The strategic importance of pipelines between geopolitics and cooperation opportunities

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Abstract:

Energy is the most significant component of power and a strategic stake that great nations have to dominate in order to achieve global leadership. This control, however, will not be complete unless it is linked to the methods in which these resources are traded. Pipes are the most cost-effective, secure, and environmentally friendly way to transport oil and gas compared to shipping, which faces numerous challenges and security threats. This has led many countries to prefer pipelines, particularly natural gas, whose demand has increased in recent years. Energy pipelines are one of the instruments to gain bargaining power since they are used as a pressure tool against rivals to achieve the state's interest .Further, if they are targeted, they might be a major generator of conflict between states threatening directly energy security. However, only the political will can make transform it to a fundamental foundation for collaboration, conflict resolution, and integration.

Keywords: *pipeline ;geopolitics; cooperation; energy security; great game.*

ملخص

إن مصادر الطاقة لطالما اعتبرت أحد اهم مكونات القوة ورهانا استراتيجيا تتصارع القوى الكبرى على السيطرة عليه من أجل الوصول إلى الريادة العالمية إلا أن هذه السيطرة لا يمكن أن تكون كاملة إلا إذا ارتبطت بالتحكم في طرق تجارة هذه الموارد . وتعد الأنابيب الطريقة الفضلى لنقل النفط والغاز من الناحية الاقتصادية ، الأمنية وحتى البيئية مقارنة بالنقل البحري الذي يواجه عديد التهديدات الأمنية ما جعل مختلف الدول تحبذ خطوط الأنابيب خاصة إذا ما تعلق الأمر بالغاز الطبيعي الذي يشهد ارتفاع الطلب في السنوات الأخيرة. وتشكل أنابيب الطاقة أحد أدوات بناء القوة التفاوضية حيث تستعمل للضغط على الأطراف الأخرى لتحقيق مصلحة الدولة وقد تكون محركا أساسيا للصراع بين الدول ولقد تحولت إلى موضوع جوهري للصراع على الهيمنة بين القوى الكبرى في أوراسيا قد يحدد مصير النظام الدولي ويرسم مستقبل العلاقات الدولية .لكنها في ذات الوقت قد تشكل ركيزة أساسية للتعاون ونبذ الصراع وتحقيق التكامل إذا ما توفرت الإرادة السياسية للدول.

الكلمات المفتاحية :**انابيب الغاز –الجيوسياسة – التعاون – امن الطاقة – اللعبة الكبرى .**

Introduction

Energy is a sensitive resource, but it would be pointless if there were no means of transporting it to other regions of the globe. The fact is that, despite its critical role that enhances its strategic value, energy is not distributed equally over the globe where production centres are concentrated in most developing countries, while consumption areas are consolidated in the north, necessitates the development of effective transportation systems that reduce time and effort while also taking environmental factors into account to transport oil and gas from these remote regions to the energy-hungry industrialized countries. Pipelines are largely hailed as the best and most widely utilized form of transportation in the modern era. Pipelines have sparked a surge in the global interest. Based on the above, we pose the following issue: **What role might energy pipelines play in promoting international cooperation and ensuring energy security?** The study attempts to answer these sub-questions within the primary question**: What are the elements that make pipelines a better option for energy trading than other options? What role might pipelines play in fostering international cooperation? Are energy pipelines becoming a new weapon in international conflicts?**

We formulate the following hypothesis in an effort to answer these questions:

1. The pipelines' strategic value is evident in their geographic location.

2. It is an element of cooperation when pipelines link a number of states.

3. Pipelines are at the centre of the new power conflict.

The purpose of the study is to determine the significance of pipelines, which are a vital means of transporting petroleum and also play a crucial role in international interactions as a cornerstone of energy security. The security of supplies is primarily determined by the methods of travel and their protection against all technical risks or security issues, as well as natural threats, which could disrupt or stop the flow of energy to its consumers, causing damage and losses to all parts of the supply chain from exporting to importing countries. Instead of being a vehicle for rivalry and conflict between great countries, this research looks at how pipelines might be used to establish the framework for collaboration.

1. Transportation Mechanisms of Energy

With the onset of the energy extraction industries, serious consideration of energy transfers began. Norbert Nobel was a key figure in the discovery of the first oil wells in Baku, Azerbaijan, and the launch of the country's oil trade, which began with ships crossing via the Caspian Sea on their way to Russia down the Volga River, then by train to Europe. Later, in 1883, the first railway for transporting oil was completed; connecting Baku, Azerbaijan, to Batumi, Georgia, on the Black Sea, but the difficulty was that crossing the Georgian highlands with a weight of six locomotives of oil was impossible. As a result, the Noble family, the Rockefellers, and the Rothschilds were among the first to invest in oil transportation via pipelines connecting multiple nations (klevman,2003,p16)

