

# The Lack Of Proper Distribution Of Energy Subsidies Endangers The Arab World

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**Abstract:** Policies regarding maintaining domestic energy costs have been a menacing problem politically and economically within the Arab countries, as well as within other parts of the world. Many objectives have been put forward to assist with energy conservation. Of these objectives, there have been discussions about expanding residents access to energy sources, which will protect income strapped households; fostering the industrial growth of the energy sector, equally providing each individual with an allotted amount of energy that they are permitted to utilize, as well as enforcing that countries that are rich when it comes to natural gas and oil resources, renting out their resource to other countries that do not have the luxury of these two energy sources. Even though energy subsidies have been established as a means to distribute energy, this paper argues that distributing energy in this fashion is costly and an inefficient process of energy distribution. Energy subsidies contort the price of energy sources for their own personal gain, and not for the gain of the people that require the source but have no means to attain it. Energy subsidies do not render any benefits for median or low income households. Instead, the households that reap the benefits of energy subsidies are high income households and industries. Which high income households and larger corporations are benefiting from paying lower costs for their energy consumption, while households that are struggling to get by are being forced to chip away at the little scraps that they do have. However, despite all of the disadvantages of energy subsidies, they continue to play an important part in the safety net for poor individuals throughout the Arab world and all across the globe. Any attempts to eliminate the subsidies will lead to an absence in compensatory programmes that could in the end cause a further decline of the welfare of households and eliminate the competitive edge that certain industries possess. The only way that a successful reform can be attempted is if the government steps in and compensates the population benefiting from the energy subsidies, while reducing its influence through carefully planned mitigation techniques that will protect the poorest households while also assisting the economy to learn to adapt without the subsidies in place. Our argument is that reforming the way that energy is priced in the Arab world will prove to be beneficial from many different perspectives, offering potential avenues that can be taken to lead the reform. This paper recognizes the current political climate throughout the region will proclaim that domestic reform of the present energy prices will be a difficult process, the reform will need to be taken on as a medium to long-term endeavor in order for everyone to reap the benefits.

**Keywords:** Electricity, Arab world, Gulf Cooperation Councils, Environment, Reform

## 1.0 INTRODUCTION

The role that fuel and electricity plays on the economic and social spectrums provides the government with many favorable arguments that subsidizing the cost of energy while maintaining control within the domestic sector is a beneficial thing to society. Low costs for energy, especially when it comes to high quality fuels (petroleum) and electricity, enable the lowest income groups the ability to be able to gain access to these popular energy forms. Also, they assist governments with protecting the income of their citizens, especially the citizens that do not possess a lot of income, thus contributing to alleviating poverty for lower income households. Maintaining energy prices at low rates will also help offset the fluctuations of the commodity and provides a smooth fluctuation against price fluctuations that affect international sectors. In a lot of countries that possess a rich amount of resources, lower energy prices could be utilized as tools to enable state benefit distribution to the population without requiring administrative involvement and income tests. They can also be utilized to promote diversification within the economy and promote industrialization that will create employment opportunities and enhance the competitiveness of the global markets economy. Controlling the costs of energy is a vital tool for macroeconomic management, especially when it comes to controlling inflation. The Arab world is not an exception when it comes to controlling energy costs. The governments use implicit and explicit subsidies within the region when it comes to distributing energy to the region. The most commonly used energy sources, such as oil products, crude oil, electricity, and natural gas characterize the energy pricing environments within Arab countries and have for decades. The Arab region is defined by its degree

of economic and political diversity, which is reflected in the different economies- the economies range from the world's largest export area for hydrocarbon exporters such as Saudi Arabia (Aissaoui, A. 2012) and the land of Qatar, to other energy exporters such as Lebanon, Jordan, as well as Morocco. With the economic and political influences within the region, this makes the Arab world a region that has a rich amount of experience, making it worth the time to study regarding the effect that energy pricing policies has. Despite the challenges faced by this diversity, this papers main objective is to convey three messages applying to the economic and social implications of lowering energy costs throughout the Arab nation.

## 2.0 Energy Subsidies Are Expensive To The Arab Nation; Economically, Socially, and Environmentally

One primary message that is even though subsidizing energy within the Arab world provides a safety net for underprivileged individuals and has the ability to enable various economic goals that promote industrialization, there are many unintended adverse consequences that subsidizing has on the Arab world. This remarks that the economic cost outweighs the benefits that are perceived. The costs arise from three primary areas: the first area is the Economic Cost-Energy subsidies lead to a variety of economic inefficiencies that occur widely throughout the Arab nations. While some portions of the Arab nation are rich when it comes to resources, and have everything that they need to supply the poorest citizen to the richest, there are other countries within the region that do not have enough energy to distribute to their citizens. Therefore,

