



The Need for Middle East Economic Confederal Union

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Outline

The following paper explores the common geo-economic interests of Middle Eastern countries on water, energy, trade and security. It comprises three contributions, an introduction to the proposed goal of an Economic Confederal Union, with some background on the energy nexus in the region by Luay al-Khatteeb and two arguments describing how this can work in the water and electricity sectors, by Azzam Alwash and Harry Istepanian.

The Need for Middle East Economic Confederal Union

By Luay al-Khatteeb

The Middle East faces a crossroads. In one direction, there is continued warfare by proxy, the invitation of foreign meddling in internal affairs, hopeless dependence on hydrocarbon revenues or costly fuel imports and economies controlled by obsolete bureaucracies. The good news today is that an increasing number of Middle East countries have chosen a second path, gradually waking up to what many see as a last chance to provide for rapidly growing populations. Some countries, particularly in the Gulf States, have stressed a commitment to revenue diversification, most famously with Saudi Arabia's Vision 2030. We contend this is not enough. The future lies in coordinating these visions in a unified framework.

Only through close coordination the region's many risks can be mitigated, but this needs a strong, permanent forum. A particularly serious problem is the demographic "youth bulge" which creates a race against time for economic reformers. Countries in the Middle East need to create, at a minimum, 40 to 65 million new jobs in the next ten years in order to reduce unemployment, such is the number of young people entering the job market every year.ⁱ This is a challenge for the oil dependent and non-oil dependent alike.

This will also place huge strain on resources, even in scenarios where economic growth is sustained. Observers commonly discuss oil and gas, water resources and electricity as separate challenges. Undoubtedly, they all carry unique problems, from the "resource curse" in the energy sector, to prolonged drought ravaging rural areas in the water sector (and fuelling extremism among unemployed farmers) to popular protests over blackouts in the power sector. Gradually, we are seeing efforts to turn these challenges into opportunities, discussed within this paper: the oil and gas sector can turn "black flare" pollution and resource waste into power generation for millions of homes, through the processing of associated gas. The management of water can be looked at in the context of energy, from hydropower to the co-location of power plants and water treatment plants, while solar is increasingly seen as a game changer in terms of freeing up oil for export, and also has numerous applications in agriculture and even water treatment.ⁱⁱ

The purpose of this paper, incorporating the strategic thinking of three sector specialists, is to take a holistic view of not only Iraq's challenges, but regional challenges, bringing shared issues together to "regionalise" key issues in a radical new framework of MENA cooperation. Several efforts along these lines have failed, in our estimation because key participants felt they could dictate economic and political unions on their terms. Those were different eras and we believe the time is right for a new endeavour. More than ever, countries in the region face multiplying internal threats and no

government will be able to observe the next crisis from afar. The danger is not necessarily state conflict - it is both across and within borders. The challenge is to use these shared threats as a mobilising and unifying force.

The seven year crisis in Syria, which reached a climax this year, drawing in more regional powers as refugees continue to spill over borders, is a terrible reminder that local problems can become regional disasters if not quickly addressed through a pre-existing framework of cooperation. Once a crisis begins, such as in Yemen or Syria, building cooperation becomes far more difficult. Only when we see the devastation left behind by zero-sum regional competition, do we plan the framework for cooperation. By then, it is often too late.

By many accounts, one of the driving forces behind the Syrian war has been prolonged drought, which led to an explosion of unemployment in rural areas, and subsequently the migration of these individuals to urban areas where they fell prey to extremist propaganda.ⁱⁱⁱ Part of the origin of this drought - and a failure of efficient water management, lies upriver in Turkey, who control the headwaters of the Tigris and Euphrates. Water therefore, was and will remain a shared strategic issue for the nations affected by the crisis, just as climate change is seen as a shared international crisis. State control of the economy has been another problem, not only in Syria but across the Arab world. A key challenge in this area is reducing barriers to trade, which will help energy poor and energy rich countries alike.

