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## Strategies to Maintain Fuel Security in Palestine

Suhaila Abu Ghoush

*Arab American University, Palestine, s.ghoush@students.aauj.edu*

Ahmad Sadaqa

*Arab American University, Palestine, Ahmad.Sadaqa@aaup.edu*

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## Strategies to Maintain Fuel Security in Palestine

### Cover Page Footnote

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## Strategies to Maintain Fuel Security in Palestine

Suhaila Abu Ghoush<sup>1</sup>, Ahmad Sadaqa<sup>2</sup>

<sup>1</sup>Strategic Planning and Fundraising, Faculty of Graduate Studies, Arab American University,  
s.ghoush@students.aauj.edu

<sup>2</sup> College of Graduate Studies, Arab American University-Palestine

Ahmad.Sadaqa@aaup.edu

### Abstract

*Fuel plays a key role in many aspects of life, particularly in any country's national security. However, energy insecurity leads to economic and political instability. In this study, the researcher investigated the strategies used to maintain fuel security in Palestine in order to define the challenges facing Palestine's fuel security, while exploring geopolitical variables and their impacts, investigate the territory's fuel storage policies and find out the potentiality to build fuel security infrastructure. To achieve those purposes, the researcher used a combination of descriptive and comparative approaches. More specifically, the researcher compared the Palestinian circumstances with the circumstances of other countries in achieving fuel security in the short run. The data was collected, treated and analyzed in Palestine during 1994-2019 using non-structured interviews. The results showed that there is no strategy for fuel security in Palestine, failure to adopt a fuel security strategy due to the absence of a healthy environment (political conditions), and building a fuel security strategy is directly linked to full independence and openness to foreign markets. As a result, the study proposed that there should be a well-defined fuel security strategy with clear objectives to achieve fuel security in case of emergency in the state of Palestine. In addition, the researcher recommended strengthening the procedures of the Palestinian Petroleum Authority and private companies to ensure the availability of fuel in the Palestinian markets, initiating the building of the infrastructure, and keeping continuous and diligent efforts and actions to compel the Israelis to abide by the agreements signed during the Oslo Accords, and coordinating with the private sector. This study is important for planners, policy makers, as it highlighted the fuel shortage crisis for future fuel security in Palestine.*

**keywords:** Strategy, energy, energy security, fuel, fuel security.

## Introduction

Petroleum, including fuel oil, is the main and strongest source of energy for any country and has proven to be the driver of many other industrial, construction, agricultural, service-sector and economic opportunities in the modern world. Therefore, strategies to maintain energy security are highly needed. As a result, three distinct perspectives on energy security have emerged: the sovereignty, robustness and resilience. At present, energy security challenges are increasingly entangled so they cannot be analyzed within the boundaries of any single perspective (Cherp, & Jewell, 2011).

In Palestine, for example, fuel security is extremely urgent due to the current political and security situations. That is to say, Palestinians need fuel and energy for planning, drawing up strategic policies, and driving some vital and strategic projects apart from the nagging everyday needs. Thus, fuel is regarded as a decisive instrument to achieve Palestine's sovereignty, robustness and resilience" (AFP, 2018). However, the absence of strategies to maintain fuel security would limit the power and sovereignty of Palestine. The world still remembers, by the end of January 2018, when seven Gaza's health centers were closed due to the depletion of fuel used to operate standby generators (AFP, 2018).

Surveying energy and fuel security literature, the researcher found out that energy studies were centered on understanding the dimensions of the concept (Cherp and Jewell, 2011; Cherp and Jewell, 2014; Sovacool and Brown, 2010). Other studies summarized many new meta-surveys (Cherp and Jewell, 2010, 2011; Sovacool and Brown, 2010). One method for characterizing this issue or concept was outlining various sorts of risks, along with long-term perspectives (Cherp et al., 2011). There was only one popular paper that addressed the European Union's standards for energy security. The paper had one qualitative indicator and two quantitative indicators and used as a model for assessing energy security (Scheepers, M., Seebregts, A., de Jong, J., & Maters, H. (2007).

### 1.1.Problem Statement

In order to survive and carry out even minimal activities, Palestinians have to be able to have functional hospitals and the possibility to cook and work. Palestinians also need basic mobility for security, transportation, and even trade and industry. Currently, Palestinians are relying on electricity generators in times of crisis. These generators are the sole alternatives for future fuel crises since Palestine's source of fuel is Israel, a hostile state.

Another potential alternative is creating fuel crisis reserves as well as a series of strategies for utilizing these reserves following the suit of some countries of the world. If we take Israel, for example, one of the main objectives of the Israeli Ministry of Energy is to prepare for emergencies, such as war, terrorist incidents, malfunctions, and climatic events. Based on these objective conditions, why should not we consider building similar reserves for a besieged country like Palestine? Additionally, there are many international agencies, such as the International Energy Agency, whose main purpose is to provide energy security. Consequently, the study aimed to answer the following main question: What are the main obstacles facing the adoption of a fuel security strategy in Palestine?

## 1.2. Added Value

The study:

- adds value to the researcher's knowledge, since it is one of the few studies on fuel reserves in Palestine.
- contributes to scientific research on Palestine, in specific, and the Arab World, in general.
- enriches scientific research on the importance of emergency fuel storage.
- highlights the importance of fuel storage and security for planners, policy makers and decision makers.

## 1.3. Questions and Aims

### 1.3.1 Objectives

The study aimed to highlight the influence of fuel crisis reserves on other sectors, while shedding light on how an emergency fuel plan could benefit the future state of Palestine. It also proposes a methodology for the creation of a fuel reserve, an evaluation of the current fuel options, and a future study on how much fuel would be necessary to achieve fuel security. The objectives of this study are listed below:

- Diagnosis of the current state of fuel security in Palestine
- Identification of fuel security challenges
- Identification of Palestine's fuel storage policies
- Identification of the different roles of the private and government institutions in achieving fuel security
- Identification the effectiveness of Palestine's fuel security strategy
- Identification of the most important problems with the implementation of fuel security strategy in Palestine

- Identification of stakeholder interest in developing future fuel security in Palestine.
- Identification of the most important obstacles curbing the development of fuel security strategy in Palestine

### 1.3.2. Questions

This study will answer the following main questions and sub-questions:

- What are the main obstacles that curb the development of fuel security strategy in Palestine?
- Is there a fuel security strategy in Palestine?
- If there is a fuel security strategy in Palestine, what does the strategy consist of?
- What is the relationship between the security situation and fuel security in Palestine?
- Are there any differences between government and private sectors storage facilities?
- What are the most important problems facing the implementation of fuel security strategy in Palestine?
- How interested are various stakeholders in developing future fuel security in Palestine?