these citizens are forced to go without. The resources are misallocated, which prevent the country from being able to optimize the energy stored within its reserves (UNEP/IEA ; 2001). Over-usage of energy is incentivized which leads to high consumption growth rates for energy within certain parts of the Arab nation. They lower incentives that have to do with productivity improvements and investments in technology that promotes energy efficiency. Pricing signals are distorted to customers, which leads to energy waste, unwanted substitution effects being practiced, and lacking incentives for investing in other alternative forms of energy that will help maintain the sources that are not renewable. This often causes people to have to resort to smuggling petroleum products because of the disparity in petroleum pricing in some neighboring locales, which leads to an additional shortage. Whenever the same energy product can be obtained for a lower cost in one region as compared to the other, individuals will go to that region and attempt to steal the energy source in order to ensure that they have enough energy where they reside. This smuggling results in both areas, the one experiencing the disparity and the one that is not having to go without the source that they require. The second area of the cost comes from the Social Cost where The consequences of energy subsidies (UNEP/IEA ; 2001) are an important issue when it comes to reducing the rate of poverty within the Arab world. Poverty within the Arab world is widely spread, particularly in Northern Africa and Levant. Poverty rates within Jordan are eleven percent, while in Morocco they are thirty percent, forty percent in Egypt, and sixty percent in Yemen. The individuals that live in poverty within the area are forced to go without proper food, education, basic health services, and energy. Even though energy subsidiaries are supposed to erect a safety net for the poor, these subsidies are regressive at the same time, because a lot of the richer households will capture the bulk amounts of the subsidies, skewing the distribution of income. Fuel subsidies remove resources from sectors that work for the poor, such resources as education and health are two of the initial things that are taken. Social and infrastructure projects that prove to be more beneficial to lower income households are taken away due to the subsidies not being distributed evenly across the board. The rich that claim the subsidies have the funds to pay for what they need, while the poor are forced to have to deal with what they are given in the best way they know how. The last and the third area of the cost is the Environmental Cost that stems from the Energy subsidies also have a negative effect on the environment (Bressand, 2007). This has become an important issue for climate-sensitive agricultural producers of North Africa and Levant. Subsidies lead to higher energy use and reduce the incentives to conserve non-renewable forms of energy (Friedman, L. 2011). Using non-renewable energy sources has potential adverse environmental repercussions (Friedman, 2011). These repercussions include increasing the amount of pollutants within the air, greenhouse gas emissions, and climate change. Fuel subsidies also hinder the developments that are being put forth for the creation of renewable and other clean energy technologies, such as wind and solar, which has a difficult time competing with subsidized fuels.

### **3.0 Increased Fiscal Pressure Leaning Towards Reform**

The limited amount of success that Arab countries have had when it comes to revising the pricing on their energy has caused an immense amount of difficulties when it comes to implementing pricing reforms for energy. Price increases, especially those that are unaccompanied by proper compensatory measures or improved safety nets, can cause large scale opposition from governments. This popular force has been apparent during 2011 in the Arab world than in other times before, within popular protests and uprisings forced the removal of the serving presidents within Egypt, Tunisia, and Libya, in consequence with the long standings of other economic and political grievances. In the upcoming years, Arab governments will engage in pricing reforms for energy that will be confronted with pressure to strike delicate balances within energy cost reforms and placing increased pressure to strike balances between painful and necessary economic reforms (Bressand, 2007). These reforms will have a positive impact on the younger populations, ensuring that they have the applicable resources that they require. The increasing fiscal costs of maintaining the subsidy systems have been felt immensely over the past decade, confronting a lot of Arab world governments. The increasing global costs experienced during the 2000s have increased the bill for imports on the Arab world, thus also increasing the prices of fuel price subsidies; importing natural gas, which is the only alternative product for petroleum that is utilized within the Arab world, has become more expensive, along with the production of reserves for natural gases according to Ragab, A. (2010). The immense fiscal burden that is caused by energy subsidies, experienced by a lot of countries that import energy to the Arab world, is an implication that a reform on the price of domestic energy has become a necessity, instead of a simple choice. For countries that are responsible for exporting hydrocarbon, the rising costs of consuming crude oil, natural gas, and other refined products on a domestic level at a fraction of international costs, has led to a call that a renewable source that is not easily depleted needs to be adopted.

### **4.0 Reforming Subsidies Will Have Effects On The Poor Forcing Focused Mitigation Measures To Have To Be Followed**

Reducing, or otherwise eliminating subsidies will propose economic consequences that can be felt on the domestic household level. The increase of energy prices combined with pricing reforms have had an indirect and direct effect on the income levels of households. Low income households are suffering the highest amount of decline. In order for the reform to be successful, the governments need to follow the lead of other governments that have reformed their energy costs. The governments must be willing to compensate their locals for reducing the subsidies being used. The targeted group that should be awarded the compensation is the poor class. This class should be compensated through direct cash transfers, or by implementing social safety nets for the class. The government has the choice of implementing their energy reform in two different mannerisms. They can choose to determine the pace at which they will eliminate subsidies

altogether. Investigating fast and slow reforms will need to be done in order to ensure that the elimination of the subsidies does not wreck additional havoc on the lower class individuals. Pivotal factors to determine the pace at which subsidies should be removed will need to be addressed by the capabilities of the administrative government and the government in general, fiscal readings can help determine the pace to remove the subsidies, without endangering the people and the entire economy in the process (Bressand, 2007). Due to the fiscal diversity of the Arab world, there will not be one single agenda reform that will work for all surrounding areas. For example, countries within the Arab world that are consistently made up of lower income individuals will require the reform to be performed expediently, while resource rich countries, such as Saudi Arabia can take a slower pace toward the elimination of subsidies, because the larger portion of the country is made up of individuals that are in middle to high classes.

## 5.0 OVERVIEW OF ENERGY SUBSIDIES

Energy subsidies has to be evaluated through the utilization of subsidies for energy within the Arab nation. The section starts with defining subsidies, including analyzing the differences when it comes to the definition in different international markets. Second, it focuses on the rationale of subsidizing energy from the perspective of government entities, this includes important points such as the alleviation of poverty and ensuring macroeconomic stability. Third, it evaluates the different means in which subsidies are financed. Fourth, it takes into account all three of these things, providing a summary of the fuel cost adjustments that are utilized throughout the Arab nation. Last but not least, it evaluates energy subsidies and their prevalence to the Arab nation (UNDP;2009).