Another great threat, as noted, is a lack of economic diversification among the oil producing economies that have been greatly affected by the “resource curse” and the disconnect between high inflows of hydrocarbon revenues and policymakers, who have been dis-incentivised to support the needs of their people. Some countries in the region (including Algeria and Iraq) have historically been far more vulnerable to over-dependence on oil revenue. But even the most “stable” oil rich countries in the GCC face a reckoning in the coming years, again due to population growth and long-term uncertainty in oil markets ^{iv}. A modest rise in the price of oil, or even a significant spike, will provide only some relief while the long term picture of oil is clouded by uncertainty. Clearly, no amount of oil revenue can substitute for institutional development and the development of a thriving free market, cut free from bureaucracy. Revenue diversification, like water stress, is another shared challenge, one that MENA countries are increasingly facing up to, but they are often facing this challenge alone.

Cynics may point to the historical absence of regional cooperation on many of the above issues. This paper challenges this assumption, highlighting existing agreements and growing cooperation on these issues, whether it be recent Saudi-Iraqi energy talks related to petrochemicals and oil production cut, Iraq-Jordan pipeline plan, Iraq-Kuwait gas deal, Iraq-Turkey security cooperation - the list goes on. In fact, the very existence of the GCC was, until recent disputes, evidence that sustained cooperation is possible. What is missing is a stable framework to expand cooperation, a functioning federalism seen in the UEA, in many ways a model for the region.

We are therefore proposing a “Fertile Crescent Economic Cooperation Region” underpinned by an Economic Confederal Union. This region would initially include Turkey, Iraq and Kuwait then inviting China, India and many regional powers to complement China’s One Belt One Road Initiative and establish a Commonwealth- style Union focused on the economic interest of the region.

This will be a long process which will require sustained support. Just as the European Union is sometimes referred to as the “gold standard” of regional cooperation, it did not appear overnight.^v It did however, appear after prolonged crisis and highly destructive conflict. The destructive civil war in Lebanon, the Iran-Iraq war, the Algerian civil war and later conflicts in Iraq, devastating as they were, were not enough to galvanise the Arab world and focus minds towards peace. The Syria and Yemen disasters appear different this time and we may be witnessing the start of a new era as regional and international powers realise the endless nature of proxy warfare.

If it is to be sustained, the Union must, from the outset, not take sides and must stay neutral on state on state or regional conflicts, something that should be clear in its Charter. This axis of economics must not act as a political axis - arguably one of the current problems in the ongoing E.U. crisis.

A Middle East economic cooperation union should apply maximum effort to bridge nations towards peace and stability. Informally, such efforts have already shown promise, through limited agreements on Syria but much more needs to be done.

Grave political problems in the GCC, the weakness of the Arab League, the OIC's increasing lack of direction and unsavoury alliances in the region make it crucial to work on a new council with a different approach. Iraq, Turkey and Kuwait aren't the only states that connect to each other in a way or another, they enjoy quite good relations together, two of which hold significant reserves of oil and are capable of reaching consumers around the globe. Turkey is also a major transit point connecting Eurasian countries. These three nations appear pragmatic enough to accept differences among each other when it comes to various regional and international issues. This confederal setting would then become more attractive to other regional states to join it once they settle their differences and focus on common interests with a shared vision for the future.

This union of diverse nations would be rich in different cultures. The focus on trade rather than politics would allow an inclusive approach to human identity, one not based on ethno-sectarian sub-national identities. It must act inclusively to reflect local diversity, in particular regarding “local content” in foreign investment and must be empowered as a forum for peace, on the political, cultural, and economic fronts. This could rid the region from future conflicts, or at least could limit the scope of any future conflict. Economically, such a council should have the potential to become a strong Eurasian partner, moreover it would be capable of becoming the real bridge between Europe and Asia.

Unlike the Baghdad Pact of 1955, this initiative must not be driven by foreign powers but supported by the international community, just as Iraq's partners have largely supported regional cooperation in recent years. It must also emerge naturally and indigenously once the founders of such a union identify common ground to agree upon and forge a prosperous future of a borderless Middle East beyond the age of oil and not limited to short term political “deals”. It would cement the MENA region's position as a global energy hub and convergence of international trade routes, ushering in the latest best development practices to act as an exemplar to other developing regions.

