

THE USE OF PARALLEL ISTISNA SUKUK IN FINANCING SOLAR ENERGY PROJECT IN KUWAIT

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©2019

International Academic Journal of Economics and Finance (IAJEF) | ISSN 2518-2366

Received: 21st October 2019

Published: 6th November 2019

Full Length Research

Available Online at: http://www.iajournals.org/articles/iajef_v3_i4_204_217.pdf

Citation: Alfadhli, M. M., Alghoussein, S. & Alarifi, F. (2019). The use of parallel Istisna Sukuk in financing solar energy project in Kuwait. *International Academic Journal of Economics and Finance*, 3(4), 204-217

ABSTRACT

With carbon emission level reaching an unprecedented levels in the atmosphere. Finding an alternative source of energy that is eco-friendly has become essential for mankind. The aim of this study is to suggest a new source of energy for the state of Kuwait that is both renewable and eco-friendly. The research then aims to propose a finance scheme that can both ease the financial obligations on the government and boost the banking system in the country.

Parallel Istisna sukuk finance is an Islamic finance product that can achieve such finance requirement. The feasibility of Parallel Istisna sukuk finance is examined in this research using SWOT and PESTEL analysis.

Key Words: *solar power, Kuwait, Islamic finance, parallel Istisna Sukuk, Shari'ah law, SWOT analysis, PESTEL analysis*

INTRODUCTION

Renewable energy as of late is one of the hottest topics in the world. Specifically speaking, it has become an extremely popular point of conversation and investment in the energy industry in the Middle East. In fact, many gulf countries are currently establishing several large solar energy related projects to replace the existing old plants that are heavily dependent on oil as a source of energy for the region. The United Arab Emirates were one of the earlier players in the gulf region, with its Shams Solar Power Station in Abu Dhabi, and the Mohammed bin Rashid Al Maktoum Solar Park in Dubai - Shams meaning Sun in Arabic. These were the first two projects in the Middle East with the intention to provide clean energy sources for their cities. These initiatives were actually recognized by the global market as an impressive feat, especially coming from an oil producing economy and country.

The rising demand for such energy producing resources was due to the huge amount of pollution and waste caused by the current method of energy production through oil. This has in turn made, not only the UAE, but many of the gulf cities among the top worst places in earth for polluted environments. In order to satisfy the rise in demand for renewable energy projects in the region, a need to find an alternative way of funding that meets shari'ah requirements. This research explore, explain and discuss the reasoning behind using the Parallel Istisna Sukuk model in Islamic finance to fund a solar power project in Kuwait. As of late, there has been an increase in Shari'ah accepted capital that is available to fund renewable energy projects such as our own. We will use the help of the Kuwaiti government to facilitate the necessary regulations and procedures needed for our project.

THE PROJECT

As mentioned earlier, implementing the Parallel Istisna'a Islamic financial instrument for this project, as it will facilitate the development and implementation of the project. Parallel Istisna'a

structure requires a buyer, a seller, and a 3rd party contractor. In this case, the buyer will be the Kuwaiti Ministry of Energy, the seller will be an Islamic Bank, and the 3rd party contractor will be a manufacturer that Kuwait's bordering countries are using, the Electricite De France (EDF) company. EDF is a French based utility company and they specialize in nuclear energy as well as gas, coal, & renewable energy (Wikipedia, 2018). As of 2017, they are reducing their dependence on nuclear energy since it is a larger part of their company energy portfolio, and are instead making a strive towards renewable energy - they in fact just partnered with a local energy company in Abu Dhabi called Masdar (Dipaola, 2018) to supply the United Arab Emirates with an additional 200 megawatts in solar power (1 megawatt = 1 million watts).