## 6.0 The Definition of Subsidies

The concept as it relates to subsidies, is commonly described as a concept that is too elusive to be given a proper definition. This is something that is accurately reflected, in the varying definitions that subsidies have in a literary sense. Defining subsidies on a general level, it is defined as "any form of assistance given by the government, in cash or other style, to produces operating on a private sector or consumers, in which the government will receive no compensation equivalent to that which has been given, but applies conditions on the assistance based on the performance of the recipient of it". Evaluating this definition, it is clear that the government can categorize their actions when it comes to assistance by including credit subsidies, cash subsidies, and subsidies for procurement (UNDP;2009). Few definitions were founded in the literatures of the term that is less elaborate. They define subsidies as, "any type of measure that is designed to keep the cost for consumers below market level pricing or keep costs for producers at a level that is above the markets levels or reducing the cost for both producers and consumers by providing indirect or direct support to the entities." The definition given by Calamai and De Moor supports the price-gap approach commonly used in modern economies. This approach is used widely due to its simplistic means of calculating subsidies. The approach uses a form of comparison when evaluating an observed

cost for a service or good against what the benchmark reference price is for that same service or good. However, the benchmark reference is something that is left up to question, according to the IEA/OPEC and IOECD sustained by World Bank. International organizations estimate the sizes of subsidies based on the differences between prices on fuel within the international market, and the price that this fuel should be sold for when given domestically. According to the Agreement on Subsidies and Countervailing Measures, certain conditions must be met in order for a subsidy to be used: The First condition is Financial contributions; and the second condition is handout given by the government or through a public entity that resides within the same territory as the recipient where the third condition is that the measures must offer a benefit. Taking this definition into consideration, there are a lot of analysts that argue that as long as the prices that consumers are being charged to pay for a good or service does not fall below the costs that were rendered to produce the product, then it is daunting to "justify that benefits are conferred upon domestic producers." According to economic theory, the best way to configure a benchmark is to compare domestic pricing to the marginal costs, referring to the total incremental cost that is derived from a unit in output. This type of analysis puts emphasis on meriting that pricing policies allow costs to reflect what the economic cost of providing the service or good is, as well as maximize the efficiency of the economy, resulting in allocation of all resources. However, measuring marginal cost is difficult to do when observing this type of practice. The focus for measuring marginal costs is put into the opportunity cost. Opportunity cost does not have anything to do with actual production costs. Instead, opportunity costs measures the value of the resource that is being given. For example, commodities such as crude oil and petroleum that has been refined are traded, even though it can be impossible to identify what the benchmark value of these two necessary commodities is. The same applies for natural gas, which is also openly traded in the international markets. It is the opportunity cost that helps determine the price of the commodity, due to the fact that everyone throughout the world requires these two products for their everyday utilization. According to the World Bank, "price-gap methods have limitations that apply in cases where countries with large endowments of energy sources are able to reap the benefits of their bounty (Cornillie et al, 2004). Keeping all of these indictments in mind, then discussion to utilizes the recent estimates given by the IEA regarding energy subsidies, based on the methodology of the price-cap approach, which is used to compare the domestic costs to international shadowing prices would be the issue. Given the fact that this paper is primarily focused on fuels that are traded internationally, comparing the domestic cost with the costs that international markets have to render is an obvious choice. To provide a clear evaluation of the issue, the authors also utilize government statistics.

## 6.1 Rationalizing Energy Subsidies

Domestic energy cost policies have various objectives that conflict with each other, making it daunting to analyze the effectiveness of the varying subsidiary programmes. The objectives include extending social welfare, assisting with

economic developments and growth, along with political viewpoints. This section evaluates the objectives behind introducing energy subsidies to the Arab nation.

## 6.2 The Expansion of Access To Required Energy

The primary objective of governments around the world when it comes to subsidizing energy is to expand the people's access to this vital source. Energy poverty, which is defined as a household's inability to access a proper energy source for daily tasks, is still a challenge in various developing countries, including those developing in the Arab nation. In a survey conducted by UNEP, it is estimated that 1.6 billion people do not have the access that they require to electricity, while an additional two billion of these people are still relying upon traditional fuels such as charcoal and wood for their cooking and heating needs. Evaluations performed in the Arab world, according to 2002 figures convey that 65 million residents do not have any access to electricity, and 60 million are undersupplied to meet their basic needs. This is occurring both rural and urban areas alike. While the region can boast about their accomplishments to bring electricity to a lot of larger regions in the nation, the inevitable that a large sum of people still are required to go without cannot be ignored (UNDP;2009). It is recognized all over the world that when people have a lack of modern energy sources and products, that this inhibits economic growth and social development, equating in an increase of poverty. Transitioning to modern and clean fuels is a primary objective for a lot of countries still within the development stages. Improving access to energy sources has become a primary Millennium Development Goal. Due to the fact that household incomes are a main detriment of access to energy, energy subsidies are expected to facilitate access to this commodity. Subsidies may assist with helping to expand the access to energy, by providing electrical grids to rural areas or through subsidizing the costs that households need to pay in order to connect to the electrical grid.

## 6.3 Protecting Low Income Households

One of the driving factors of subsidizing fuel costs is to protect households with low incomes. This objective can be practiced in many different ways, governments can choose to target specific fuels that are commonly utilized by the poor, targeting lower income households directly. Governments can also choose to take an indirect approach. For example, diesel is a fuel that is widely utilized for transporting public goods and services, and is the main method of transport for lower income households. There are other countries around the world that provide producers with subsidies. This assists with reducing the cost for production, allowing the producers to carry over the lower costs that they were charged to produce a specific good or service over to the consumers. Instead of directly targeting the poor, there are a lot of governments that choose to keep their petroleum products below the international price range, regardless if these fuels are being utilized by low class or high class households.