On the energy front, Iraq needs to launch aggressive exploration to exploit and invest in all petroleum assets with a focus on potential non-associated gas production centers. These additional gas resources could be found in the western desert, with the 5.6 trillion cubic feet Akkas field (a

potentially tip of an iceberg for more gas to be found) being a notable example which will be vital for local industrial development, located near vast reserves of high quality phosphate rock for fertilizer. As oil production reaches 10 million barrels a day, this gas has the potential to supercharge Iraq's linked industries in cement, fertilizer and petrochemicals, giving Iraq a unique edge with abundant low cost energy. Starting now, Iraq is opening up to solar energy investment with a number of projects planned across the country, outlined in the 2018 Reconstruction and Development Framework. The commerciality of renewable energy to replace expensive liquid fuel for electricity is due to the fact that Iraq burns around 220,000 barrels a day of oil (170kb/day from the south alone) and such production should be freed for export and industrial use, to secure higher premium/rent.

Already, Iraq's regional partners are leading the way here. As mentioned, the UAE has made great progress in linking energy to industrial growth. The key however, is global thinking from a regional perspective. Saudi Arabia have been behind major investment in petrochemical refineries in-country (such as al-Jubail in the KSA) and in consuming countries in Asia and Turkey while investing in mega storage capacity to better control supply and demand. Iraq may be following suit with plans to build oil storage in Japan. Iraq and Kuwait could also jointly play the role of a swing producer at the global level while developing their sovereign wealth funds with petrodollar revenues for future generations and prepare for the "age after oil." Saudi Arabia has its Vision 2030, Iraq has a national Reconstruction and Development Framework, in addition to its own Vision 2030, while Kuwait has its "New Kuwait: Vision 2035" strategy. None of these plans can succeed in isolation and all envision the breaking down of barriers to trade. What better time to make a grand, regional plan that looks to the future?

In this respect, Iraq's reconstruction and development framework could expand to envision cooperation on mega projects and grand ports, to turn mega projects that currently compete -such as Iraq's Grand Al Faw and Kuwait's Mubarak Al-Kabeer port on Bubiyan Island, into complementary projects. In the ports sector, this has been called "co-opetition."^{vi} This could make sense, as Kuwait and other Gulf countries position themselves to align with the KSA's Vision 2030, while global containerised trade is expected to increase 300% by 2050.^{vii} It could be logical therefore, for Bubiyan to be developed in the same way Hong Kong has emerged with the management of the port spread between different actors, the government, the Hong Kong Special Administrative Region and private sector operators who own most of the facilities at the port. Also in the transport sector, Iraq is expanding railway travel with new rail lines already taking passengers from Basra to Baghdad. It is envisioned that eventually, these lines will go north to Samarra and beyond, to Dohuk and then Turkey, and into mainland Europe.

In the airports sector, Iraq has long been preparing for a surge in passenger numbers, with airports plans expanding from Nasiriyah to the mid-Euphrates and an increasing number of international carriers arriving in Baghdad International Airport, since the lifting of the overflight ban across Iraq at the start of 2018.

Already, Iraq and Saudi Arabia, through the Saudi-Iraqi Coordinating Council, are signing agreements between their ministries of transport, to ease the movement of air passengers and air cargo, in addition to the movement of other goods through ports and overland between the two countries.^{viii} Ultimately, this development of trade and tourism will require new relationships to ease visa-access, to connect nations, cultures and economies. In this regard, China's \$900 billion One Belt, One Road initiative fits well with the prospect of such a union. Consider for example, how China not only does

business with Iran, but also does increasing trade with the GCC and Iraq. As with the other major Asian economies, China depends on the region for its energy security and through increasing economic union and regional cooperation, China and its Asian partners can be assured they are investing not only in energy security, but also the security of trade between the continents. A union would provide a global forum for strengthening the MENA region, to the benefit of all.

Finally, it is worth discussing the issue of security cooperation. In the 21st century, it is not unusual for military competitors to hold joint exercises, with China and the U.S. being notable examples. China and the U.S. have also both taken part in a major operation to secure trade routes through the once pirate infested Gulf of Aden. Security cooperation therefore, is not simply about alliances. It is about building trust, confidence and cooperation and will be an essential part of constructing a successful Middle Eastern Union. Importantly, security cooperation is vital for confronting the threat of transnational terrorism, sharing databases of suspects with security partners to stop the movement of terrorists, but it is not something that should arouse regional suspicion. Turkey and Iraq have recently taken part in joint exercises but this does not necessarily mean they will work together in regional conflict.

