The Natural Gas Market and Its Relation to the Syrian Crisis

Alaa Alkhatib

MENA Monitor

20/06/2018

1 Introduction

The Middle East and North Africa region, stretching from Iran in the east to the Atlantic Ocean in the west, is the richest in the world in terms of energy resources, particularly oil and natural gas. This wealth has made the region a battleground for global and regional powers since the mid-20th century. However, does oil and natural gas still hold the same importance? Have the nature of conflicts and the tools used in them remained the same? And what is the relationship between the events in Syria since 2010 and the global oil and natural gas market?

Since 2011, hundreds of articles and studies have analyzed the causes and consequences of the Syrian revolution and the unprecedented international intervention in a relatively small country like Syria. Among the widely discussed views, both in pro- and anti-regime circles, is the theory that the real reason behind the international conflict over Syria is the competition over oil and natural gas in the global market. This interpretation is often based on two main hypotheses:

- The first hypothesis suggests that massive oil and gas reserves have been discovered under the Mediterranean waters near Syria, with claims that these reserves would make Syria a significant competitor in the global market.
- The second hypothesis argues that Russia feared the construction of a major natural gas pipeline from Qatar through Syria to Europe, which would threaten its position as the largest gas supplier to Europe. Conversely, some have claimed that Qatar was concerned about the possibility of an Iranian gas pipeline extending to the Mediterranean via Iraq and Syria, reaching European markets.

This study aims to examine these claims from an engineering and economic perspective, relying on credible scientific sources. To comprehensively address the issue, it is essential to review the state of the global, European, and particularly the natural gas market before reaching a conclusive assessment. This study avoids overly technical details or complex scientific language to ensure accessibility for non-specialists.

2 Methodology for Studying Energy Systems

It goes without saying that energy is the essential lifeline of modern societies. Its importance increases with every technological advancement that enhances human well-being. Moreover, energy has taken center stage in international politics due to growing public and political concern over climate change and the need for comprehensive global action to prevent environmental disasters over the next century and beyond. It is well known that fossil fuel consumption is the primary source of greenhouse gas pollution.

The methodology for analyzing and studying energy systems can be divided into seven key perspectives:

2.1 The Natural Perspective

This involves examining the availability of natural energy resources such as oil, natural gas, uranium, wind, and solar energy. Climate conditions also play a crucial role, as temperature variations impact energy consumption patterns and the efficiency of energy technologies.

2.2 The Technological Perspective

This focuses on the technologies used in energy extraction, conversion, transportation, distribution, and consumption. These include:

- Extraction technologies such as oil drilling machinery, hydroelectric dams, and wind farms.
- Conversion technologies such as oil refineries and power plants.
- Transportation and distribution technologies such as electricity grids, natural gas pipelines, and petroleum storage facilities.
- Energy consumption technologies such as heating and cooling systems, automobiles, and trains.

2.3 The Economic Perspective

This perspective treats energy sources such as coal, oil products, and electricity, as well as energy technologies, as market commodities governed by supply and demand, competition, purchasing power, and national and international economic policies.

The types of fuel and energy supply and consumption technologies serve as key indicators of a country's economic and living standards. For example:

- The percentage of citizens connected to the electricity grid, the per capita energy consumption, and the reliability of electricity supply are indicators of development and progress.
- On the other hand, increased reliance on biofuels such as wood and agricultural waste indicates economic hardship and lower living standards.

Economic structure, market conditions, and pricing are among the most critical factors in analyzing the present and future of energy systems. The 2015 oil price crisis demonstrated how deeply fluctuations in energy prices can impact global markets.

2.4 The Social Perspective

This examines cultural, class, and ethical structures within societies, as well as individual and collective behaviors, public opinion, and social acceptance of energy-related developments.

For instance, electrical grid engineers recognize that during Ramadan, electricity consumption patterns in Islamic countries differ significantly from the rest of the year. Household electricity use spikes before and after the evening meal, while industrial and commercial electricity demand generally declines.

Even in economically and technologically similar regions like Western Europe and the United States, public sentiment can influence energy markets. The American lifestyle, with its urban sprawl and infrastructure, necessitates a heavy reliance on private vehicles, whereas Western Europeans increasingly prefer public transportation.

Public opinion can also challenge economic decisions in the energy sector. Following the 2011 Fukushima nuclear disaster in Japan, anti-nuclear sentiment surged in Germany, forcing the government and market to reduce reliance on nuclear energy despite its economic feasibility.

2.5 The Political Perspective

Political decision-making is deeply interconnected with economic, social, natural, and international factors, shaping and being shaped by various aspects of state governance and global relations.

When analyzing the future of an energy system, political stability becomes a crucial factor. For example, energy forecasting methodologies in politically stable Western Europe differ significantly from those applied to Eastern Europe, which remains susceptible to political crises. These methodologies, in turn, are entirely different from those used to predict energy futures in conflict-ridden countries like Syria and Iraq.

International relations play a decisive role in global energy trade. Although there is a general international consensus against using energy as a political weapon, political motives were clearly behind Russia’s decision to cut gas supplies to Europe during the Ukraine crisis. Similarly, despite Iran's vast oil and gas reserves, its share in the global market remains limited due to ongoing political tensions with the West. Some analysts attribute the 2015 oil price drop to political maneuvering by Saudi Arabia and the United States.

2.6 Energy Security Perspective

Energy security entails reducing a country’s dependence on foreign energy sources to safeguard its political independence and protect its domestic market from international economic and political instability.

Additionally, international political relations, global market agreements, and environmental protection treaties directly impact both national and international energy systems. This is one of the most complex aspects of energy analysis, as it involves numerous uncertainties and unpredictable geopolitical shifts.

2.7 The Environmental Perspective

Environmental considerations have become increasingly critical in energy system analysis, gaining significant importance over the past two decades.

The conversion of fossil fuels—oil, gas, and coal—into usable energy is the largest contributor to environmental pollution and poses a serious threat to life on Earth. The environmental factor, alongside economic and technological considerations, has become a key determinant in shaping future energy strategies.

Fuel Type	Average Carbon Emissions (kg C/GJ)
Natural Gas	15.3
Oil	20
Coal	26.6

Table 1 Average Carbon Emissions[1].

These perspectives are highly interrelated, and analyzing their mutual influences adds further complexity to this field of study.

3 The Issue of the Qatari-European or Iranian-European Natural Gas Pipeline

This theory is based on the assumption that Europe will import natural gas through pipelines from Qatar via Syria or even from Iran via Syria. Many have written about this topic, including Western journalists, based on unverified statements by regional politicians.

Regardless, discussing this theory requires first understanding the reality of the global energy system and natural gas trade, then examining the European energy system and the role of natural gas within it, as well as its sources in the European market. Finally, we must evaluate the feasibility of these claims by consolidating confirmed data from the first two points.

3.1 Changes in the Global Energy Market Over the Past Decades

The energy system generally consists of three components:

1. Supply Side: This depends on the availability and distribution of natural energy resources (oil, natural gas, coal, hydropower, wind energy, etc.). It includes technologies for extracting primary energy sources, their initial conversion, and their transportation to consumption or export points.

2. Transformation Side: This involves converting primary energy sources into secondary energy and delivering them to end consumers, such as refining crude oil into gasoline, kerosene, and petroleum products, or converting coal, natural gas, and hydropower into electricity. The energy is then transported via pipelines, tankers, or electrical grids to consumers.
3. Demand Side: This covers the final consumption of energy, where end-users transform it into useful applications, such as using diesel for transportation, electricity for lighting and appliances, or fuel for industrial and agricultural operations.