### 1.4. Limitations

**Spatial boundaries:** Since the study is concerned with the Palestinian state, its spatial boundaries will be the West Bank and the Gaza Strip.

**Temporal boundaries:** 1994 to 2019. The study was conducted in the first semester of the 2018/2019

**Human boundaries:** This study included people who were working either in the fuel sector or deeply connected to either the private or public fuel sector.

### The Concept of Fuel Security

"The IEA defines energy security as the uninterrupted availability of energy sources at an affordable price. Energy security has many aspects: long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs. On the other hand, short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance."

Accordingly, the IEA defines energy security as, "the uninterrupted physical availability at a price which is affordable, while respecting environmental concerns."

Defining energy security as "Assessing various types of risk in the energy system" has a drawback which is simplifying energy security into an action, while assessing risks is regarded as part of the process of creating energy security. (Kucharski, J., & Unesaki, H., 2015).

## 2.1. Previous Studies

Ben Al Seid and Mohamed conducted a study titled “Management and Distribution of Petroleum Products from 2010 to 2015”. It is a case study of Nafat - HassiMasoud Branch, which showed that storage is important for marketing and industry. For industrial facilities, storage created a balance between the need to purchase and the stability and follow-up of the production process (Ben Al Seid, Mohamed, 2016). Al-Zubair’s study, “Policy on the Distribution of Petroleum Products in the Oil Corporation”, explained what drives institutions to the storage process, explaining the many benefits part from avoiding the crisis of fuel shortage (Al-Zubair, 2015). “What the UK has is an obligation on industry to hold oil at their existing sites above what they would normally do. That oil is quietly kept aside by firms so that the government can access it immediately, if and when it’s needed” (Baraniuk, 2015).

A competing view of energy security argues that policymakers should not focus only on geopolitical power and sign contracts with states with large energy resources. Trade alliances are not the only way to reach energy security. It is also necessary to encourage smart customer behavior (Sovacool and Brown, 2010).

A regularly cited approach to energy security is the four aspects of energy security: the geological accessibility, geopolitical availability, economic affordability, and the social and environmental acceptability. This approach links economic factors with the environmental factors of energy security (Kruyt et al., 2009).

In his paper, Lee (2005) answered the questions: how and why has the basic need for crude oil been perceived as a security question in China? How does China enhance its oil security? Lee’s paper demonstrated the importance of investigating China’s oil diplomacy and security. He broadened the scope of his research into China’s security by joining economic security, non-traditional security, territorial integrity, and traditional security.

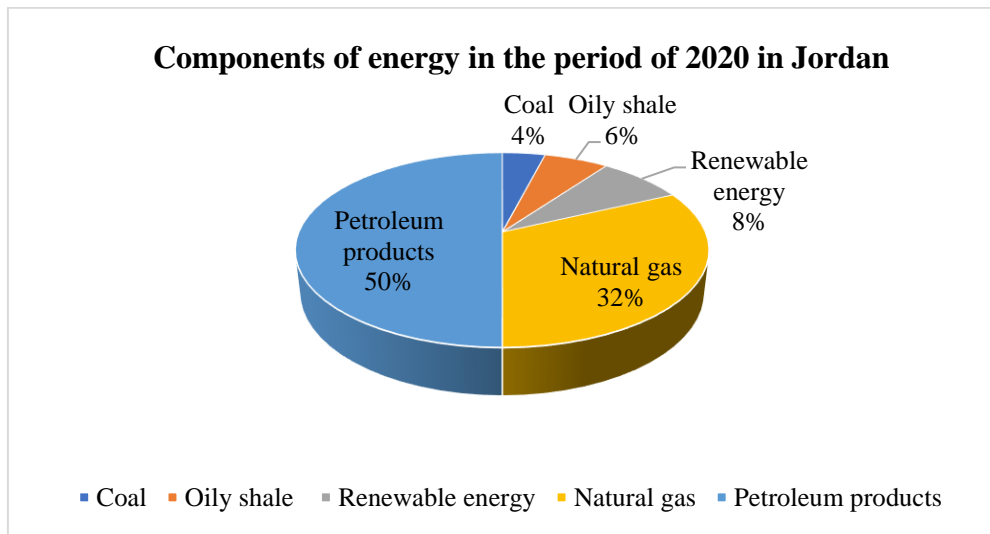
## 2.2. Fuel Security in the Hashemite Kingdom of Jordan

Jordan is in the same region as Palestine and had a population of 10,240,111 in 2018. It adopted an energy security plan for 2015 to 2025, with several strategic objectives. Achieving the security of Jordan’s energy supply is approached in various ways:

1. The Jordan Petroleum Refinery (JPRC) is undertaking its fourth expansion.
2. The companies are meeting Jordan’s needs for oil.
3. Increasing the storage capacity of petroleum products for 90 days
4. Implementing the company's logistics activities related to oil facilities

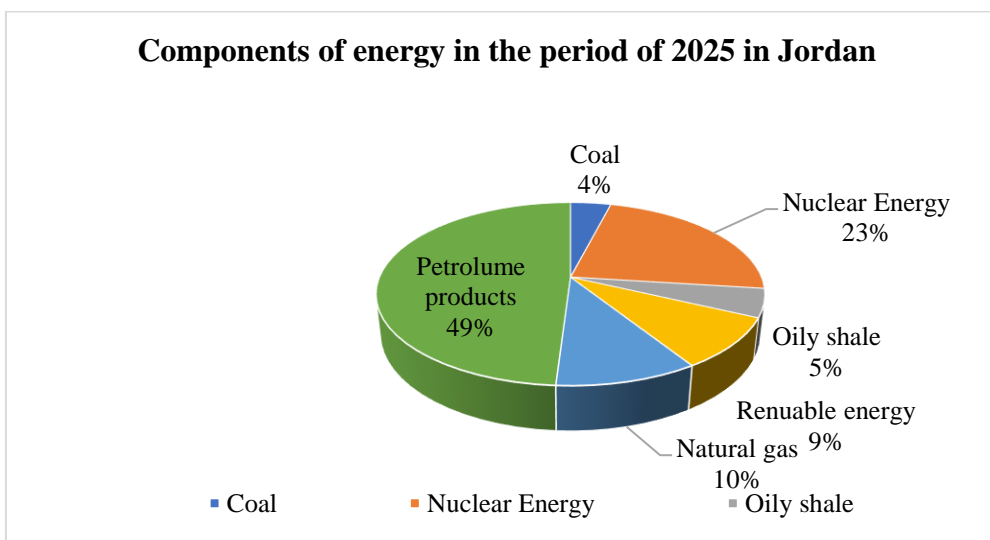
5. Completing the construction of the pipeline to transport oil from Iraq through the Kingdom of Jordan to the export port located in Aqaba.

Graphs show the sources of energy in Jordan during the period 2015 to 2025.