1.1. Shipping

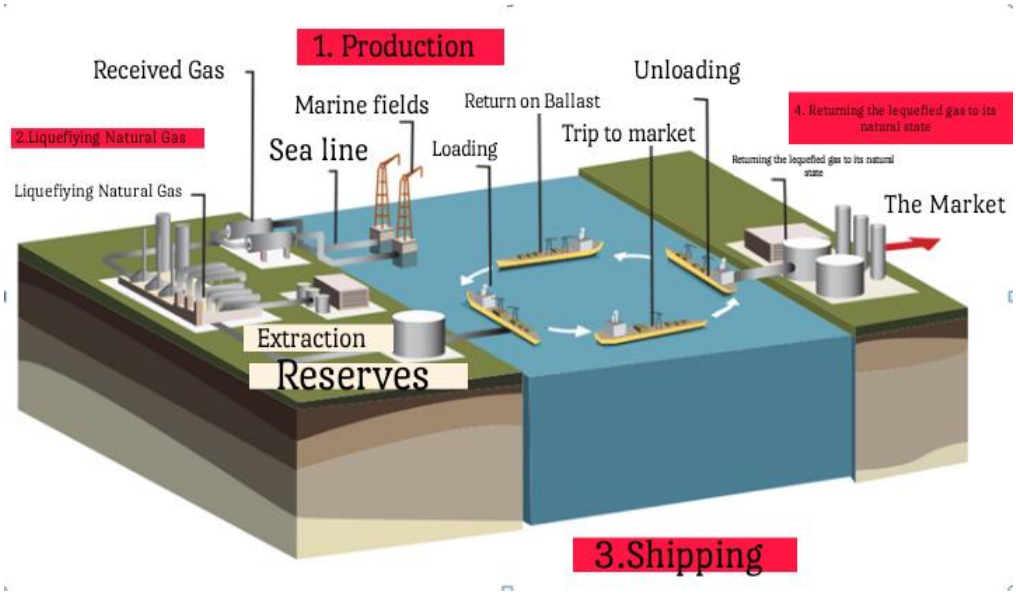
Seaways and pipelines are the two primary means of energy transfer currently in use. The use of sea routes as a means of carrying oil is regarded to be the first. Until now, 62 percent of global oil output has been delivered by sea in oil tankers or by short-distance marine pipelines. The industry and load capacity of oil tankers have[1] changed over time, taking into account the expansion in global demand from 150 thousand tons to 270 thousand tons to ships with a capacity of 500 thousand tons. However, the size and capacity of the ships are determined by a variety of criteria, including the structure of the sea lanes and transit zones, as well as the character of the ports. The more deep-water ports there are, the more large ships they can receive, and vice versa, depending on infrastructure, storage stations, and uptake capacity. Furthermore, oil tankers must consider the possibility of maritime mishaps, since technical studies have shown that the larger the tanker, the less flexible it is, which can lead to accidents(Schoumaker,p161)

Maritime transport presupposes a number of safety precautions, which include highly trained security crews to ensure the safety of oil tankers, especially since this industry is prone to a number of issues, including accidents that can result in oil spills in what are known as oil slicks in the oceans and seas, such as the Exxon Valdez ship, which became stuck in Prince William Strait in Alaska in 1989, resulting in the leakage of 40,000 tons of crude oil in a sensitive

In a different incident in 1999, the ship Erica was split in two after leaving the port of "Dunkirk" in northern France with 30,000 tons of cargo on its way to the Italian port of "Livourne." The marine environment, fishing, and tourist industries are all growing. The catastrophe resulted in a 10,000-ton spill and 400-kilometer-long contamination of the French coast, with severe consequences for the marine ecology, fishing, and tourist industries(Edorh,2008,pp113-142).

In the case of natural gas, just 33.4 percent of international gas sales were shipped by water in 2014. The issue with natural gas is that it takes up a lot of area to carry because one cubic meter of oil is comparable to around 957 m3 of gas in terms of volume. As a result, it is vital to rely on gas-to-liquid conversion technology to lower the amount of gas and therefore make transportation easier; such that one meter of oil is equivalent to one and a half m3 of liquefied gas(Rolami and Kettouche,2016,p33).

For example, a ship with a tonnage of 225,000 tons can only stop after the movement continues at 7 to 10 km



Source: Daniel Kanti, "The Golden Age of LNG," Afaq Magazine, Vol. 3 (Summer 2016), pp. 04-16. https://www.bomobile.total.com/uploads/gestion_media/AFAQ_3_ar.pdf

The liquefied gas business initially arose in Algeria in 1964, as part of a pioneering attempt to export Algerian gas to France and the United Kingdom. As shown in the diagram below, this trade demands an integrated network of infrastructure extending from extraction fields to liquefaction facilities along the coast, loading huge tankers, and finally discharging at degasification stations.

Due to the infrastructure required by the transport, production, and distribution chains, as well as the key procedures for creating ships with well-insulated tanks that can maintain a temperature of -162°F, transporting liquefied gas is a high-cost procedure(Muti,2017,p.162).

The relative cost of liquefied gas has declined as a result of technological advancements, since studies have shown that the larger the volume of gas in the tank, the lower the cost. According to a research produced by a specialist consulting firm, current gas-to-liquids capabilities may provide rates of between 12 and 15% for a facility with a capacity of 5000 barrels per day. LNG tankers are also quicker than conventional tankers, which helps to reduce the charter price of the ship(Kanti,2016,p.04).

1.2. Shipping challenges

There are a variety of hazards to shipping, including terrorist acts and piracy, as well as military conflicts and regional issues, all of which are related to straits and vital sea lanes that force ships to slow down when crossing, exposing them to these threats. A strait is a short passageway that connects two oceans and separates two areas of the land, continent, or island by a specified width. Unlike the canal, which is technically man-made, the strait is natural. Legally, the strait's width should

not be more than twice that of the state or state bordering. The importance of the strait is determined by the following elements:

*Location: for example, a strait between the sea and the ocean, such as the Magellan Strait, is more essential than one joining two oceans; or when the strait is the sea's only outlet.

* The volume of traffic that passes through it that gives it commercial value.

* Validity for ship passage and the absence of natural or man-made obstacles.

* The maritime straits are called choking points and are usually close to politically unstable areas or states, increasing the risk of navigation. The following areas are the most well-known choking points[2]:

A-Strait of Hormuz: Because of its location in the Arabian Gulf, the world's major manufacturing hub, this strait is regarded as the most important in the world. It has a width of 48 to 80 kilometers and looks out over the Gulf of Oman and the Arabian Gulf. Two round-trip lanes with a width of 2 nautical miles and a buffer zone are included. It is littered with a series of islands, the largest of which is Iran's "Qeshm," as well as the lesser and Greater Tunbs and Abu Musa, all of which are contested by Iran and the UAE. Storms, tides, strong sea currents, and the influence of dust on vision are some of the challenges that this corridor faces. This strait witnessed the Iran-Iraq war from 1984 to 1989, and the Iranian threat to block the strait still continues, as evidenced by Iranian leaders' declarations on several occasions. The strait, which account for around 90% of Arab Gulf exports, is subject to the law of innocent passage for ships as long as they are quick and discreet. As the US Fifth Fleet, stationed in Bahrain, ensures commercial transportation via the strait, the situation is jeopardized(Fian,2014,p188).

