

# Energy Report:

## “Trading in Electricity Between GCC States”



By

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# Introduction:

Demand for electricity in the Arab world has increased tenfold since 1980. The increase in demand is due to several factors, the most important of which has been an increase in the population of Arab countries, in addition to urban and industrial growth. However, growth in electricity demand has slowed over the past few years as a result of a decline in economic growth rates and the adoption by Arab governments of policies to reduce subsidies on electricity. According to estimates by the Arab Petroleum Investment Company (APICORP), the demand for electricity in the Arab countries will increase by 7.4% per year, which corresponds to the addition of 130GW and will require investments estimated at US\$ 180 billion.

This growth in demand has created many difficulties for certain Arab countries in meeting the growing demand for electricity, which resulted in frequent power blackouts during periods of peak loads. In order to alleviate these blackouts, Arab governments have sought to increase their own investments and encourage the private sector to participate in investing in the power generation sector.

## GCC Electricity Interconnection:

The policies of Arab countries have been largely based on investment in local power grids with limited consideration of the significant benefits that regionally interconnected grids could provide. Instead of each country acting alone, the Arab countries could arrange to source the necessary electricity they need during peak periods and emergencies through joint ventures and regional interconnection of power grids. Power interconnection can achieve many benefits, including enhancing the energy security of the interconnected countries, and obtaining economic benefits in the form of improved efficiency in power generation and financial savings on the costs of infrastructure and investment, as well as strengthening the institutional cooperation between the concerned countries.

The electricity interconnection between the Gulf states is one of the most important strategic projects that the GCC has implemented. The GCC interconnection began with a decision by the 18th Session of the GCC Supreme Council held in Kuwait in December 1997, and an agreement to this regard came into effect on 23 March 2009. The exchange of electricity in the Gulf Cooperation Council Interconnection Authority (GCCIA) Grid is limited to two main categories:

1. **Scheduled Exchange:** It is the least in terms of the amount of electricity transmitted through the GCCIA Grid. Scheduled exchanges are based on direct bilateral agreement between two countries, after which such countries make transmission arrangements with GCCIA.
2. **Unscheduled Exchange:** This represents the majority of the exchange of electricity through the GCCIA Grid. The GCCIA Grid provides electricity directly to any Gulf state in cases of emergency. The exchange cycle will be completed when the importing Gulf State re-exports the quantity of electricity it had previously imported from the GCCIA Grid back to the Grid.

According to the Gulf Cooperation Council Interconnection Authority (GCCIA), the Gulf states have made an estimated \$400 million in financial savings in 2016. The World Bank expects that Arab countries can save between \$ 17-25 billion and reduce the required production capacity by 35 GW through better mutual utilization of the available power generation/ production capacity between these countries. At the same time, regional interconnection grids will help achieve more efficient utilization of the existing power production capacity, considering that the World Bank estimates that the utilization rate of the Arab countries' generating capacity stands at only 42% and the utilization of the production capacity of the interconnection grids is just 10%.

## Trading in Electricity Between the Gulf States:

It may be necessary for the Gulf countries to expand the role of the GCCIA Grid to other countries in the region and enhance trading in electricity. Trading in electricity will benefit from the generating capacity of all these countries combined together and ensure the most efficient and optimum utilization of such capacity. If properly implemented, this would achieve significant economic gains for the Gulf states. At times when the revenues of Gulf countries have been declining in recent years, and other countries in the region are facing financial difficulties in investing in the electricity generation sector and the provision of other public services, trading in electricity could have provided alternative financial revenues to the Gulf countries and supplied the other countries with electricity and as such helped them avoid the need for expensive investments in new power plants. Many Arab countries will also be able to obtain electricity at prices lower than that of the locally produced electricity because the cost of generating electricity varies from one country to another. As governments are expected to continue their policies to curtail their electricity subsidies, electricity consumption will fall and this will result in larger unutilized capacities in such countries and the unutilized capacities can be absorbed by trading with neighboring countries. Despite this the electricity trade between Gulf countries is still modest.

The sixth meeting of the heads of the sectors concerned with energy trade held on 14 January 2017 in the United Arab Emirates was an important "energy trade" related meeting. The meeting adopted the setting up of a new mechanism for commercial exchange of energy between GCC institutions and companies based on a simplified electronic platform. The system directly receives offers of supply and demand and then executes deals without the need for bilateral talks or negotiations between the trading parties. Two deals were transacted on this system that resulted in savings of US\$109.3 million between the trading countries. This represents an increase of 20% in energy trade up from the previous year. The two deals were made between four GCC companies for a period of 184 days and involved quantities of up to 878,400 MWh. The shares of the countries taking part in the exporting of energy were: Kuwait 46%, UAE 41% and the Kingdom of Bahrain 13%.

