

## Middle East and North Africa Business Frontier

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## Renewable energy in North Africa

Henry Smith, Research Analyst, Frontier MEA

The association between the Arab world and oil remains arguably as strong today as it ever did despite attempts at economic diversification. But many of the region's countries are now moving to extend their connection with energy into new – and cleaner – territory. Not only does the region sit on some of the world's largest hydrocarbon reserves, it also boasts favourable climatic and geographical conditions that could allow the first-movers to position themselves as international powerhouses of renewable energy production.

The headline-grabbing green initiatives in the region include Masdar in the United Arab Emirates (UAE), which intends to be the world's first carbon-neutral city. There is also the Desertec Industrial Initiative (DII) that envisages a solar power grid across the whole region, claiming that in six hours deserts receive more solar energy than humankind consumes in a year. But in

global terms there has been remarkably little investment in renewable energy compared to other regions, with financial new investment in these resources reaching US\$2.6bn in the Middle East and Africa in 2008, according to one source (see Figure 1). This represented only 2.2% of total new global investment in renewables in the same year, and lags well behind other emerging regions such as South America. According to a 2009 report from management consultancy Booz & Co., the Middle East and North Africa region has a total electricity generation capacity of 146GW, an insufficient level to support a forecast demand growth of 7% per year which will require 80-90GW of new capacity by 2017. This will be easier to achieve for countries with substantial hydrocarbon reserves, who can fund and supply the fuel for oil and gas-fired power plants.

**Figure 1:** Financial new investment in renewable energy by region, 2002-08 (US\$bn)

Region	2002	2003	2004	2005	2006	2007	2008	Total
Europe	3.7	3.6	8.4	17.7	26.3	48.6	49.7	158
North America	1.7	5.0	4.2	10.3	22.6	32.7	30.1	106.6
Asia & Oceania	1.3	2.0	3.3	5.5	12.1	21.7	24.2	70.1
South America	0.4	0.6	0.3	1.6	4.3	7.6	12.3	27.1
Middle East & Africa	0.0	0.0	0.2	0.3	1.1	2.0	2.6	6.2
<b>Total</b>	<b>7.1</b>	<b>11.2</b>	<b>16.4</b>	<b>35.4</b>	<b>66.4</b>	<b>112.</b>	<b>118.9</b>	

Source: *New Energy Finance, United Nations Environment Programme & Sustainable Energy Finance Initiative*

Yet those countries in North Africa and the Levant lacking large reserves may need to rely on alternative sources of energy in the future – something which is becoming both a government priority and a target for private sector interest.

In November 2009, the Moroccan government established a US\$9bn solar power project that should lead to the construction of five sites that aim to generate 38% of the country's power by 2020. Morocco is also developing wind energy and in June inaugurated Africa's largest wind farm, whose 165 wind turbines can provide 140MW of energy annually and complement existing smaller sites. The

government's interest in domestic renewable sources has largely been driven by its dependence on imported energy, which accounts for 96% of total consumption.

In July this year, Egypt unveiled plans to build a US\$700m, 100MW solar plant near the Aswan Dam. The project will be the second large-scale solar plant in the country, with the first expected to come online in late 2010 and provide 20MW from solar power and 120MW from conventional gas. Both sites are an attempt by the government to diversify away from natural gas and to meet a target of generating 20% of power from renewable sources by 2020. Wind power is also being pursued to meet this target, with two new

sites on the Red Sea already generating a combined 430MW, although much more solar and wind capacity will need to be installed if the goal is to be achieved. In 2009, Tunisia launched the Tunisia Solar Plan – a US\$2.6bn programme, aimed at reducing the country’s dependence on hydrocarbons by funding 30 separate renewable energy projects, including three large solar power sites. The ultimate goal of the plan is to reduce demand for conventional energy by 22% and increase renewable energy production to 550MW by 2016. Wind farms currently provide 6% of Tunisia’s electricity, with output expected to rise to 1,000MW in the coming years.

Aside from the socio-economic and environmental advantages associated with renewables, countries prioritising green energy stand to gain other benefits. These include economic diversification, first-mover advantage in a growth industry and reduced dependence on volatile conventional energy sources and their prices.