## 6.4 Encouraging Industrial Development

Petroleum subsidized products can be made available to producers that require them. Industries that are driven by energy will benefit the most from the utilization of subsidies,

due to the fact that energy constitutes an important cost for their industry. The rationalization behind allowing these subsidies is that the firms will be able to provide their goods to consumers at prices that consumers can afford to pay for them. This will help to protect the local industries against competing with foreign entities, enhance the competitiveness of their exports, and help protect the jobs of locals. Looking at the broader picture, subsidizing the industrial sector will help promote and provide a national advantage, and be beneficial to the countries it is done in.

## 6.5 Controlling Consumption

Governments have the ability to offset the price of commodities and to detour them from fluctuating by controlling the cost of energy, and there are a lot of good reasons why this approach should be assumed. Consumers and producers can incur costs when they are forced to adjust the amount of energy they are consuming. By smoothing over the effects of consumption, this can help to economize the costs. It may be plausible for households as well as private sector organizations to smooth the budgetary shock by resorting to capital markets for assistance or by increasing their precautionary savings that they have set aside. This can help when energy costs are high, and provide additional money that can go back into the economy when prices are at lower brackets.

## 6.6 Avoid Inflation Pressures

A worry that many governments throughout the Arab nation face is the consistent increases in price on the international levels. Vital commodities such as food and energy will induce the pressures of inflation. Energy is a vital component that the consumer requires, any increase in its cost will be reflected within the consumer pricing index. Economists argue that when fuel prices are high, consumers are forced to deal with an upward shift when it comes to costs, industries will pass the escalated costs that they are forced to pay onto their consumers, in order to recoup costs. If the nominal wages are able to respond to living costs, higher prices for energy will stimulate an inflationary expectation, this can pose a lot of concerns, especially when governments are already facing inflationary pressures on the national levels.

## 6.7 Considerations On The Political Level

Fuel subsidies are popular. Due to their popularity, they are introduced and increased appropriately, to help alleviate discontent. Taking the Arab gas and oil producers into consideration, a policy for supplying energy that is low priced to the domestic market, can provide a way to distribute gas and oil rents. A lot of Arab Gulf exporters provide their citizens with a plentiful supply of cheap energy, this marks a cornerstone for the citizen's election to participate in the natural resource that has brought wealth to their country. A lot of citizens residing in the area, consider low cost energy to be their birthright. Energy subsidies normally consist of a lot of institutional barriers and mechanisms that lock them in, thus making it difficult to abolish their use altogether. The reason being is because a lot of subsidies provide a creation of rents for specific industries, groups of people, and religions. Because these rents accrue in a disproportionately, the beneficiaries of these rents will have an interest in defending the programs,

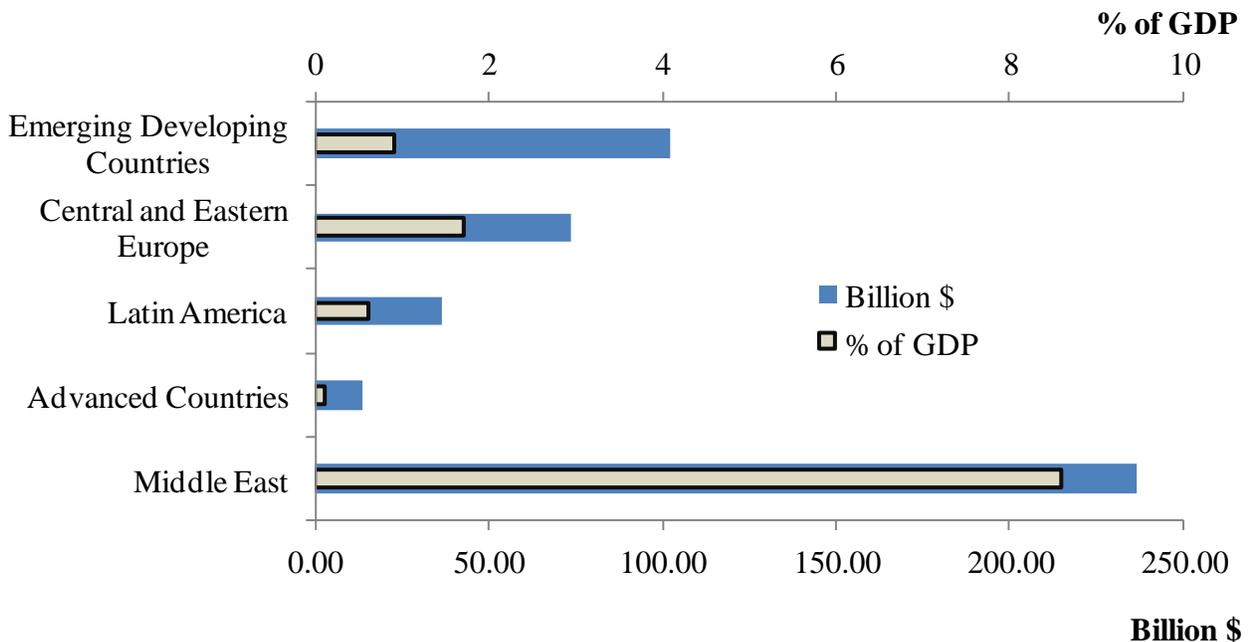
because the benefit exceeds the cost that is relayed to them. The groups will have the ability to organize effective political actions which can lead to political biases, where governments accept the interests of small groups, but neglect to pay attention to larger groups that have more interests.