**Figure 1: Components of energy in the period of 2020 in Jordan**

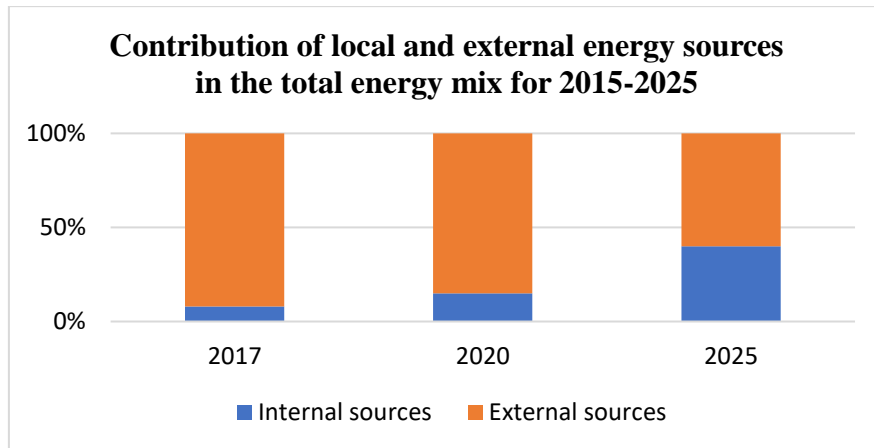
“Ministry of Energy and Mineral Resources of Jordan, energy security strategies in Jordan 2015”



**Figure 2: Components of energy in the period of 2025 in Jordan**

“Ministry of Energy and Mineral Resources of Jordan, energy security strategies in Jordan 2015”





**Figure 3: Contribution of local and external energy sources in the total energy mix for 2015-2025**

“Ministry of Energy and Mineral Resources of Jordan, energy security strategies in Jordan 2015”

### 2.3. Canadian Oil Security.

In 2010, Canada’s population was 34,005,274 and its population growth during the same year was 1.11395972071239. According to the World Bank, fossil fuel energy consumption (% of total) was 75.3857415699794. The energy imports and the net percentage of energy use were 51.374873798441 as shown by IEA Model of Short-term Energy Security (Jewell, 2011).

The model analyzed a country’s supply of crude oil and the flexibility of its refinery infrastructure. In this assessment, Canada received high marks for both oil security and infrastructure flexibility. The model also analyzed the number of the refineries in a country in relation to its size, and here Canada operates a large number of refineries, which is 2+ with the highest marks for flexibility of its crude oil refineries and supply of vulnerable oil products. Step two of the assessment analyzed the vulnerability of Canada’s imported oil products. Canada again appears to be high ( $\geq 5$  ports) on its infrastructure rating, but medium on its diversity rating. After that, the country’s output is analyzed against its exposure to external risks. Canada here has a very low ( $< 5$ ) level for its gasoline imports, no deficit for its imported middle distillates and a medium level (25 percent to 45 percent) for its products with high external resilience. Step three of the analysis joined the data mentioned above to assess the vulnerability of both internally refined oil and imported products. Here, Canada is one of the most secure countries in terms of its domestically refined gasoline, middle distillates and other oil products. In the last step of the analysis, the vulnerability of Canada’s total supply of oil products is assessed.

This merged the previous assessment with the average levels of oil products in storage. And here Canada had stored more than six weeks of supply of each produce, gasoline, middle distillates and other oil products.

Canada imports  $\leq 45\%$  of its gasoline consumption, gasoline and other oil products with stocks  $\geq 6$  weeks, and  $\leq 45\%$  of its consumption of middle distillates with a stock of middle distillates  $\geq 9$  weeks.

#### 2.4. France's Oil Security

France's population was 65,027,507 in 2010 and its population growth in the same year was 0.49402976972961. The World Bank ranked its fossil fuel consumption (percentage of total) as 49.8363783215558. Its energy imports were (% of energy use) 48.1634659237485.

The study presented French oil security using the IEA Model of Short-term Energy Security (MOSES), which used 2010 data and was published in 2011 (Jewell, 2011).

The first stage of analyzing the state's supply of crude oil and the flexibility of the refinery infrastructure showed that France had a medium score for both crude oil supply security and refineries' infrastructural flexibility. Similarly, in stage number two, France had a medium score for both of 2+ and flexibility of its crude oil refineries when assessed for the number of the refineries compared to the states' size. To reduce the vulnerability of the imported oil products, entry points, number and diversity of suppliers were needed. France had a high rating ( $\geq 5$  ports) and a high diversity rating. France here had a very low ( $< 5$ ) level for gasoline imports and a medium rating (25%-40%) for middle distillates and a low rating (5%-25%) other products with high external resilience. Step number three was an analysis of all the data mentioned above used to assess the vulnerability of both internally refined oil and imported products. And here France had a medium rating for its domestically refined gasoline, refined middle distillates and other domestically refined oil products, while it had a high rating for imported gasoline, middle distillates and other oil products. For the last step, the total amount of stored oil was assessed. High levels of stored oil might mitigate both internal and external vulnerabilities at different stages of the supply chain. And here France had more than six weeks of supply for each product, gasoline, middle distillates and other oil products.

France imports  $\leq 45\%$  of the state's consumption of middle distillates with enough stores of middle distillates  $\geq 3$  weeks,  $\leq 45\%$  of the state's consumption of other oil products with enough stores for three to nine weeks and moderate flexibility in its refining capacities.

## Methodology

This study used descriptive and comparative approaches, in which the researcher aimed to create an objective and clear description in order to generalize the findings of the study. The descriptive approach was used because the study required the collection of clear and relevant data regarding strategies for creating fuel security in Palestine. It also employed a comparative approach because the study required the comparison of the fuel storage situation in Palestine with neighboring countries and international standards and with fuel security indicators for Canada and France as short-term security.

### 3.1. Population

The study population included all 130 employees of the Palestinian Petroleum Authority as well as 290 private-sector oil companies, of which 276 are located in the West Bank and 19 in the Gaza Strip.

### 3.2. The Study Sample

The study sample used a purposeful and objective selection of seven employees in the Palestinian Petroleum Authority and owners of oil companies.

### 3.3. Study Tools

The researcher used interviews to gather data from the interviewees. The interview was unstructured in order to gather all the data that needed to be collected. To verify the validity of the interviews, the interview questions were presented to arbitrators with expertise and experience in the field of administrative work. After the experts gave their opinions, the interview questions were redrafted and finalized. The interview conditions were prepared in advance, and the interviewees were informed of the objectives, duration and location of the interview.

### 3.4. Time of Interview

Respondents were interviewed individually during the course of one day due to time constraints, since the interviews were conducted during working hours.

### 3.5. Sources of Data Collection

The data for this study was collected from the following sources:

1. Secondary Sources: books, scientific journals, studies and previous research.
2. Primary sources: This data was collected from the interviewees.