The fascinating thing about the EDF, is that they are already familiar with Islamic Financing, "The 800-megawatt expansion will cost about \$900 million, and the EDF and Masdar have arranged \$650 million of conventional and Islamic loans to finance it" (Dipaola, 2018). This would be a great opportunity for them to work on another solar energy project in the region, and it would also give them another opportunity to work with another Islamic financial instrument. Since Kuwait is still relatively new to the renewable energy space, it would be fair to assume a smaller capacity in our project, thus a relatively cheaper project too. It is believed that Kuwait should aim for at least half of what Dubai's solar park will produce, "The Dubai solar park, to be fully built by 2030, will spread across 214 square kilometers of desert and generate 5,000 megawatts from the sun" (Dipaola, 2018). The objective for the project of building a park, also by 2030, that is capable of generating 2500 megawatts.

Using the numbers from the project in Dubai, we have calculated that it would cost \$1,125,000 per megawatt in construction costs (900 million divided by 800 megawatts). 2500 megawatts (half the capacity of the project in Dubai) would bring this total project construction cost to roughly \$2812 million, compared to Dubai's total project construction cost of \$5625 million.

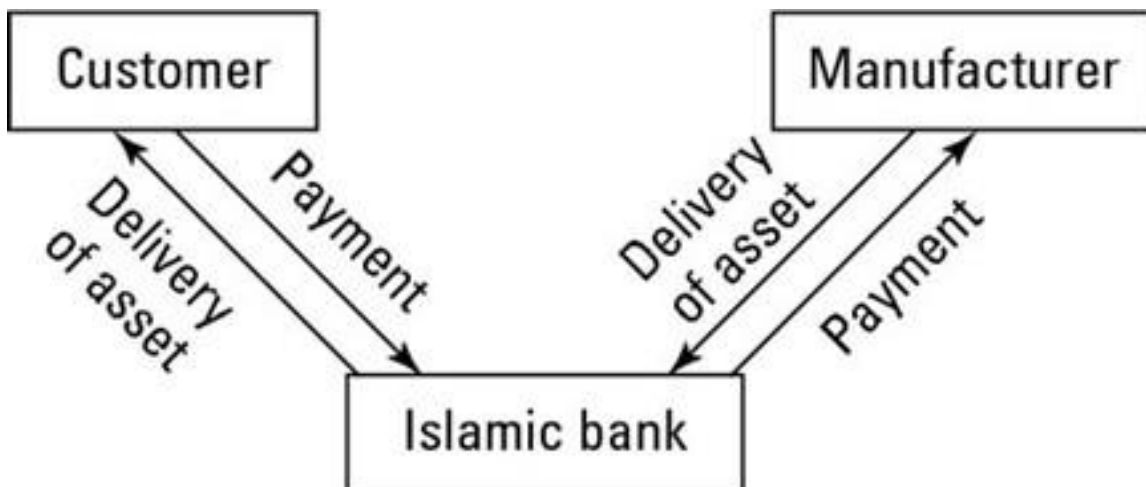


Figure 1: Parallel Istisna'a Islamic

The above diagram (Jamaldeen, 2018) illustrates the flow of our project Islamic financial instrument. It is a flow chart that shows how the procedure will work and be implemented once the project is approved. The key part of parallel istisna'a, and the differentiating factor from regular istisna'a, is the 3rd party that is, in this case, the Islamic bank. As mentioned, this party will be the Islamic bank. They will be responsible for making the payment and purchasing the asset from the manufacturer once they have completed manufacturing. Payment must only be made once the asset is physically ready for the transfer of ownership. The manufacturer, the Electricite De France Company, will be responsible for delivery of the asset which of course in this case will be enough solar panels capable of producing the energy required and already specified for this project.

Once the asset and ownership thereof has been fully 100% transferred to the bank, the bank is then responsible for providing the asset to the customer, who will be the Kuwait ministry of energy and will be responsible, as per the diagram, for the payment to the Islamic bank. As such, the Islamic bank will act as the intermediary between the customer and manufacturer.