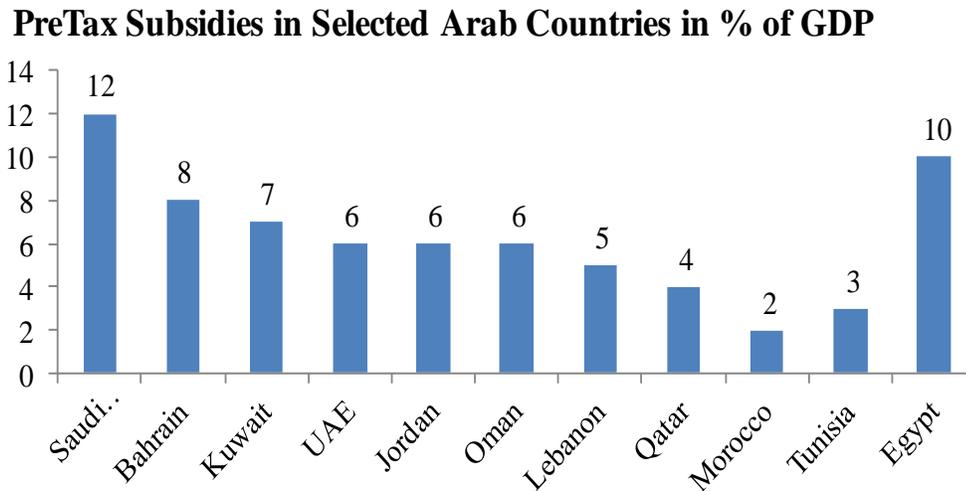
### 7.0 Financing For Energy Subsidies Within The Arab Nation

Financing for energy subsidies takes on varying forms. These forms depend on the factors that weigh in, and whether the country is an importer or exporter of petroleum based products, has any ownership of energy assets, participates in distributing acts, or assists with the health of government finances. In this paper, distinctions are made when it comes to net energy importing countries and net exporting countries. The net exporting countries in the Arab nation include a lot of high income countries, such as Kuwait, Saudi Arabia, as well as the UAE. Economies that are on the mid and lower levels are Egypt, Algeria, Yemen, and Iraq (Shaher,2011). These countries are forced to deal with substantial levels of poverty, but are given different pricing options when it comes to energy that is domestically consumed. It also needs to be noted that net importers that import crude oil and other products that are considered to be refined are some of the impoverished countries with the lowest poverty rates, while countries that are net importers of natural gas, tend to be economically rich. It is plausible to find various ways of financing subsidies within the same country, including paralleling the utilization of implicit and explicit subsidies in countries that are importing and

exporting different forms of energy. If some of the poorest countries are those that export their crude oil and petroleum based products, something needs to be done in order for these countries to be repaid for their rich resource that they are generously trading with the international markets. For examples; For decades, countries in the MENA region—both energy importers and producers—have relied heavily on generalized energy price subsidies as their main tool to provide social protection and share hydrocarbon wealth. IMF estimates suggest that, for the region as a whole, pre-tax energy subsidies—that is subsidies measured as the difference between the value of consumption at world and domestic prices—cost close to \$240 billion in 2011.2 This amount is equivalent to about 8.5 percent of regional GDP, or 22 percent of government revenue, and accounts for about one-half of global energy subsidies (Figure 1). Energy subsidies far exceed in value other subsidies that are also being provided in many MENA countries. For instance, food subsidies are estimated to have amounted to 0.7 percent of GDP in 2011 in the region. About one-half of total energy subsidies in MENA are accounted for by petroleum products, while the remainder represents subsidies on electricity and natural gas. There is a wide dispersion of subsidies in the region, with subsidies being more prevalent in oil exporters (Figure 2). Energy subsidies exceed 5 percent of GDP in two-thirds of the countries in the region. In several countries, the true cost of energy subsidies is higher than what is reflected in the budget. In Iraq, for instance, budget spending on energy subsidies was

Figure (1) PreTax as a subsidies presentation in selected areas with the % of GDP



**Figure (2) PreTax Subsidies in Selected Arab Countries in % of GDP**

eliminated in 2007, but the population continues to receive a sizeable implicit subsidy as domestic fuel prices including those charged to domestic power plants and refineries—are set well below international levels. The size of this implicit subsidy was estimated at over 11 percent of Iraq's GDP in 2011 (Fattouh, 2011). Energy subsidies also divert public resources away from spending that promotes more inclusive growth where is notwithstanding several reforms in Yemen, energy subsidies still amounted to about 6.5 percent of GDP in 2012 and exceeded public capital investment. In Egypt, total energy subsidies are three times the spending on education and seven and half times health expenditures. The negative environmental externalities from energy subsidies are substantial. Subsidies cause overconsumption of petroleum products, and natural gas, and reduce incentives for investment in energy efficiency, public transport, and renewable energy and emit the carbon dioxide within the country or the region to contribute to global emission and greenhouse gas but also leaves fewer resources for future generations (Koplow, 2009). Hidden subsidies are encompass in Energy subsidies that appeal to governments because of their administrative ease relative to other, more targeted, social safety net instruments, such as cash transfer schemes or direct income support. In energy rich countries, subsidies are also seen as a direct way to share the country's natural resource wealth. But subsidies create more problems than those they intend to address (Clements, 2003). Energy subsidies do not provide effective support to the poor, and they weigh on public finances. They also create distortions that are harmful for the economy, which is important even in countries that are large energy producers and are therefore less concerned about the budgetary and balance of payments implications of energy subsidies. Energy subsidies benefit households directly through lower prices for energy used for cooking, heating, lighting, and personal transport, but also indirectly by reducing production costs for other goods and services that use energy as an input. However, energy subsidies are highly inequitable as they mostly benefit upper income groups. For instance, in Sudan the poorest 20 percent of the population receives only

about 3 percent of fuel subsidies, whereas the richest 20 percent captures more than 57 %. The situation is similar in many other countries across the region. Energy subsidies also exacerbate the difficulties that countries face in dealing with the volatility of international energy prices. The balance of payments of many energy-importing countries is vulnerable to international price increases. These effects could be offset by allowing domestic energy prices to rise in line with international prices, possibly combined with a smoothing mechanism to avoid overly sharp domestic price changes. Energy subsidies create distortions that are harmful to the economy. They can discourage investment in the energy sector and in more labor-intensive industries, and create incentives for waste and smuggling. Energy subsidies also divert public resources away from spending that promotes more inclusive growth (Figure 3). For example, despite several reforms in Yemen, energy subsidies still amounted to about 6 percent of GDP in 2011 and exceeded public capital investment. In Egypt, total energy subsidies are three times the spending on education and seven times health expenditures.

