

AN ANALYSIS OF ENERGY SUBSIDY REMOVAL IN NON-PETROLEUM ARAB COUNTRIES: ECONOMIC DEVELOPMENT INITIATIVES

APRIL 2023

I. INTRODUCTION

On a global scale, MENA region countries that rely on net energy imports face significant challenges since they are highly dependent on external sources of fossil fuels to meet their energy needs. The stability of the energy supply for net energy importer countries in the MENA region is subject to internal and external political conflicts and policies. These factors affect fuel insecurity and make these countries vulnerable to energy supply disruptions.

Currency fluctuations and unstable fuel prices are challenges related to energy dependence. This exposure creates significant economic and geopolitical implications, as maintaining a steady energy provision often requires difficult decisions that could compromise national energy security and impact many sectors.

To address these challenges, energy importers have taken measures as means of a sustainable and autonomous economy to achieve energy independence. Several countries provide fuel subsidies to their citizens. These subsidies are typically aimed at supporting low-income households and promoting economic development, but they can also contribute to fiscal imbalances and distort market incentives.

II. The understanding of Energy Dependence and Energy subsidies in Non-Petroleum Arab Economies

Energy dependence refers to the extent to which an economy relies on energy imports to meet its energy needs. In the case of non-petroleum Arab economies, such as Egypt, Jordan, Morocco, Tunisia, and Lebanon, energy dependence is a significant issue because these countries have limited domestic energy resources.

Therefore, these countries are heavily reliant on energy imports to meet their energy needs, particularly for electricity generation, transportation, and industrial processes. This dependence on energy imports can be a significant burden on their economies, as they must pay for these imports in foreign currency, which can strain their balance of payments.

To address this issue, many non-petroleum Arab economies provide energy subsidies to their citizens, particularly for fuel and electricity. These subsidies are intended to make energy more affordable for consumers and reduce the burden of high energy prices on low-income households.

1. TUNISIA

Historically, fuel subsidies have been an important policy and social protection mechanism in Tunisia, dating back to 1970. The subsidies were originally intended to support economic development and maintain social stability by keeping fuel prices low for consumers.

The government had always subsidized gasoline, diesel, and Liquefied petroleum gas (LPG), which are widely used in transportation, heating, cooking, and natural gas for electricity generation.

The energy subsidy system includes both direct and indirect subsidies:

- Direct subsidies are payments made by the government to two key state-owned companies - Tunisian Refining Company (*STIR*) and Tunisian Company of Electricity and Gas (*STEG*) - to offset their deficits.
- Indirect subsidies, on the other hand, are the difference between provision costs of crude oil and gas for the State, and the selling prices to two state-owned companies - Tunisian company for petroleum activities (*ETAP*) and *STIR*.

Therefore, Tunisia has a significant dependence on energy imports, as the country's domestic energy production is limited. According to the International Energy Agency (*IEA*), Tunisia's total primary energy supply in 2019 was 5.5 million tonnes of oil equivalent (*Mtoe*). Of this, 3.7 Mtoe (67%) was from imports, while 1.8 Mtoe (33%) was from domestic production.

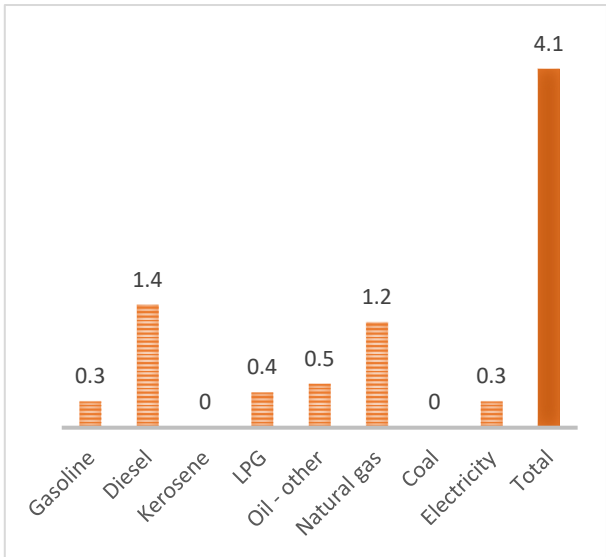
In 2021, Tunisia imported Natural Gas (NG) from Algeria by 45% to meet its demand for electricity generation, which is less than the previous year which was 57% (International Trade Administration & Statista). In addition, the local gas production is sourced from both concessions managed by the Tunisian company for petroleum Activities (*ETAP*) and foreign companies.

Therefore, the "**Nawara Gas Field**" a local gas production field started production in early 2020. The field is expected to reduce the energy deficit by 20% and gas imports by 30% when it reaches its peak production (International Trade Administration).

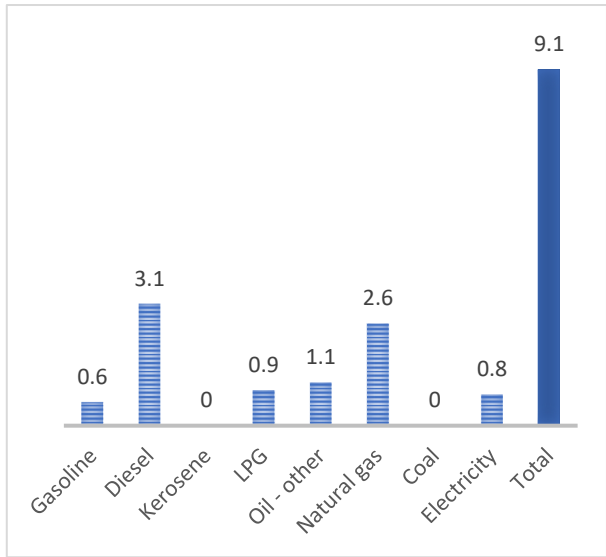
Based on IMF Data, energy subsidies were valued at \$4.1 billion, which is 9.1% of the Gross Domestic Product (GDP) in 2022 (see figures 1 and 2). Compared with 2021 were valued at

\$3.9 billion, which represented 8.7% of GDP, and the GDP in dollars was worth \$46.69 billion (World Bank).