CONTRACT PROVISIONS

Contracts are quite complex by nature and include many clauses that may be opaque. However, it is important to keep in line with the principles of Islamic finance and be as clear as possible, which includes identifying some key provisions before signing the contract, that must be kept in mind by both parties to reduce counterparty risk as much as possible (IslamicMarkets, 2018). Such provisions include but are not limited to:

1. The manufacturer must produce the said asset according to the exact specifications that must be provided by the buyer and agreed upon by all parties such that there is no gharar (uncertainty) which is forbidden in Islamic Finance. Such specifications must include quantity and quality through a quality assurance agreement (discussed more in detail in the following section).
2. The buyer must deliver the agreed upon payment required for the said asset. If the asset is not up to standards, payment is not required as the manufacturer party failed to fulfil their part.
3. The said asset must be delivered on the date agreed upon by all parties.

In order to minimize risk further, incentives must be aligned for all parties (IslamicMarkets, 2018). Some examples are below:

1. As mentioned before, counterparty risk is a big factor in contracts, and it includes delivery risk which essentially when the two are combined is the risk that the other party will not produce their obligation. To minimize this, the contract can include a clause that

can scale pricing or payment in line with delivery time - payment amount decreases should any delays arise and would continue to decrease per additional delay. This will incentivize the contractor (manufacturer) to keep on schedule and not abuse the contract by taking an unjustified amount of time to produce the asset.

2. To reduce quality risk, both parties should have a quality assurance agreement and a protocol to follow should a faulty product be produced unknowingly. Perhaps an agreed upon Rahn (a pledge of collateral) can be included in the contract in the event of a delivery issue/contractual breach.

LOCATION AND FUNCTIONALITY

According to TradeArabia business news source on April 26th of 2018, Kuwait is planning an expenditure of more than \$3 billion on new residential projects (Trade-Arabia, 2018), which is roughly in line of how much they spent last year on such projects (~2.7BN last year). This is a clear signal to the global economies that Kuwait is keen on expansion and development. Our proposal is to power such new residential projects with renewable energy. As we will discuss later, this will help Kuwait reduce their dependence on oil by generating revenue from another energy source, as oil currently makes up 95% of the government's revenue! This would certainly help with the diversification of the government sources of revenue.

The specific location and new residential project we have chosen is Jaber Al Ahmad, roughly 30 minutes by car from Kuwait City. This area is expected to receive KD388 million (~\$1100M) in government spending to facilitate construction (TradeArabia, 2018). As you can see by the picture below, this project is very realistic given not only the space surrounding the residential area, but more importantly the proximity of the free land lots to the sea - this is important because there will be no buildings in the way of the sun creating shadows over the solar panels that would have reduced their exposure to the sun, consequently reducing energy output.

In terms of the energy production process itself, the next diagram (KenbrookSolar, 2018) best illustrates the flow of energy from the panels to the residential users. The sun's energy will first be captured by the solar panel park as per the first picture on the left-hand side of the next diagram. This energy will then be stored in a converter that will convert the energy to energy that is usable for either households or, if the project proves to be successful, to other areas of Kuwait that can be transferred by an electric grid - if the project turns out well, they can expand solar panel use to greater areas of the country through this method since the new areas would probably be further than the originally planned residential area.



Figure 2: Jaber AlAhmad Area



Figure 3: Flow of Solar Power

WHY KUWAIT?

We believe the country of Kuwait is the right place to construct our solar energy project due to its prime location in the Middle Eastern region. It has significant leverage that it can use by benefiting from a climate that offers a lot of sun (it has profound exposure to the sun, which is of course essential to solar energy) as well as being situated in an economy that features strong development in its Islamic banking systems – government backing is something that is paramount to any Islamic banking project. There is also high demand from the citizens to move towards cleaner energy.

Geography

As mentioned earlier, Kuwait lies in the Middle Eastern region and in the South- West of Asia. The country of Kuwait is surrounded by economies that are also making strides in Islamic banking systems - it shares its borders with Saudi Arabia from the south, and the country of Iraq from the North and West. Historically speaking, Kuwait has been using its strategic location in the Arabian Gulf to do trade and business with India and other locations.