These are introductory concepts for what is hoped to be a vast, multi-sector framework for cooperation and ultimately a new trade zone in the world, one that has the potential to create a region of stability for decades to come.

A Borderless Middle East...

By Azzam Alwash

Water as a catalyst for change and cooperation instead of yet another layer of tension

Scarce water resources are becoming not only a major challenge in the Middle East but also in the entire world. The population annual growth rate in the Middle East is one of the highest in the world (more than 3 percent)^{ix}, putting more stresses on socio-economic development and natural resources including energy and water. The stresses on water resources in the Middle East are increasing as more land is being irrigated by flood irrigation instead of the traditional rain irrigation in the areas that are higher than the rivers. This is exasperated by building dams in Turkey and Iran at the headwaters of the Tigris and Euphrates rivers and tributaries to harness hydroelectric energy.

Recently, Turkey is poised to start filling the latest dam it has completed on the headwaters of the Tigris, Ilisu. The dam has a reservoir capacity of more than 10.8 billion cubic meters and is expected to complete filling in 2020.^x As such, and with the continued foundation problems of Mosul dam forcing the reservoir at this point to maintain at lower levels (recently it has been reported to be at about 1.5 to 2.0 billion cubic meters of its total capacity of 11 billion cubic meters),^{xi} Turkey's filling of Ilisu will add a new potential layer of tension between Iraq and Turkey.

Water has been a source of tension among Syria, Jordan, Palestine and Israel in the past and similar tensions are escalating between Egypt, Sudan and Ethiopia with the construction of the Grand Ethiopian Renaissance Dam on the headwaters of the Nile. While it is hard to believe that the situation would escalate to become an armed 'water conflict', it is without a doubt an added tension to an area that is already geopolitically complex. It maybe worthy to note the recent news reports of the governorate of *Muthana*^{xii} using armed forces to remove pumps in neighboring *Qadissya* province when pleas for increased share of water for irrigation failed to reduce water usage upstream on the Euphrates.

Such tensions might turn into a win-win opportunity for better regional cooperation if the water issues are addressed in conjunction with energy coupled with increasing efficiency of irrigation technologies. Regional cooperation for better water and energy management might transform the entire region to a new Fertile Crescent economic cooperation platform, steering the countries' economies with new dimensions to combat extremism in a free market environment.

The concept of the Fertile Crescent Cooperation region is based on the core of cooperation among Turkey, Iraq and Kuwait as the three states share huge natural resources including oil and gas, water and renewable energies. Other regional actors can be added to the core as the process proves to be complementary to the economics of the three countries.

Iraq and Turkey might come to an agreement concerning the reservoir water of the Mosul Dam to store in Turkish dams with leasing rights negotiated in such a way that would lead to cooperation on energy issues and operational rules for the Turkish dams on the Tigris river. In 2007, the Mosul dam was described by the US Army Corps of Engineers as the most dangerous dam in the world, given its inherited foundation problems, and in 2016, it was suggested that instead of repairing Mosul Dam, the Ilisu dam can be leased by Iraq to store Iraq's water (xii). The argument for the idea not only saves money from not having to repair the foundation to no end, but also saving from evaporative and infiltration losses. If the rest of the artificial reservoirs are added in Iraq, the argument would be a lot more convincing.

The areas of the reservoirs (at design capacity) of Mosul Dam are 344 km², while *Haditha* dam is 460 km², *Tharthar* depression lake is over 2700 km², *Razzaza* flood control closed lake is 1560 km², *Habania* flood control lake is 354 km². Given the evaporation rates between 2.5 to 3.0 meters per year,^{xiii} Iraq is currently losing well over 10 billion cubic meters of water every year. More losses can be accounted for from infiltration into the subgrade. Iraq can save not less than half to two thirds of the evaporated water by storing it in Turkish reservoirs before releasing from the dams, which have much lower evaporation rates due to high altitudes and deep reservoirs with smaller lake surfaces. The savings in water losses can be credited to for any future negotiations between Iraq and Turkey to offset the costs associated with treating the saline water to the south cities of Iraq as currently planned by the government.