### 7.1 The Financing of Energy Subsidies In Energy Imported Areas

Energy importing countries face a range of options when it comes to financing subsidies. These subsidies can either be on-budget or they can be off-budget. Subsidies that are on-budget will distribute cash transfers that come from the government to go to the producer of the commodity or directly to the consumer that will be receiving the subsidy. Net importers may also decide to finance the subsidy by utilizing off-budget motives. An off-budget subsidy is not as transparent and can be difficult to properly calculate. The impact of off-budget subsidies to the finances of the public is similar to those of on-budget subsidies. Off-budget subsidies will require some sort of pay back to have to be made. This will equate for a higher deficit that the government will be forced to deal with. Common features that energy subsidies share is that the size of the subsidy is usually beyond the control of the government.

### 7.2 Adjust Prices For Fuel

When it comes to the Arab world, there are only a few countries that operate different variations of rules that assist with automated fuel cost adjustments that pass through increases regarding the price of fuels that are imported onto the international markets and fuels that are used domestically. These countries are Lebanon, Jordan, Morocco, and Tunisia. The domestic costs for fuel in the Middle East have been set at the lowest standards when comparing costs to the rest of the world. By eliminating adjustment mechanisms for fuel, regulating prices leads to fluctuations in implicit and explicit subsidies following cost movements on fuels within the international market. The results of this stance are transparent and on-transparent when it comes to the government budget, but the consequences that these choices infringe on the economy are visible. There is a variation occurring amongst the Arab countries and other countries across the globe. This variation is mainly seen amongst net exporters that have adopted an ad hoc approach when it comes to adjusting the price of fuel. Despite the plans that are being made for reforms in various countries, there has been little progress made. This unveils that there are political difficulties that are involved when it comes to increasing the cost of energy and also liberalizing this sector.

### 7.3 Analyzing The Use of Energy Subsidies Within The Arab Nation

The Arab nation and GCC countries that make up the nation, are comprised of many different types of economies that vary when it comes to their objectives and practices of utilizing energy subsidy programs. Implicit and explicit subsidies have resulted in a variety of unintended consequences that are experienced throughout the region. The message that needs to be conveyed is after evaluation, energy subsidies have achieved some of the objectives that they were set out to accomplish, however, they are inefficient when it comes to the Arab nation. Energy subsidies can distort cost signals, creating an inefficiency that has serious implications on the way that the resources are allocated. This protects consumers from the ability to adapt the amount of energy that is being consumed to the

increasing costs of the energy, and from investing in newer forms of technology that are energy sufficient, thus leading to over-use and waste of energy that is subsidized to industries as well as to households. Energy subsidies typically take a socially regressive approach. Higher income individuals and industries are the entities that benefit from the lowest energy costs. In most cases, energy subsidies have proven that they are ineffective when it comes to securing the stability of a macro economy. Subsidies carry fiscal consequences, thus contributing to unsustainable deficits in the budget(Koplow,2009). Yet managing domestic demand for both fossil fuels and electricity remains a key challenge in a region accustomed to plentiful and cheap supplies. An energy-wasteful culture has grown up around subsidised fuel and electricity prices. For example, it is common for people to leave air-conditioning, lighting and music running when they leave their homes. Foreign firms send their least energy efficient air-conditioners and cars to the Gulf. Many consumers see energy subsidies as part of an implicit social contract with GCC rulers, an essential part of wealth redistribution. Subsidies are politically very difficult to change. Energy is the national wealth and people feel they have a right to consume part of those resources. If there were alternative sources of energy, it would be politically easier, the GCC states could foster more energy-efficient practices in building design and transport infrastructure. There is a pressing need to reduce emissions from transport and industry because of worsening air pollution in many Gulf cities. Regardless of climate change, these sectors need to become more energy efficient over the next decade because the air pollution affects people directly. Some of these changes are already under way as the need for green buildings, and are addressing environmental issues through engineering as well as architecture. "The design of buildings in the Middle East has been predicated on the availability of cheap oil. The result has been heavily air-conditioned buildings absorbing vast amounts of energy. Slowly, however, opinion leaders are realising that the value of oil to the source country is much more important than the cost of buying it at subsidised prices.

**Table (1) Electricity Consumptions per capita and total energy consumption**

	2000	2002	2004	2006	2008	2010	2012
Electricity consumption total (Gwh)	207,292.5	234,564.20	264,440.30	307,133.90	353,647.60	383,181.80	427,519.20
% change on annual Electricity consumption		5.9	3.5	8	8.4	5.4	5.4
per head usage, Kwh	6,999.20	7,414.40	7,854.50	8,424.80	8,967.90	9,307.20	9,771.20

In UAE, natural gas price has reached \$5 per mmbtu. It used to be \$1.5 per mmbtu. For gas of \$5 the related price of electricity is \$0.075 or 27.5 fils per KWH. This is mainly for the fuel cost and does not include operations and investment costs. Comparing this gas energy to oil is three times cheaper. This is where it makes a big difference

Gas is cheaper than oil in energy terms. Saudi Arabia's natural gas output is slated to grow an annual rate of 2.2 per cent from 78 BM<sup>3</sup> and 165 BM<sup>3</sup> in 2035. Qatar alone will increase their natural gas production by a combined 128 BM<sup>3</sup>, nearly one-fourth of the total increment in world gas production