The energy system (Figure 1) is thus a complex and interconnected chain that extends from natural energy sources to the end consumer. It interacts at local, national, and international levels, influencing and being influenced by economic, social, technological, environmental, and political factors.

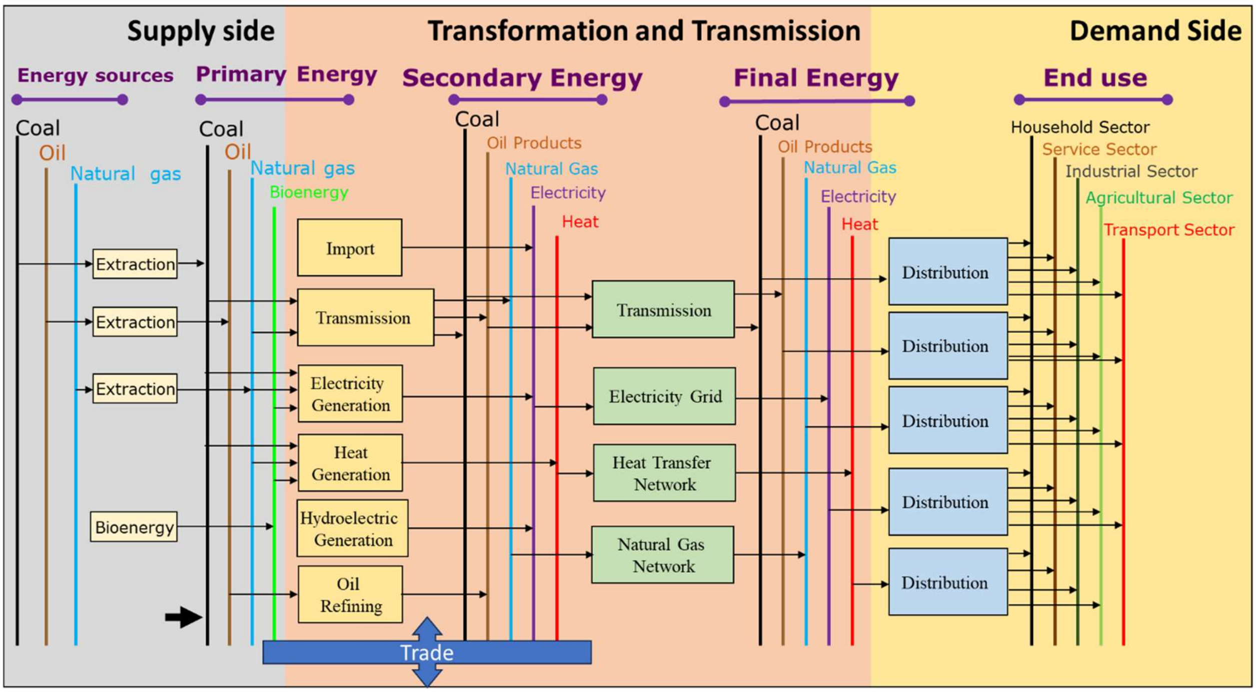

Figure 1 Energy system structure

In recent decades, the global energy system has witnessed a decline in the share of oil and its derivatives in primary energy consumption. In the early 1970s, oil accounted for around 44% of total primary energy use, but this has since dropped to approximately 32%. Meanwhile, the share of natural gas has increased from

16% to 22%, and coal has seen a slight rise from 26% to 28%. Additionally, nuclear energy's share has grown from 1% to 5%.

This decline in oil's share and the rise of natural gas can be attributed to changes in electricity generation. In the early 1970s, oil accounted for 22% of electricity generation, while natural gas contributed 13%. However, in recent years, electricity generated from oil has dropped to approximately 5%, whereas the share of natural gas has risen to 22% (Figure 2)[2]. These changes are primarily due to the superior efficiency of gas-powered electricity generation, the relatively lower cost of natural gas, and the global trend toward reducing reliance on oil. Environmental protection policies have also played a role, as natural gas is cleaner than oil and coal. However, given that coal-fired electricity still constitutes about 40% of global production, the overall impact of these policies remains limited.

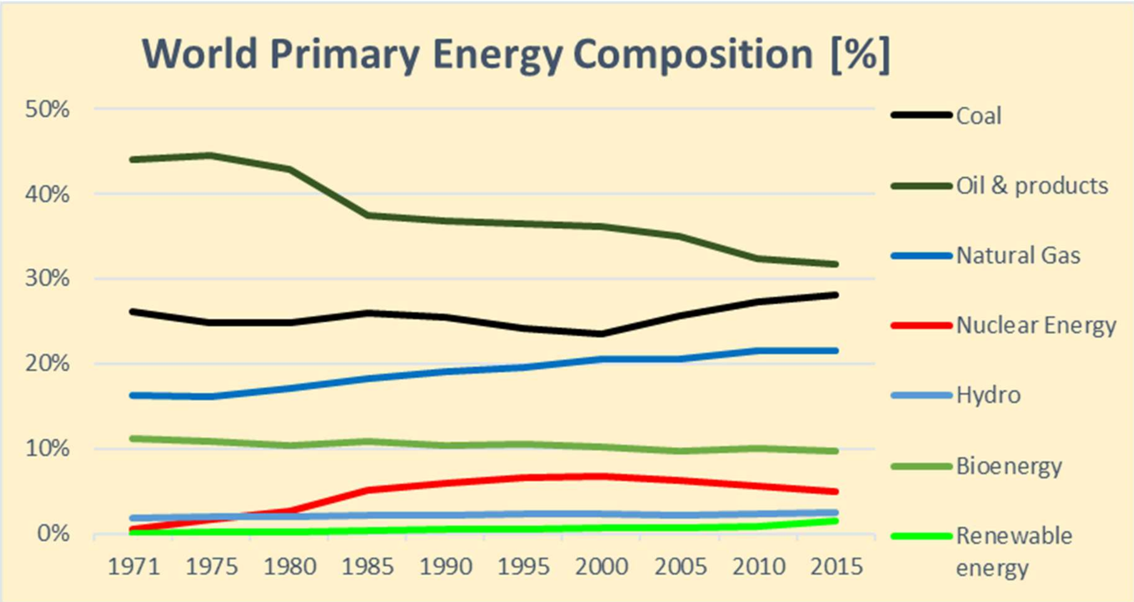

Figure 2 World Primary Energy Composition[2].

3.2 The State of the Energy System in the European Union

The availability of local energy resources is one of the most pressing concerns for Europe's future. The European continent has largely exhausted its domestic fossil fuel reserves (except for coal, which remains available) and has nearly maximized its investment in hydropower. The nuclear energy option faces strong public opposition, especially after the Fukushima nuclear disaster in Japan on March 8, 2011. Furthermore, biofuel resources are practically limited and are simultaneously subject to widespread public criticism due to concerns over their balance with food supply and environmental safety.

Meanwhile, renewable energy sources such as wind and solar currently account for only about 3% of the total energy supply in the European Union. Despite strong governmental and public support, their expansion has been hindered by their relatively high costs and technical limitations.

Compared to global averages, the EU energy system has seen a more significant decline in coal consumption as a share of total primary energy[3]. It dropped from 28% in 1990 to 17% in 2015. Meanwhile, the share of natural gas in total primary energy consumption rose from 18% to 23% over the same period, and the share of renewables increased from 0.4% to 3%, as illustrated in *Figure 3*.