### 3.6. Statistical Processing

The data collected from the respondents was processed using frequencies, and a statistical measurement to illustrate the distribution of the sample by demographic variables.

#### Definition of Terms

**Palestine:** includes both the West Bank and the Gaza Strip.

**Strategy:** Stratégie in French. The origin of the word strategy is the Greek word “strategos,” which means the art of command and combat management used by the military (Tzu, 2008). The term was first used by Sun Tzu and Clausewitz. In this study, strategy was defined as “important and influential decisions taken by institutions and decision-makers to maximize their ability to benefit from the opportunities offered by the environment and to develop the best means to protect them from the threats posed by the environment.”

**Fuel security:** In this study, fuel security is defined as the ability to meet the fuel needs of the community—in the short term. Improving fuel security is fundamental to minimize shortages of liquid fuels (petrol, diesel and jet fuel) or gas, which can cause significant disruptions in daily life. Activities that support better fuel security include: minimizing and managing fuel supply shortages and protecting the state from the loss of fuel.

**Consumed oil:** These products can either be imported or domestically refined. Both choices have their own resilience factors and specific risks. The products of domestically refined oil are exposed to many risks like supply disruptions and refinery outage, while imported products might be impure or face trade barriers or compromises in the importing infrastructure.

**Middle distillates:** This group includes diesel, gas, jet fuel, and different types of kerosene, as well as white spirits, jet fuel, lubricants, petroleum coke, fuel oil, ethane, aviation gasoline, paraffin waxes, naphtha, and refinery gas among others.

### Strategies for Fuel Security in Palestine

When factorizing strategies for fuel security in Palestine, the following three factors need to be addressed: the status of fuel security, the challenges of fuel security, and the adoption of fuel security.

#### 4.1. Status of Fuel Security Strategy in Palestine.

There are many factors that have an impact on the status of fuel security in Palestine, and one of them is the conditions of Paris Economic Accord. Importing fuel to Palestine is directly related to Paris Economic Accord signed on 24 April 1994 with regard to oil products and their import conditions, as listed below:

- A. The terms of importing fuel into the Palestinian territories from the Hashemite Kingdom of Jordan, which are mentioned in the Paris Economic Accord in Clause 12 and Annex1, will be accepted if their standards comply with the United States and European Union standards that are proportional to the geographical conditions of Israel, West Bank and Gaza Strip. As for fuel that does not match these standards, a joint committee of experts will meet and take the decision within six months. In the meantime, the Palestinian Authority can import gasoline for Palestinian areas provided that they should:
1. change the color of gasoline to distinguish it from that in Israel.
  2. take all necessary measures to ensure that it is not marketed in Israel.
- B. The difference in the final price of gasoline for the Israeli and Palestinian consumers must not exceed 15% of the final official price of the Israeli consumer, and the Palestinian Authority has the right to decide the prices of fuel products except for gasoline.
- C. Egyptian fuel will be accepted if its standards meet the conditions stated in the paragraph (a).

To find out and analyze the status of Palestine fuel security, interviews were conducted with both members of the public sector (the Petroleum Authority) and the private sector (owners of petrol stations in the State of Palestine). Accordingly, the researcher concluded that there is no doubt that there is no specific fuel security strategy either in the public sector or the private sector. However, there are some procedures that are implemented according to the vision of the competent authorities to achieve fuel security, so fuel is provided for specific periods of time, depending on the political conditions.

Officially, there have been no serious plans to develop a fuel security strategy, but attempts were made to build a vision to keep fuel supplies flowing. The first attempt to create this vision was made at the beginning of the year 2016 before a draft cabinet bill was passed.

There are new indicators suggesting that serious considerations will be given to build a fuel security strategy after the movement of the Petroleum Authority to the Council of Ministers. Thus, the conditions will be favorable to start building and developing a fuel security strategy in the State of Palestine.

It can be said that there is not yet a strategy for fuel security in the State of Palestine except for a short-term plan to achieve immediate targets. The reasons for not adopting a fuel security strategy in Palestine are both objective and subjective. There is no doubt that the process of providing fuel under these conditions, especially after Israel had closed the roads and imposed a siege on the State of Palestine, forced the Palestinian Petroleum Authority and the owners of fuel companies to take measures to ensure the continued flow of fuel to companies in the State of Palestine through an Israeli transport company, which has been contracted to transport fuel.

This means that the fuel companies in Palestine are tied to Israeli fuel companies because they are dependent on the Israeli oil refineries. Since Israel's fuel companies do not have sufficient fuel reserves, Palestine's fuel companies do not have them either.

Regarding the price of fuel, the respondents said that the measures they are taking to provide an uninterrupted supply of fuel mean they are constantly suffering from a pricing problem because they are tied to fuel prices in Israel, as stipulated in the Paris Economic Agreement. Therefore, the Palestinian Petroleum Authority does not have the right to change the price of petroleum products because it is completely linked to fuel prices in Israel.

According to Al-Huda, it could effectively provide fuel for a two-week period. As for the Palestinian Petroleum Authority, the storage period is not sufficient for more than one day.

Because of the Israeli army's frequent incursions into the territories of the State of Palestine, which often come up with curfews and blocked roads, fuel carriers have limited mobility within Palestine. For example, one of the biggest fuel companies in Palestine has a contract with an Israeli fuel transport company, which is based in Jerusalem. The Israeli company can transfer fuel to the Palestinian fuel companies because it has an Israeli registration plate, and so is allowed to move freely in the Palestinian territories.

Because of the unstable security situation, the establishment of barriers on the roads and the restrictions on the movement of the population and vehicles, fuel companies throughout Palestine are threatened. This is also due to the agreement on the partition of the territory of the State of Palestine, which has divided the territory into the A area (under full Palestinian administrative and security control), the B areas (administratively under Palestinian control), and the (C) areas (under Palestinian and Israeli control).

#### **4.2. Challenges to Fuel Security in Palestine**

The respondents stressed that there are many problems that prevent the creation and development of fuel security strategy in the State of Palestine. Those problems can be classified into security, administrative, political, and financial categories.

The security problems are due to the Israeli occupation, which continuously imposes restrictions that paralyze all aspects of life, whether by restricting the movement of people, closing crossings and borders, or preventing the transfer of goods and equipment from one area to another. Successive Israeli governments, and their army forces deployed in the territory of the State of Palestine, have been implementing security policies in order to limit the local population's lives.

The most prominent manifestation of these policies is the prevention of the supply of goods from being delivered to the Palestinian population. This restriction causes great harm to the Palestinian economy.