**Table (2) Energy Balanced in Selected Countries including GCC countries**

Country	Oil production (1000 b/d), 2012	Oil Consumption (1000 b/d), 2012	net Oil Balance (1000 b/d), 20102	natural gas production (Bcm), 2012	natural gas Consumption (Bcm), 2012	net natural gas Balance (Bcm), 2012
Jordan	0.09	98	-97.91	0.25	3.1	-2.85
lebanon	0	124	-124	0	0.04	-0.04
Morocco	4.32	199	-194.68	0.06	0.56	-0.5
Tunisia	83.72	84	-0.28	3.6	4.85	-1.25
Bahrain	46.43	47	-0.57	12.58	12.58	0
Egypt	662.62	740	-77.38	62.69	44.37	18.32
Oman	867.88	142	725.88	24.77	14.72	10.05
Syria	401	292	109	6.19	7.1	-0.91
Yemen	268	157	111	0.82	0.15	0.67
Algeria	1200	351	849	92	29.2	62.8
Iraq	2408.47	694	1714.47	1.15	1.15	0
Kuwait	2447	377	2070	11.19	12.08	-0.89
Libya	1789.16	289	1500.16	15.9	6.01	9.89
Qatar	714	126	588	128	24.2	103.8
Saudi Arabia	10476	2843	7633	78.45	78.45	0
UAE	2657	638	2019	59.06	59.06	0

#### 7.4 Underinvesting In The Energy Sector Where Subsidies Are Implemented Poorly

The use of energy subsidies throughout the Arab world has consequences when it comes to the rate that these subsidies are being invested. Caps that are being imposed upon government subsidies that are paid to producers or to outside payment subsidies are not fully compensated to the domestic gas and oil producers, distributors, importers, and electricity producers for the losses they have encountered, this under minds the return on investment. This diverts funds away from enterprises that are state-owned, leaving these companies unable to upgrade the capabilities that they have internally, invest in new equipment, or shift to modern/cleaner forms of energy. The end result is a lower quality of services to the end user, most commonly to the regions electrical sector. Irregular services that persistently experience power outages occur throughout the Arab world, this is in response to a decade long underinvestment within the electricity generation on one side of the spectrum, and distribution and transmission networks setting on the other. In many areas along the Arab Gulf and Levant, the situation is a lot worse because the culture does not believe in paying the utility bills rendered to them, the popular perception in the area is that utilities should be supplied to the people at little or no cost. This is the result of decades of low cost provisioning for utilities by state owned companies. In countries such as Jordan and Lebanon non-payment by a large majority of groups is due in part to the continued theft of electrical service and households illegally connecting to the electrical grids due to the fact that they

are either unwilling or unable to pay for a utility bill on their own accord. In most cases, the people that end up paying for electricity being taken illegally or not being paid for at all are the remaining portion of consumers. Electrical companies will raise the cost on their services, overcharging individuals to help recoup the costs that they have lost due to theft. The consequence is normally recurring blackouts of having to wait long periods of time for new electrical connections to be made for households. This results in businesses losing money and backup costs being assessed on the economy. Some of the poorest countries within the Arab nation are experiencing an immense amount of consequences when it comes to underinvestment and the lack of an electricity grid. Electrification is lacking in remote areas, primarily throughout the areas of Yemen and some rural areas of Morocco and Oman. Yemen, noted as being the Arab world's most undersupplied region when it comes to electricity faces electrification rates that affect more than half of the population, the remaining parties lack any form of access to electrical sources-causing severe consequences for the socio-economic development of the country and increasing the rate of poverty in the area. The case with Yemen is extremely upsetting, especially since Yemen is a net exporter of energy sources.

## 8.0 Impacts On The Environment

Increased amounts of CO<sub>2</sub> emissions are releasing more pollutants into the air. The impact that fuel subsidies have on the environment is not entirely straightforward. On one end of the spectrum, lowering the costs for the end user, these subsidies can cause higher utilization of energy, thus reducing the incentive to conserve this precious resource, wreaking havoc on the environment with increased emissions and greenhouse gases being released into the atmosphere. However, not subsidizing petroleum items will increase dependence on other sources of energy that pollute, discouraging low income households from converting to cleaner burning fuels and alternative electrical sources. Regardless if the benefit of energy subsidies when it comes to the environment is negative or positive, there are alternative means of facilitating the delivery of energy to low income households. For example, more effective security systems that rely on the transfer of cash, would not result in inefficiencies that are encountered in the Arab nation's consumption of energy sources. The utilization of energy subsidies should not be seen as the only or the most effective way to protect the use of a cleaner energy source. It is safe to say that the increase in electricity and fuel consumption throughout some parts of the Arab nation, coupled with the lack of incentives that exist for users of energy to rationalize their consumption, contributes to an increase in the amount of CO<sub>2</sub> emissions. The smaller importers of energy that lie along the gulf have some of the highest rates of CO<sub>2</sub> emissions, while countries that are forced to pay higher rates for energy sources have the lowest emissions in comparison. The Arab nation is releasing more than six times the world average of CO<sub>2</sub> emissions. Lower prices for hydro-carbon based electrical generation is discouraging the development of alternative energy sources, such as solar and wind. The Arab world could be one of the most varied regions when it comes to the types of energy sourced that are used. The nation would benefit substantially from utilizing alternative energy sources that are renewable. Interest regarding solar energy being used in the area has increased over the past decade, this is due partly in response to the energy needs of many different regions in the area, and also to the advancements that are being made in technology and the cost profiles accompanying them. Although the government has been making plans to invest in alternative sources of energy within the region, the fact still remains that the Arab nation continues to rely on oil and natural gas for ninety five percent of its energy needs. The lack of energy diversity within the region is due to a variety of obstacles. These obstacles include the availability to natural gas and oil, which are superior to renewable energy sources in the region, technical challenges also exist for implementing renewable energy sources. However, it all boils down to energy subsidies that the government is given for its natural gas and oil, and not for alternative energy. The lack of utilizing diverse energy sources within the Arab nation is not the only environmental concern for the region, it has also become a concern on a national energy security point as well, this concern is specifically voiced by the increased reliance on energy costs and when it comes to natural gas, the long-term partnerships that have been made via LNG contracts. Having a diversified energy base would make more sense in the long run.