**Figure 2:** Wind power potential in the MENA region (GW of generation capacity)

Country	GW	Rank in MENA
Egypt	30	1
Algeria	20	2
Morocco	9	4
Libya	8	5
Tunisia	4	9

Source: “Concentrating Solar Power for the Mediterranean Region” (MED-CSP), German Aerospace Agency (DLR), 2005

**Figure 3:** Concentrated solar power potential in the MENA region (GW of generation capacity)

Country	GW	Rank in MENA
Algeria	62,600	1
Libya	51,700	2
Egypt	26,300	4
Morocco	7,800	8
Tunisia	3,900	10

Source: “Concentrating Solar Power for the Mediterranean Region” (MED-CSP), German Aerospace Agency (DLR), 2005

The enormous hydrocarbon reserves of Algeria and Libya have until now provided something of a disincentive to developing alternative energy

sources – a setback for promoters of an integrated North African renewable energy hub. Algeria and Libya have the potential to generate 114,328GW of electricity from wind and concentrated solar power (CSP), around 30 times Europe’s yearly demand. However, there are positive signals from the Algerian government, which aims to provide 10% of energy from renewable sources by 2025, with 5% of supplies coming from solar power by 2015.

While Algeria has recently tightened regulations on international investment and shifted towards resource nationalism, it appears willing to participate in pan-Mediterranean solar schemes if Algerian firms take a lead role in projects based in the country. As such, Cevital is currently looking for international partners for its US\$8bn solar plant. The company has also joined the Desertec scheme. Algeria has demonstrated more interest in developing renewable sources than neighbouring Libya, particularly in relation to projects that involve partnerships with Europe rather than sub-Saharan Africa.

In June, the EU Energy Commissioner Gunther Oettinger met with Algerian, Moroccan and Tunisian Energy Ministers in Algiers to discuss the future of the DII project, which aims to provide 15% of Europe’s energy needs (around 550GW) through renewable sources by 2050. The benefits to Europe should be clear: a reduced reliance on volatile Russian gas imports, and an environmentally and politically valuable reduction in carbon emissions. Nonetheless, a number of obstacles remain that are not due to the economic dominance of hydrocarbons in Algeria and Libya.

Security risks in unstable corners of the region present problems, while technology throws up others. Crucial infrastructure networks, such as submarine cables, remain unbuilt, while a lack of water in remote Saharan locations reduces the commercial and practical viability of CSP sites. There are also political obstacles, with governmental disagreements putting cooperation efforts into question.

In short, although the potential exists for North Africa to become an important centre for renewable energy and individual governments are showing encouraging signs, significant hurdles need to be overcome



before the sector's potential role can be realised.

If they can, then governments, consumers, businesses and the environment should all reap benefits in the long term.

**What is the Desertec Industrial Initiative?**

By 2050, the DII aims to provide 15% of Europe's energy needs (around 550GW) from renewable sources. Under the scheme, energy captured using

concentrated solar power, photovoltaic cells and wind plants will be channelled under the Mediterranean using 20 high-voltage direct current cables. The DII was launched in July 2009 by the Desertec Foundation, a German non-profit organisation, and initially consisted of a consortium of primarily German corporations, including Siemens, Deutsche Bank and RWE. Since then it has drawn signatories from Algeria, Spain and Switzerland as part of its efforts to bolster international support from both continents.

## MENA Hotspots

There have been a number of developments in the economies of the MENA region for the past quarter. Frontier Advisory and Frontier MEA have been tracking these developments.

### Algeria

#### Algeria squeezes foreign investors

The Algerian government announced a series of measures in early September that will require any foreign firm bidding for a state contract to now have a domestic partner. Furthermore, the price of any state-led acquisitions of foreign-owned assets will now be set by expert valuation rather than the market, while the government can now also levy windfall taxes of between 30-80% on all firms, not just oil and gas companies. The conditions that would activate the tax are unclear.

### Libya

#### Unicredit wins banking license

Italy's largest bank, **Unicredit**, won the right to open a subsidiary in Libya, beating off competition from **HSBC**, **Standard Chartered**, **Emirates NBD** and **Mashreq**. The news came soon after Libya increased its stake in Unicredit: it now owns around 6.7% of the Milan-listed lender.