These trade routes have led Kuwait to become an important trade center in the region. Since the establishment of Kuwait city in 1963, the country's economy has been dependent on the pearl diving profession as a major source of income which was the reason for the revival of the shipbuilding industry, where the manufacture of marine vessels for fishing and diving purposes was carried out for pearl exploration until the country started exporting its first shipment of oil in 1946 which helped, increasing its wealth to become one of the richest countries in the world.

What is really important about Kuwait's location is the general climate in the country that enjoys a high hot weather during the summer time which is usually longer than the winter time. The summer season in Kuwait usually lasts from April until the end of October, with temperatures averaging 45°C. This can be a great benefit for our project since the solar panels are going to store a lot of energy in their storage and use them efficiently.

Economy and Business

Kuwait's Economy is among the strongest economies in the gulf countries. Since 1963, the country has been heavily depending on oil as the main source of income as it makes up for more than 90% of the government income and 92% of all export revenues. Kuwait's GDP was 120 billion in 2017, but is certainly oscillating due to the instability of oil prices (World Atlas, 2018). With that being said, Kuwait is planning to expand its production of oil and increase its oil exports to 4 million barrels per day by the end of 2020. The chart below shows the global oil reserves, with Kuwait as the world's sixth largest, with more than 100 billion of oil barrels.

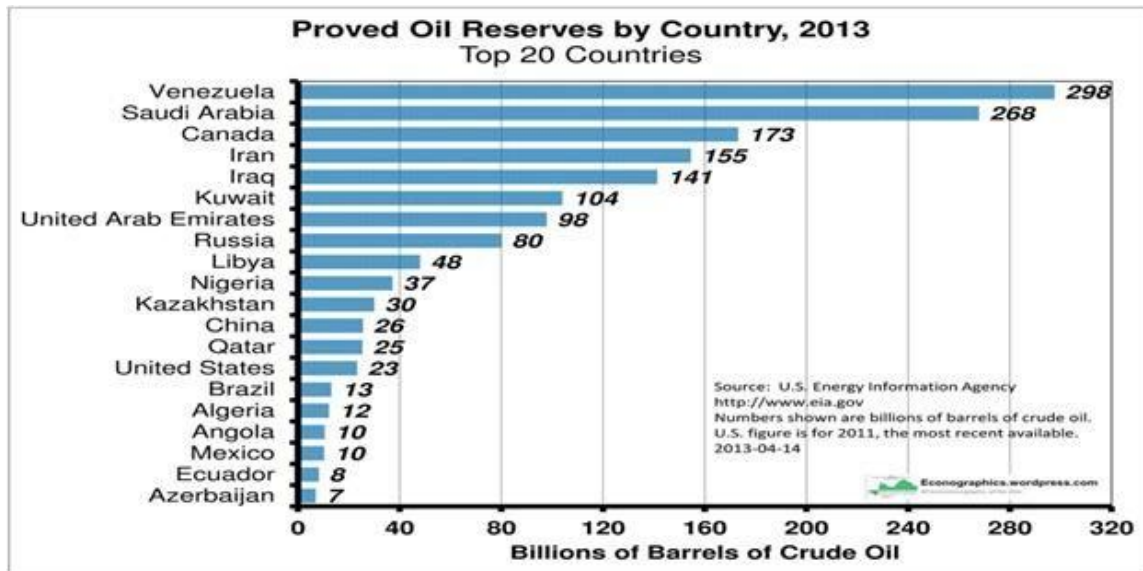


Figure 4: Proven Oil Reserve in 2013

However, with the fluctuations in oil prices for the past 4 years, and in particular over the course of the past semester, the government hedged its economy from the declining oil prices impact by efficiently lowering the government spending costs and increasing its savings from its revenues. The strong leadership that Kuwait showed during the oil crisis has made Moody's (one of the world's top rating agencies) maintain a credit of Aa2 for the country with a relatively stable outlook for the next few years (Moody's, 2018).

