, eliminating "rents" at all gas chain levels is the goal. It protects Europe's gas supply by increasing technical and market ties.(Kedidir M, 2016).

##### **3.1.2. The stages of the liberalisation of the European gas market**

The stages were as follows(Kedidir M, 2016):

- *The Gas Directive of June 22, 1998 (Directive 98/30/EC)*: In 1998, the European Union Gas Directive was passed to create a single European gas market with transparency and non-discrimination. Incumbent operators must separate their marketing and transport, and distribution accounts. National Regulatory Authorities were established by the commission (NRAs). These regulators first monitor network access and connections. They must not be a barrier to the entrance and represent numerous considerations, including production factor costs and projected network investments.
- *The Barcelona summit (March 2002)*: At the Barcelona summit in March 2002, a new directive on internal electricity and natural gas market rules were presented. By accelerating energy market competition, the European Council supported this effort.
- *The second Gas Directive of June 26, 2003 (Directive 2003/55/EC)*: The European gas market liberalisation process has been inconsistent despite its goal of removing distortions. Some countries have implemented retail competition, while others have tried to meet the directive's minimum standards. June 26, 2003, saw the second directive. This directive expands the first gas directive, where it Accelerated gas and electricity market opening dates: July 1, 2004, for all non-residential customers, and July 1, 2007, for 100%.

### **3.1.3 The content of the third legislative package**

This third legislative package applies Directive 2009/73/EC adopted on July 13, 2009, concerning standard rules for the internal market in natural gas and repealing Directive 2003/55/EC. It is essentially summarised in the following points(C, Chitour, 2022):

The commission separates networks. One option is deciding ownership between production/supply and transport/distribution network management.

In addition, the Brussels Commission created an Agency for the Cooperation of Energy Regulators to fill the regulatory hole on cross-border concerns and provide an institutional platform for NRAs to cooperate and make decisions on topics outside the national framework (ACER).

The group recommends solidarity amongst Member States in the case of a supply disruption. The January 2006 Russo-Ukrainian crisis cut fuel supply to numerous European countries and showed the EU's lack of energy policy unity, which is particularly significant.

### **3.1.4 Constraints preventing the opening of the European gas market**

After adopting the first two directives, market concentration is the first barrier to European natural gas market competition. In most European countries, incumbent operators still control too much output and imports, according to the European Commission.

However, incumbent operators continue to hinder new entrants and competition, notwithstanding management, accounting, and legal separation (vertical restrictions)(Kedidir M, 2016).

## **3.2 Restructuring of the European gas industry**

### **3.2.1 Organisation of natural gas supply and demand in the European market**

Gas production in the EU fell from 70 bcm in 2019 to 54.4 bcm in 2020. The Netherlands produced 24 bcm of gas (down from 33.7 bcm the year before), with Germany coming in third with 09 bcm in Romania and ten bcm in 2019. (4.9 bcm vs. 5.7 bcm a year before)(GECF, 2022).

The United Kingdom produced ten bcm of gas in the fourth quarter of 2020, which was 7% (0.8 bcm) less than the fourth quarter of 2019, while it

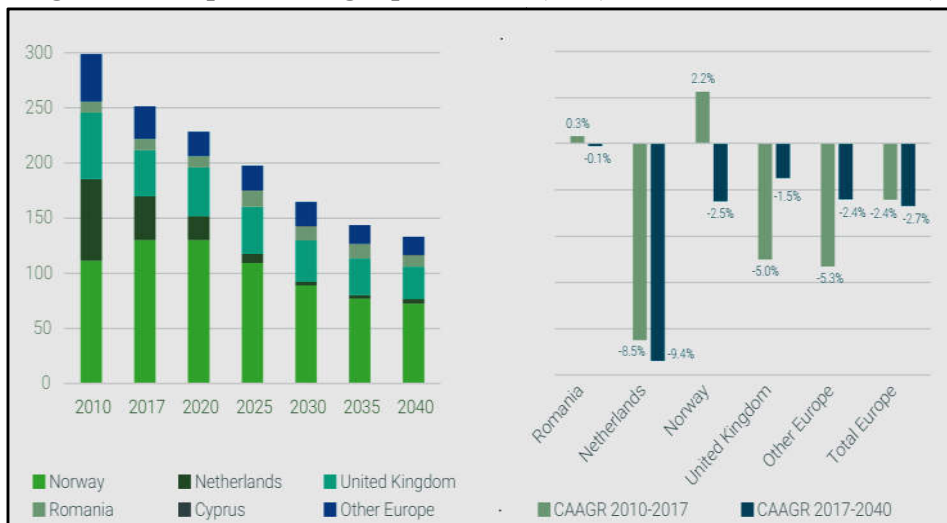
produced 39.5 bcm of gas in 2020, which was marginally less than a year earlier (39.9 bcm). Norway's gas output dropped from 30.2 billion cubic meters by 4%(GECF, 2022).