The Iraqi and Turkish government might come to terms of selling oil and gas at a special price in lieu of leasing Turkish dams for the storage of Iraq's water, as well as credits for the savings from evaporation and infiltration into the subgrade. Pipelines can be built to export Iraqi oil and gas to the European markets through Turkey while the Ukrainian border is only 400 kilometres away from Istanbul. Further, a Public-Private Partnership could establish a special purpose vehicle company owned by a consortium including Iraq, Iran, Kuwait, Turkey, Qatar, Saudi Arabia and the Gulf countries to build and operate the pipeline, benefiting from reduced shipping costs, not to mention common economic interests that would reduce political tensions.

Ambitious plans to transform the region to the new Fertile Crescent economic cooperation area might also include an agreement on development of communication and transportation networks including a fast telecommunication system and internet connection by extending the fibre optic cables from Kuwait to Turkey via Iraq with the rest of the world. Mubarak Port in Kuwait can be further developed to connect with *Fao* port in Iraq with a modernized railway and highway network for transportation of goods and products from Turkey to the Gulf States via Iraq. This connection will make the inhabited *Bubiyan* Island a major trading hub and gateway for the new China-Pakistan Economic Corridor to Europe.

Iraq and Iran need to work collaboratively to amend the 1975 Algiers Agreement which settled their border disputes and conflicts over the *Shatt-al-Arab*, otherwise known as *Arvand Rud*. Both countries are able to cooperate on building a water regulating structure at *Fao* across the *Shatt-al-Arab* to prevent the Gulf salt wedge from infiltrating up to the north, which would happen more severely as water becomes less available with time. The salt wedge is badly affecting the agricultural lands and cities in both countries. Such development will assist in changing the mindset of the local farmers to

take new approaches in cultivating the lands instead of the current flood irrigation methods which go back as far as Sumerian time, 2500 BCE.

The floods that used to heal the land through the removal of accumulated salt and depositing a new layer of silt and clay are no longer coming as dams have changed the hydro pulse of the Tigris and Euphrates. The flood irrigation methods that are continuing to-date are generating drainage water that is salty and rich with pesticides that are harmful to the downstream farms. This is without mentioning the wastage of water through evaporation and loss of quality. Iraq and the countries of the region need to change their policies to remove subsidies from products that consume a lot of water (such as rice and wheat) by adopting modern production and irrigation techniques that would save water and reduce drainage. Drip irrigation and hypotonic farming will go a long way to solve the high demand for water and reduce the harmful effects of polluted drainage water.

The countries of the Middle East region including Iraq, Turkey, Kuwait, Saudi Arabia, UAE, Qatar and Iran should be reminded that the European Union started with a simple agreement between France and Germany, five years after the end of the Second World War, to coordinate the production of steel and coal. This led to the formation of the European Common Agricultural market that eventually became the largest economic zone in the world, the European Union.^{xiv}

Converting such concepts into economically prosperous models for the Middle East after decades of war is currently lying in the hands of the political leaders of the region. The first step would arguably be an agreement on water management between Turkey and Iraq on storing Mosul dam water in Ilisu dam while Iraq repairs Mosul dam functions. That can be serve as the coal and steel coordination agreement between Germany and France in May 1950. Such a deal could become the basis of cooperation in many of the above sectors.

Green Fertile Power Hub, from Concept to Reality

By Harry Istepanian

The energy landscape in the Middle East is undoubtedly changing to meet the increasing demand for electricity, due to rapid growth in population. The regional wars in Iraq and Syria were major setbacks not only to the two countries, but for the entire Middle East. The high cost of reconstruction of the electricity sector has not started yet, though to meet the future needs for energy to support the post-conflict socio-economic development will require searching for low-cost energy concepts other than dependence on traditional fossil fuel resources. The power grid inter-connectivity in the region is not new. But creating an integrated green fertile energy hub among the three Middle Eastern countries Turkey, Iraq and Kuwait will bring their huge energy resources into coordination. These include hydropower, oil and gas and renewable energies, moving into one platform which will introduce the European and Caucasus states to a new free energy trading market and a cheaper source of electricity.