Figure 1: Tunisia’s Total Energy Subsidies In 2022 **Figure 2: Energy Subsidies as A Percentage of GDP In 2022**



(Source: IMF Data)



(Source: IMF Data)

This rise in subsidies is due to Tunisia's heavy reliance on energy imports and exposure to international fluctuations in natural gas prices. Additionally, the devaluation of TND against USD and infrequent electricity tariff adjustments also contribute to this increase.

Additionally, the Global energy prices have risen on the international market in recent years. The cost of fuel subsidies with a linear growth of domestic energy consumption has been a significant burden on Tunisia's economy.

Currently, the low-sulphur diesel price is 2.205 Tunisian Dinar (\$0.71 USD) per litre, and the ordinary diesel is 1.985 Tunisian Dinar (\$0.64 USD) per litre, compared to the average price of diesel in the world for March is 4.061 Tunisian Dinar (\$1.29 USD) per litre. Meanwhile, the gasoline price is 2.525 Tunisian Dinar (\$0.81 USD) per litre in March compared to the average price of diesel in the world for March is 3.999 Tunisian Dinar (\$1.31 USD).

Petrol Prices - March 2023

Table 1: Tunisia Petrol Prices in 2023

Gasoline	2.525 Tunisian Dinar (\$0.81 USD) per litre
Low-Sulphur Diesel	2.205 Tunisian Dinar (\$0.71 USD) per litre

Ordinary Diesel	1.985 Tunisian Dinar (\$0.64 USD) per litre
-----------------	---

Source: Global Petrol Prices

In 2022, oil prices were revised upward 5 times for 3 products: gasoline, low-sulphur diesel and diesel by (3% in February, 3% in March, 5% in April, 3.5% in September, and 6% in late November), for a total increase of 20.4% during the year to achieve actual pricing by the end of 2023.

As a result, increased oil prices may contribute to high inflation by increasing the costs of production and transportation for businesses, leading to higher pricing for goods and services, therefore, the inflation rate was %10.4 in February 2023.

Nowadays, Tunisia continues to subsidize gasoline and diesel fuel while implementing various initiatives to eliminate fuels subsidies, with the goal of reaching zero subsidies by the end of 2023 for gasoline and diesel and Liquefied Petroleum Gas (LPG) by 2026, pursuant to the state's reform program with the International Monetary Fund (IMF).

As well, the state budget of 2023 plans to phase out fuel subsidies by 25.7%, reaching 5.669 million dinars (\$1.8 Billion) compared to 7.628 million dinars (\$2.5 Billion) in 2022.

2. JORDAN

Jordan has a long history of providing citizens with energy subsidies, which has been a primary policy objective of the government for several decades. Jordan has traditionally subsidized petroleum products such as gasoline, diesel, and liquefied petroleum gas (LPG).

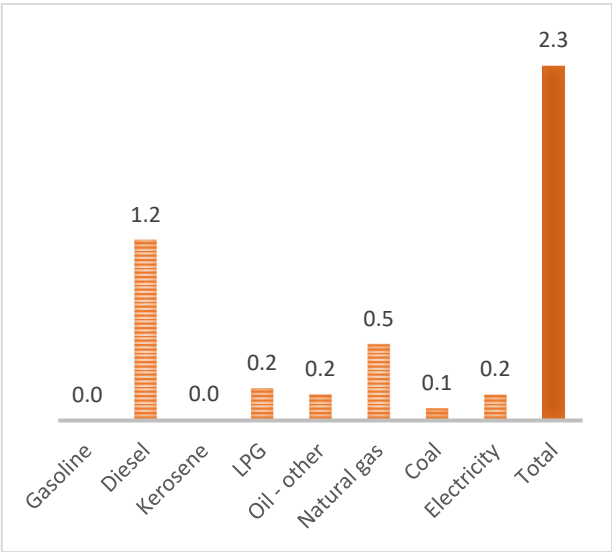
Jordan's energy subsidies in the 1970s were mainly intended to sustain the country's economy, which was heavily reliant on oil imports. The government extensively subsidized petroleum products, making them more accessible to Jordanians and stimulating economic growth.

Jordan is a country that depends absolutely on energy imports. According to the Jordanian Ministry of Energy and Mineral Resources, Jordan's total energy consumption was about 16.5 million tons of oil equivalent (Mtoe), and about 96% was imported in 2019. The main sources of imported energy are crude oil, natural gas, and electricity.

The government spent around \$2.2 billion on energy subsidies in 2021, accounting for 4.9% of the GDP, and the GDP in dollars was worth \$45.74 billion (World Bank). These subsidies were a persistent challenge for the government, despite fluctuations in their cost due to changes in international prices.

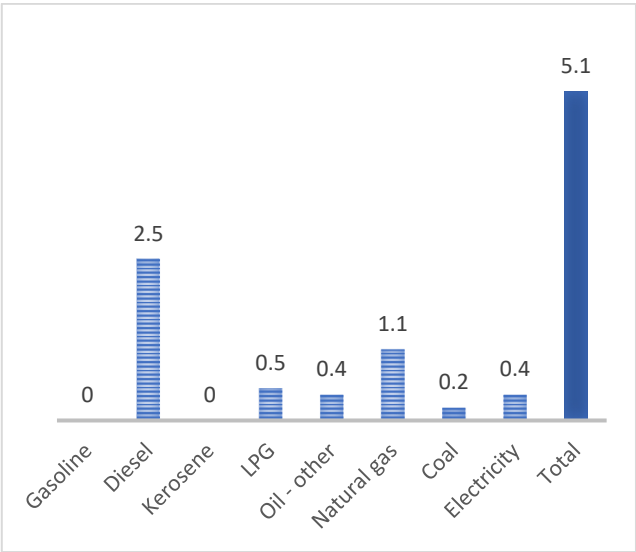
According to IMF data, Jordan spent \$2.3 billion on energy subsidies in 2022, representing 5.1% of GDP (See Figures 3 and 4).