Only Europe predicts low natural gas production. Most of the region's gas producers expected output to drop throughout the forecast period. Norway, which produces more than half of Europe's gas, will have the largest reduction, dropping over 50 bcm over the projection period. Norway will continue to produce the most gas in Europe, contributing a slightly bigger share. The Netherlands' gas production will drop by 35 bcm by 2040, contributing to Europe's total decline(GECF, 2022).

Europe will produce 130 bcm of gas by 2040, less than half of 2010's production. Most European gas producers have seen a decline in gas output over the past seven years. However, Norway shines out with positive annual growth rates above 2.2% during the period.(GECF, 2022).

In contrast to the current proportion of just under 7%, it is predicted that Europe's contribution to global natural gas output will fall to 2%.

**Figure 7. Europe natural gas production (bcm) and associated CAAGR (%)**



Source:GECF Secretariat based on data from the GECF GGM, 2018.

### 3.2.2 Modes of supply in the European market

Long-term contracts (20–25 years) are still Europe's most common gas exchange technique. Buyers want supplies; sellers want profits. Long-term contracts are used for marketing 70% of gas in the UK but 90–100%

in other Member States.

Additionally, spot prices on the British market and prices directly influenced by petroleum products on the continent are affecting the European market. Since the Interconnector, a gas pipeline connecting Belgium and England, arbitrates, these markets are not independent. However, because of a lack of exchanges and operators, European short-term and spot markets are difficult to emerge. The regulator can also foster competition through the Gas Release Programme, which requires the incumbent gas operator to retrocede a portion of its imported gas (mainly via long-term contracts) to competitors' capacity to service end-market customers.

A firm can swiftly broaden its offer to gain knowledge in a new sector through horizontal integration. An electrician who wants to enter the natural gas business is an example (E-ON, who bought Ruhrgas ). Its number of production process stages defines a firm's vertical boundaries.(Kedidir M, 2016).

#### **4. strategic and commercial options for the valuation of algerian gas**

Over the past thirty years, Algeria's successor governments have shown extremely prudent management of gas reserves. This caution is explained by the role of this energy source in the country's energy policy.

##### **4.1 Evolution of the gas legal framework in Algeria**

We distinguish this title from four critical phases in the history of the legal framework of the oil industry and the hydrocarbons sector(Boukrif N, 2008)

- *The phase before nationalisation (1956-1970)*:Before 1971 when Algeria gained independence the hydrocarbon industry was strongly influenced by colonial control. The contracts during this period were concessions that primarily benefited France without considering interests.
- *The nationalisation phase (1971-1985)*:Following nationalization the gas industry in Algeria became monopolized by the state-owned company SONATRACH. The previous concessions were replaced with service and production sharing contracts.

- *The opening phase of the oil upstream (1986-2004)*: In response to declining oil prices in 1986 Algeria adopted a approach by encouraging partnerships to revitalize the sector particularly in gas exploration and production.
- *The phase of opening up to the market economy (2005-2013)*: During this period Algeria introduced laws allowing for concessions in the hydrocarbon sector, which generated some controversy. However, SONATRACH remained a stakeholder with a stake of 51% in these partnerships. The 2013 hydrocarbon law aimed to improve partnerships and emphasized research efforts including exploring "Shale gas".
- *The phase of execution Energy Transition Program in Algeria (2011-2030)*(Ghandir H & Siagh A-R, 2020): In 2011 Algeria initiated the "National Program for Renewable Energy and Energy Efficiency" as part of its plan to reduce reliance, on gas. This program includes increasing energy capacity while simultaneously reducing CO<sub>2</sub> emissions.

These stages illustrate how Algerias strategy, towards its oil and gas sector has changed over time as its efforts to shift towards more sustainable energy practices.

#### **4.2 Algeria faced the liberalisation of the gas market**

Algeria heavily depends on the EU, which receives 90% of its exports, particularly gas, contributing significantly to the country's foreign currency earnings. However, recent changes in EU policies, such as the "gas directive" since 1990, have introduced competition in the natural gas market, affecting supplier nations like Algeria. These changes question long-term contracts (take or pay) and destination clauses in commercial agreements with gas-exporting countries like Algeria, Norway, and Russia. These developments pose challenges to Algeria's economic stability, heavily reliant on hydrocarbon exports.(Boukrif N, 2008).

Long-term contracts (take or pay) between a producer and a pool of customers are needed to finance the gas chain's massive investments (liquefaction plants and LNG carriers for LNG, transcontinental gas pipelines for land transport). The European Commission requires long-term natural gas delivery contracts. It initially downplayed their importance

because they were not needed to open the market.