Also, according to Moody's report published in June 21, 2017, stated that Kuwait Investment Authority fund (the oldest sovereign wealth fund in the world) has showed an exceptionally strong development by the increase in the size of its foreign assets to more than \$500 billion, which makes it amongst the top largest four sovereign wealth funds in the world. The total assets of this fund can cover up to 29 times of the government total debt in 2016.

The downside of the Kuwaiti economy includes a high tension that is present between the executive authority and the parliament, as there were many suggestions by Sheikh Sabah Al-Sabah on economic reforms but got rejected by the parliament which many say was due to political reasons. Many people in the parliament believe there is corruption in the current government and these bills on economic reforms are going to benefit only the high political authority and businessmen, so they ask for political reforms before they pass the bills on economic reforms.

Looking at the businesses in Kuwait, it is unfortunate to say that the country has a poor business climate which we believe is due to the lack of support from the government to the private sector and the big portion of citizens working in the public sector. However, according to Index-Mundi which is a data portal that provides facts and statistics about countries indicates that the government is planning to spend more than \$100 billion to support economic diversification in

order to attract many foreign investment into the country as the entire region is shifting their dependence on oil as a main source of income to a healthy business environment that attract international investments as another source of income (Index-Mundi, 2017). We have to remember that Kuwait is still relatively young compared to the rest of the world in terms of independence, so such changes take time to happen.

Kuwait has been active in promoting Islamic finance field as it hosts many important Islamic financial events that are typically attended by high profile leaders and Islamic bankers. The Central Bank of Kuwait has hosted recently the Islamic Financial Services Board annual meeting during the month of May in 2018. Also, the country is hosting the IFN Forum in December for the fourth time which reflects the commitment from the government to its investors in developing the Islamic banking and finance sector. These events are used to give insights and share knowledge about the latest developments in the Islamic financial field.

ISLAMIC FINANCE

Kuwait was one of the first countries in the world to adopt Islamic finance laws and regulations which was a key reason in launching the Kuwait Finance House that is considered the oldest Islamic bank in the world. Currently, more than 40% of the banks in the country are Islamic banks. Kuwait was the fifth largest holder of Islamic banking assets and was the sixth largest holder of Islamic funds worldwide back in 2015 (The Banker, 2018). Kuwait is certainly not as advanced as Malaysia when it comes to Islamic Finance, but it is a sector that is maturing in Kuwait and is growing exponentially.

According to EY report from the previous article, many of the Islamic banks operating in Kuwait have gained a compounded annual growth rate between the period of 2010 and 2014. At the end of 2017, many Islamic banks like Kuwait Finance House, Ahli United Bank Kuwait and Warba Bank have shown increases in their annual net profits which reflect the interest and confidence from the people in the potential growth of Islamic finance. The Islamic market is now gaining attention from the government in order to provide more support, favorable regulations and policies. In 2016, The Central Bank of Kuwait introduced many governance rules and auditing procedures to monitor all shariah-compliant financial activities, and to ensure that they are shariah-compliant to begin with. Looking at the sukuk market, generally speaking, the global sukuk issuance has increased to a new record of \$97.9 billion in 2017 which represents roughly a 45 percent increase year over year from 2016. However, Kuwait didn't contribute on that as much as investors would want it since the government had not yet issued any sovereign sukuk. The Kuwait Finance House is the largest sukuk trader in the country with more than \$16 billion worth of traded sukuk in both regional and global markets but without any domestic issuance from the bank. However, looking at its neighbor Saudi Arabia, the country might be one of the latest in Islamic finance development, but the government has recently issued

\$9 billion worth of sukuk which is seen as the largest issuance up to date. Thus, if Kuwait doesn't catch up with its neighbors, the country will be left behind.