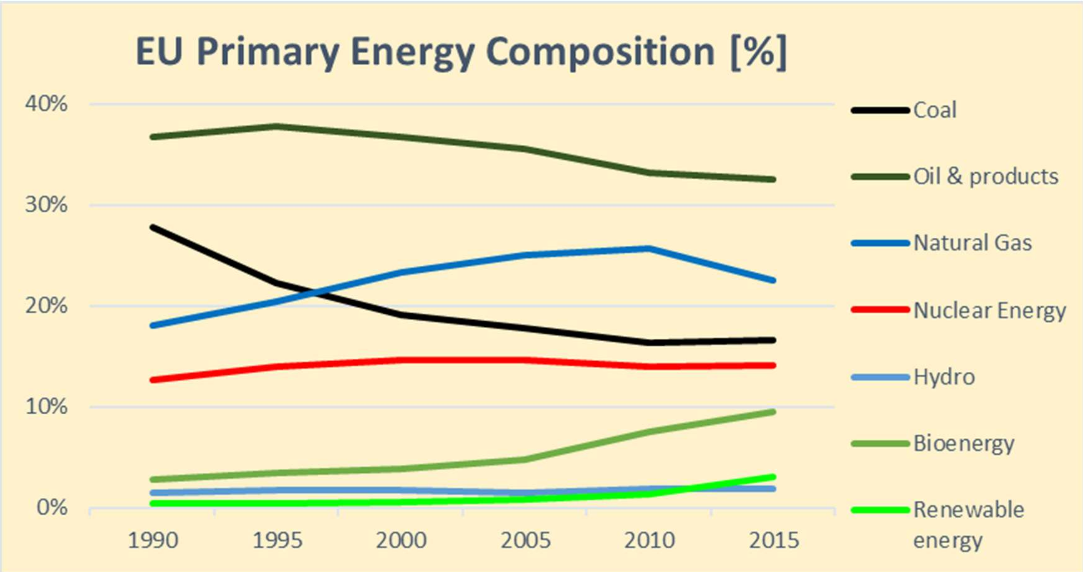

Figure 3 EU Primary Energy Composition[3]

These shifts in the primary energy balance were driven by the power generation and heating sectors in the EU. The share of coal in these sectors declined from 41% in 1990 to 25% in 2015. During the same period, the share of oil and its derivatives decreased from 7% to 2%, while the share of natural gas rose from 7% to 24%. Additionally, the share of renewables in power and heat generation increased from 1% to 10%. These changes were influenced by global energy trends, stringent EU environmental policies, and a push for more effective energy security through supplier diversification and alternative energy sources.

Western EU nations, in particular, have invested heavily in improving energy efficiency through technological advancements in energy-consuming equipment, energy conservation policies, and demand-side management strategies. Environmental concerns, widely supported by the public, have played a crucial role in shaping these policies. Figure 4 illustrates the changes in primary energy intensity (energy consumed per unit of GDP) and per capita primary energy consumption relative to changes in per capita GDP from 1990 to 2015. Over this period, primary energy intensity improved by approximately 30%, while per capita GDP increased by about 36%. However, per capita primary energy consumption remained relatively stable. Figure 4 also highlights the impact of the 2009 financial crisis on economic and demographic indicators affecting energy consumption.

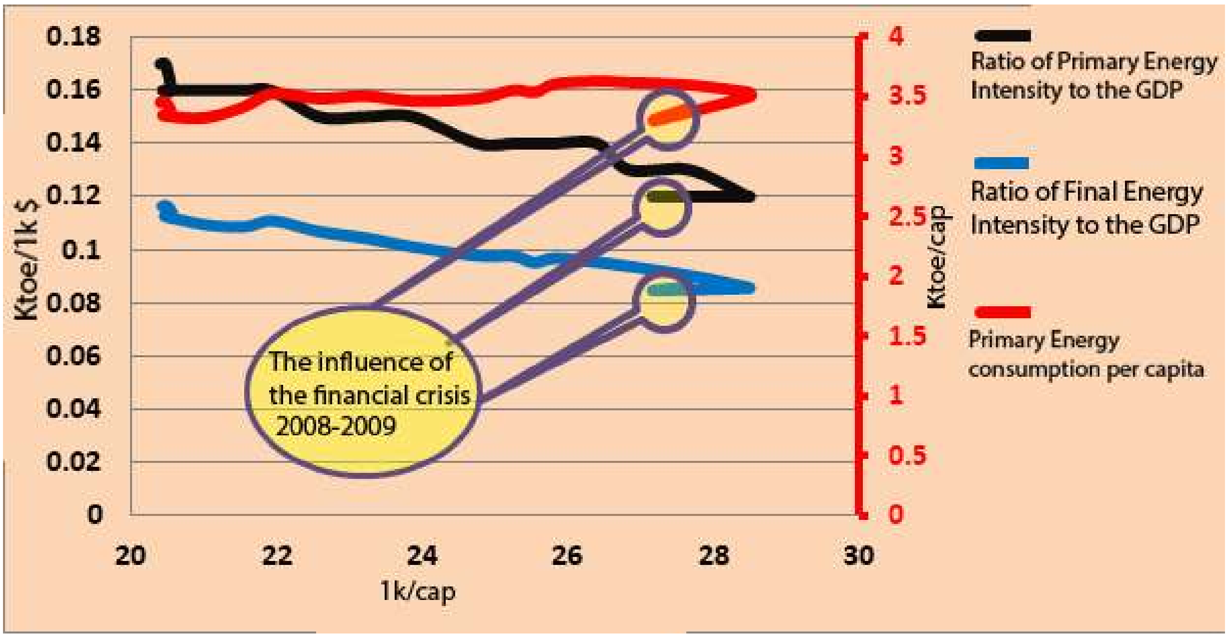

Figure 4 Energy and economic growth indicators in the European Union during the period 1990-2010. The red curve follows the right axis.

3.3 The Role of Natural Gas in the EU Energy System

Natural gas plays a fundamental role in the European energy system. Over the past few decades, its importance has grown significantly due to its economic and environmental advantages. Unlike coal and oil, natural gas burns more cleanly, producing lower carbon dioxide (CO_2) emissions and less air pollution. It is also more flexible in its applications, making it a preferred choice for power generation, industrial use, and residential heating.

One of the most significant advantages of natural gas is its efficiency in electricity generation. Modern combined-cycle gas turbine (CCGT) plants can achieve efficiency rates of up to 60%, compared to 35-40% for traditional coal-fired power plants. This efficiency, combined with lower emissions, has encouraged many European countries to shift from coal and oil to natural gas, especially in response to strict environmental regulations and the EU's commitment to reducing greenhouse gas emissions.

Moreover, natural gas has been a key component in balancing the integration of renewable energy sources into the electricity grid. Wind and solar power generation are inherently intermittent and dependent on weather conditions. Natural gas power plants, particularly those with fast-response capabilities, serve as backup energy sources, ensuring grid stability and meeting demand fluctuations when renewable generation is insufficient.

The share of natural gas in the EU's total primary energy consumption has grown from 18% in 1990 to around 23% in 2015[3]. This increase reflects a broader trend toward cleaner and more efficient energy sources. However, natural gas consumption patterns vary across EU member states due to differences in resource availability, infrastructure, and energy policies.

In Western Europe, countries such as Germany, the Netherlands, and the United Kingdom have historically relied on domestic gas production from the North Sea. However, as these reserves have declined, reliance on imported natural gas has increased. In contrast, Eastern European countries, including Poland and Hungary, have been slower to transition to natural gas due to their continued dependence on coal and historical energy ties with Russia.

Despite the growing role of natural gas, concerns remain about energy security and supply diversification. The EU has actively pursued policies aimed at reducing dependence on a single supplier, particularly Russia, which has historically provided a significant portion of the region’s gas imports. This has led to investments in liquefied natural gas (LNG) infrastructure and the development of alternative pipeline routes to enhance supply security.