Figure 3: Jordan's Total Energy Subsidies In 2022



(Source: IMF Data)

Figure 4: Energy Subsidies as A Percentage of GDP In 2022



(Source: IMF Data)

The high dependence on imported energy sources has led to various challenges for the Jordanian economy, including a high energy import bill, vulnerability to global energy price fluctuations, and potential energy supply disruptions.

As of early 2023, Jordan’s budget provides policies to increase the allocations of the National Aid Fund “*The unified cash subsidy*¹”. This program tries to offset the impact of fuel price increases on low-income groups. The program includes:

- Support the owners of passenger vehicles (taxi) in the amount of 50 dinars each month for three months.
- While the owners of medium buses will receive 110 dinars per month for three months.

¹ <https://takaful.naf.gov.jo/Account/Register>

- The owners of big buses will get monthly payments of 150 dinars for three months.

Currently, the gasoline-90 price is 0.945 Jordanian Dinar (\$1.33 USD) per litre, and the Gasoline-95 price is 1.185 Jordanian Dinar (\$1.67 USD) per litre, compared to the average price of gasoline in the world for March is 0.928 Jordanian Dinar (\$1.31 USD). While diesel price is 0.820 Jordanian Dinar (\$1.14 USD) per litre, compared to the world average price for March which is 0.914 Jordanian Dinar (\$1.29 USD).

Petrol Prices - March 2023

Table 2: Jordan Petrol Prices in 2023

Diesel	0.810 Jordanian Dinar (\$1.14 USD) per litre
Gasoline-90	0.945 Jordanian Dinar (\$1.33 USD) per litre
Gasoline-95	1.185 Jordanian Dinar (\$1.67 USD) per litre

Source: Global Petrol Prices

As a result of high oil prices, Jordan experienced severe inflation as a result of increased transportation and production expenses, currency depreciation, and reduced government subsidies. Overall fuel and lighting contributed 35.32% to the increase in inflation. Therefore, the inflation rate increased to 4.25% in February 2023, up from 3.77% in January.

Eventually, the Jordanian Minister of Finance reported that the adopted measures have reduced the budget deficit from 5.6% in 2020 to 4.4% in 2021. The deficit is projected to decrease to 3.7% in 2022, with an anticipated budget deficit of 2.9% in Jordan's 2023 draft budget.

3. EGYPT

Egypt has a long history of providing citizens with energy subsidies. These subsidies have been in existence since the 1950s and have played a critical role in keeping energy prices reasonable for the bulk of the population.

Initially, the subsidies were largely aimed at assisting the agricultural sector by supplying lower-cost diesel and other fuels. Subsidies were expanded to encompass other kinds of energy, such as electricity and natural gas, in the 1960s.

Subsidies have become increasingly expensive for the Egyptian government over the years and attempts to modify them have been made to reform them. These efforts, however, have

been met with opposition from the populace, who rely on government handouts to make ends meet.

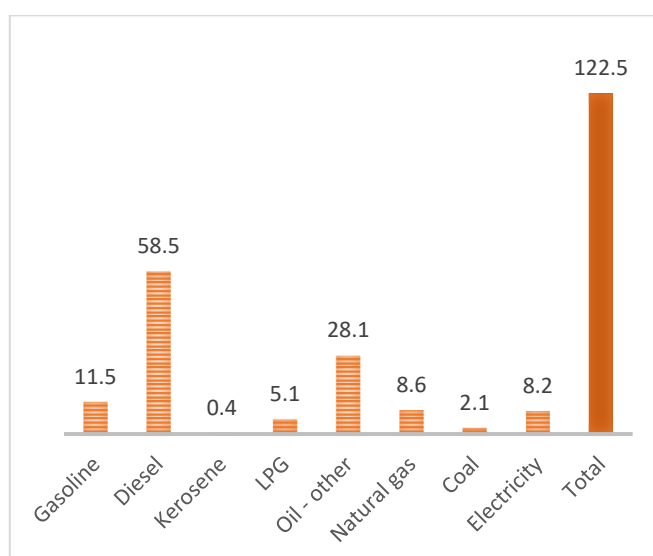
In 2019, Egypt's primary energy consumption was around 111 million tons of oil equivalent (Mtoe), with oil and gas accounting for approximately 96% of the country's total primary energy supply (International Energy Agency).

During the same year, Egypt imported an average of 635,000 barrels of crude oil and petroleum products per day. Also, it imports natural gas, largely from Israel, to meet its increasing energy demand. The transportation sector consumes the most oil, while the electrical sector consumes the most natural gas.

Therefore, the government spent more than \$115 billion on energy subsidies in 2021, which accounts for 29.1% of the GDP and the GDP in dollars was worth \$404.14 billion (World Bank).

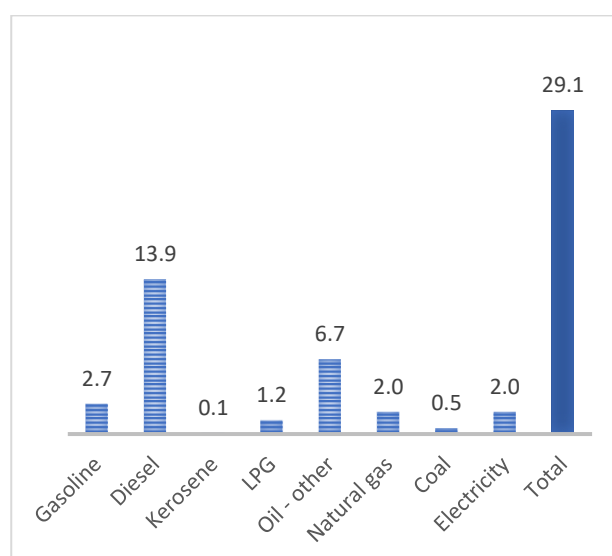
Energy subsidies were expanded to \$122.5 billion in 2022, representing 29.1% of GDP (IMF Data), this is illustrated in Figures 5 and 6. These subsidies were a persistent huge challenge for the government budget, despite fluctuations in their cost due to changes in international prices.