In order to overcome this dilemma, Palestinian fuel companies built fuel stations. One of these stations is in Gaza, and was completed before Israel withdrew from the Gaza Strip. Another is a special store operated by one of the biggest Palestinian fuel companies near Ramallah. These stations can supply the Palestinian population with fuel for a period of ten to fourteen days in addition to Palestinian fuel companies' contract with Israeli companies to transport fuel to the State of Palestine. The Israeli companies have Israeli license plates, allowing them to move freely under the Israeli ban.

The administrative problems that prevent the adoption fuel security strategy in Palestine include the lack of laws and legislations necessary to regulate the storage and distribution of fuel. To this day, a proposal regarding laws related to the fuel supply and its availability in the Palestinian market has not been put forward, nor has a bill been submitted to allow the construction of fuel stores inside the territory of the State of Palestine due to the absence of a unified body specialized in the provision and distribution of fuel. Despite the establishment of the Palestinian Petroleum Authority, this body is not a unified official body that regulates the process of the provision, distribution and storage of fuel in Palestine because it has not been a part of the Palestinian Council of Ministers. Because of this, the vacuum left by the Palestinian Petroleum Authority had to be filled. Private companies are working to ensure the continued supply of fuel to the Palestinian market. They have made bold and practical steps, which are nevertheless illegal, to build a fuel storage outside the border of their fuel stations.

As for the political obstacles, it is known that the Oslo Accords did not lead to an agreement on the final status of Palestine. Some of the issues were postponed for a period of five years, during which the issues related to the postponement were supposed to be settled, although that has not happened. There is no doubt that the fuel situation was one of those issues because it is linked to crossings and borders. It is not possible for Palestine to import oil from neighboring countries directly, because of its lack of control over its own crossings.

Therefore, because the negotiations related to the Oslo Accords were never finalized, many commercial activities in the State of Palestine remain dependent on Israel, which imposes a systematic policy aimed at preventing Palestine's full independence and keep the Palestinians fully subordinate to the Israeli economy.



One of the major fuel security challenges in this sector is the failure of Israel to abide by the agreements reached with the Palestinian side, especially the declaration of Principles on Interim Self-Government Arrangements (Oslo Accords), which was signed on 13 September 1993, as clause (11) entitled (Israeli-Palestinian Cooperation in the Economic Fields) dealt with the formation of an economic cooperation committee from the Israeli and Palestinian sides with the aim of implementing and developing the programs mentioned in the attached protocols specifically (Annex 3 and Annex 4) after the Agreement of Principles enters into implementation phase.

The Third Annex of the Oslo Agreement on the Protocol for Israeli-Palestinian Cooperation and exactly at the third point included the cooperation of the two parties in the field of energy and energy development program, taking into account the exploitation of gas and oil for industrial purposes. The program may include the establishment of an industrial petrochemical complex in Gaza Strip and the construction of a gas and oil pipelines.

While the Annex IV concentrates on the same protocol in the regional development programs. The program consists of two components: the first is associated with the West Bank and the Gaza Strip and the second is related to the regional program, which aimed at transferring oil, gas and other sources of energy and industrial exploitation and distributing it.

Moreover, in Oslo II Agreement (transitional period) between the representative of the Palestinian people and the government of the State of Israel signed in Washington on September 28, 1995 and contained thirty-one clauses, seven annexes and eight maps; Chapter I addressed the Council and the establishment of a transitional Palestinian Authority for self-government; Chapter II detailed redeployment and security arrangements and was directly linked to this study, clause XI, in particular; Chapter III highlighted Legal Affairs, and Chapter IV dealt with the cooperation. Different provisions and concluding paragraphs were addressed in Chapter V.

Chapter II, which is about redeployment and security arrangements, was related to this study, especially in clause (11), and titled "The Land". The land was divided into three sections (Areas A, B and C); the areas (A and B) are under the control of the Palestinian Authority in the first stage. The redeployment phase was expected to take eighteen months in three phases six-months each. During the first phase, Area B will transfer civilian and non-territorial responsibilities from Israel to the Council. Area C is the area outside the "A" and "B". These areas will be gradually transferred to the Palestinian State in accordance with this agreement and in three phases, except for the final status negotiations, such as the borders.



The final status negotiations, which were supposed to discuss the most important issues, such as borders have failed. This, in turn, directly affected importing products, in general, and the importing of fuel in specific, not to mention the inability to build fuel storage in Area "C" without Israeli approvals, which the Palestinians have not received from the Israeli side and the inability to build fuel storage in other populated areas.

Since this matter depends on a political agreement, there are no measures to be taken to overcome this problem either from the Palestinian Petroleum Authority or the private fuel companies because the political situation can only be resolved through negotiations.

As confirmed by the respondents, there are also financial difficulties preventing the adoption of a fuel security strategy in the State of Palestine. It is well-known that the process of building a national oil refinery, like the ones constructed in other countries, is the mainstay of the energy sector in the country. The process of building the refinery needs large sums of money and external assistance. The construction of these reservoirs is not only impossible because of the Israeli ban, but also because of the problem of funding. The problem is not only in providing direct costs, but also in compensating the residents of the areas in which the reservoirs will be built.

#### **4.3. Adoption of a Fuel Security Strategy in Palestine**

The following table shows the main obstacles preventing the adoption of a fuel security strategy in Palestine. Table (1) shows three respondents (42.9%), who talked about the problems, which prevent fuel security, like smuggling fuel, securing enough land to build fuel reservoirs, Israel's strategy to unload bad fuel on the Palestinians, the proliferation of illegal fuel stations, citizens' lack of awareness of the necessity of fuel security and quality.

**Table 1: The Main Obstacles Preventing the Adoption of a Fuel Security Strategy in Palestine**

Paragraph	frequency	percentage
Israel's refusal to provide the General Petroleum Authority with sufficient quantities of fuel.	1	14.3
Lack of funding to build fuel tanks.	1	14.3
Israeli control over the proposed and suitable land to build reservoirs.	3	42.9
Lack of laws to regulate fuel storage safety.	0	0
Failure to comply with existing laws and regulations related to fuel security.	2	28.6
Lack of qualified and trained personnel to create a fuel security strategy.	2	28.6
Lack of desire among decision makers to create a fuel security strategy.	2	28.6
The difficulty of providing the necessary equipment for fuel storage.	1	14.3
Israeli restrictions on the freedom to import fuel from other countries.	1	14.3
The number of competent authorities concerned with fuel security (Ministry of Economy - Energy Authority - Petroleum Authority - Security Forces)	2	28.6
Lack of specialization (Academic/functional/professional) related to petroleum engineering.	0	0
The spread of settlements in the territory of the Palestinian state, which prevents Israel from agreeing to allow Palestinians to build fuel stores.	1	14.3
Israel's monopoly on supplying the state of Palestine with fuel.	0	0
Israel's desire to unload bad fuel into Palestinian markets.	3	42.9
Fuel smuggling.	3	42.9
Illegal fuel stations.	3	42.9
Lack of public awareness about fuel security and quality.	3	42.9
The public is not responding to the government's attempts to stop fuel smuggling.	4	57.1

The following Table (2) shows the intermediate obstacles that prevented the adoption of a fuel security strategy in Palestine.