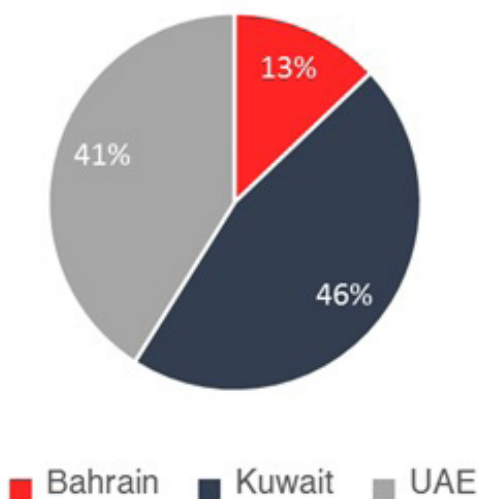


Figure 1: Gulf States participation in energy trade, 2017

The GCCIA estimates that GCC electricity trade could achieve savings of up to \$24 billion by 2038. However, electricity trade in Arab countries is lagging behind other countries around the world because of technical, institutional and political barriers.

## **Oman's Energy Trading Project:**

In a major step towards preparing for electricity trading at international level, Oman is embarking upon setting up an electricity trading system of its own, by establishing an electricity Spot Market.

The main objective at the current phase is to develop procedures and regulations to establish the market and enable it to trade in electricity available on the country's main grids on a daily basis. This includes drafting the legal documents and rules that regulate the market, development of Information, Communications and Technology (ICT) systems to operate the market, development of the capabilities of the electricity sector's employees and coordination with other stakeholders in their preparations to participate effectively in the Spot Market.

The Omani electricity Spot Market will comprise the following parties: (1) Oman Power and Water Procurement Company (OPWP), which will act as the Market Operator (MO) and also the Power Procurer (PP) as sole purchaser of electricity in the Sultanate's Spot Market; (2) Oman Electricity Transmission Company (OETC) which will be the Load Dispatch Center (LDC) and its role will remain to be to act as the load control center and be responsible for operating orders in accordance with the Grid's rules (3) Authority for Electricity Regulation (AER), which in addition to its current role will provide regulatory oversight of the Spot Market, and (4) Generators, electricity generation companies, whose role will be to submit daily offers to the Market Operator and access various market data such as prices. The Spot Market is expected to start operational trials in 2019 and go live in 2020.

The creation of this electricity Spot Market in the Sultanate of Oman will provide an alternative option for electricity generators to sell their production. Instead of entering into long-term agreements, qualified producers will be able to participate in and submit offers on the Spot Market on a daily basis and in an open and transparent manner. As demand for energy is growing in the Sultanate, with annual growth of 10% and expected to reach 11% by 2020, the Spot Market system will certainly increase competition among power producers in line with the level of demand for energy.

## **Challenges Facing Energy Trade:**

Although many Arab countries are mindful of the importance of energy security and the role of regional interconnection grids in enhancing energy security, there are major challenges that prevent benefiting from such joint projects:

1. Geopolitical tensions between Arab countries constitute one of the most important barriers to cooperation in the fields of energy. Such tensions prompt these countries to adopt individual plans and policies in this regard and avoid participating in joint projects and plans.

2. Lack of institutional capabilities and non-clarity in regulatory frameworks. Despite the establishment of the GCC Interconnection Authority (GCCIA), there is a lack of transparency in terms of regulatory frameworks, not to mention the lack of legislation on trading and pricing, etc.
3. Challenges caused by the discontinuation of subsidies and liberalization of energy prices. An efficient market for trading in electricity cannot be achieved without the liberalization of electricity prices that reflect the real production costs and provides a sound environment for competition between producers and consumers of electricity.

## **Recommendations:**

1. Locally, the government should pay greater attention to the GCC interconnection as it can represent a promising investment opportunity and may develop to be a main contributor to the national economy.
2. It is also necessary to develop the infrastructure of the national electricity grid to the level required by the energy trade, and also train qualified national staff to run this sector.
3. The national market should be prepared for entering the electricity trade market through the issuance of the necessary laws and regulations. It is advisable to start, like Oman, with a local energy market by encouraging existing private sector companies to produce electricity in competition among themselves.