Figure 5: Egypt's Total Energy Subsidies In 2022



(Source: IMF Data)

Figure 6: Energy Subsidies as A Percentage of GDP In 2022



(Source: IMF Data)

Along with the enormous cost of energy subsidies, Egypt decided in July 2019 to begin liberalizing gasoline and diesel prices every 3 months through a committee formed by a Prime

Minister's decision, whose membership includes representatives from the Ministries of Petroleum and Finance, when they make any decision about increasing fuel prices, should be no more or less than 10%.

Currently, the gasoline-80 price is 8.75 Egyptian Pound (\$0.28 USD) per litre, Gasoline-92 is 10.25 Egyptian Pound (\$0.33 USD), and Gasoline-95 is 11.25 Egyptian Pound (\$0.36 USD) per litre, significantly lower than the world average of 40.56 Egyptian Pound (\$ 1.31 USD) in March. On the other hand, the Diesel price is 7.25 Egyptian Pound (\$0.23 USD) per litre, also lower than the world average of 39.49 Egyptian Pound (\$1.29 USD).

Petrol Prices - March 2023

Table 3: Egypt petrol Prices in 2023

Diesel	7.25 Egyptian Pound (\$0.23 USD) per litre
Gasoline-80	8.75 Egyptian Pound (\$0.28 USD) per litre
Gasoline-92	10.25 Egyptian Pound (\$0.33 USD) per litre
Gasoline-95	11.25 Egyptian Pound (\$0.36 USD) per litre

Source: Global Petrol Prices

According to the monitoring of the specialist energy platform, the current increase in gasoline prices in Egypt in March 2023 is the seventh since the country's decision to liberalize fuel pricing and this increase resulted in a 32% inflation rise in February 2023, the highest level since the summer of 2017.

Ultimately, Egypt's general budget for Fiscal Year 2022/2023 allocates around EGP 28.094 billion (around \$911 million) for petroleum subsidies, with a 52.6% increase from the previous year. This decision is due to the rise in soaring Brent prices and fluctuations in the value of the dollar relative to the Egyptian pound.

4. MOROCCO

Morocco has a lengthy history of energy subsidies, particularly for fossil fuels like gasoline, diesel, and butane gas. The Moroccan government has used energy subsidies to assist the country's growth and social welfare goals.

Morocco began providing energy subsidies in the 1970s, in response to the worldwide oil crisis, as the government sought to alleviate the impact of growing energy prices on the

country's economy and population. Energy subsidies have been a persistent component of Moroccan economic policy since then.

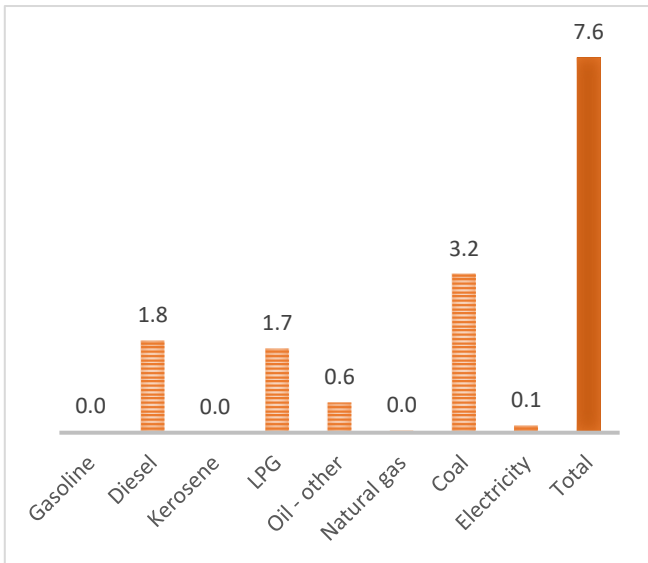
Therefore, energy subsidies remained a considerable strain on the Moroccan government's budget, until 2014, when the government initiated a comprehensive reform program targeted at lowering fossil fuel subsidies.

Morocco's total final energy consumption in 2019 was 22.2 million tonnes of oil equivalent (Mtoe), a 4.4% increase over the previous year. As stated by the IEA, oil accounted for 47% of total energy consumption in Morocco in 2019, followed by coal (29%), gas (13%), and renewable energy (11%) (International Energy Agency).

Subsidies for gasoline, diesel, and butane gas were gradually phased off, with the intention of abolishing them totally by 2020. However, only the diesel subsidy, which amounts to 1.4% of GDP and is valued at \$1.8 billion, is still in effect until 2022.

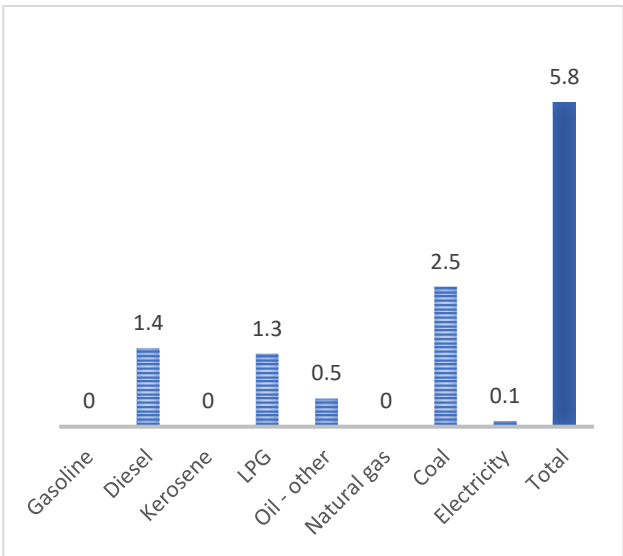
IMF data reveals that in 2022, energy subsidies amounted to \$7.6 billion, equivalent to 5.8% of GDP as depicted in figures 7 and 8. Compared with 2021, the subsidies amounted to \$6.7 billion which represented 5.4% of the GDP, and the GDP in dollars was worth \$142.87 billion (World Bank).

Figure 7: Morocco's Total Energy Subsidies In 2022



(Source: IMF Data)

Figure 8: Energy Subsidies as A Percentage of GDP In 2022



(Source: IMF Data)

Due to the rising prices of gasoline and diesel, the government launched an exceptional subsidy for transportation professionals last March to address the rise in fuel prices in Morocco, benefiting various professional groups and allocated to around 180,000 cars.