What a waste?

Iraq has nearly 112 trillion cubic feet of proven natural gas reserves,^{xv} about three-quarters of the reserves are associated with oil which lie in the supergiant fields of *Basrah*. Iraqi gross natural gas production is about 800 billion cubic feet, more than half is flared because of insufficient pipelines and other infrastructure to transport and store for consumption and/or export. The annual flared gas is sufficient to generate more than 5,500 MW electricity, that is almost half of current generation of all power stations in Iraq collectively.^{xvi} Iraq has recently signed a contract to export 50 million cubic feet per day of natural gas to neighbouring Kuwait as feedstock for electric power generation.^{xvii} The contract is considered a major step forward to amend the relationship between the two neighbouring countries after Saddam's invasion of Kuwait in 1990. Prior to the first Gulf War, Iraq used to export natural gas to Kuwait from *Rumaila* fields through a 100-mile gas pipeline with an exporting capacity of more than 400 million cubic feet per day. Iraq and Kuwait are also seriously negotiating to increase exporting capacity despite uncertainties in payments and the condition of the mothballed pipeline. A proposal to build a new trans-continental pipeline to export natural gas to Europe via nearby countries has been also on the discussion table, but there are no firm plans due to security concerns and war against ISIS. Until such plans are materialized, Iraq will continue struggling to resolve its electric power shortage and will face a sharp rise in the demand for electricity, once the reconstruction program kicks-off and the necessary funds are made available. The acute daily power outages will continue for years to come particularly during summer although more on-grid and off-grid generation were added to reach around 15,000MW in 2017, but still not sufficient to meet the demand during peak months, sparking public protests in many southern provinces with accusations

of corruption and mismanagement levelled at government officials.^{xviii} Nevertheless, the heavy fuel oil currently burned will remain the traditional feedstock for generating electricity, averaging almost 220,000 b/d during the hot summer months (July to September) instead of being freed for export and industries, to secure premium rent.

What a gain?

On the other hand, Kuwait has very ambitious plan to spend more than 20 billion USD to build 15,000 MW over the next several years to meet the increasing demand for electricity as the projected electricity consumption is expected to reach 30,000 MW by 2035. The new power projects include *Az Zour North*, *Nuweiseeb* and *Al Khairan* CCGTs. However, the main challenge for the Kuwaiti plan is securing natural gas for the new power projects and converting the old power stations to burn gas rather than the highly polluted heavy fuel oil. The investment in Iraq's southern giant gas fields such as the Basrah Gas Company projects will supply the necessary fuel to meet the increasing demand for natural gas in the future, to replace the high cost imports of LNG feedstock.

Water-for-electricity

In 2016, the Wilson Centre, an American think tank tackling global issues published a controversial article by Azzam Alwash of Nature Iraq suggesting a solution for both the Mosul and the Ilisu Dams issue^{xix}. Iraq has been against the construction of the Ilisu Dam on the Tigris River but the article suggests creating a mechanism for the multi-lateral cooperative management of the river basins. The author believes this could act as a foundation for cooperation on a wide range of other issues, including saving the marshes of southern Iraq by coordinating water spills from the dams in the spring to replicate the historic cycle of flood waters to renew the vitality of the biodiversity for the marshes. The concept triggers the idea that Iraq might come to an agreement with Turkey for trading off the Iraqi reservoir headwater kinetics in Ilisu dam by the equivalent generated electricity. The concept will also ease the tension on the Iraqi Mosul dam, which was built in mid-eighties, from the fears of catastrophic failure due to foundation problems. The water level at the dam reservoir is currently kept at minimum to ease the pressure on the dam's barrier wall and mitigate the risks of collapsing while the grouting works are continuing to augment the foundations.^{xx} The dam is currently generating less than 100 MW of electricity out of an installed capacity of more than 1,000 MW, insufficient even for meeting the dam's internal electricity consumption.