The importance of natural gas in meeting the EU's energy demand has increased, and its share within the European energy market is expected to grow further. Domestic natural gas production in the EU declined from 235 billion cubic meters in 2000 to 123 billion cubic meters in 2016. Consequently, the share of imported natural gas rose from 47% to 71% over the same period (Figure 5).

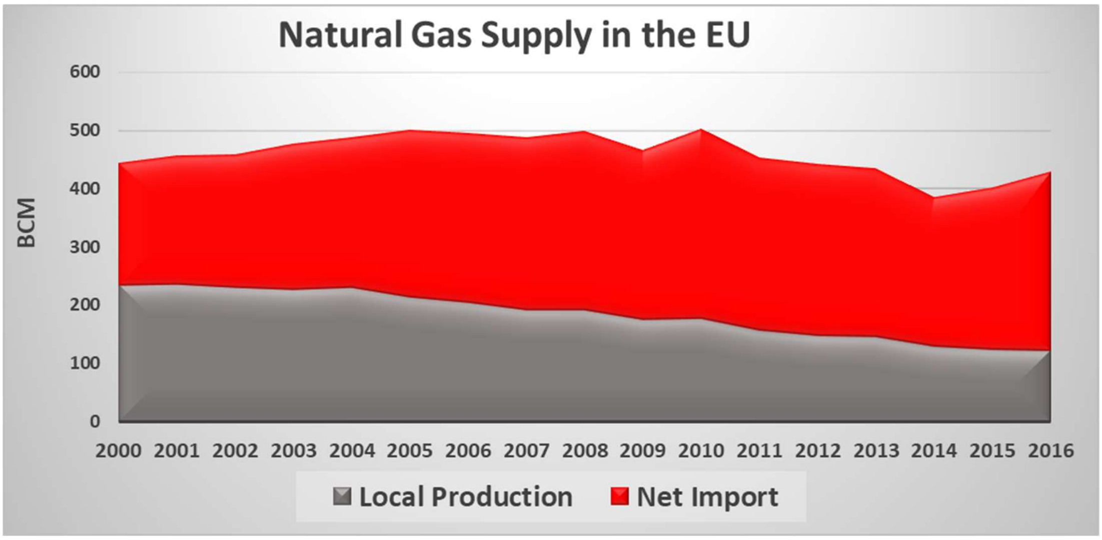

Figure 5 Sources of Natural Gas in the EU Since 2000.

The largest suppliers of natural gas to the EU are Russia, Norway, Algeria, Libya, and Qatar[3], as shown in Table 2. Currently, liquefied natural gas (LNG) accounts for about 13% of the total imported natural gas, equivalent to approximately 45 billion cubic meters. However, it is noteworthy that the EU has built LNG import terminals at its ports with a total capacity exceeding 220 billion cubic meters. This capacity could meet more than half of the EU's total natural gas consumption, yet the EU currently utilizes only one-fifth of this capacity.

Exporter	Billion Cubic Meters	Share of Total Imports
Russia (via pipeline)	153	47%
Norway (via pipeline)	91	28%
North Africa (via pipeline)	41	13%
Norway (LNG)	4	1%
Algeria (LNG)	9	3%
Nigeria (LNG)	7	2%
Qatar (LNG)	21	6%
Other Countries (LNG)	3	1%

Table 2 EU Natural Gas Imports by Source in 2016.

The infrastructure for importing natural gas into Europe has a large capacity and is geographically distributed between the eastern and western parts of the continent, as illustrated in Figure 6. Russia owns the largest natural gas pipeline network to Europe, with a total capacity of approximately 270 billion cubic meters—more than half of the EU's annual gas consumption. With the addition of the Nord Stream 2 pipeline, currently under construction, the total capacity will reach 325 billion cubic meters.

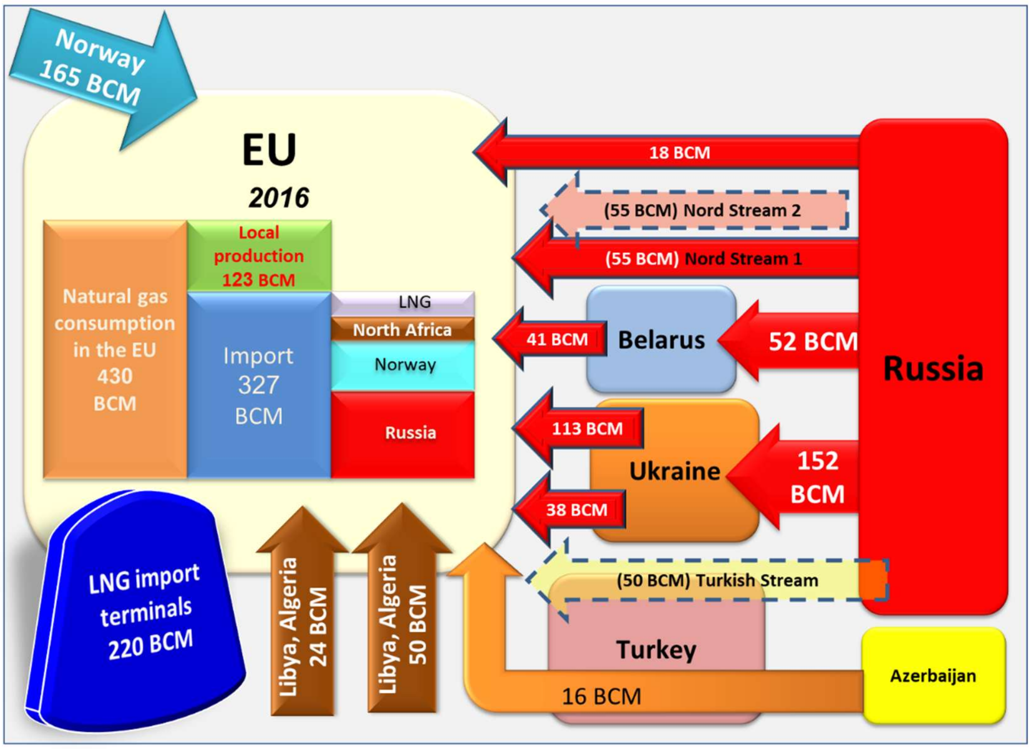

Figure 6 Overview of the Infrastructure for Importing Natural Gas to Europe via Pipelines or LNG Terminals.

3.4 The Future and Strategies of Energy in the EU

The EU countries generally adopt long-term strategic planning across all sectors, particularly in economic policies[4]. Numerous European governmental and private research centers contribute to these studies, with a major focus on the strategic development of future energy systems over the next 50 to 100 years. This emphasis is driven by several key factors:

1. Environmental Protection Policies – EU policies aim to reduce greenhouse gas emissions, which is a major benchmark for evaluating government performance. Since energy consumption is the largest contributor to environmental pollution, long-term studies (spanning at least 50 years) are necessary to understand and mitigate environmental changes.

2. Energy Security Enhancement – One of the core aspects of energy security is to reduce dependence on energy imports. When imports are necessary, diversifying suppliers ensures that no single provider has excessive control over the EU's energy market.
3. Massive Energy Investments – The energy sector requires substantial investments, necessitating in-depth studies that assess economic, financial, technical, and human factors shaping the future market environment. The fundamental question remains: "When, how, and how much will capital investment yield returns?"

Within the European Commission in Brussels, the Directorates-General (DGs) include a dedicated Energy Strategies Division, which primarily coordinates energy policies and research across the EU and develops long-term energy strategies. This division also oversees EU-Russia energy relations through the EU-Russia Energy Dialogue, as Russia continues to be the EU's largest natural gas supplier, accounting for approximately 47% of total EU gas imports (Reference 3).