B-Suez Canal and Bab al-Mandab Strait:

The Suez Canal, which was inaugurated in 1869, has cut the travel and navigation distance between Europe and Asia by nearly 6,500 kilometers and boosted world trade. However, the canal's history exposes the involvement of a variety of parties, including Britain, which served as the canal's guardian state, but whose nationalization was the catalyst for the threefold attack on Egypt in 1856. Israel attacked the canal when Egypt refused to allow Israeli ships to pass through, resulting in its blockage from 1967 to 1975 during the Arab-Israeli wars. With over 2,500 ships passing through each year, the canal processes around 14% of the world's energy traffic. The principal gateway to the Red Sea is Bab al-Mandab. This implies that the canal's viability is contingent on the presence of the strait. Its length is estimated to be 55.5 kilometers, and it is distinguished by an average depth of 8.1 meters to 200 meters, in addition to the nature of the sea, which is covered in coral reefs, and the difficulty of navigating it except in its centre channel, which necessitates tremendous skill and prudence(Al atbi,2008,pp205-235).

Bab al-Mandeb carries at least 4 million barrels of oil every day, which makes it an ideal bet for several regional powers, including Israel and Egypt. Israel has considered securing an outlet to the Red Sea a priority tied to its national security since its inception, and this is what it accomplished after seizing control of the Negev desert and the port of Eilat (formerly Umm al-Rashrash). In 2015, as part of Egypt's participation in the "Decisive Storm" against Yemen, President Sisi declared that "securing navigation in the Red Sea and preserving the Bab al-Mandab Strait is a major priority of Egyptian national security."(Al talawi,p.04)

Major governments, including the European Union, and the United States of America, as well as NATO have attempted to be in close proximity to the strait in order to prevent pirate operations in the Horn of Africa. Several nations, including Turkey in Somalia, Saudi Arabia, and China in Djibouti, have sought to create military outposts on the strait's edge indicating the presence of a regional and worldwide strife.(Altlawi,p.05)

C-Bosporus strait: The strait is under Turkish jurisdiction, which ensures freedom of travel across it, and it is the Caspian Sea's only outflow for energy resources to the open oceans. 50 thousand ships sail through it every day, including 5500 oil tankers, vast numbers that are projected to expand as the number of discoveries and fields in the Caspian Sea region increases, as well as the openness of its leaders to the West(Rodrigue)

d-The Malacca Strait: It is the canal that connects the Indian Ocean with the China Sea, with Singapore, Indonesia, and Malaysia on either side. The strait is 800 kilometers long. It protects the transit of 80 to 90 percent of Japan's, China's, and South Korea's imports, as well as around 40 percent of global commerce, making it a target for regional and international powers struggle among the United States of America, China, and India(Bakeer,2008).

The intense competition between the various powers is embodied in US military moves and Chinese attempts to build a naval fleet that matches American power, in addition to India, which seeks to implement a naval control strategy through economic soft power, as well as the formation of the Eastern Naval Forces Command, which works to monitor the strait and the Indian Ocean, especially given the region's political instability due to internal conflicts such as the one in Indonesia, for example, as well as political differences between its countries(Belmadi)

E-Panama Strait: It is a 64-kilometer-long, 125-meter-deep, and 915-meter-wide artificial waterway that connects Central and South America. It is a crucial asset for American trade since it connects the east and west of the country across 13,000 kilometers. The canal transports around ten to eleven percent of the world's oil. This medium-capacity canal is complemented by oil-transporting trains and a 1 million-barrel-capacity oil pipeline.

The challenges facing water transport come in the form of environmental risks represented by accidents or the geographical nature of the strait mentioned previously, but it is mainly due to piracy and terrorist activities

Piracy:

Since the 1990s, piracy has grown exponentially, with 3,500 assaults recorded in mid-2007 and around 2,100 pirates registered. Attacks on oil tankers are a frequent occurrence. According to statistics, oil tanker piracy accounted for 29.8% of all pirate activities between 2001 and 2007. Piracy is concentrated in locales like the Horn of Africa and the Strait of Malacca, particularly off the coast of Indonesia. The goal of these operations is generally to seize the cargo and, in some situations, to gain control of it in exchange for a ransom demand(Ninncic,p31-44).

The Gulf of Aden is second in terms of hijacking activities, followed by Nigeria. Pirates captured a Saudi oil tanker carrying 2 million barrels in 2008 and released it two months later after being paying a $3 million ransom by the cargo owner(Jean Paul,p39).

Terrorism:

Terrorist assaults on oil tankers entail effort and a thorough understanding of marine trade routes and systems. As a result, it's difficult to calculate how many successful operations there have been, but the Al-Qaeda group outlined four types of assaults in a study:

1- The suicide bombing of the tanker from the inside.

2- Exploding small ships near major oil tankers or inside ports.

3- Exploding tankers using small bombing aircraft.

4- Undersea attack by suicide bombers or a task force to place bombs under the ship.

One of the most well-known al-Qaeda attacks was on the French ship Lumburg, which was sailing from Iran to Indonesia in October 2002. The ship caught fire in the Gulf of Aden, spilling over 90,000 barrels of oil into the sea, polluting the area up to 45 nautical miles from the coast and injuring crew members. The Tamil Tigers terrorist organization is one of the well-organized terrorist groups capable of causing damage to oil tankers, but the biggest threat is attacking LNG carriers, which might lead to devastating flames and the destruction of infrastructure(Fettweis,pp62-75).

Maritime transport is one of the most essential forms of energy delivery and a cornerstone of global trade, yet it is up against intense rivalry from pipelines.