Plenty of sunny days

Iraq and Kuwait have huge potential for renewable energy. But to maximise the use of these resources and take up the vast opportunity, both countries will need to focus on developing joint policies for investment in feedstock and generated electricity to secure future finances for IPP projects. One key priority area that remains inadequately developed is large scale photovoltaic power plants. Iraq has significant potential for solar energy, with irradiation levels in the range of 2,100 – 2,300kWh/m² per year, particularly in the western and southern parts of Iraq which proved to be one of most conductive areas for generation of solar energy in terms of abundant sunshine, low precipitation, and vast areas of unused land.

Exploiting this potential could have significant benefits for the entire Middle East region in the long-term. Realising this resource potential will depend on political and regulatory framework conditions

required to attract foreign investments into the region. Kuwait has started the last few years to consider renewable options as part of its international commitment to reduce greenhouse gases by investing mainly in solar, wind and concentrated solar power (CSP) to meet the 15 per cent target of total generation by 2030.

Kuwait is planning to increase the capacity of *Al Shagaya* Renewable Energy Park to reach 5,000 MW by 2025. Iraq is lacking behind Kuwait and the rest of the countries in the region due to its economic and security turmoil. However, the Ministry of Electricity announced in November 2016 plans to launch 12 sites in the central, southern and western provinces of Iraq for foreign and local investment to produce 1,000 MW of solar energy in the first phase. Four contracts have been already signed in October 2017 to build PV solar power stations in *Babel, Muthana, Najaf* and *Anbar* provinces with total capacity exceeding 450 MW.

Iraq and Kuwait need to harness renewable energy sources more systematically, as part of reducing the dependency on fossil fuels, to guarantee energy access through secure and affordable energy supply and off-set the environmental emissions from the hydrocarbon facilities. The key to leveraging Iraq renewable energy within the region will undoubtedly be played by the private sector, ranging from financing to building small-medium scale power stations. Managing this complex transition, Iraq will require the systematic efforts of many institutions to take the right measures for creating appropriate financing mechanisms.

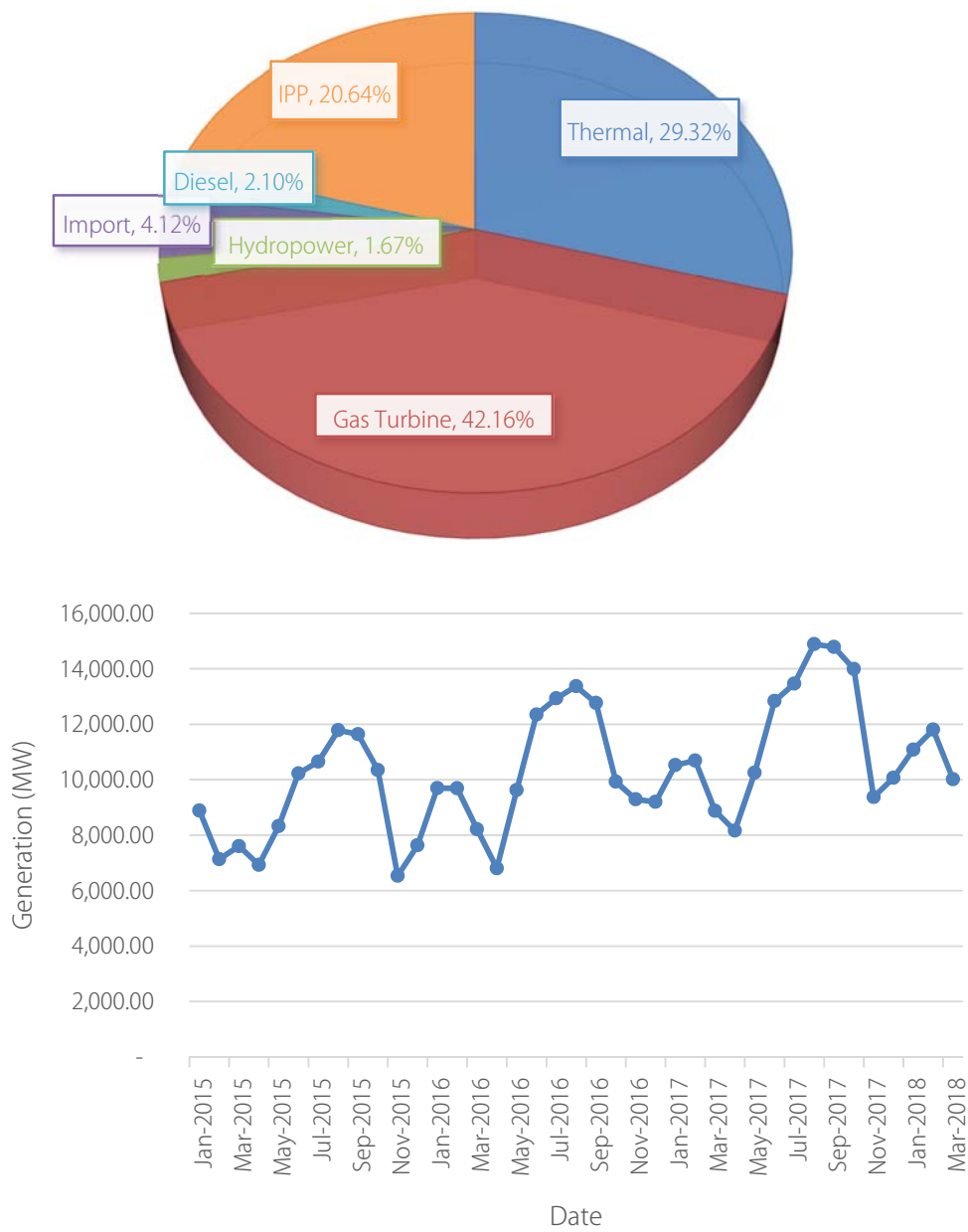
Making it happen!