Currently, the gasoline price is 14.60 Moroccan Dirham (\$1.40 USD) per litre compared to the global average price of gasoline 13.58 Moroccan Dirham (\$ 1.31), while the diesel price is 12.70 Moroccan Dirham (\$1.22 USD) per litre compared to the global average of 13.37 Moroccan Dirham (\$ 1.29).

Petrol Prices - March 2023

Table 4: Morocco Petrol Prices in 2023

Diesel	12.70 Moroccan Dirham (\$1.22 USD) per litre
Gasoline	14.60 Moroccan Dirham (\$1.40 USD) per litre

Source: Global Petrol Prices

Increasing oil prices may have a considerable impact on Moroccan inflation by increasing the cost of production and transportation, resulting in higher pricing for goods and services. As a result, Morocco's annual inflation rate increased to a new record high of 8.9% in January 2023, up from 8.3% the previous month.

In summary, fuel (diesel) subsidy was part of the government's allocations of \$1.8 billion in the state budget of 2022. In addition, the Moroccan government introduced a targeted-subsidy mechanism in March 2022 to support transportation drivers, in response to record-high fuel prices caused by a surge in oil prices. Exceptional support was given to maintain citizens' purchasing power, in light of the current situation characterized by fluctuating fuel prices.

5. Lebanon

Energy subsidies have played an important part in Lebanon's economic history. To help ease the financial strain on Lebanese inhabitants, the government has historically extensively subsidized the cost of energy, including gasoline, diesel, electricity, and cooking gas.

Energy subsidies in Lebanon stretch back to the 1950s and 1960s, when the government began to offer financial aid to its inhabitants in order to help cut the cost of living. During the

Lebanese Civil War of the 1970s and 1980s, energy subsidies became even more crucial, as the country's infrastructure was severely destroyed, and the economy was in turmoil.

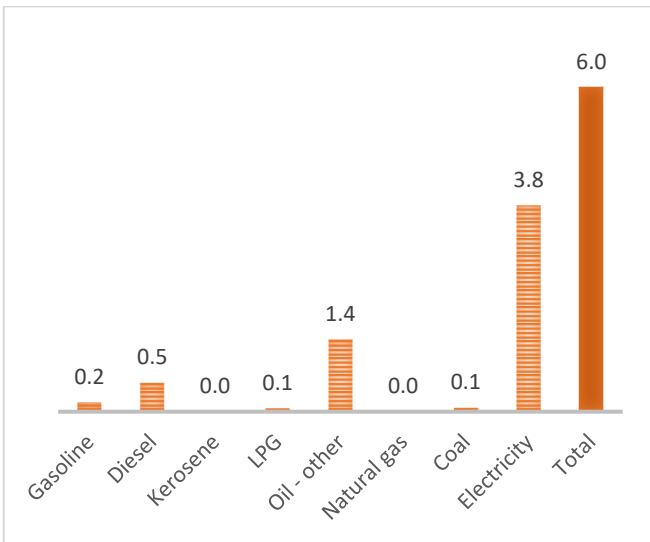
The government subsidizes gasoline, diesel, and LPG. A significant portion valued at around 40 % of total government expenditure goes for electricity subsidies. This has caused losses for Electricité du Liban (EDL) and contributed to the company's financial crisis.

Energy subsidies, provided through Electricité du Liban (EDL), the Ministry of Energy and Water, and the Ministry of Finance, are primarily funded by the government to mitigate the impact of high energy prices on citizens.

The cost of subsidies is estimated up to 17% of the country's GDP and is valued at \$9.3 billion in 2019, but this percentage was decreased in 2021 to 8.2% of the GDP and \$5.6 billion of the state budget (IMF Data).

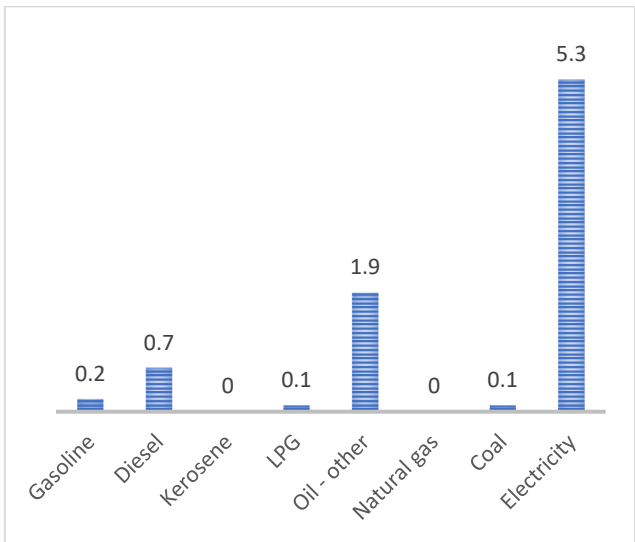
Nevertheless, energy subsidies were increased again to \$6 billion, equivalent to 8.3% of the GDP in 2022 (IMF data), and the GDP in dollars was worth \$23.13 billion in the previous year (World Bank). This subsidy policy is a significant financial strain on the government budget, as depicted in Figures 9 & 10.

Figure 9: Lebanon's Total Energy Subsidies In 2022



(Source: IMF Data)

Figure 10: Energy Subsidies as A Percentage of GDP In 2022



(Source: IMF Data)

In recent years, the Lebanese government has attempted to change the subsidy system, but progress has been slow due to political and social opposition. The government announced a

proposal in August 2020 to gradually reduce fuel and other product subsidies over the next five years, but this plan was received with widespread protests and criticism.

Despite Lebanon's large budget for subsidies, fuel costs remain significantly high in comparison to its neighbours' countries, currently, gasoline price is 92.600.000 Lebanese Pound (\$6.18 USD) per litre, compared to the global average price which is 19.634 Lebanese Pound (\$ 1.31). While diesel price is 87.900.00 Lebanese Pound (\$5.86 USD) per litre, compared to the global average of 19.334 Lebanese Pound (\$ 1.29USD).