1.3. Pipelines:

Pipelines are an old form of transport that date back to the 19th century, when the first local pipeline to transport oil, 7 km long and 5 cm wide, appeared in 1864 in Pennsylvania, USA, with a capacity of 10 tons, that was transported to the nearest railway station, from where the oil was then transported to other sites. The accomplishments and technological advancements contributed to the construction of the first pipeline connecting several nations: the Baku-Batumi line, which was completed in 1893 and spans 880 kilometers. Following the discovery of Iraqi oil reserves in Kirkuk in 1927, talks with the four states involved: Syria, Lebanon, Palestine and East Jordan, resulted in the development of pipelines to carry oil to the Mediterranean Sea. Work on the Kirkuk/The

Mediterranean line began in 1932. As a result, the use of pipelines intensified and extended to the Arab region, where the Arab line, which connected Gulf oil reserves to the Lebanese port of Sidon, was finished in 1950(Merenne,1978,pp183-200).

The Suez-Mediterranean pipeline "SUMED," which runs from the Gulf of Suez port of "Ain Sukhna" to the Mediterranean Sea port of "Sidi Kerir" in the Arab Republic of Egypt, was launched in 1977 to transfer oil from the Arabian Gulf region to the Mediterranean Sea. It has a transit capacity of 90 million tons per year and is comprised of two parallel lines that are 200 miles long and 42 inches wide. This line, it should be highlighted, is part of a concerted Arab operation in which the Kingdom of Saudi Arabia, the State of Kuwait, the State of the Emirates, the State of Qatar, and the Arab Republic of Egypt all participate(Al Quraich,2008,p111-160).

Pipelines are the greatest means to carry crude oil compared to tankers whenever producing fields are located far from sea shipping ports, since the use of pipes produces abundant mileage to refineries or global markets, boosting pipeline transportation economics. Main and subsidiary pipelines, oil storage tanks, and payment stations with high-powered pumps make up the pipeline networks. When needed, reinforcement stations can be set up based on the length of the line to help with the payment process, transformer systems, receivers and transmitters, both wired and wireless, and electronic systems in order to finish the basic treatment process, the oil is transferred from each well to the nearest gathering tank in the fields, where it is sent straight to refineries or shipping ports for export. Refined petroleum products are also transported from refineries to major distribution hubs in order to fulfill local demand or to shipping ports in order to be exported(Al Quraich,ibid).

Pipelines initially carried just crude oil until 1929, when they began to carry refined (processed) petroleum by accident. In terms of natural gas, the first 140-kilometer gas pipeline was built in 1886 to connect Pennsylvania and New York. It may be claimed that the pipeline sector has evolved over time. Different materials and technologies have all contributed to enhancing the capacity and economic feasibility of pipes(Schoumaker,pp163-165).

Pipelines are the ideal means of energy transmission, but their construction requires meeting a set of conditions:

1-The Geographical Factor:

Pipe building demands a thorough understanding of the topography of the places through which the line runs. Power transmission may be challenging in high mountain ranges, mandating the use of strong pumps. Furthermore, due to the losses that may arise from earthquakes in transmission lines, geologically unstable places are not appropriate for constructing pipes. Pipes are generally built in relatively close locations; therefore they are underground in crowded areas and above the ground in vast stretches like deserts. Deep-sea pipe construction also involves complex technology, making marine pipes more expensive than onshore pipes, particularly due to the difficulties of installing the bands and the difficulty maintaining them, both of which need high-tech equipment and critical human skills. Pipes must take into account weather parameters, since they may cause oil to freeze if built in particularly cold places. Heating stations must be constructed in order to enhance the flow

inside the pipe. As a result, we learn that the cost of building pipes in the polar areas is quite expensive, potentially exceeding the cost of building maritime pipelines(Soubeyrol,1950,pp157-185).

2-The Economic Factor:

The pipelines must be financially sustainable. As a result, economic studies on the costs of construction, pumping, and heating stations, as well as labor force salaries based on construction, maintenance, and operation, as well as transit fees, must be conducted, with the results compared to the revenues that a state or group of countries can realize by exporting through this means. As an example, the huge costs of creating the "Nabucco" project were a major factor in its collapse. When compared to previous forms of energy delivery such as sea or rail, pipelines are generally thought to be the most cost-effective. All of the previously mentioned factors that go into the construction of marine tankers, as well as the cost of their human crews and the cost of securing them, are taken into account in maritime transport. On top of that, the cost of the return trip is added to it, as the tanker is returned empty, and maritime transport takes longer while gas and oil flow in tube clock(aboutpipelinehttps://www.aboutpipelines.com).

Pipelines, on the other hand, are known for their excellent efficiency and cheap transit costs. The lower the cost per mile, the longer the pipeline is. It's also notable for its energy efficiency. The crude oil transmission line consumes just 0.4 percent of the energy content of the carried oil per 1000 km, according to studies done in the 1980s, compared to 1% for freight trains and 3.2 percent for vehicles(AlQraich)

4-The Ecological Factor:

Pipelines are built with environmental considerations in mind, therefore environmentally sensitive regions such as nature reserves and wetlands must be avoided. ""In this context, the World Bank issued a set of recommendations relating to the construction of the Doba-Kribi pipeline in Cameroon, emphasizing the need to mitigate the impact of works in three areas, namely "Mbéré Valley" and "Ghaba Deng Deng", as well as "the Atlantic coastal forest, which is rich in biodiversity and home to the pygmy bakula(Simonet).

.5-The Security Factor:

Transport lines must avoid locations where there is political unrest or military conflict. This was a contributing element in the failure of several initiatives. For example, the Baku-Tbilisi-Ceyhan pipeline was supposed to pass through Armenia, but because of the conflict between Armenia and Azerbaijan over the Nagorno-Karabakh area, the pipeline bypassed the route despite its benefits in terms of convenience of construction and low cost(Souleymanov,2012,pp77-105).

1.4. Pipelines' Legal Status:

The domestic pipeline network of a country is governed by the laws of that country, but export pipelines that cross several nations or international regions, such as the high seas, present a dilemma. A set of questions must be asked here:

• Who owns this pipeline?

• Guarding and securing the pipeline.

• Profit sharing.