One of the most significant EU studies on the future of European energy is the "Roadmap 2050", which explores various possible and desirable energy transition scenarios. These studies agree that natural gas imports in the EU will not increase by more than 0.3% annually in the coming decades. Some scenarios even project that energy-saving policies could reduce gas imports by up to -0.75% annually. Figure 7 provides a graphical representation of future gas import trends in Europe under key energy scenarios.

3.4.1 Potential Sources for Securing Natural Gas in Europe

The EU is currently connected via natural gas pipelines to Russia, Norway, Libya, and Algeria, in addition to expanding LNG import capacity. The most significant future supply options for the EU include:

- Turkish Stream Pipeline: A 60 billion cubic meter per year pipeline from southern Russia, running under the Black Sea to Turkey, then into Central Europe via Greece.
- Nabucco Pipeline (formerly planned): This pipeline project was designed to transport gas from the Caspian Sea to Turkey and then to Austria via Bulgaria, with a capacity of 8–23 billion cubic meters per year. Storage sites

along the route (with a total capacity of 20 billion cubic meters) were intended to improve supply flexibility and reliability (Reference 2). While the project was discontinued, alternative pipeline routes from Azerbaijan to Europe via Turkey remain under consideration.

- LNG Imports from Global Suppliers: The EU's LNG terminals allow for natural gas imports from the United States, the Arabian Gulf, Australia, and other global suppliers[3]. The EU's LNG import capacity has already exceeded 220 billion cubic meters, offering the bloc a significant advantage in supply diversification.

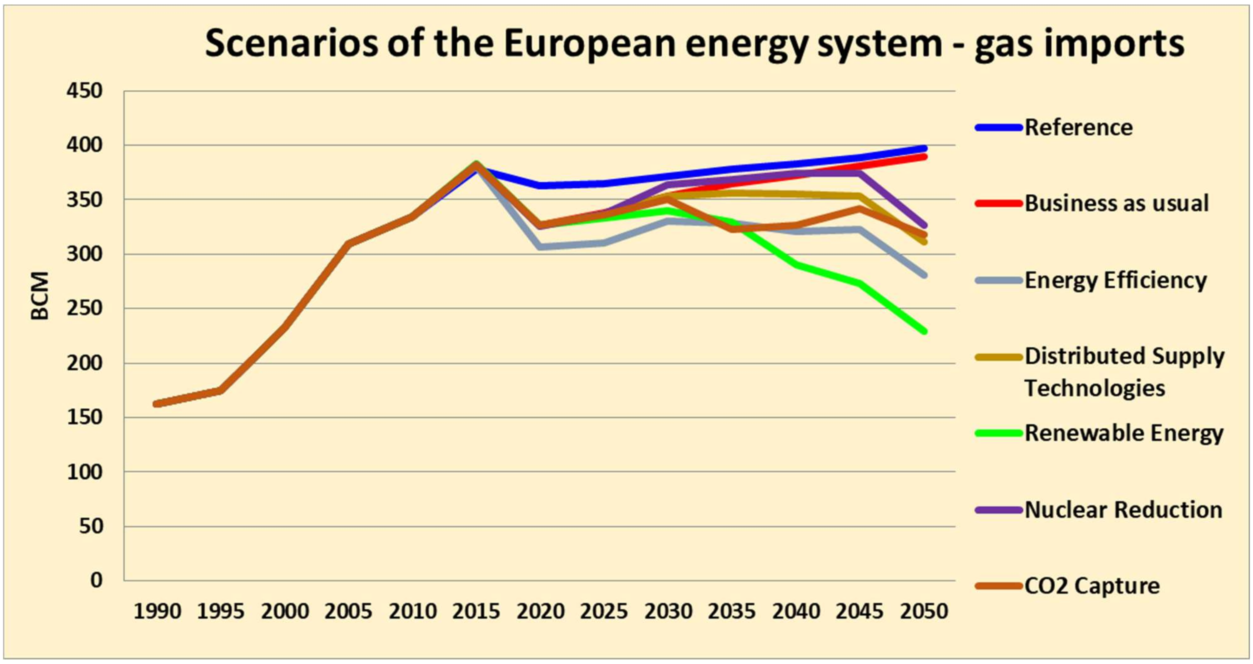

Figure 7 Natural Gas Imports in Europe Under Future Energy Scenarios (Black section represents historical data).

EU Roadmap 2050 Scenarios	Scenario Description
Business as Usual (Common Reference Scenario)	Current trajectory with no major policy shifts.
Current Policy Initiatives (CPI)	Policies currently in place aimed at reducing emissions.
High Energy Efficiency Scenario	Strong focus on energy savings and efficiency.
Diversified Supply Technologies Scenario	Emphasis on diversifying energy sources and suppliers.

High Renewable Energy Scenario	Rapid expansion of renewable energy adoption.
Delayed CCS Scenario	Slower development of carbon capture and storage (CCS) technologies.
Low Nuclear Scenario	Reduction in nuclear energy reliance.

Table 3 The Six Core Scenarios in the EU Energy Roadmap 2050[4].

3.5 Global Natural Gas Trade

Natural gas trade faces two fundamental challenges compared to oil and coal: transportation and storage technologies[2]. Unlike oil and coal, natural gas cannot be transported in its gaseous form over long distances without specialized pipelines meeting strict technical and safety standards. These pipelines are significantly more expensive than those used for transporting other fuel types. For example, the estimated cost of constructing the Nabucco pipeline, planned to link Azerbaijan with Europe via Turkey, Bulgaria, Romania, Hungary, and Austria, was initially $8 billion. However, BP later revised this estimate to $18 billion.

The second challenge is the complexity and high cost of natural gas storage compared to oil or coal. Austria, for instance, serves as a strategic gas storage hub for Central Europe due to its underground storage facilities, which were originally natural gas reservoirs that have since been depleted and repurposed. These facilities allow for gas injection and withdrawal as per market demands, ensuring stability in Austrian and Central European gas markets. However, such favorable geological conditions are rare and cannot fully meet the growing energy demand.

Due to these constraints, natural gas contract negotiations are among the most complex in the energy sector and typically involve long-term agreements spanning 20 to 30 years. Most gas contracts follow a “Take-or-Pay” (TOP) clause, meaning that the buyer is obligated to pay for a minimum contracted gas volume, regardless of actual consumption. This significantly complicates negotiations, as it increases financial risk for importers while ensuring supply security for exporters.

3.6 The Natural Gas Pipeline from Qatar to Europe Scenario

The challenges associated with natural gas trade and the EU's long-term energy projections suggest that a pipeline transporting gas from the Arabian Gulf—whether from Qatar or southern Iran—is unlikely in the medium to long term. There are no documented serious studies by the EU regarding these proposed pipelines, and they are not part of its future energy strategies. Statements regarding these pipelines have mostly come from politicians or media outlets and are often used as leverage in the political games surrounding the Middle East. In reality, the EU already has sufficient means to diversify its gas sources and possesses enough LNG terminals to easily compensate for any complete disruption of Russian gas supplies or those from other sources. The most secure, feasible, and cost-effective option for the EU remains expanding the capacity of pipelines from Libya and Algeria, as both countries hold vast reserves sufficient to meet European demand for decades.

3.4.1 Technical Considerations

The hypothesis that the construction of gas pipelines through Syria—whether from Qatar or Iran—was the primary cause of a large-scale war is insufficient. For this theory to be justified, one must assume that such pipelines would need to have a minimum capacity of 50 billion cubic meters per year to make a significant impact on the European market, which requires over 300 billion cubic meters of imported gas annually. Constructing a pipeline similar to the now-defunct Nabucco project, which had a planned capacity of around 10 billion cubic meters, would not substantially alter the European market or significantly affect major suppliers to Europe.