CURRENT ENERGY OUTLOOK

Oil makes up for 54% of the total Kuwait GDP, whilst their oil sector is responsible for 90% of the Kuwaiti government revenues (Energy Economics, 2018). 40% of the total oil extracts in 2010 was used domestically with 60% being exported for international needs. 90% is a large figure, and so Kuwait has planned to diversify their electricity dependence on oil by setting an objective by 2030 to produce 15% of total energy needs through renewable resources - this objective will help them reduce their reliance on oil.

Consumers pay only 5% of the total actual electricity provided from the government and that percent amount is accounted to be as low as \$0.07 (Renewable and Sustainable Energy Reviews, 2017) . Kuwait provides electricity to its citizens with the lowest price in the GCC area while its electricity subsidies are among the highest in the region with a total amount of \$8.8 billions per year. The population is expected to reach 6 million at the end of 2030 which will increase the demands for electricity with an estimation of 28.8GW to meet the 15% target. Thus, renewable energy would need to produce more than four GW of solar radiation. The yearly average solar radiation in the GCC area is equivalent to 1.1 barrel of oil which is equivalent per meter square.

SWOT ANALYSIS

Strengths: The first strength is that, quite simply, Kuwait is a new country relative to the rest of the world. Whilst this may present its own challenges, it is actually in this specific scenario a good thing because it means there is land to work with. In fact, almost 80% of Kuwait is uninhabited desert, and the rest is the capital city (Kuwait city). This helps our project idea and reinforces the eligibility of our idea because it not only means that there is space currently to implement the project, but it means there is space in the future for future growth if the project is successful. Lack of space is actually one of the biggest challenges for most developed countries, to switch to renewable resources when their land is already developed. This causes countries to build wind and solar farms far away from cities, increasing costs of energy delivery to those who need it. Thus, Kuwait can minimize any reconstruction costs as well as energy delivery costs since they have a main resource (land) at their disposal.

Weaknesses: Any local in Kuwait will tell you that, naturally, construction is a little slow in Kuwait, and so investors may get a little impatient if the project takes long to construct, especially if you are talking thousands of millions of dollars in project value. This may deter any foreign direct investment if Kuwait proves to be unreliable in infrastructure construction. It really has to be a country wide effort.

Opportunities: The switch to solar panels as a method of renewable energy is certainly a step in the right direction. The entire region is becoming more and more renewable by the year, with

large projects in Abu Dhabi, Dubai, and Saudi Arabia already underway as discussed earlier. This is an opportunity for Kuwait to really make the Middle East stand out as not only global players in the renewable space, but global leaders. Generally speaking, this will be a great alternative for the region as oil prices have become increasingly unstable. Global production has also surpassed the gulf region in terms of oil barrels per day - the USA and Russia are now ahead of Saudi Arabia in daily production. Consequently, this is an opportunity for Kuwait to gain a foothold in a new market whereby they can facilitate the rest of the region in becoming key global players. It may even become something the GCC (Gulf Cooperation Council) could work on together and have an agreement to power the region through renewable energy.

An opportunity already briefly discussed earlier on in the paper is the fact that the contractor we aim to be partnering with, the EDF, is already familiar with working in the region and with islamic financing, and so there will be very minimal costs associated with the transparency and differences between conventional and Islamic financing. Another opportunity would be having another contractor in our project to diversify construction costs. A Saudi based energy company, ACWA Power, is also a partner in the Dubai solar power park project (Dipaola, 2018), and they may also be interested in helping their neighbor Kuwait in completing our solar park project. Finally, a more general opportunity is that according to Green Matters, a eco- friendly news firm, Denmark wants to ban the sale of cars powered by everyday fossil fuels by 2030 (Neelis, 2018), and so this really goes to show how the global sentiment is shifting towards renewable resources. Kuwait can become an early player in this field by taking a step towards solar energy.