Table (2) shows that (28.6%) of the respondents said that all of the following led to fuel insecurity: Israel's refusal to provide the General Petroleum Corporation with sufficient quantities of fuel, the lack of financial means to build fuel tanks, and the lack of land suitable for the construction of reservoirs being under the control of the occupation. There is also a lack of laws necessary to regulate the safe storage of fuel, the lack of desire among decision-makers to address fuel security, and the lack of appropriate academic/occupational specialization related to petroleum engineering. These are all intermediate-level obstacles that prevent the adoption of a strategy for fuel security in Palestine.

**Table 2: The Intermediate-level Obstacles Preventing the Adoption of a Fuel Security Strategy in Palestine**

Paragraph	frequency	percentage
Israel's refusal to provide the General Petroleum Authority with sufficient quantities of fuel.	2	28.6
Lack of funding to build fuel tanks.	2	28.6
Israeli control over the suitable land for building reservoirs.	2	28.6
Lack of laws to regulate fuel storage safely.	2	28.6
Failure to comply with existing laws and regulations related to fuel security.	1	14.3
Lack of qualified and trained personnel to create a fuel security strategy.	0	0
Lack of desire among decision makers to create a fuel security strategy.	2	28.6
The difficulty of providing the necessary equipment for fuel stores.	0	0
Israeli restrictions on the freedom to import fuel from other countries.	0	0
The number of competent authorities concerned with fuel security (Ministry of Economy - Energy Authority - Petroleum Authority - Security Forces)	1	14.3
Lack of specialization (Academic/functional/professional) related to petroleum engineering.	2	28.6
The spread of settlements in the territory of the Palestinian state prevents Israel from agreeing to build fuel stores.	0	0
Israel's monopoly on supplying the state of Palestine with fuel.	1	14.3
Israel's desire to unload bad fuel in the Palestinian markets.	0	0
Fuel smuggling.	0	0
Illegal fuel stations.	0	0
Lack of public awareness about fuel security and quality.	1	14.3
The citizen does not respond to the government's intentions regarding smuggled fuel.	0	0

The following Table (3) shows the low-level obstacles preventing the adoption of a fuel security strategy in Palestine. Table (3) shows that the difficulty of providing the necessary equipment for the fuel stores, the Israeli restrictions on the freedom to import fuel from others, and the spread of settlements in the territory of the Palestinian state prevent Israel's approval to build fuel stores for the sake of the settlers. A small percentage or 6 of the respondents (85.7) talked about the absence of the necessary laws to regulate the storage of fuel safely. Five of the respondents (71.4) talked about the lack of qualified and trained professionals (academic/functional/ professional) in the field of petroleum engineering.

In addition, four of the respondents (57.1) talked about Israel's refusal to provide the General Petroleum Corporation with sufficient quantities of fuel, lack of financial means to build fuel tanks, failure to comply with the existing laws and regulations related to fuel security, the number of agencies in the fuel economy (the Ministry of Economy - the Energy Authority - the Petroleum Authority - the security forces), Israel's desire to unload bad fuel in the Palestinian markets, fuel smuggling, and the proliferation of illegal fuel centers as low-level factors, which prevent the achievement of a fuel security strategy in the State of Palestine.

**Table 3: The Low-Level Obstacles Preventing the Adoption of a Fuel Security Strategy in Palestine**

Paragraph	frequency	percentage
Israel's refusal to provide the General Petroleum Authority with sufficient quantities of fuel.	4	57.1
Lack of funding to build fuel tanks.	4	57.1
Israeli control over the suitable land to build reservoirs.	2	28.6
Lack of laws to regulate fuel storage safety.	5	71.4
Failure to comply with existing laws and regulations related to fuel security.	4	57.1
Lack of qualified and trained personnel to create a fuel security strategy.	5	71.4
Lack of desire among decision makers to create a fuel security strategy.	3	42.9
The difficulty of providing the necessary equipment for fuel stores.	6	85.7
Israeli restrictions on the freedom to import fuel from other countries.	6	85.7
The number of competent authorities concerned with fuel security (Ministry of Economy - Energy Authority - Petroleum Authority - Security Forces)	4	57.1
Lack of specialization (Academic/functional/professional) related to petroleum engineering.	5	71.4
The spread of settlements in the territory of the Palestinian state prevents Israel from agreeing to build fuel stores.	6	85.7
Israel's monopoly on supplying the state of Palestine with fuel.	6	85.7
Israel's desire to unload bad fuel in Palestinian markets.	4	57.1
Fuel smuggling.	4	57.1
Illegal fuel stations.	4	57.1
Lack of public awareness about fuel security and quality.	3	42.9
The public does not respond to the government's attempts to control fuel smuggling.	3	42.9

## Results and Recommendations

When comparing the Palestinian situation with previous studies and international models for each of Canada and France fuel security, there will be enormous differences:

- 1- Canada has high marks for both oil security and also infrastructure flexibility, whereas France has a medium score for both crude oil supply security and its refineries' infrastructural flexibility. However, Palestine is not supplied with crude fuel and has no oil refineries.
- 2- Canada operates a large number of refineries, which is 2+ with the highest marks for flexibility of its crude oil refineries and supply of vulnerable oil products, whereas France has a medium score of 2+ with a medium score for the flexibility of its crude oil refineries and its supply of vulnerable oil products. However, Palestine has no oil refineries.
- 3- Canada appears to be high ( $\geq 5$  ports) on its infrastructure rating, but medium on its diversity rating, while France has a high rating ( $\geq 5$  ports) for its infrastructure and a high diversity rating. Regarding Palestine, the supplier is the Israeli side represented by two Israeli oil refineries.
- 4- The indicator, which measures the country's output is its exposure to external risks, shows that Canada has a very low ( $< 5$ ) level for its gasoline imports, no deficit for its imported middle distillates and a medium level (25 percent to 45 percent) for its products with high external resilience. However, France has a very low ( $< 5$ ) level for gasoline imports and a medium rating (25%-40%) for middle distillates and a low rating (5%-25%) other products with high external resilience. As for Palestine, there is no fuel production, and it is fully dependent on importing of all fuel products, and is highly vulnerable to foreign risks as it imports fuel from a country classified as hostile.
- 5- Canada shows that it is one of the most secure countries in terms of its domestically refined gasoline, middle distillates and other oil products. However, France has a medium rating for its domestically refined gasoline, refined middle distillates and other domestically refined oil products, while it has a high rating for imported gasoline, middle distillates and other oil products. Palestine, on the other hand, is a country with no oil refineries. In view of the imported petroleum products, they are vulnerable as they are subject to disruption and instability due to political, security and financial reasons.
- 6- Canada and France have stored more than six weeks of supply of each product, gasoline, middle distillates and other oil products.