Algeria created benefit-sharing. It involves sharing Algerian gas sales revenues with an EU country linked to Algeria by a trade deal with a third country (destination clause). EU nations set prices. However, it took time for Algeria to convince European countries to renegotiate long-term contracts and share earnings from reselling Algerian gas to third countries.

Sonatrach is pragmatic, depending on market prospects, to compete in a key area. Among others,(Boukrif N, 2008).

- To increase exports of natural gas and power, the government established the Algerian Energy Company with Sonatrach and Sonelgaz;
- An LNG marketing joint venture with Gas de France;
- The acquisition of a stake in the Spanish LNG reception terminal, Ferrol;
- Algeria bought a 30% share in Spanish marketing company Cepsa Gas Comercializadora to sell gas to qualifying clients;
- At four Spanish cogeneration plants with a total capacity of 200 megawatts, Cepsa had a 30% partnership in generating power from Algerian gas.

#### **4.3 Liberalisation of the European gas market and adaptation of the Algerian export policy**

This liberalization is primarily governed by the Gas Directives of 1998 and 2003, focusing on three key measures(El Kadi I, 2008):

1. Elimination of national import monopolies.
2. Introduction of competition in commercial trading and natural gas supply to end-users.
3. Decentralization of the gas supply chain to reduce market power held by natural monopolies.

Traditional suppliers, notably Sonatrach, have adapted by adopting new commercial strategies to optimize gas exports, eliminating vertical inefficiencies (such as double margins and higher prices). Sonatrach is pursuing a partnership approach to enhance cooperation, expand its project portfolio, and ensure additional sales, secure outlets, and downstream margin capture in new markets(El Kadi I, 2008).



#### **4.4 The role of Algeria in the European gas supply**

Algeria, Russia, and Norway supply Europe's gas. Sonatrach has exported through two main works: the gas pipelines Enrico Mattei (Transmed) to Italy and Pedro Furan Farell (Transmed) to Spain, as well as the liquefaction facilities in eastern and western Algeria. This line was discontinued at the end of 2021.

Sonatrach's access to expanding gas markets and reliability as a provider has earned its trust and cooperation from Europe's most powerful groups.

Thus, Algeria supplies Europe's gas through Sonatrach, honouring its 1964 pledges.

Sonatrach has invested in many gas chain segments around the following axes through large structuring projects, recognised by the EU as "of important regional interest." (Djebari K, & Nabila M, 2015):

- Gas supply subsidiaries transferred by gas pipes from Algeria to Italy and Spain to European end-users to capture part of the gas income downstream;
- Participation in the Medgaz gas pipeline (a 24-inch gas pipeline that crosses the Mediterranean Sea and links Algeria to Europe via Spain), Galsi (a new route to Europe via Italy), and gas volume reservation for direct supply to end-users;
- Sonatrach's partnership with two major Spanish electricity companies (Endesa and Unie Fenosa) for the Reganosa project provides for constructing an LNG regasification terminal in Mugardos (Ferrol) in Galicia, in the north-west of Spain.
- The Sonatrach Petroleum Company (SPC-BVI), a 100% Sonatrach subsidiary based in London, specialises in trading and managing LPG carrier vessels.
- The partnership between Sonatrach and British Petroleum (BP) for the creation of In Salah Gas aims to jointly market the gas produced in association with the Ain Salha fields in southern Europe.
- The partnership between Sonatrach and Gas de France (GDF) for the creation of a new company called "MED LNG and GAS," which is responsible for the joint marketing of LNG in the European and North

American markets.

- The purchase of new LNG carriers to grow its LNG exports and diversify its market outlets.

These projects will help diversify Europe's energy supply, integrate Algerian gas networks into the Maghreb and European networks, safeguard the environment, and provide competitive energy.

With the signing of the Association Agreement with Europe, Algeria modernises its energy industry and invests heavily to become Europe's energy bridgehead. These efforts have increased Algerian natural gas in the EU's gas balance sheet. (Kedidir M, 2016).

## **5. Conclusion**

Natural Gas is now considered an essential energy source; because of its dominance in the global energy market, it has become a competitive source with oil, in addition to the principal role in a harmonious policy in the economy and the environment.

The liberalisation of natural gas markets worldwide, particularly in Europe, aims to end vertically integrated national monopolies and introduce competition in those segments where this is possible.

Admittedly, Implementing the first two Gas Directives significantly advanced European market liberalisation. Still, they caused many structural changes (in terms of the Organisation of supply and demand in the markets).