There is plenty of potential for Iraq, Turkey and Kuwait collectively to explore the future vision that differs from that chosen in the past from just burning fossil fuels. More integrated cooperation and a diversified energy mix will take the entire Middle East region into new era post-oil dependence economy to become front—runners in demonstrating economic integration and utilizing energy resources.

Many obstacles to the green fertile power integration concept include red-tape, geopolitics and dysfunctional bureaucracies which lie in the hands of the policymakers' hands. The three counties need to take every opportunity to position themselves as an energy-trading hub between Europe and Middle East which will require strategic long-term planning and negotiation.

Acceleration of the hub's creation will also require a strong public-private partnership from the three countries, to manage the power generation and transmission lines. Potentially, the most important factor for creating the right environment for cooperation among the three states would be the removal of all kinds of political, economic and "*historical baggage*," barriers that hinder economic benefits of the three states and ultimately the entire region.

Figures



Iraq Power Generation mix (March 2018)

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Dr. Azzam Alwash, a Senior Fellow at Iraq Energy Institute. Earn his Ph.D. in Civil Engineering from the University of Southern California in 1988. He practiced in the environmental and geotechnical field for over 20 years. He started Eden Again, a program to put the spotlight on the drying of the marshes of southern Iraq, under the auspices of the Free Iraq Foundation, where he is a member of the board of directors. After the removal of Saddam Hussien, he moved back to Iraq to work on the restoration of the marshes and founded Nature Iraq, an Iraqi NGO focusing on the preservation of the environment of Iraq and its cultural heritage, an effort that earned him the Takreem award in 2011 and The Goldman Environmental Prize for the 2013. The story of the restoration is told in a book titled Eden Again: Hope in the marshes of Iraq, and a scientific summary of the data collected on bio diversity of Iraq over the past 15 years by scientists associated with Nature Iraq was published in a book titled Key Biodiversity Areas of Iraq. In 2006, and in recognition of the need of Iraq to improve its undergraduate education, he became a founding member of the board of trustees of the American University of Iraq – Sulaimani. The mission of the university is to be the builder of the future leadership of Iraq and the region through the use of the liberal arts. While achieving their academic goals, students who represent the mosaic of Iraq are interacting and forming life-long friendships through living together and sharing hardships as well having honest discussions about the modern and ancient history of the region. The first graduating class was in 2011 and the university now has some 1400 students with plans to expand to a 5000 students' population. Dr. Alwash is working now on issues of water and the environment through Nature Iraq and American University to promote the idea of cooperation on water management and making water an instrument of peace rather than the source of tension in the future Middle East.


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