The summary of Canada's oil security profile in 2010 shows that Canada imports  $\leq 45\%$  of its gasoline consumption with gasoline stocks  $\geq 6$  weeks. It imports  $\leq 45\%$  of its consumption of middle distillates with a stock of middle distillates  $\geq 9$  weeks; it imports  $\leq 45\%$  of its consumption of other oil products with stocks of  $\geq 6$  weeks. France, on the other hand, imports 45% of the state's gasoline consumption with enough gasoline stores for three to six weeks with moderate to high flexibility in refining capacity, and imports 45% of the country's consumption of medium distillates containing adequate stocks of medium distillates 33 weeks, whereas it imports 45% of the country's consumption of other oil products for three to nine weeks and moderate flexibility in its refining capacity. However, the Palestinian case is totally different. Palestine imports 100% of its consumption of fuel products, refineries do not exist and there is no storage.

### 5.1. Results

According to this study, there were six main results.

1. The results of the study showed that there is no strategy for fuel security in Palestine, although there are precautionary measures and procedures to deal with emergencies.
2. The failure to adopt a fuel security strategy is due to the absence of a healthy environment (political conditions).
3. The private sector, especially Al-Huda Company, bears the burden of providing fuel to the Palestinian markets in case of emergency and crises.
4. Building a fuel security strategy is directly linked to full independence (control of crossings and borders) and openness to foreign markets.
5. Building a fuel security strategy in Palestine is an urgent necessity not only for emergencies but also for price fixing because fuel prices in the current situation are tied to fuel prices in Israel.
6. The study also showed that building a fuel security strategy in Palestine needs legislative support, including:
  - A. The enactment of laws to regulate the fuel sector in Palestine.
  - B. The training of competent personnel.
  - C. Increased capital to fund the high costs of creating a fuel security strategy.
  - D. Coordination with Palestine's friends to benefit from their experience in this field.

## 5.2. Recommendations

In the light of the study's results, the researcher recommends the following:

1. Strengthening the procedures of the Palestinian Petroleum Authority and private companies to ensure the availability of fuel in the Palestinian markets should be a high priority.
2. There is a necessity to initiate the building of the infrastructure needed to create a fuel security strategy in the future.
3. There is a necessity to coordinate with the private sector, which provides fuel to the Palestinian markets.
4. There is a necessity for continuous and diligent efforts and actions to compel the Israelis to abide by the agreements signed during the Oslo Accords.
5. There is a necessity to have competent authorities to search for alternative methods to provide fuel for Palestine and avoid dependence on Israel because of the high cost of fuel to the Palestinian citizen (in other words the dissolution of the Paris economic agreements).
6. Competent authorities are needed to:
  - A. pass laws and regulations to regulate the fuel sector in Palestine.
  - B. qualify and train competent staff.
  - C. accumulate the capital to fund the high costs of constructing the strategy.
  - D. coordinate with friendly nations to benefit from their experiences in this field.

## 5.3. Recommended Fuel Security Strategy

The ultimate goal of a fuel security strategy is to stockpile fuel for crisis periods. The justification for supporting the proposed strategy from the year 2020 to 2030 was presented above, and is essential for political, legal and commercial reasons. This strategy is meant to be a proactive approach to create a diverse fuel supply and prevent disruptions. Palestine, in both the public and private sector, is not well organized to address threats to its economy, national security and stability that could be created by interruptions to its fuel supply. Here are some suggestions to mobilize the government and donors' resources to create deep attention to the balance between security, stability and economic factors needed to achieve fuel security in Palestine. Based on this study, some possibilities exist to support the fuel sector and achieve fuel security in Palestine.

Goal 1: from 2020 to 2023

Pass legislations that ensure the development of fuel security.

Objective 1.1: Develop and supervise policies and legislation related to fuel security in consultation with the relevant parties in the State of Palestine

Strategy 1.1.1: Draw on case studies from other countries that illustrate possible laws regarding stockpiling crisis fuel reserves.

Strategy 1.1.2: Coordinate with relevant authorities to propose laws.

Strategy 1.1.3: Develop Laws related to the regulation of the fuel sector and stockpiling of fuel crisis.

Strategy 1.1.4: Pass laws regulating the relationship between the General Petroleum Corporation and other related parties.

Objective 1.2: Enhance the contribution of the fuel sector to Palestine's fuel supply security.

Strategy 1.2.1: Push towards a law that allows the private sector to store fuel reserves to support the public sector in times of crisis and emergency.

Strategy 1.2.2: Develop a licensing system for crisis fuel reserves for the private sector.

Strategy 1.2.3: Establish general safety and security conditions for fuel reserves outside the government stations.

Goal 2: from 2023 to 2027

Agreements and treaties concluded to be re-examined and agreements to be amended

Objective 2.1: Re-examine and analyze current status of previously concluded agreements and treaties.

Strategy 2.1.1: Work with experts in international law.

Strategy 2.1.2: Identify and disband inappropriate agreements, treaties and protocols.

Strategy 2.1.3: Negotiate with the relevant authorities regarding the removal of the inappropriate agreements.

Objective 2.2: Ratify fair and appropriate agreements regarding fuel security in Palestine.

Strategy 2.2.1: Focus on the search for mechanisms to conclude fair agreements to facilitate the process of supplying fuel to the State of Palestine.

Strategy 2.2.2: Find possible sources of fuel from countries other than Israel, such as Venezuela.

Objective 2.3: Propose a fuel reserve project in cooperation with international organizations.

Strategy 2.3.1: Request that international organizations finance the construction of crisis fuel reserves.

Strategy 2.3.2: Coordinate with international organizations to provide crisis fuel reserves as grants to the State of Palestine.

Strategy 2.3.3: Cooperate with international organizations to operate and supervise crisis fuel reserves when completed.



Goal 3: from 2027 to 2028

Store sufficient amounts of crisis fuel distributed geographically throughout Palestine.

Objective 3.1: Build sufficiently large fuel storage facilities.

Strategy 3.1.1: Coordinate with Israel to build fuel reserve stores in border areas.

Strategy 3.1.2: Coordinate and grant approvals and licenses to build fuel reserves.

Strategy 3.1.3: Identify locations for the fuel reserve stores and conduct the necessary tests on them. Ensure that they are distributed throughout the Palestinian state (central, north, south).

Strategy 3.1.4: Communicate with companies with expertise in building fuel reserve stores.

Strategy 3.1.5: Focus on determining the appropriate specifications for the fuel reserve stores and determining the security and safety conditions for them, taking into account the sensitivity of the Palestinian situation.