• In the event of a conflict, what is the solution?

A distinction must be made between onshore and offshore pipelines, as the onshore pipelines are operated by an agreement between a group of countries through which the pipeline passes, as well as the investing companies so that a company to undertake the implementation work is established based on this agreement. As well as maintaining it in coordination with the implementing company. In other cases, it may obtain quantities of oil or gas exported through the pipeline, for example, Tunisia received transit fees in exchange for crossing the Algerian-Italian line on its territory(AbdulJabbar,2018,p04).

Given that the high seas are an international area that all countries of the world have the right to benefit from and exploit, the Law of the Sea Convention expressly stipulated in Section 112 that all countries have the right to lay submerged cables and pipelines in the bottom of the high seas beyond the country's continental shelf given that the high seas constitute an international area, all countries have the right to benefit from and exploit(International Convention on the Law of the Sea, Article 112).

This article confirmed what was stated in Article 79, which stated that pipelines can be built with the consent of the coastal state whose territorial sea the pipeline passes through, taking into account the coastal state's right to explore its coast line, but that it has no right to obstruct pipeline maintenance or laying after expressing its consent. This contract also outlines the processes for pipe maintenance and compensation in the case of a pipe fault[(IBID)].

1.5. Advantages of Pipeline Transportation:

Pipelines have a negligible influence on the environment. Accidents or natural calamities that may harm the pipeline will never result in significant losses due to the simplicity with which they may be contained, especially on land where, at most, the flow of oil or gas via the pipeline can be stopped to contain the problem. Despite this, there is a small risk of oil pipelines exploding, especially because oil is a moderately toxic substance whose accumulation inside the pipeline can cause an increase in pressure and possibly an explosion, but technological advancements have been able to reduce these risks through new pipe construction techniques such as multiple layers. Pipelines continue to save time and effort. Because it requires a little amount of labor compared to the technical and manned personnel on maritime tankers. It saves time and money by allowing energy to flow continuously through it. As a result, the use of this mechanism of energy transmission is increasing, as 73 percent of natural gas is now exported via pipelines, and there are 60 countries in the world with pipelines with an average length of 2000 kilometers and about 10,000 kilometers of pipelines planned to be completed this decade(Abdljabbar,p.06)

2. Pipelines: Engine of Peace or Tool of Conflict?

Due to their economic benefits, oil and gas transmission lines are of significant interest to politicians and scholars. They are the cornerstone of energy security for any country. These lines are seen as a sign of reliance since they are frequently utilized to exert influence and pressure on other countries in order to achieve certain political objectives.

2.1. Pipelines as a Pressure Tool:

Ukraine's power outages in 2006 were a turning point in the evolution of energy security. It also demonstrated how pipelines might be used to achieve geopolitical benefits and aims, like what Russia did by putting pressure on other nations to align with their international stances or punishing them for taking specific positions. Economic penalties imposed by a single nation were seen differently by the researchers; some thought they may be beneficial, while others favored collective sanctions, which are thought to be more effective. However, the struggle of to reach an agreement on the enforcing of sanctions has a negative impact on their usefulness. For example, after occupying Manchuria in 1935, the United States unilaterally imposed an oil embargo against Japan, despite the latter's energy dependence on the US; in another example, the 1973 oil embargo lasted only six months before collapsing due to differences between the Arab states.

Despite this, it should be highlighted that the global oil market's structure restricts the usage of oil in the context of sanctions. In contrast to natural gas, it is easier to utilize as a tool because its trading is based on pipelines. In 2003, the director of US strategic stocks commented on the rise in gas prices in July 2003 to double their price in the same month of the previous year: "...Russia's capacity to exert pressure on these nations was aided by Eastern and Central Europe's 85 percent reliance on Russian gas and the Russian pipeline network... "(Ghaleb ,2001)

Russian President Vladimir Putin considers Russia to have the right to use gas and its pipeline network to achieve its foreign policy goals. He publicly stated: "The gas pipeline network is a revival of the Soviet Union. "(Ghaleb,2001)

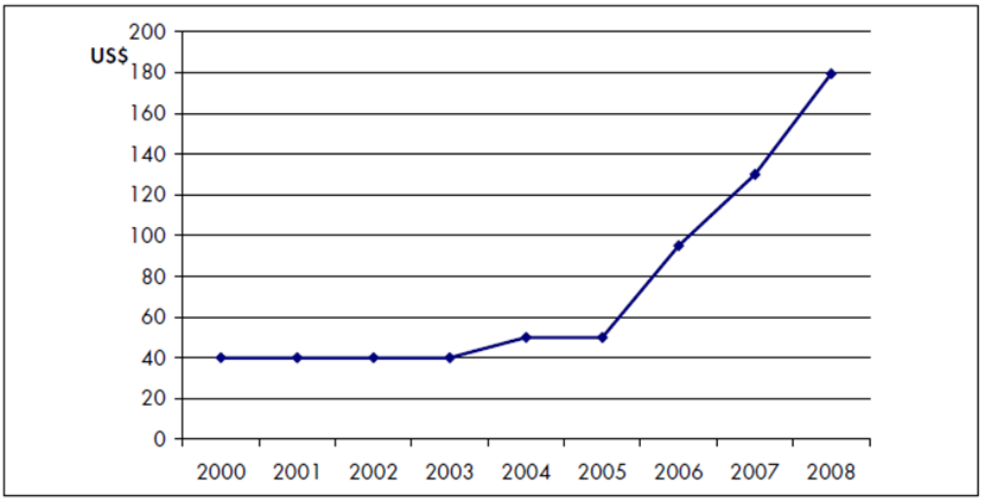
In January 2006, Russia leveraged its gas and pipelines to put pressure on Ukraine for the first time in history, in reaction to Ukraine's failure to pay European gas prices, which were higher at the time, estimated at $230 per thousand cubic meters. Russia cut off the flow of Russian gas to Ukraine, forcing Ukraine to deduct other European nations' gas quotas to satisfy their demand, resulting in a shortfall and loss of supplies for several European countries, estimated at 40% for Hungary and 30% for France and other countries. Regardless of the trade dispute between Russia and Ukraine, Russia's actions can be explained from a geopolitical standpoint, as it seeks to destabilize Ukraine in order to depose President Yushchenko, who is friendly with the West and has expressed his desire to establish friendly relations with the United States of America, indicating Russia's loss. Because of its sway in this area, which it has long perceived as its back garden(NIES,2010).