Threats: The government may not support this idea because, although oil and fossil fuels are of course expected to run out at some point, it does still power the economy and switching costs may be high, therefore causing the project to become unattractive. It is also quite expensive, but costs from oil production and nonrenewable energy may actually be much more in the future as these resources are starting to run out at an exponential rate.

PESTEL ANALYSIS

Political: Like much of the region at the time, Kuwait was under rule of the British Empire. Having gained independence in 1961 from the protectorate, Kuwait was keen on becoming an independent state quickly, and in 1963 they took their first steps towards achieving that they actually became the first country in the region to have a fully elected parliament in the Gulf Arab region in 1963. The parliament consists of 50 seats that sees members that are typically voted in from big tribes, and they usually challenge the government which is unheard of in the region because of how powerful the ruling families are - no one would dare oppose them. Parliament roles include managing the budget of the state and all civil and criminal laws. They are also free to audit ministers, and even have a hand to play in the future of their employment if they don't perform according to the required agenda. At the end of the day, Kuwait's ruler, the Emir Sheikh Sabah al-Ahmad al-Sabah generally has the final say on all decisions related to government and country.

Economic: Throughout the early years of Kuwait, their exports mainly featured pearls from pearl diving, which close countries like the UAE also did. In the 1940s, however, Kuwait discovered oil, and what a discovery it was. Half the country's GDP is from oil and now makes up for 95% of Kuwait's total export and government revenue. Incidentally, this would be a key selling point of our idea - having to rely on 1 source that provides 95% of their revenue is far too large of a risk, we would argue that these sources must be diversified into renewable energy, so that their sources of income would also be diversified.

Social: Kuwait is a Muslim country where the majority of its people following Islam as a way of life. Most of the population are part of big tribes that are located across the Middle East and the head of each tribe called Sheikh. As any country in the region, Kuwait has many racist concerns regarding the differentiation between its people by the color of their skins, the tribes they belong to and the countries where they originally from. However, people in Kuwait are known for their generosity, kindness and offering help for those who need it. Most of the people who live in Kuwait are middle class income and above which explains how wealthy is the country.

Technology: The technology in Kuwait is very advance where people can access internet service everywhere in the country. Kuwait has three major telephone carriers which are Zain Group, VIVA and Ooredoo. Also, the government is making a great effort in converting itself to an E-government where people could access governmental services without ever been having to go in person. Currently, the Ministry of Interior is in a lead of providing these kinds of services.

Environmental: There are many huge concerns regarding the role of Kuwait government in protecting the environment. Kuwait is well-known for its large business in oil exploration and drilling, but these kinds of activities are causing air pollution as a result of oil refining. Not only air pollution but water pollution may result of the oil exported from the sea. Last year, the government of Kuwait implemented restrictions of selling or eating local fish since most of them were poisoned. According to Alaraby News, many analysts believe the government was responsible of the water pollution as there were many video recordings of oil waste dumped in the ocean which made the people angry and raised many questions about the government monitoring system. Another concern is the limited resources of natural water in the country. A report from the United Nation has shown that Kuwait is among the poorest countries which lacks variety of water resources while in the same time is being one of the most consuming countries in the world as an individual is responsible of consuming more than 500L of water per year.

Legal: Kuwait is an Arab nation that follows Islam as a main source of its legal system. Arabic is the language used in its courts where all cases and evidences are in Arabic. Unfortunately, the timeline for most of the cases can take long before they have been resolved. Moreover, most major laws have to be passed by the parliament before they go to court for implementation. As a result, positive laws can be embraced even if they are not sharia compliant.

CONCLUSION

The carbon footprint is a global problem that imposes a threat to future generations. Countries are trying their best to reduce their dependence on fossil fuel to generate electricity. The aim of this research is to propose an alternative source of electricity that is both renewable and eco-friendly. Solar power is proposed in this paper as an alternative source of energy and for such project Parallel Istisna Sukuk scheme is considered. The project and its finance scheme were examined using both SWOT and PESTEL analysis and results showed that such a combination is worth looking at.

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