Strategy 3.1.6: Start bidding for building fuel reserve stores and choose the best offers.

Strategy 3.1.7: Sign agreements to build fuel reserves and follow up on their implementation.

Objective 3.2: Provide adequate fuel reserves.

Strategy 3.2.1: Search for fuel suppliers with appropriate qualifications and prices.

Strategy 3.2.2: Expand the network of oil refineries in other countries willing to sell to Palestine.

Strategy 3.2.3: Start bidding for the supply of fuel to the State of Palestine.

Strategy 3.2.4: Sign fuel supply agreements with specifications suitable for the State of Palestine.

Strategy 3.2.5: Evaluate and follow up on the implementation of the agreements for the supply of fuel.

Goal 4: from 2028 to 2030

Import fuel to be from diversified sources.

Objective 4.1: Build strong ties with oil refineries in other countries.

Strategy 4.1.1: Focus on strengthening relations with suppliers of oil derivatives in other countries.

Strategy 4.1.2: Expand relations with oil suppliers in other countries.

Strategy 4.1.3: Explore the local and international market for the oil derivatives sector.

Objective 4.2: Provide fuel from diverse sources at reasonable prices.

Strategy 4.2.1: Study the feasibility for securing a diverse supply of oil derivatives (both crude oil and re-refining or supply of oil derivatives in its final form).

Strategy 4.2.2: Study the possibility of providing oil derivatives through grants to the State of Palestine (both crude oil and oil derivatives in their final form).

Strategy 4.2.3: Offer bids to fuel suppliers with appropriate conditions, specifications and prices to ensure sustainability.

Objective 4.3: The transfer of fuel through pipelines from the Israeli refineries

This suggestion could limit smuggling and waste and reduce the problem of transporting fuel from Israeli refineries to the warehouses of the General Petroleum Corporation, thus overcoming the problem of interruptions due to closures or holidays.

Strategy 4.3.1: Initiate pipelines between the Palestinian fuel stores of the General Authority of Petroleum and the Israeli refineries.

Strategy 4.3.2: Follow-up by maintaining the security and safety of the pipelines.

Goal 5: from 2020 to 2030

Improve the efficiency of the Palestinian General Petroleum Authority.

Objective 5.1. Provide sufficient human resources to carry out the activities of the General Petroleum Authority.

Strategy 5.1.1: Recruit experienced specialists to the General Authority for Petroleum.

Strategy 5.1.2: Providing programs to increase the employees' efficiency at the General Petroleum Corporation through quality training programs.

Objective 5.2: Build an accounting program commensurate with the work of the General Petroleum Corporation.

Strategy 5.2.1: Build an electronic software program for crisis fuel reservoirs.

Strategy 5.2.2: Build accounting programs suitable for the work of the General Petroleum Authority that could assist with licensing and supply of oil derivatives and distribution to Palestinian fuel companies.

Objective 5.3. Promote the financial efficiency of the General Petroleum Authority.

Strategy 5.3.1: Build programs to pay off the debts of compromised fuel companies and secure funds to build crisis fuel reserves.

Strategy 5.3.2: Work with fuel companies only on a cash basis, which will form a protective shield against disruptions due to inability to transfer cash to supply companies and also limits delays from the General Petroleum Corporation.

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## استراتيجيات للحفاظ على أمن الوقود في فلسطين

سهيلة ابو غوش<sup>1</sup>، احمد صدقة<sup>2</sup>

<sup>1</sup>التخطيط الاستراتيجي وجمع التبرعات ، كلية الدراسات العليا ، الجامعة العربية الأمريكية ،

s.ghoush@students.aauj.edu

<sup>2</sup> كلية الدراسات العليا، الجامعة العربية الأمريكية-فلسطين

Ahmad.Sadaqa@aaup.edu

### ملخص

يلعب الوقود دورًا رئيسيًا في عديد من جوانب الحياة ، وخاصة في الأمن القومي للبلد، ويؤدي انعدام الأمن في الطاقة إلى عدم الاستقرار الاقتصادي والسياسي ، ويمكن أن يتسبب في اندلاع الحروب أو اضطرابات في العمل. في هذه الدراسة، تقوم الباحثة بالبحث في الاستراتيجيات المستخدمة للحفاظ على أمن الوقود في فلسطين، والهدف من ذلك يتمثل في تحديد التحديات التي تواجه أمن الوقود في فلسطين ، مع استكشاف المتغيرات الجيوسياسية وتأثيراتها ، والتحقق في سياسات تخزين الوقود في المنطقة. وقد تم استخدام المنهج الوصفي والمقارن ومقارنة الظروف الفلسطينية بظروف الدول الأخرى في تحقيق أمن الوقود على المدى القصير، وكانت الحدود الزمنية للدراسة 1994-2019 ، والحدود المكانية للدراسة هي فلسطين. وتم استخدام المقابلات بوصفها أداة لجمع البيانات من إجراء مقابلات مع المهتمين المقابلات. والنتائج الرئيسية لهذه الدراسة هي إستراتيجية لأمن الوقود المقترحة مع الأهداف المقترحة لتحقيق أمن الوقود في حالة حدوث أزمة في دولة فلسطين. وقد توصلت الباحثة إلى ستة نتائج رئيسية ، بما في ذلك عدم وجود استراتيجية للتحقق من أمن الوقود في فلسطين والقطاع الخاص ، وعدم اعتماد استراتيجية لأمن الوقود بسبب عدم وجود بيئة صحية (الظروف السياسية)، و يرتبط تحقيق أمن الوقود ارتباطًا مباشرًا بالاستقلال التام والانفتاح على الأسواق، وكذلك الحاجة إلى تبني استراتيجية لأمن الوقود. في ضوء هذه النتائج ، تضمنت توصيات الدراسة تعزيز إجراءات هيئة البترول الفلسطينية والشركات الخاصة لضمان توافر الوقود في الأسواق الفلسطينية ، وضرورة البدء في وضع البنية التحتية اللازمة لإنشاء استراتيجية لأمن الوقود في المستقبل ، وبذل الجهود والإجراءات المستمرة والدؤوبة لإجبار الإسرائيليين على الالتزام بالاتفاقيات الموقعة من خلال اتفاقيات أوسلو. بالتنسيق مع القطاع الخاص ، وفي الجانب التشريعي ، ضرورة قيام السلطات المختصة بسن قوانين ولوائح لتنظيم قطاع الوقود في فلسطين. هذه الدراسة مهمة للمخططين وصانعي السياسات؛ كونها ستسلط الضوء على أهمية تحقيق أمن الوقود لمواجهة أزمة نقص الوقود في فلسطين.

الكلمات الدالة: الإستراتيجية ، الطاقة ، أمن الطاقة ، الوقود ، أمن الوقود.