Petrol Prices - March 2023

Table 5: Lebanon Petrol Prices in 2023

Diesel	87.900 Lebanese Pound (\$5.86 USD) per litre
Gasoline	92.600 Lebanese Pound (\$6.18 USD) per litre

Source: Global Petrol Prices

High oil prices directly impact inflation in Lebanon. Rising fuel prices increase the cost of transporting goods and services, and as a result, worsen inflation by raising the end price that customers have to pay for all goods. Therefore, Lebanon's annual inflation rate increased to 123.53 percent in January 2023, up from an 18-month low of 121.99 in December 2022.

Ultimately, Lebanon's energy subsidy issue is complex, requiring careful examination of both economic and social considerations. Subsidies, while providing a safety net for many Lebanese citizens, have also contributed to economic insecurity and inequality.

In conclusion, energy dependence and energy subsidies are significant challenges for non-petroleum Arab economies. While energy subsidies can help make energy more affordable for consumers, they can also lead to inefficiencies and fiscal challenges. Reforming energy subsidy systems can help address these issues and promote more sustainable energy use in these economies.

Tunisia, Jordan, Morocco, Egypt, and Lebanon are all heavily reliant on energy imports to meet their domestic energy needs; they import more than 80% of their energy (International Energy Agency), and the main sources of imported energy for these countries are crude oil, petroleum products, and natural gas, with some variations depending on each country's energy mix.

Consequently, in order to minimize this percentage, they are implementing several reform programs in the energy sector, with the IMF or the World Bank, in order to reduce energy imports and convert to renewable energy sources such as wind and solar...etc.

III. The Economic Impacts of the Energy Subsidies Removal

Energy subsidies are a significant drain on government finances, and many MENA countries are facing increased financial difficulties as a result of a variety of issues, including rising oil prices and budget deficits. The removal of energy subsidies can help these countries in reducing their budget deficits and improving their fiscal sustainability.

Tunisia, Jordan, Morocco, Egypt, and Lebanon are adopting energy sector reform programs in order to limit government participation in the economy, enhance business conditions, and boost private sector growth. Eliminating energy subsidies can help businesses compete on a more level playing field.

Removing energy subsidies is a decision with both positive and negative effects, some of which are outlined below:

Table 6: The Positive and Negative Impact of The Energy Subsidies Removing.

Positive impacts	Negative impacts
• Lead to a decrease in the expenditure on subsidies, freeing up funds that could be directed towards other sectors such as education, health, and infrastructure. • Help reduce the budget deficit and improve its fiscal stability in the long run. • Encourage more efficient use of fuel and reduce wasteful consumption, which could contribute to a more sustainable energy policy. • Incentivize the development of renewable energy sources and reduce the country's reliance on fossil fuels	• lead to higher fuel prices for consumers. • Result an increase in the cost of basic goods and services, as transport and production costs increase. • Negatively impact the transportation sector and limit access to transportation, particularly for low-income individuals

(Source: World Bank, International Energy Agency, IMF)

1. Impact on Prices

Energy subsidies refer to the financial support provided by governments to keep energy prices low for consumers. These subsidies can take the form of direct payments, tax breaks, or price controls. When these subsidies are removed, energy prices typically rise, which can have both positive and negative effects.

"Removing energy subsidies can lead to short-term price increases, but in the long term it can create a more efficient and sustainable energy system, which benefits both consumers and the environment." - The Organisation for Economic Co-operation and Development (OECD).

On the positive side, removing energy subsidies can lead to a more efficient use of resources. Subsidies can encourage over-consumption of energy, which can lead to waste and environmental damage. When energy prices reflect their true cost, consumers are incentivized to use energy more efficiently, which can help reduce greenhouse gas emissions and other negative environmental impacts.

On the contrary, eliminating energy subsidies may raise the cost of living for families and companies, especially those with lower incomes who are already struggling to make ends meet. Additionally, this may raise the cost of doing business, making companies less competitive and potentially leading to job losses. Furthermore, removing subsidies may have a disproportionate impact on specific sectors of the economy that rely substantially on energy, such as manufacturing or transportation.

For example, "manufacturing companies that rely heavily on energy may face increased costs, which can reduce their competitiveness and lead to job losses. Similarly, transportation companies may see their operating costs rise, which can lead to higher prices for consumers and may result in reduced demand for their services".

In conclusion, removing energy subsidies can have a range of impacts on prices, depending on the specific context and circumstances. While it can provide incentives for conservation and efficiency, it can also lead to higher prices for consumers and increased costs for businesses. It is important to carefully consider the potential benefits and drawbacks of any changes to energy subsidy policies.

2. Effect on Suppliers

The impact of removing energy subsidies on suppliers can be significant and depends on several factors, including the type of supplier, the structure of the energy market, and the size of the subsidy.

The impact of removing energy subsidies on suppliers can be crucial. *For example, “if a government removes subsidies for oil and gas producers, these companies may see a reduction in profits and revenue. In response, they may reduce production or cut jobs”.*

The impact on suppliers will also depend on the structure of the energy market. In some cases, energy suppliers may be able to *pass on the costs of removing subsidies to consumers, resulting in higher prices for energy*. In other cases, energy suppliers may be able to adapt to the removal of subsidies by diversifying their product lines or investing in new technologies.

"Removing energy subsidies is crucial for sustainable development, but it can also have a significant impact on suppliers. Companies must adapt to these changes by investing in renewable energy and energy-efficient technologies." - Fatih Birol, Executive Director of the International Energy Agency.

In summary, the impact of removing energy subsidies on suppliers can vary depending on the type of supplier, the structure of the energy market, and the size of the subsidy. However, in general, the removal of energy subsidies is likely to have some effect on suppliers, whether in the form of reduced profits, reduced investment, or changes in market dynamics.

3. Effect on Producers

The impact of eliminating energy subsidies on energy producers can be enormous, and this impact varies based on the specific conditions. Following are some of the consequences of the elimination of energy subsidies for producers:

- **Decreased profits:** If energy subsidies are removed, energy prices may fall to reflect the true cost of production. This has the possibility of reducing the profitability of energy producers that have relied on subsidies to keep their businesses profitable. This impact can be especially severe for companies with high production costs, such as those who rely on unconventional energy sources or operate in difficult areas.