### Lebanon

#### US\$5bn investment plan

Energy Minister Gebran Bassil proposed a US\$5bn investment plan for the energy sector in July which could eliminate electricity rationing in four years. US\$1.5bn would come from the government with the remaining finance sourced through loans from Lebanon's neighbours and private sector investors. Under the scheme, Lebanon should source 12% of its energy supply through alternative sources by 2014, mainly wind and biomass.

### Turkey

#### Pharmaceutical takeover

Private health group **Alliance Boots** has taken control of Turkish pharmaceutical wholesaler **Hedef Alliance Holding** by increasing its stake by 10% to 60%. Hedef Alliance controls one third of the growing Turkish pharmaceuticals market and posts annual sales of around US\$3.4bn. Hedef has operations in Egypt through a 50% controlling stake in the wholesaler **United Company of Pharmacists** and an associate interest in Algeria's largest wholesaler **Hydrapharm**.

### Bahrain

#### Stability fund is needed

Authorities in Bahrain, are pushing for the creation of a regional stability fund to counter potential fiscal crises and balance economic disparities between the six member states of the Gulf Cooperation Council (GCC). Bahrain ran a budget deficit in 2009 for the first time in four years due to low global oil prices.

### Dubai, UAE

#### Emirates expand

The Emirates airline announced the biggest contract in civil aviation history in June with the purchase of 32 Airbus "superjumbos" for US\$11.5bn. The deal saw the airline's fleet of A380s increase to 90 aircraft. Emirates also purchased 30 Boeing 777 planes for US\$9.1bn at July's Farnborough International Airshow.

### Qatar

#### Qatar Airways expands

**Qatar Airways** placed a US\$501m order with **Boeing** during July's Farnborough International Airshow for two 777s and announced plans to purchase another three. The airline will also accelerate delivery on 20 787s. The purchase took their total spending on aircraft to US\$35bn and forms part of the airline's strategy to seize market share from European airlines in the intercontinental market. The airline currently operates a fleet of 84 aircraft to 92 destinations.

### Saudi Arabia/Egypt

#### Electricity exchange

Egypt and Saudi Arabia have agreed to link their power grids and exchange 3,000MW of electricity. Egypt will send Saudi Arabia electricity in the afternoon and the reverse will happen in the evening. The US\$1.5bn cost of the project will be shared by the two countries and an international tender for work on the project is scheduled for January.

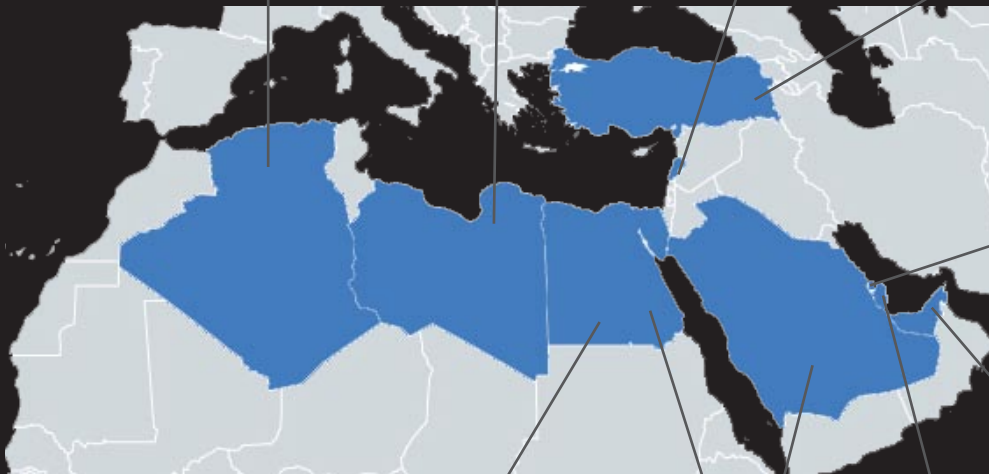
### Egypt

#### New tunnel

The government announced plans in July to construct a US\$1bn tunnel under the Suez Canal. The tunnel will be built 19km south of the Canal's entrance at Port Said and will provide rail and road access. The government will be seeking to finance the tunnel entirely from private finance. A second tunnel is planned for Ismailia following the completion of the Port Said project.