3.4.2 Qatar’s Perspective

Qatar controls nearly one-third of the global liquefied natural gas (LNG) market and owns the world's largest LNG processing facilities. All of Qatar’s strategic energy plans indicate that it will continue relying on maritime LNG exports, which provide complete independence from its politically and security-wise unstable geographic surroundings. Furthermore, no serious scientific studies from Qatar suggest the construction of a gas pipeline to Europe. LNG exports also remain more profitable than pipeline-based exports due to pricing advantages. Therefore, there is no economic or technical justification for Qatar to pursue gas exportation via pipelines to any country.

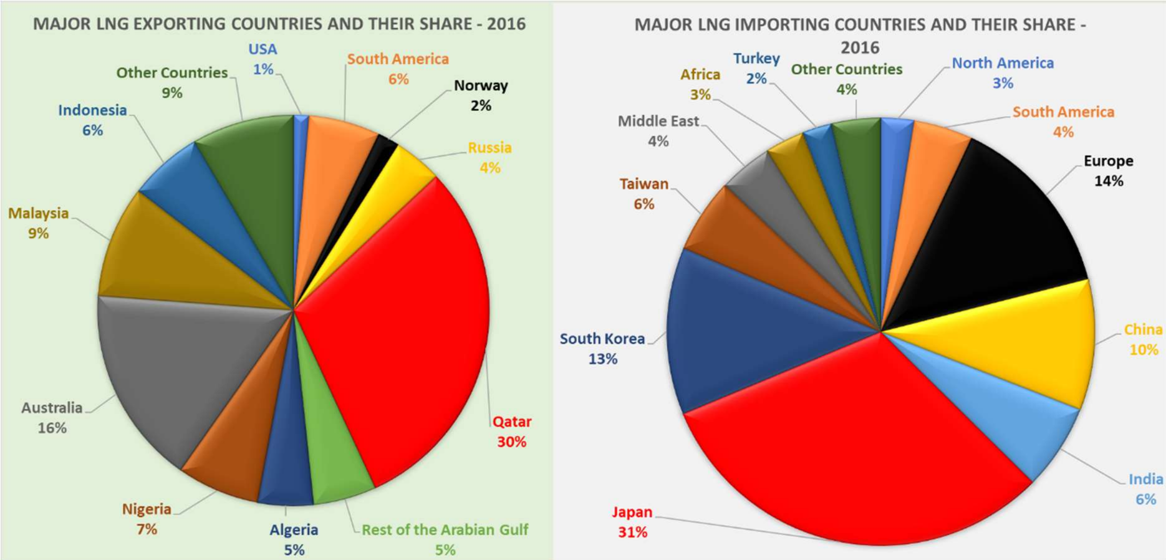

Figure 8 LNG global trade[2]

3.4.3 Iran’s Perspective

Iranian natural gas exports to Europe could become a possibility if political issues are resolved—though a sustainable solution seems unlikely in the near term. Technically, an extension of the Azerbaijan-Turkey pipeline to accommodate Iranian gas remains feasible but has not received political backing thus far. The gas would come from Iran’s share of the Caspian Sea reserves and northern Iranian fields. However, Iran’s richest gas fields are located in the south, and transporting this gas northward within Iran and then to Europe via pipelines presents significant logistical and financial challenges. In reality, Iran’s most viable market remains Asia, with key customers including India, China, and Pakistan. However, political instability in Central Asia continues to pose major obstacles to pipeline connectivity.

Even if Iran proposed a pipeline through Syria or directly to Europe, it would face the same financial constraints as Russia in funding such a megaproject. Given Iran's current economic situation, financing this project is not a viable option. A more economical approach for Iran would be to construct LNG processing plants near the Persian Gulf, enabling it to export LNG without geopolitical constraints, a lesson Iran has learned after decades of experiencing geopolitical pressure and sanctions.

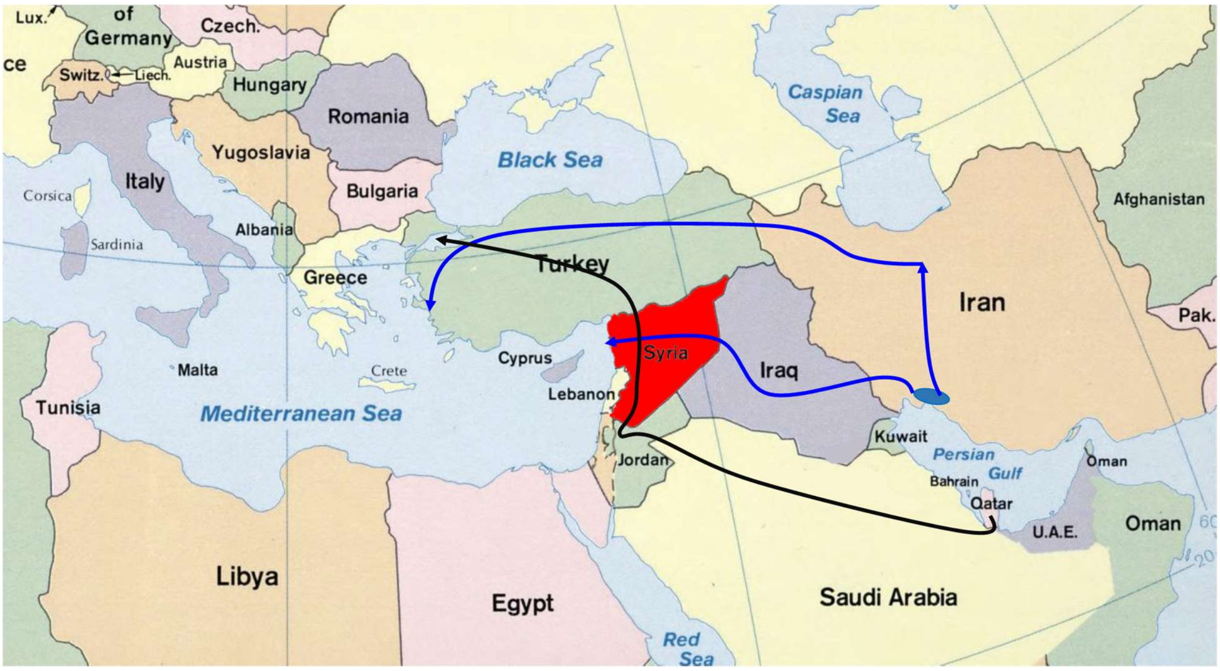

Figure 9 Assumed Natural Gas Pipelines from Qatar and Iran to Europe.

3.7 Conclusion

In addition to the economic, energy, and strategic indicators outlined in previous sections—which confirm that the likelihood of constructing a natural gas pipeline from Qatar or Iran to Europe via Iraq and Syria is extremely low and not part of European, Qatari, or Iranian energy strategies—this conclusion can also be drawn from observing global political events. One does not need technical expertise to realize that Europe would never risk its energy market stability on the fragile geopolitical landscape of the Eastern Mediterranean, where conflicts erupt every decade. The Russia-Ukraine crisis alone was enough to demonstrate how vulnerable Europe is to energy supply disruptions, despite having no direct involvement in the conflict.

Similarly, both Qatar and Iran would face risks as exporters. Any disruption to a pipeline would result in economic losses for the supplier, making such an investment highly risky. From a practical perspective, even if Qatar or Iran disregarded all these risks and successfully constructed a 200 billion cubic meter pipeline to Europe, and assuming that natural gas prices remained stable at around $6 per million British thermal units (MMBtu), the total annual revenue from the project would be approximately $43 billion. However, this figure does not account for infrastructure costs or the massive investment required to maintain supply.

The key question remains: Would this revenue justify a seven-year war and hundreds of billions of dollars in infrastructure investments? The evidence overwhelmingly suggests that the geopolitical instability and financial risks far outweigh any potential benefits, making such a pipeline an implausible scenario for the foreseeable future.