The pricing dispute between the two nations escalated again in 2009, prompting the supply of 16 European countries to be reduced and shut off to Ukraine initially, before cutting off the supply via the pipeline altogether on January 7, 2009. It may be argued that Russia utilized the price paper to exert pressure, particularly during the winter months when the need for energy is at its

highest , implying that Russia picked this period to guarantee that its objectives were met. This theory is supported by the fact that Russia exports gas at different prices depending on the status of the state and the nature of the relationships it maintains with that state. For example, Armenia, a major ally in the Caucasus region, obtains gas at a price of $110 per thousand cubic meters only, while the Baltic States, with western European leanings, buy at $230 per thousand cubic meters, while the rest of European countries import it at $500 per cubic meter, according to 2009 statistics(Rasoul,2018,p68-72).

Russia announced a pricing war against Ukraine as one of its key strategies for swaying public opinion in Ukraine ahead of the 2010 elections. The population, sensing the threat to energy security posed by the disruptions, will recognize the regime's incapacity to meet its primary commitments, and will then gravitate to the change represented by certain pro-Russian faces. With the election of President Viktor Yanukovych in 2010, he was able to negotiate a cheaper price than Russia had asked in recent years, for a price estimated at $330 per thousand cubic meters compared to 412 dollars per thousand cubic meters, later reaching 270 dollars per thousand cubic meters following talks, and this was before the 2014 crisis(Rachid,2014).

Figure 1: A graph showing the evolution of prices for Ukraine's imports of Russian gas.



Source: Institute for economic research and policy consulting, Kiev

Russia used the same tactic to exert pressure on Belarus, resulting in the Russian business Gazprom reducing the amount of natural gas available to Belarus by 50% and boosting the price to $150 per thousand cubic meters from $30 in 2002. This tension began to rise in tandem with the completion of the Yamal-Europe strategic line, which connected Russia and Europe. Belarus is one of the key nations that this pipeline crosses through on its way to Germany. By putting pressure on Belarusian President "*Alexander Lukashenko,"* who does not have friendly relations with Moscow, the latter was able to ensure the pipeline's passage without Belarus imposing any difficult conditions, such as high transit fees, in addition to the desire to punish a country that is gradually moving away from Russia's sphere of influence(Balmaceda,2006,p14).

On the contrary, transit countries may exert influence over oil-producing countries, particularly when it comes to landlocked countries that rely on the territories of other countries to export their goods, putting them in a permanent weak position vis-à-vis others, and even major countries like Russia may be subject to these bargains from transit countries, such as the Baltic States: Lithuania, Lithuania, Estonia. Despite the fact that these countries are small in comparison to Russian power, the latter is in desperate need of friendly relations with them because they form a geographical divide between them and a part of the Russian region known as "Kalingrad," which requires increased energy that needs to pass through these countries(Loic,2007).

Many countries benefit from the advantages of pipelines passing on their lands, such as Lebanon, which obtained high fees and enormous privileges in exchange for crossing the Arabic line "*Tablaline*" linking Saudi Arabia and Lebanon.

2.2. Pipelines as a Tool for Achieving Energy Security and Building Strength

Pipelines are also an instrument for self-affirmation, supplementing and solidifying a state's independence. The European Maghreb line, which connects Algeria and Spain, aided Algeria's separation from France, which fought tooth and nail to keep control over energy resources, particularly Algerian gas, and commerce. At a time when the French were suspicious of Algeria's capacity to market its gas, the Algerian energy firm Sonatrach submitted a proposal to European partners and completed the necessary studies. Algeria was able to draw the attention of Spain, and later the Italians, to this crucial project. The construction of the pipeline began with the signing of many agreements to sell Algerian gas to a large number of countries, increasing the amount of gas exported through the pipeline from 15 billion m3 proposed at the outset to 60 billion m3 in response to large European demands. The project's success compelled the French to purchase gas from Algeria and to try to include French firms (Total) as shareholders(Belaid,1989,pp245-252).

In the same vein, Turkey is attempting to attract various competing energy pipeline projects, whether European or Russian, in order to gain a key position in the global energy market, boost its strength and role in the world stage, and achieve other objectives, the most important of which is to ensure its energy security and meet its growing needs despite its lack of energy resources so that its endorsement of pipelines from various sources may contribute to reducing its 55 percent reliance on Russian gas, increasing its income from transit fees and transportation taxes, as well as the competitive prices for energy that it may obtain through these pipelines will work to upgrade energy services for its citizens, as well as achieve rent surpluses and attracting foreign investments, as it may propel Turkey into the ranks of an energy tycoon which will be mirrored on the social side by accomplishing progress and welfare for its residents and, as a result, providing stability that supports the Turkish economy's primary sectors, which include tourism. On a global scale, Turkey's transformation into a transit country with competing pipeline projects strengthens its negotiating position on a variety of issues, the most important of which is its admission to the European Union and avoiding the European's criticisms regarding human rights and democracy, which are deteriorating under the Islamists' presidency, and to reduce Western support for the Kurdistan Workers' Party, which poses a threat to Turkish national security(Salmi,2016).

2.3. Pipelines as a Conflict Issue

Pipes are a common target in conflicts since governments want to destabilize the opposing state by preventing it from gaining energy security, hence jeopardizing its economic and political stability in an endeavour to increase its market share. The Kirkuk-Baniyas pipeline, which was built in 1952, was targeted by former Iraqi Ministry of Energy officials after they learned that the line would be used to supply Israel with Iraqi gas, according to media sources(Khadouri,2013).