#### Offshore gas fields

**RWE Dea** (Germany) and **BP** (United Kingdom) will jointly invest US\$9bn to develop two offshore gas fields around 40km off Egypt's Mediterranean coast. BP is the operator of both fields with a 60% and 80% stake in each of the concessions. Egypt is not required to contribute to the investment and will receive royalties from BP and RWE Dea for production, scheduled to begin in 2014.





## Sovereign wealth funds and the financial crisis

**Henry Smith, Research Analyst, Frontier MEA**

The plunge in BP's share price following its catastrophic spill in the Gulf of Mexico in April has not only brought attention to the risks of deepwater drilling, but has also placed renewed focus on the significance of sovereign wealth funds (SWFs); particularly those from the Middle East, and their strategies and interests in the wake of the global economic downturn.

Two events in July 2010 played a role in this. The first was a meeting between BP's then CEO, Tony Hayward and Abu Dhabi Crown Prince Sheikh Mohamed bin Zayed Al Nahyan, who heads the Abu Dhabi Investment Authority (ADIA), the largest overseas investment fund in the United Arab Emirates (UAE). Further interest (and controversy) then emerged from comments by the head of the Libyan National Oil Corporation, Shukri Ghanem, who said he would advise his country's main overseas investment fund, the Libyan Investment Authority (LIA), that BP's stock was a "good buy."

But BP's apparent search for a sovereign suitor from the Middle East or North Africa is not the only reason that regional funds deserve attention. According to statistics from Monitor-FEEM, a joint venture to monitor transactions by SWFs, Middle East SWFs invested US\$50bn in 58 transactions in 2009, representing just less than 75% of SWFs' total global investments. For the second year running

this exceeds investments by Asian funds, which totalled US\$19.1bn. The funds have played a pivotal role in the financial crisis, which in many ways has changed both the strategy of the funds themselves and their relationship with developed markets.

### Spending down?

Although the China Investment Corporation (CIC) and the Government of Singapore Investment Corporation (GIC) made the greatest number of investments in 2009, at 17 and 18 respectively, the two highest-spending funds were both from the Middle East. The Qatar Investment Authority (QIA) was ranked first, having invested US\$32.1bn across 14 deals, followed by Abu Dhabi's International Petroleum Investment Company (IPIIC), which invested US\$12bn in 15 transactions.

Although the table below lists the largest active funds in the region, a universally agreed definition of a "sovereign wealth fund" does not exist, and different organisations use different labels. Establishing a fund's status is particularly difficult in the MENA region, due to the often complex and opaque links between a ruling family's personal wealth and the wealth of their country, as well as factors such as the autonomy of different federal governments, such as in the UAE; or the SWF-like nature of some central bank funds, such as Saudi Arabia's SAMA Foreign Holdings.

**Figure 1: Middle East and North Africa Sovereign Wealth Funds**

SWF Name	Country	Assets (US\$bn)	Inception	Origin	SWFI Global Rank	Linaburg-Maduell Index <sup>+</sup>
Abu Dhabi Investment Authority	Abu Dhabi, UAE	627	1976	Oil	1	3
SAMA Foreign Holdings*	Saudi Arabia	415	N/A	Oil	3	2
Kuwait Investment Authority	Kuwait	202.8	1953	Oil	8	6
Libyan Investment Authority	Libya	64-70	2006	Oil	12	2
Qatar Investment Authority	Qatar	65-70	2005	Oil/Gas	13	5
Revenue Regulation Fund*	Algeria	54.8	2000	Oil	15	1
Oil Stabilisation Fund*	Iran	23	1999	Oil	23	1
Investment Corporation of Dubai	Dubai, UAE	19.6	2006	Oil	25	4
International Petroleum Investment Co.	Abu Dhabi, UAE	14	1984	Oil	27	N/A
Mubadala Development Co.	Abu Dhabi, UAE	13.3	2002	Oil	29	10
Mumtalakat Holding Co.	Bahrain	9.1-13	2006	Oil	33	8
State General Reserve Fund	Oman	8.2	1980	Oil/Gas	35	1
Public Investment Fund*	Saudi Arabia	5.3	2008	Oil	37	3
RAK Investment Authority*	Ras Al Kaimah, UAE	1.2	2005	Oil	42	3
National Fund for Hydrocarbon Reserves*	Mauritania	0.3	2006	Oil/Gas	47	1
Oman Investment Fund	Oman	Unknown	2006	Oil	N/A	N/A
Emirates Investment Authority	UAE	Unknown	2007	Oil	N/A	2
Abu Dhabi Investment Council	Abu Dhabi, UAE	Unknown	2007	Oil	N/A	N/A