- **Increased costs:** The removal of energy subsidies can raise the cost of energy production, especially for companies who rely significantly on subsidies to keep prices low. This can have an influence on energy producers' competitiveness and their ability to invest in new technology and processes.
- **Changes in market dynamics:** The elimination of energy subsidies may have an effect on the industry's market dynamics. This can cause changes in the competitiveness of various energy sources, as well as changes in the market share of various energy producers.
- **Opportunities for innovation:** The removal of energy subsidies may provide opportunities for energy companies to innovate and cut production costs. This can help to foster the development of new technologies and techniques, which can boost energy producers' long-term competitiveness.

The effects of eliminating energy subsidies on producers can be complex and far-reaching. Before making any changes to subsidy policies, governments should carefully assess these implications and seek to mitigate negative repercussions on affected communities and companies.

4. The Role of The Private Sector in The Post-Removal of Energy Subsidies (Case Study Chile)

Chile has one of the most liberalized energy markets in Latin America, with the removal of energy subsidies dating back to the 1980s. The decision to remove energy subsidies was driven by several factors, including the need to reduce government spending, promote market competition, and encourage investment in the energy sector. By removing subsidies, the government aimed to create a more level playing field for private sector companies to compete and invest in the energy sector.

The private sector has played a significant role in the transition to a more sustainable energy market in Chile. For example:

1. **Investment in renewable energy:** Private sector companies have invested heavily in renewable energy in Chile. The country's abundant natural resources, such as solar and wind power, have made it an attractive destination for renewable energy investment. As a result, Chile has become one of the largest producers of renewable energy in Latin America.
2. **Innovation in energy efficiency:** Private sector companies have also developed and invested in new technologies to improve energy efficiency. For example, Enel Chile, a subsidiary of the Italian energy company Enel, has developed an advanced energy management system that uses big data and artificial intelligence to optimize energy consumption and reduce costs for consumers.
3. **Increased competition:** The removal of energy subsidies has increased competition in the energy market in Chile, leading to lower prices for consumers. Private sector companies have been able to compete more effectively in the market, which has led to greater innovation and efficiency.
4. **Collaboration with government:** The private sector has worked closely with the government to promote sustainable energy practices. For example, Enel Chile has partnered with the government on several initiatives to promote electric mobility, including the installation of electric vehicle charging stations and the development of a national electric mobility strategy.

Overall, the private sector has played a crucial role in the transition to a more sustainable energy market in Chile. By investing in renewable energy, promoting energy efficiency, increasing competition, and collaborating with the government, the private sector has helped to create a more equitable and sustainable energy market that benefits both consumers and the environment.

Source: The World Bank, the International Energy Agency, Chile's National Energy Commission as well as articles from Reuters and the Financial Times.

Finally, the removal of energy subsidies in the MENA region would have substantial economic consequences. While the elimination of subsidies may raise government income and reduce budget deficits, it may also result in increased energy prices for individuals and companies, potentially contributing to inflation and reduced economic growth in the short term.

Furthermore, the elimination of energy subsidies may have long-term positive impacts, such as encouraging energy conservation and investment in alternative energy sources, resulting in increased energy efficiency and lower greenhouse gas emissions.

The particular consequences of eliminating energy subsidies would be determined by a number of factors, including the quantity of subsidies in each country, present economic conditions, and the availability of alternative energy sources.

IV. Policies Adopted by The Countries to Reduce Energy Dependence in MENA Region

The International Monetary Fund (IMF) called on MENA countries to take steps to reduce fuel subsidies in order to reduce their budget deficit and improve their fiscal stability.

Therefore, governments have implemented various measures to promote renewable energy, such as increasing energy efficiency, diversifying the energy mix, and improving energy efficiency.

TUNISIA

Tunisia is adopting a number of programs to minimize its energy dependence and improve its usage of renewable energy sources.

The Programs	Current Situation
<i>Tunisia's National Energy Efficiency Action Plan (NEEAP):</i> is a framework that describes the country's strategy to increase energy efficiency and reduce energy consumption. The NEEAP contains initiatives to promote renewable energy, such as the adoption of feed-in tariffs and net metering schemes to promote the installation of solar and wind energy systems. Tunisia has set a target of generating 35% of its electricity from renewable sources by 2030.	In 2023, Tunisia generates only 3% of its electricity from Renewable Energy.
<i>Energy Subsidy Reform:</i> Tunisia has launched a progressive reform with the IMF to eliminate its	In 2022, Tunisia revised upward its oil prices 5 times (3% in February, 3% in

energy subsidies, which were a significant burden on the public budget. The reform aims to reduce energy consumption and promote energy efficiency by raising energy prices for customers and encouraging the use of renewable energy.	March, 5% in April, 3.9% in September, and 5.5% in late November) for a total increase of 20.4% during the year to achieve actual pricing by the end of 2023.
--	---

Overall, these policies demonstrate Tunisia's commitment to reducing its energy dependence and promoting the use of renewable energy sources.

JORDAN

Jordan relies significantly on imported energy resources to meet its local energy demand. In recent years, the country has undertaken a number of programs to minimize its reliance on fossil fuels and expand its usage of renewable energy sources.

The Programs	Current Situation
Jordan passed the Renewable Energy and Energy Efficiency Law in 2012, with the goal of increasing the country's reliance on renewable energy. The law provides incentives for renewable energy projects such as feed-in tariffs, tax breaks, and customs duty exemptions.	The law is still in force.
The Jordan National Energy Efficiency Action Plan (NEEAP) was developed in 2015 in accordance with the Jordan Energy Efficiency and Renewable Energy Law. The plan aims to promote energy efficiency in all sectors of the Jordanian economy and reduce the country's dependence on imported energy sources. The NEEAP outlines a set of measures to improve energy efficiency in several sectors, including buildings, transportation, industry, and the public sector. The plan includes a	Jordan has succeeded in raising the share of renewable energy with electricity generation capacity to 26% in 2021, and it reduced carbon dioxide emissions by an average of 85 tons annually.

number of specific targets, such as reducing energy consumption in buildings by 20% in 2025, increasing the share of renewable energy in the electricity mix to 31% by 2030, and reducing carbon dioxide emissions by 14% by 2025.	
The Jordan Energy Strategy 2020-2030: to improve energy efficiency in all sectors by 9%, through updating and following up national legislation and plans in the field of energy efficiency, implementing programs to improve energy efficiency in the water sector by 15% by 2025, improving transportation, establishing rapid bus networks and a railway transport network, and improving energy efficiency. Energy use in the domestic sector, the industrial sector, the government sector, and the commercial and service sectors.	The contribution of the generation of electric power reached 26% in 2021, considering the shift towards networks and smart meters and the implementation of projects to store electric energy.