I'll start translating this section while maintaining its scientific accuracy and coherence. Stay tuned!

4 The Issue of Massive Oil and Natural Gas Discoveries Off the Syrian Coast and in the Mediterranean

4.1 Sources and Reserves of Fossil Fuels

There are vast quantities of oil and natural gas in many parts of the world, but can any country with oil or gas beneath its land fully benefit from it? Experts differentiate between resources, which refer to the availability of raw material within underground rock formations, and reserves, which indicate that these resources meet three essential conditions:

1. The likelihood of their existence is sufficiently high.
2. Their extraction is technically and geologically feasible.
3. The market price of these resources covers the costs of extraction and export (Figure 9).

This distinction explains why reports sometimes mention an increase in a country's reserves. Additionally, most scientific research institutions estimate that the potential global resources of oil and natural gas are several times the volume of currently confirmed extractable reserves. Many of these sources remain untapped because they require oil prices to stabilize above $150 per barrel to become economically viable. If such prices were reached, one can only imagine what kind of world it would be.

For instance, rising energy and natural gas prices enabled the United States to become a major natural gas producer once the cost of shale gas extraction became economically feasible.

Figure 9: A schematic illustration of the difference between natural resources and extractable reserves. The greater the value of the three parameters shown in the three-dimensional axes, the higher the likelihood of confirmed reserves.

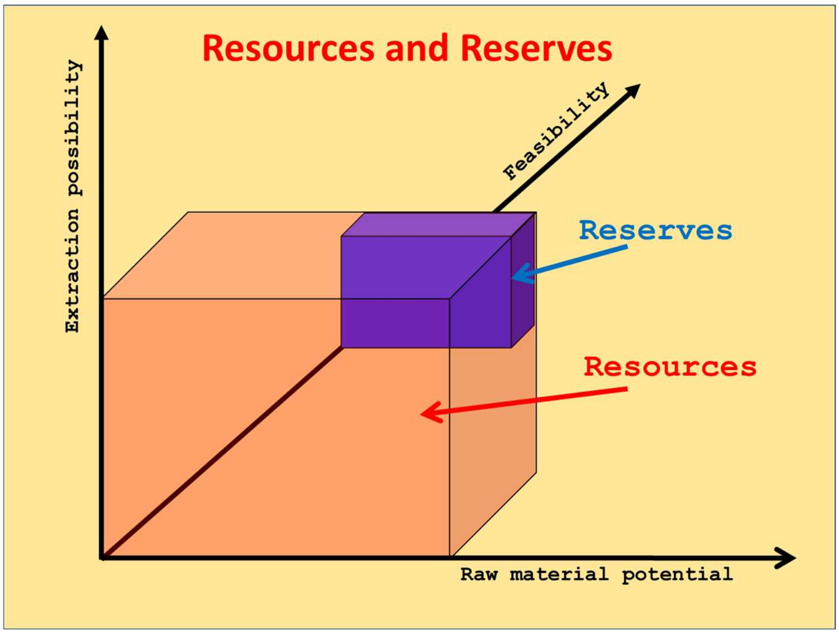

Figure 10 A diagram showing the difference between natural resources and raw material reserves. Increasing the value of the three specifications shown along the three axes increases the probability of having a proven, recoverable reserve.

4.2 The Reality of Oil and Gas Reserves in Syria

Syria possesses relatively moderate oil and natural gas reserves, sufficient for self-sufficiency for a reasonable period and allowing some exports to support the national economy[5]. However, these reserves do not play a significant role in the global or regional markets, as illustrated in Figure 10.

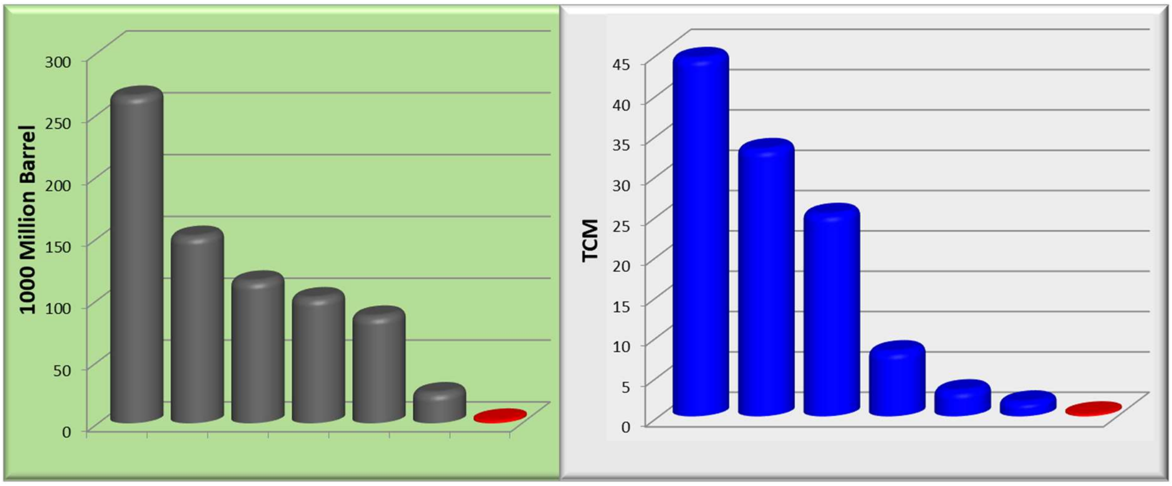

Figure 11 Proven reserves of oil (left) and natural gas (right) for some countries at the end of 2010 according to BP sources.

Since the 1990s, Syria's energy sector has grown rapidly, similar to many developing nations. Between 1990 and 2010:

- Primary energy consumption increased at an annual rate of 3.7%.
- Final total energy consumption grew at an annual rate of 3% (meaning both figures doubled during this period).
- Electricity generation increased from 11.6 TWh in 1990 to 45 TWh in 2010, at an annual growth rate of 7%.

The share of natural gas in electricity generation rose from 21% in 1990 to 55% in 2010, while the share of oil-based products declined from 56% to 39% over the same period (Figure 11).

In 2010, 77% of Syria's total natural gas consumption—equivalent to about 7 billion cubic meters—was used for electricity generation.

Projecting Syria's future energy demand requires dedicated research. However, if electricity consumption from natural gas continues to grow at its current rate, then slows to 4% annually after 2020, the country's confirmed reserves would be sufficient for electricity generation until the third decade of this century. This highlights the need for extensive studies on Syria's future energy system.