Algeria as a major player in this market, is faced with many strategic and commercial options to develop better its gas resources, which can be summarised in the following points:

- The abandonment of long-term contracts: the political will on the Algerian side to abandon long-term contracts to improve the future valuation of Algerian Gas.
- Liberalisation of the European gas market and adaptation of the Algerian export policy: Algeria via Sonatrach shows its desire to strengthen its presence as a stakeholder in the European gas market rather than as a simple traditional gas supplier to take advantage of the opportunities offered in this market.

- Cooperation between gas exporting countries: Long-term contracts and regionalization of natural gas trading make it impossible to create an intergovernmental organisation like OPEC in the medium future. However, market liberalisation, upstream and downstream vertical integration, multi-energy diversification of enterprises, and LNG-accelerated trade will support the establishment of a gas cartel like OPEC in the medium/long future.

Natural gas's environmental friendliness, especially in regards to its low greenhouse gas emissions, and its wide range of economic applications make it an attractive resource. As a result, we are forced to consider Algeria's approach in light of its substantial energy resource to strengthen its strategic positioning in the Mediterranean basin and why not make it an asset to take advantage of other regional economic milestones.

### **5. Bibliography List:**

1. Boukrif, N. (2008). Le Gaz algérien dans l'équation de l'approvisionnement du marché Européen. *Recherches Économiques et Managériale*, 4, 01-25.
2. BP. (2014). BP Energy Outlook 2035 Shows Global Energy Demand Growth Slowing, despite Increases Driven by Emerging Economies. Retrieved from BP website: <https://www.bp.com/en/global/corporate/news-and-insights/press-releases/energy-outlook-2035.html>.
3. Chitour, C. E. (2021, May 18). Algérie Presse Service. Retrieved June 26, 2022, from <https://www.aps.dz/economie/121902-chitour-l-algerie-dispose-d-un-delai-de-huit-ans-pour-operer-sa-transition-energetique>.
4. Chevalier, J.-M., & Percebois, J. (2008). *Gaz et électricité : un défi pour l'Europe et pour la France*. Paris: CONSEIL D'ANALYSE ECONOMIQUE.
5. DHEBARI, KAMEL, & ELMOOFFOL, NABILA. (2015). Perspectives de la commercialisation du gaz naturel Algérien sur le marché Européen. *La Revue Des Sciences Commerciales*, 14(1), 28–45.
6. El Kadi, I. (2009). Le gaz algérien en passe de changer de religion (pp. 01-16). Retrieved from Gouvernance européenne et géopolitique de l'énergie website: <https://www.ifri.org/sites/default/files/atoms/files/elkadi.pdf>.42 .
7. GECF. (2022). Global Gas Outlook 2050 Synopsis (pp. 01-91). Retrieved from The Gas Exporting Countries Forum website: [https://www.gecf.org/\\_resources/files/pages/gecf-global-gas-outlook-2050/gecf-gas-outlook-2022.pdf](https://www.gecf.org/_resources/files/pages/gecf-global-gas-outlook-2050/gecf-gas-outlook-2022.pdf).

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8. Ghandir, H., & Siagh, A. R. (2020). Algerian Energy Policy after 2020: Comparative SWOT analysis for promoting renewable energy and Shale Gas: Priorities, Opportunities and Challenges. 131–121, 10(2), *مجلة روى اقتصادية*. Retrieved from <https://www.asjp.cerist.dz/en/article/131536>.
9. Hansen, J.-P., Percebois, J., & Janssens, A. (2019). *Énergie: Économie et Politiques*. France: De Boeck Supérieur.
10. Kedidir, M. (2016). *Le gaz naturel algérien dans la sécurité énergétique de l'Union Européenne: un enjeu géopolitique* (Thèse de doctorat, UNIV-LYON2). Retrieved from <https://shs.hal.science/tel-03586445/>.
11. MEKHELFI, Amina . (2014). Evolution des exportations gazières de l'Algérie et son impact au sein de l'OPEC (1970 à 2012). –13, 13(1), *مجلة أداء المؤسسات الجزائرية*, 26. 3.
12. OPEC. (2021). Annual Report 2020 (pp. 01-116). Retrieved from Organization of the Petroleum Exporting Countries website: [https://www.opec.org/opec\\_web/static\\_files\\_project/media/downloads/publications/AR%202020.pdf](https://www.opec.org/opec_web/static_files_project/media/downloads/publications/AR%202020.pdf).
13. BP. (2019). BP Statistical Review of World Energy 2019 (No. 68; pp. 01-64). Retrieved from BP Distribution Services website: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2019-full-report.pdf>.
14. Benabbou , S. (2012). Expansion du marché mondial du gaz naturel liquéfié et stratégies des acteurs. Étude comparative des stratégies algérienne, qatarie et russe. *Innovations*, 1(32), 27–54.