Pipelines are under not only the threat to of state wars but also to terrorist groups. The Islamic State in Iraq seized control of the majority of Iraq's pipeline network, and some of them were damaged, such as the Kirkuk-Ceyhan pipeline, which distributes Iraqi oil to Europe, in 2014, causing Iraqi output to drop by 40% compared to 2013. Since 2002, this pipeline has been the target of approximately 50 assaults. Furthermore, numerous pipelines have been exposed to the extraction of large amounts of oil through pumps and sale on the black market inside the organization's controlled zone or even to Turkey at competitive rates in order for the terrorist group to finance its members' salaries((Iraq selected issues report,2015).

Russian control over the Baku-Novorossiysk and Itaro-Novorossiysk pipelines which crosses Chechnya and supplies Azerbaijan with Russian gas was one of the main resons for the conflict in Chechenya. The evidence for this is that Russia was slow to respond to Chechnya's declaration of independence in 1991, and that its war against Chechnya began at a time when the Caspian countries were concluding important oil deals under the purview of the US, the most important of which is the deal of the century between 14 Western companies to invest in the extraction sector of Azerbaijani oil and its transport to Europe which may pose a threat to the Russian pipeline network(Jassim and Al KHafaji,2019).

2.4. The Grand New Game over Gas Pipes

Energy resources, as in the past, are a strategic gamble between major countries in their struggle for leadership, but in today's world, transportation routes are the real wager for the renewed conflict between Russia, the heir to the Soviet Union, and the United States of America in what is known as the new great game whose aspects have become apparent. In the 1990s, in the Central Asian and Caspian Sea area, the American government urged American oil firms to infiltrate and invest in this region owing to "Richard Cheney's" assertions of vast oil and gas deposits in the Caspian Sea region, which later turned out to be false. It inflated numbers for strategic goals, so the main goal of going to this region was to encircle Russia and prevent it from returning to the world stage, as well as to build a supply network to bypass Russia's massive transport network, which controls the gas supply sector in Europe as a whole.

Simultaneously, Russia recognized the game and began a robust comeback to the world stage by valuing its strengths and capacities in gas, particularly this resource that has distinguished itself since the third millennium in exchange for a relative drop in the importance of oil. To do this, Russia employed Gazprom as an economic arm to solidify its control over the European energy market, as evidenced by repeated crises that showed the degree of Russia's pressure on the European energy market (Cutting off supplies to Ukraine in 2006-2009 and 2014 and its disastrous

consequences for all European countries). This issue, which began with the energy market, has spread to geostrategic spaces such as interference in global issues, particularly the Syrian war, which represents a critical gamble for Russia to realize its old dream of having an access to warm waters and restore its international standing in the face of the U. S. by forging alliances with emerging countries such as China.

Today, American strategy focuses on Eurasia, because it is the focal point of the conflict and the primary source of oil and gas, primarily from Central Asia, the southern Caucasus, Turkey, and the eastern Mediterranean, where recent discoveries have been made to isolate Russian gas from Europe and control gas sources and routes. The context of Turkey's participation in the Arab world that extended to Libya may be found here. On the other hand, the cheapest alternative of delivering through Iran was rejected because it may lead to a strengthening of gas commerce to Asian nations through the Iran-Afghanistan-Pakistan axis, which the United States strongly opposes. This explains why it is so adamant about following up on Iran's nuclear program. To secure Russia's southern flank, the United States has worked for years to strengthen strategic ties with countries in the South Caucasus through financial and political aid, including Azerbaijan, which "Brzezinsky," President Carter's National Security Adviser, describes as "a cork plug for the Harkazin and Central Asia's wealth, making it a major geopolitical hub, The United States' Eurasia policy is based on(Brezenzinski).

The Russian side has reacted strongly to American plans to deliver gas to Europe as a whole, realizing that this conflict must be handled by the power of negotiations and Russia's capacity to lure diverse nations to its side. As a result, it initiated pipeline projects like the Southern Stream, which is connected to the Blue Stream line and extends over the Black Sea through Bulgaria, Serbia, Hungary, and Slovenia before finishing in Austria. In addition to concluding numerous commercial deals to supply gas with Turkmenistan and Azerbaijan, which devoured huge quantities of gas that ought to be pumped into the Nabucco pipeline, and raising numerous issues, the most important of which was the legal problem in the Caspian Sea to prevent the pipeline from passing through the sea's bottom. All of these difficulties, in addition to the challenges it had from the start, contributed to the project's fragility and ultimately led to its demise. Despite this, the fight over gas pipelines between the numerous parties that China joined after announcing the Silk Road initiative has continued.

3. Pipelines: A tool of Peace and a Pillar of Regional Integration

Pipelines have evolved into a representation of the nature of ties between energy-producing and energy-consuming nations, as well as a significant instrument for drawing international contacts in today's world. However, these lines, which have become a well-established reality on the ground, are likely to have a favorable influence on countries as time passes, forming a key to international collaboration. "Pipelines have a real opportunity to enhance peace and security in the region. They bind countries together by making the shared costs of conflict unacceptably high", said Singapore's Deputy Prime Minister(Salim,2010,p.06).

The construction of the Trans-Mediterranean pipelines connecting Algeria and Italy through Tunisian territory in 1970 was a catalyst for improving tense relations between the two neighbors, which culminated in the signing of the Treaty of Brotherhood and Concord in 1983,

coinciding with the line's inauguration. Similarly, Algerian-Moroccan relations were much worse than those with Tunisia due to a number of issues, including Western Sahara and Moroccan territorial demands in Algeria's west, particularly the Sand War, which had a negative impact on the two peoples' psyches and fueled hostility, but the establishment of the Moroccan-European pipeline linking Algeria and Spain through Morocco has improved relations between the two, and the result contributed to the de-escalation of tensions and the restoration of diplomatic ties in 1988, allowing the Arab Maghreb Union to be proposed as a significant regional project(Al Arabi,2017).