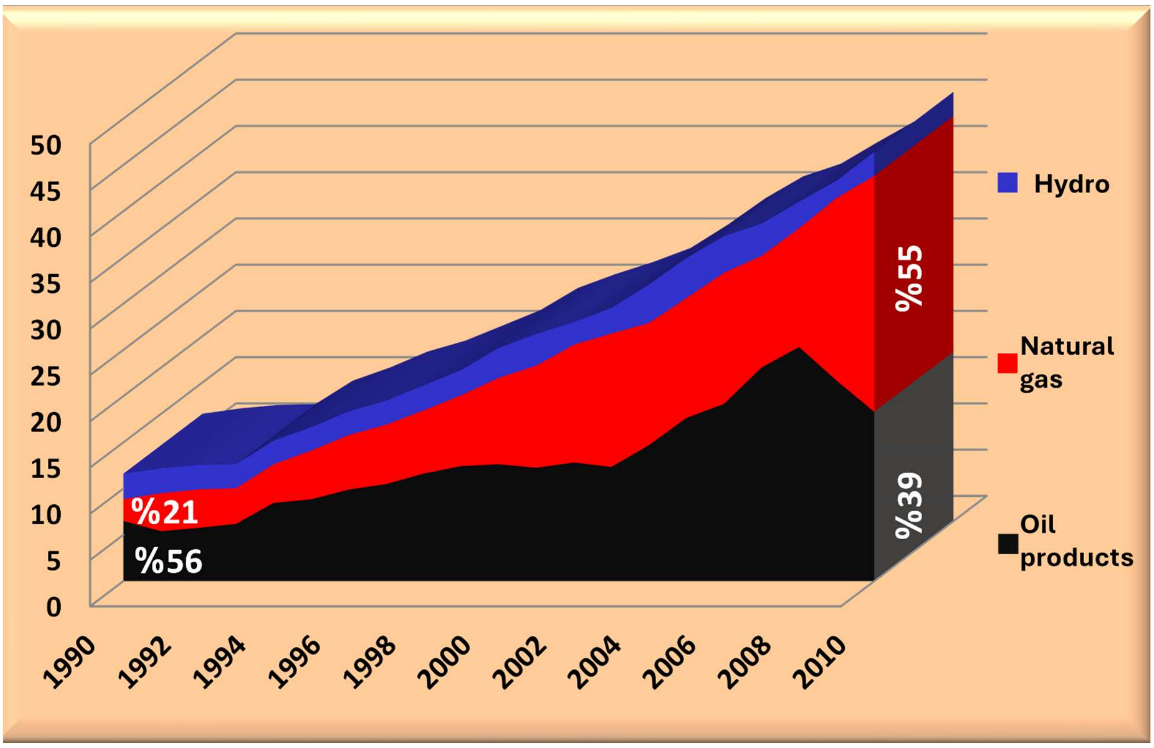

Figure 12 Electricity generation in Syria by fuel type.

4.3 Natural Gas Reserves in the Eastern Mediterranean Basin

Since the late 1990s, several exploratory studies have been conducted in the Eastern Mediterranean, all confirming the presence of significant resources in the region. Figure 13, issued by the United States Geological Survey (USGS)—the world's most reputable scientific institution in this field—illustrates the estimated reserves along the Eastern Mediterranean coast and their extensions.

The Levant Basin, depicted in the map, is roughly triangular, with its base near Palestine and northern Egypt, where most of the reserves are concentrated. The triangle extends through Lebanon and ends along the Syrian coast, with extensions reaching Cyprus[6].

Syria's share of this field, in terms of area, is the smallest among the four neighboring countries, as shown within the red triangle on the map.

Figure 13 The Eastern Mediterranean Levant Basin. It consists of three main areas following the geological structure of the region, represented by the yellow and brown lines. The red dots indicate confirmed and extractable natural gas fields, while the green dots represent confirmed oil fields[7].

The mean estimated natural gas reserves in this region amount to 3,455 billion cubic meters, ranging from 1,400 to 6,400 billion cubic meters. This means that at least 1,400 billion cubic meters are technically extractable, while the upper estimate reaches 6,400 billion cubic meters, with 95% of this reserve located offshore. Additionally, the region holds an estimated 1.7 billion barrels of oil based on statistical probability distributions.

Total Petroleum Systems (TPS) and Assessment Units (AU)	Field type	Largest expected mean field size	Total undiscovered resources											
			Oil (MMBO)				Gas (BCFG)				NGL (MMBNGL)			
			F95	F50	F5	Mean	F95	F50	F5	Mean	F95	F50	F5	Mean
Levant Basin Province, Mesozoic-Cenozoic Composite TPS														
Levant Margin Reservoirs AU	Oil	177	278	763	1,765	857	340	944	2,202	1,062	7	19	45	22
	Gas	1,074					1,678	4,559	10,594	5,135	51	142	333	160
Levant Sub-Salt Reservoirs AU	Oil	184	148	460	1,242	548	179	569	1,559	679	4	12	32	14
	Gas	12,238					32,462	74,210	150,573	80,758	1,006	2,309	4,721	2,519
Plio-Pleistocene Reservoirs AU	Oil	130	57	217	752	284	68	265	933	351	1	5	19	7
	Gas	4,756					15,360	32,066	61,569	34,393	157	328	633	353
Total Conventional Resources			483	1,440	3,759	1,689	50,087	112,613	227,430	122,378	1,226	2,815	5,783	3,075

Table 4 Oil and natural gas reserves estimated in the Eastern Mediterranean

4.4 What Do These Numbers Mean?

To understand the significance of these figures, let's compare them with global reserves:

- The world's confirmed natural gas reserves amount to approximately 226,500 billion cubic meters.
- The Levant Basin represents only 1.5% of global reserves.
- Russia’s reserves are 16 times larger, Iran’s 10 times larger, and Qatar’s 7 times larger.
- The Levant Basin’s gas is equivalent to one year of global gas consumption or six years of European gas consumption at the current annual rate.
- Regarding oil, the basin’s reserves are roughly two-thirds of Syria’s existing oil reserves.

It is important to note that these estimates will likely be revised downward once actual exploration begins in the region.

5 Conclusion

All EU energy policies indicate that Europe will likely focus on supporting two major natural gas pipeline projects:

1. The Turkish Stream pipeline, bringing Russian gas through the Black Sea to Turkey and into Central Europe.
2. The pipeline from Azerbaijan and the Caspian Sea, passing through Turkey to Austria, with potential extensions from Iran, Iraq, and Egypt.

Meanwhile, Qatar remains committed to being the world's largest LNG exporter, and ongoing regional instability further reduces the feasibility of a gas pipeline through Syria. These factors make the possibility of a Qatari or Iranian pipeline to Europe via Syria highly improbable.

The newly discovered oil and gas fields in the Eastern Mediterranean are promising, but they will not significantly impact the global market. Syria's share of these reserves appears to be the smallest among neighboring countries based on all available scientific evidence.

Moreover, exploratory studies of the Syrian coast and waters, which began slowly in 2005, have not been completed and have not yielded confirmed data to encourage investment. This means there are no scientifically verified figures—all commonly cited numbers are speculative at best.

What is certain is that there is a substantial amount of natural gas in Syria's territorial waters, especially compared to Syria's confirmed reserves of 283 billion cubic meters. However, the exaggerated claims that Syria could rival Qatar, Iran, or Russia as a gas-exporting powerhouse are unrealistic.

Based on all available data, Syria's share of the Levant Basin is the smallest among its regional counterparts, due to the geological characteristics of the field and its location at the tip of the triangular formation rather than at its base, like Palestine.

6 A Final Thought

The goal of this analysis is not to discourage optimism about Syria's energy potential, but rather to set realistic expectations. It is equally important not to accept unverified theories that attribute Syria's geopolitical conflicts solely to its gas reserves.

In reality, Syrian natural gas and oil reserves are among the least influential factors in shaping the future of Syria's political and economic landscape.

---

[1] Intergovernmental Panel on Climate Change (IPCC)

2 International Energy Agency IEA – Data Bank

3 European Commission Energy Division - Directorates-General
http://ec.europa.eu/energy/index_en.htm

[4] Roadmap 2050, European Commission, Brussels, 2012.
[5] GEO EXPRO, VOL. 8, NO. 3 – 2011
https://www.geoexpro.com/wp-content/uploads/2022/11/GEO_ExPro_v8i3_Full.pdf.pdf

[6] Outlook for Oil and Gas in Southern and Eastern Mediterranean Countries, ISBN 978-94-6138-239-9, MEDPRO Technical Report No. 18/October 2012

[7] USGS, Map of Levant Basin Province, Eastern Mediterranean,
https://www.usgs.gov/media/images/map-levant-basin-province-eastern-mediterranean