These initiatives have supported Jordan in reducing its energy dependence and expanding its usage of renewable energy sources. Yet, the country still faces challenges such as limited domestic renewable energy supplies and high import energy costs.

MOROCCO

In order to reduce its energy dependence and enhance its usage of renewable energy sources, Morocco has implemented multiple policies such as:

The Programs	Current Situation
The Moroccan Solar Plan is a program launched in 2009 by the Moroccan government to improve the country's solar energy potential. The program is one of the country's efforts to minimize its reliance on	In 2020, renewable energy contributed to 37% of overall energy consumption.

fossil fuels and enhance the proportion of renewable energy in the country's energy mix. The program's goal is to generate 2,000 MW of solar power by 2020, reduce the country's reliance on fossil fuels, and increase renewable energy's part of the energy mix to 42% by 2020 and 52% by 2030.	In 2020, Morocco had a total installed capacity of solar power of 1,070 megawatts (MW).
Morocco started its Energy Efficiency Program in 2008 with the target of a 15% energy consumption reduction between 2016-2030. The initiative comprises actions that promote energy-efficient equipment, set energy efficiency requirements, and offer financial incentives to promote energy conservation.	Total energy consumption decreased by 7% in 2020.

These policies have supported Morocco in making considerable strides toward reducing its reliance on fossil fuels and increasing its usage of renewable energy sources. Morocco is presently Africa's renewable energy leader, with major investment in its renewable energy sector.

EGYPT

Egypt has developed a number of programs aimed at reducing its dependence on imported energy and increasing its energy self-sufficiency. These policies have included renewable energy development, energy efficiency initiatives, energy source diversification, subsidy reforms, and energy sector reforms. These policies have not only reduced Egypt's reliance on energy imports but have also helped to increase the energy sector's efficiency and competitiveness.

The Programs	Current Situation
Egypt began a renewable energy plan in 2015, with the objective of producing 20% of its electricity from renewable sources by 2022 and 42% by 2035. The plan is divided into	Renewable resources represent 6,128 MW, constituting 20% of the maximum of the country's total power loads in 2022.

three sections: wind power, solar power, and hydropower.	
Energy Subsidy Reforms: To minimize energy subsidies and enhance energy prices, the government has enacted a series of subsidy changes. To reflect their true cost and decrease the strain on government budgets, the government has steadily increased the price of energy goods such as gasoline, diesel, and natural gas.	The Egyptian government decided to raise domestic fuel prices in 2022 by rates ranging between 7 and 10 percent, as this will be the third increase in gasoline prices this year.

Ultimately, Egypt's efforts to minimize energy dependence and promote energy self-sufficiency have been fruitful, with the country making significant progress toward its objectives. However, there is still work to be done, and the state should continue to invest in renewable energy, energy efficiency, and energy source diversification to secure a sustainable energy future.

LEBANON

Lebanon, like the other Arab countries, has been struggling to reduce its energy dependence.

The Programs	Current Situation
Incentives for Renewable Energy: The Lebanese government has provided a variety of incentives to encourage the use of renewable energy sources, particularly solar energy. Tax breaks, subsidized loans, and a net metering plan that allows households and businesses to sell excess energy back to the grid are among the incentives available. The government has also set renewable energy production targets, with the goal of producing 12% of the country's electricity from renewable sources by 2020.	In 2019, renewables accounted for only 7.83% of total electricity generation in Lebanon.

Diversification of Energy Sources: Lebanon has been investigating the prospect of diversifying its energy sources beyond fossil fuels. The country has inked deals with neighbouring countries to import natural gas and is looking into offshore oil and gas exploration.	In 2022, Lebanon, Syria, and Egypt agreed to ship 650 million cubic meters of natural gas from Egypt to Lebanon via Syria.
Energy Conservation Education: The Lebanese government has started public awareness programs about energy conservation and the advantages of renewable energy. In addition, the government has collaborated with schools and universities to integrate energy conservation into their curricula.	

Generally, Lebanon has been working to minimize its reliance on foreign oil by encouraging renewable energy, boosting energy efficiency, and investigating other energy sources. These policies are anticipated to contribute to the country's pursuit of energy security.

In conclusion, Tunisia, Jordan, Morocco, Lebanon, and Egypt have implemented various policies and measures to manage the energy sector more efficiently. Through diversifying energy sources, implementing energy efficiency measures in buildings, transportation, and industry, promoting energy conservation, and establishing regulatory frameworks to encourage private sector investment in the energy sector are among these. These efforts aim to reduce dependency on fossil fuels and increase energy security, while simultaneously helping to reduce greenhouse gas emissions and address climate change.

V. Conclusions and Recommendations

In today's world, renewable energy is becoming increasingly important as a unique solution to tackle the challenges of climate change concerns and meet rising energy demand

sustainably. Electrification² of the economy is one strategy to promote the use of renewable energy, which will lead to a reduced dependency on fossil fuels and a decrease in greenhouse gas emissions.

However, it is crucial to ensure that renewable energy remains accessible to everyone and does not become monopolized by a few large businesses. This will promote healthy competition, benefiting both customers and the environment in the long run.

Non-petroleum Arab countries should also recognize the value of taking action and effectively implementing initiatives to reduce energy dependence, thus creating a more sustainable future for the region and the world. By working together, governments can minimize reliance on fossil fuels, reduce carbon emissions, and build a more sustainable future for the next generations.

² An electrified economy is when every major economic sector is 100% powered by electricity generated from clean energy, instead of fossil fuels.