The Kingdom of Morocco has had significant success in Africa through its economic diplomacy, as it was able to persuade Nigeria to extend a gas pipeline destined for export to Europe through Moroccan territory, taking advantage of the project's severe delays and obstacles, which was supposed to pass through Algerian territory to Europe after the two countries had previously engaged in an important integrative endeavor that began to materialize in the Trans-Saharan road and the gas pipeline between Algeria and the Nigerian capital Lagos, which is supposed to be less expensive than if it would cross Moroccan territory, with the conclusion of several agreements between the Algerian-Nigerian High Bilateral Committee[3]. Despite the weakness of its gas industry and lack of experience compared to Algeria, Morocco has undertaken the project, which the Royal Institution deems a qualitative leap that will determine Morocco's position as an important transit country in the global energy market, as well as providing a strong incentive to integration trails in the Economic Community of West African States on the one hand and ensuring recognition by the group of countries of its right to self-determination on the other(Risk Al Makhadmi,p169-170).

The potential economic benefits of energy pipelines make states consider putting their political differences aside and taking advantage of these benefits, which might include energy sharing to meet domestic requirements or cash resources given to their national economy. In this case, Israeli gas pipelines may provide a mechanism for achieving peace in the Middle East, as it has done since the agreement to sell Egyptian gas to Israel, which has overcome many historical obstacles, including Egypt's denial of the existence of exported quantities of gas from the beginning, but this relationship exists thanks to the offshore gas pipeline connecting the port of Arish and the city of Ashkelon over 100 kilometer away(Mills,2016,p13).

Despite differences with Lebanon and the Palestinian Authority over the eligibility of exploitation, the new gas discoveries in the fields of "Tamara" and "Leviathan" contribute to strengthening Israel's position in the international energy market, as it will play a key role in supplying many neighbouring countries such as Jordan and Cyprus. The several initiatives suggested by Turkey to build a pipeline from Israel to Turkey, as well as Qatar's transition into a supplier for Israel in an attempt to fill the hole left by the suspension of Egyptian supplies during the Arab Spring of 2011, have proven it(Alyan,2016). Israel has become an important player in the global gas market as a result of these new realities, as it may be a player in any gas pipeline projects bound for Europe. When confronted with this fact, Arab countries may want to normalize ties with the Zionist entity.

Oil pipelines might be a key component in regional integration. The goal here is to discuss the modern idea of regionalism or integration, which has emerged as a result of the new functionalism. Integration, according to "Ernest Haas," is a process or route that involves changing allegiances and political action to a new core with new powers that go beyond those of governments. Other academics challenged this approach, focusing on other aspects. "Karl Deutsch" proposed four prerequisites for accomplishing integration: reciprocal interactions across nations, alignment of actual values and benefits, common experiences, and a particular level of public loyalty(Goujili,p246).

Based on the assumption that regional integration and dependency analysis are at the same level, as Joseph Nye and Robert Keohn believe, the French researcher Samuel Lussac considers that energy transmission lines are the foundation of regional integration because they are built through the efforts of a group of people. Companies, organizations, and individuals, according to Bash, are the players who promote collaboration and lead to integration, which have been overlooked by functionalist theory for a long time. The researcher proposes an energy transportation model for Azerbaijan, Georgia, and Turkey, based on the Baku-Tbilisi-Ceyhan gas transmission line and the Baku-Tbilisi-Erzurum oil transmission line. The researcher shows that multiple actors, including companies like "BP" and "SOCAR" Azerbaijan and the Gas Pipeline Management Company, as well as funding organizations like the International Monetary Fund and states, participated in the realization of these projects and the building of this interdependent relationship between the three countries. There are additional reasons that preserve this relationship, which he refers to as "Bash," or the crisis that draws these parties together and provides them a common understanding, which he believes was the fall of the Soviet Union and the independence of these nations. The relationship and issues that these countries confront together are the second element. For example, in the context of this initiative, there was a Russian competition in 2008 that involved military action in Georgia(Lussac,2011).

Pipelines have the potential to help resolve a number of crises in hotspots like South Asia, where disagreements and security risks continue to obstruct project completion. It might be a manner of integrating infrastructure across a group of nations, as well as energy management systems, as a nucleus for regional integration, especially because the pioneering European Union model began with an agreement on iron and steel, but grew to be a huge success. As a result of the good historical relations between the three countries, serious consideration of this project was given, which will increase the importance of these small countries for the European Union, as Cyprus was a refuge for many Jews before they went to Israel, and the three countries share the same fears and misgivings about rising Turkish ambitions in the eastern Mediterranean, as well as the historical hostility between Turkey, Greece, and Cyprus over the issue of dividing the island between Turkish and Greek Cypriots. Despite the strategic alliance that has traditionally kept the two countries together, various indicators of friction have surfaced between Tel Aviv and Ankara in recent years. Availability of infrastructure capable of connecting to pipelines in each of these countries, as well as the establishment of legal frameworks or agreements that ensure the effective management of these pipelines in a way that benefits both parties and prevents damage to structures or relationships are among the conditions that must exist.

The Energy Charter Treaty might serve as a foundation for mutual reliance in this case. If it is expanded to include other parties, this agreement will offer an energy transmission protocol that

stipulates the rights and responsibilities of exporting and importing countries, and crucially, it should cover the rights and duties of transit nations in terms of transit fees, which are relatively inexpensive in comparison to the costs of securing and maintaining pipelines on the ground. All of this would serve as a foundation for long-term collaboration between the states through which the pipeline passes through, resulting in a complex web of interdependency that might help to avert conflicts while also encouraging cooperation in various sectors. For that, pipelines are called peace pipes or the diplomacy of pipes.

Conclusion

Gas transmission lines have contributed and continue to contribute to the economic development of both rich and poor countries, as well as ensuring the establishment of cooperation between countries in the common interest they represent, which may be a way to avoid inter-country conflicts and a nucleus of regional integration. However, in light of the rising interest in energy and natural gas, these transportation routes have become a tactic in a new struggle between major nations, with the winner controlling the world's transportation routes.

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