Source: SWF Institute, Monitor-FEEM, Frontier MEA

\* Not identified as a SWF by Monitor-FEEM

+ The Linaburg-Maduell Index was developed at the SWF Institute as a method of rating the transparency of different SWFs in relation to ten essential principles. Confirming with a principle adds a point to the fund's score.

But despite the scale of investments from Middle Eastern funds in 2009, the year was generally a slow one for SWFs internationally. Total investment from SWFs fell by some 40% compared to 2008 and many funds saw their total assets lose value during the global downturn. Statistics from Monitor-FEEM indicate that funds from the Middle East were less affected than those from Asia-Pacific, Europe and North America. However, average

losses still ranged between 20-25% of known portfolio values. ADIA, QIA, Kuwait Investment Authority (KIA) and Abu Dhabi's Mubadala are all understood to have experienced losses in this range.

That said, some funds made substantial profits during the financial crisis. The IPIC made a profitable exit from Barclays, selling its stake for a gain of around US\$2.3bn in June 2009; while



the QIA sold some of its shares for a profit of approximately US\$950m in October 2008. While the funds' investments in Barclays have been some of the most successful, investments in Citigroup have had mixed results.

At the onset of the crisis, Middle East funds were quick to come to the rescue of faltering Western institutions, investing billions into financial institutions in 2007-08 with mixed success, but crucially providing much-needed liquidity that initially appeared to stabilise markets. However, as the credit crunch tightened and markets dipped further, many funds began to retreat from developed markets and turn instead towards domestic investments. With the credit crisis now spreading to their own backyards, funds began to focus on propping up vulnerable domestic institutions, while also attempting to continue developing and diversifying their respective economies.

Abu Dhabi is one good example of this. Mubadala, one of the largest funds, focused on its original aim of developing and diversifying the emirate's economy, becoming the most active fund in its respective domestic market between Q2 and Q3 2008. By the middle of 2008, 57% of the fund's investments were at home, which included the construction of an aerospace hub and an increased provision of education and health care services. IPIC also targeted strategic investments it considered to be integral to Abu Dhabi's development, including a 70% stake in MAN Ferrostaal, which granted access to the German industrial giant's expertise in petrochemicals, solar power, construction and project management. The deal will also lead to a joint venture based in Abu Dhabi, IPIC-MAN Ferrostaal, which will focus on developing new business in the Middle East and North Africa. Similarly, although IPIC announced that Daimler would not be opening a factory in the emirate, the fund's investment provided access to the firm's advanced engineering technology. The investments in Daimler and MAN Ferrostaal were both made through Aabar in March 2009 – IPIC's vehicle for investing outside the oil industry. Mubadala and IPIC's refocusing can be seen as targeting those sectors and objectives identified as priorities by the emirate's Economic Vision 2030, Abu Dhabi's strategic economic roadmap.

In Q1 2009, the neighbouring emirate of Dubai restructured its sovereign wealth vehicles, bringing them under the Advisory Council of the Government of Dubai in an attempt to increase central government supervision. It was also part of a wider reallocation and restructuring of debt across "Dubai Inc." This move ultimately heralded the debt crisis in November. The fact that Dubai World and its subsidiaries accounted for 75% of the entire emirate's debt meant the fund and the emirate became inseparable for many observers, encouraging panic in global markets. The levels of debt were largely a result of over-gearred investments in 'trophy' assets, such as Time Warner, that were ultimately loss making. Despite ongoing negotiations with the remaining 40% of investors exposed to Dubai World's US\$14.4bn debt, the repayment plans are yet to be finalised and officials have stated that asset sales are dependent on improved market conditions.