## 8.1 Reforming The Use of Energy Subsidies In The Arab Nation

Reforming energy costs in the Arab nations remains an economically and politically challenging feat. Political uprisings that have confronted the governments in the Arab nations since the early onset of 2011 has made these challenges even more important. The way to making future reform in regards to energy prices within the Arab nations feasible is going to rely on the government's ability to address social and economic costs that energy prices entail; this way pricing reforms can be designed to fit the needs of varying circumstances, and applying an effective mitigation measure that will protect low income families and assist the economy during its long term adaptations.

## 8.2 Economic and Social Costs For Reform

The government faces a lot of challenges when it comes to revising the way that their energy pricing systems operate. Even though energy subsidies are costly and have a regressive way of distributing them, reducing or eliminating the subsidies for energy without implementing a compensatory program to be put in its place will have a major impact on the incomes of domestic households and can lead to a decline in the welfare of the households. The effect of eliminating energy subsidies will be two fold. On a direct scale, through high prices of consumed energy such as electrical energy sources and household fuels; indirectly, by implementing higher pricing for other types of consumer goods that utilize energy as their output source. Given the high intensity of a lot of Arab nation's economies, going through an energy pricing reform will more than likely induce an indirect effect on the income of households. Households that have lower incomes will be impacted in an adverse manner, due to the fact that low consumption levels and the lack of the ability to compromise the consumption of necessary goods such as energy and food in the face of the escalating costs for living. Implementing an energy pricing reform will also affect the competitive nature of domestic firms and industries. Higher costs of energy associated in conjunction with a reform will affect the increasing costs for industrial outputs of products, including those that input fuels or other types of products that are based with oil. Based on the industries structure and the ability for it to pass on the increased cost to their final consumers, the increase in the structure will reduce the profit margin for domestic industries, which erodes their ability to compete on a global level. Long term adjustments will require that the firms are able to survive the short term adjustments that will need to be made, giving the firms access to short term funds during the transition will ensure their lasting power and make the reform successful. Against the short term effects that the reform will have on the price of energy, the reform can improve the economy's growth prospects by providing them with capital, international competitive, technological advancements, and reducing the intensity on energy. The risk lies with the first round effects of implementing the reform. In response to the higher prices of living that will be imposed, workers will demand an increase in their wages in order to account for the loss in their incomes. Governments must be willing to respond by increasing public wages.

## 9.0 Conclusion

A lot of literature studies the utilization of energy subsidies from varying perspectives. For example, from an environmental standpoint (contributions made to emissions in the air); from a public health standpoint (impacts on accessing cleaner fuels to cook with) or from a security standpoint (with less energy subsidies more oil will be available on the market, reducing its price). This paper evaluates energy subsidies as a social and economic issue. It focuses on the need to evaluate energy subsidies in terms of what their contributions and consequences on the economic and social development stances are. This paper is geared towards the most diverse region when it comes to energy resources and the different varying economic development levels- the Arab nation which produces energy net importers along with major exporting economies for the source. Energy subsidies within the Arab nation are widely varied when it comes to their socio-economic policies and objectives, along with the approach that governments take when it comes to financing them. Alleviating poverty and protecting the income of households is one of the fundamental goals behind utilizing energy subsidies, having a relevance for Arab regions that are importers of energy and experience high poverty levels. With an absence of welfare systems, energy subsidies are an important social safety net for low income families, they help to increase access to energy and contribute to lowering prices for goods that the economy requires. For a lot of Arab energy producers, provisioning low cost energy is a critical tool that allows them to diversify their economy thus distributing to the wealth of the region, which is commonly generated through natural gas and oil exports. A lot of these countries would never consider subsidizing their energy costs because they believe that their domestic pricing reflects the advantage of producing the fuel domestically. Lower costs for energy have resulted in devastating economic costs, in countries that import and export the commodity. This includes inefficiently allocating resources, lower levels of efficient use of energy, rising levels of electricity and fuel being consumed, in some cases underinvestment in specific domesticated public sectors. As far as alleviating poverty, higher shares of energy subsidies have been taken by higher income groups and larger corporations. While energy subsidies do benefit poor households, they need to be seen for what they really are, costly and simply inefficient tools to protect the low income citizens of the Arab nation. Financial resources that are being spent on energy subsidies are funds that could have been spent on other items that would benefit the poor, such as providing them with health services, education, or social security programs. Reforming domestic energy costs remains an economically challenging task. The economic and social costs if left unmitigated can be large, making the poverty levels in some nations more severe than they are today, lessening the amount of social protection for the low income households within the society. Rising energy prices, along with increased prices for food and other necessary foods are sensitive and can provoke a lot of protests. Some limited reforms within the Arab nation have seen success. Areas such as Syria and Jordan have combined the revision to their pricing schemes and introduced social security systems to compensate for the benefits that they were previously given from the energy subsidies. When

done appropriately, eliminating energy subsidies and introducing a means to compensate the individuals that are in poverty can work, and provide more benefits than drawbacks to the Arab nation.

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