As with Abu Dhabi's domestic refocusing, the QIA and the KIA also bailed out a number of struggling companies as both countries battled with the global flight from financial products in emerging markets. Problems on the domestic front brought both SWFs under greater political and popular pressure to divert their capital towards domestic markets, with the QIA injecting US\$5.3bn into eight domestic banks and the KIA creating a US\$5.4bn fund to invest in companies listed on Kuwait's bourse.

While the QIA has a reputation for making high-profile investments in Europe, which in the past have included stakes in Barclays, Volkswagen, Credit Suisse, Sainsbury's supermarket and holdings of prime London real estate, it has arguably concentrated more heavily on domestic investments since the downturn. Wholly-owned subsidiaries such as Qatari Diar, a real estate developer, are responsible for urban development in Qatar itself, and in November 2009 the fund signed a US\$26bn deal with the German national railway operator, Deutsche Bahn to build the country's first railway network.

If SWFs were sometimes viewed with suspicion due to their opacity and unclear motives, the financial crisis and economic downturn appear to have prompted many foreign companies and governments to welcome them with open arms as potential saviours of



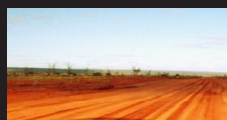
troubled institutions. However, Middle Eastern SWFs have also demonstrated that their motivations are not just to ensure healthy financial returns or acquire high-profile trophy assets, but rather also support and develop their domestic economies. SWFs' targets have moved away from the higher-risk financial services and real estate sectors and towards natural resources, engineering, technology and renewable energy – sectors targeted to benefit domestic economic development and encourage diversification.

With oil prices still relatively robust, it seems certain that the size of Middle Eastern SWF assets are only likely to grow in the future. This trend may

well be accompanied by further calls for improved transparency, which remains limited despite the formation of bodies such as the International Forum of Sovereign Wealth Funds and the adoption of the Santiago Principles, a set of 24 voluntary guidelines identifying best practice for SWFs. Little is still publicly known about some MENA funds, which is not altogether surprising given that many originate from business environments where accountability and transparency lag behind the standards of more regulated markets. Their strategies, intentions and portfolios therefore often remain difficult to identify, despite being increasingly courted by international companies and governments.

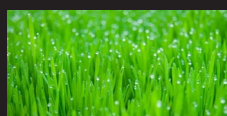
## Africa Seminar Series Calendar

Frontier Advisory and the Johannesburg Stock Exchange host a series of seminars on a monthly basis. The African Seminar Series primary objective is to assist South African companies to better understand issues affecting the African continent and how to better position their companies and organisations. The seminars are largely targeted at CEO's, Managing Directors and Executives of companies, looking to give their business a comparative edge in emerging markets.



### **African Political Scenarios: The Outlook for Africa in 2010**

19 January 2010



### **Recovery from Crisis: Prospects for Africa Funds & Capital Raising**

22 February 2010



### **Ghana: The Hub for Business Expansion in West Africa**

30 March 2010



### **Prospects for Renewable Energy Investment in Africa**

29 April 2010



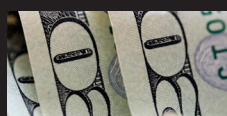
### **The rise of the African consumer: The Implications for Retail in Africa**

9 June 2010



### **Africa's Sleeping Giant: Looking into Nigeria**

19 July 2010



### **Rethinking the Model: What is the role of Development Finance Institutions in Post-Crisis Africa?**

30 September 2010



### **Africa's Commodities: The Engine for Growth on the Continent**

27 October 2010



### **Building Africa's Capital Markets through its Leading Stock Exchange**

19 November 2010



## PROFILES

**Frontier Advisory** works to enhance our clients' competitiveness in emerging markets. Our firm has research, strategy, capital advisory and knowledge divisions.

**Research** – Our team provides in-depth macro, sector, and trend analysis in emerging markets

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**Frontier Middle East and Africa** (MEA) is a research and advisory firm providing sector analysis, feasibility studies and market advisory services across the countries of the Middle East and North Africa, with a particular focus on Libya.

Our work helps companies to understand and do business in this highly diverse region, which offers significant opportunities across a range of industries. Our approach to undertaking research and strategy advice is based on a combination of sector-specific expertise and local country knowledge, contacts and data collection.

We cover a broad range of sectors, including real estate, tourism and hospitality, consumer markets, banking and finance, retail and infrastructure and macro analysis.

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