



**ACCESS FOR WOMEN IN ENERGY MISSION
TO
THE UNITED ARAB EMIRATES
7 – 10 MAY 2017**

VISIT SUMMARY

AccessWIE Mission to the UAE

As part of its ongoing growth, Access for Women in Energy (AccessWIE) embarked on a new activity in 2017: organizing educational and business visits to major energy producing and consuming countries in an attempt to give its members a comprehensive and exclusive overview of the latest energy developments in the host country.

The first target country is the United Arab Emirates (UAE) which is one of the world's largest oil producers and is leading the Arab world with green energy developments – both in terms of renewable energy and nuclear power. The Emirates' dedication to promoting the role of women in the energy sector is also remarkable.

Over four days the mission featured a carefully selected and balanced variety of meetings with leading government institutions. It was a fascinating and highly rewarding visit.

This note summarises the key takeaways from the various meetings that the delegates attended.

Visit Schedule

DAY 1

Ministry of Energy
IPIC/Mubadala
Abu Dhabi Investment Authority
(ADIA)
Workshop, Energy & Diplomacy,
Emirates Diplomatic Academy
Networking dinner

DAY 2

British Embassy
BP
ADNOC
Emirates Foundation
Executive Affairs
Authority

DAY 3

NYU Abu Dhabi
Abu Dhabi
Sustainability Group
(ADSG)
Masdar City &
Institute City Tour

DAY 4

Ministry of
Environment
Central Bank of UAE



AccessWIE personalized signature, courtesy of Masdar City

2017 Energy Mission to the United Arab Emirates

Overview

- Several facts make the UAE stand out among its peers in the Middle East.
- Although the UAE is a major oil and gas producer and an important OPEC member, it has embarked on an ambitious energy programme to safeguard its current oil and gas production while promoting its pioneering status in the development of green energy in the region. The Barakah nuclear power plant, the first such plant in the Arab world, and Masdar City are just some examples. The UAE also hosts the International Renewable Energy (IRENA).
- The UAE economy is one of the most diversified in the GCC region. The government recognises the importance of advancing the diversification agenda to support prosperity and development of the country.
- The UAE has also shown outstanding dedication to promoting the role of women in the energy sector.
- Several challenges remain, but on balance, progress has been impressive and many business opportunities exist.



Cultural tour. From left to right: Gonzalo Nicolas Vazquez Vicente, Axpo; Sarah Raffoul, Crystal Energy; Eleni Papadopoulou, Cheniere Marketing; Lord Howell, House of Lords; Jessica Obeid, UNDP

Economic conditions

- The UAE's economy is more diversified than most of its Gulf neighbours with 70% of revenues coming from non-energy sectors.
- However, the UAE is still an oil producing country and its economy has been hit by the protracted market crisis, low commodity prices, global economic growth slowdown and fiscal consolidation.
- Economic growth dropped from 4.6% in 2014 to 2.7% in 2016.
- According to the **Central Bank of the UAE**, the non-energy sector is expected to see a rebound of around 3% in 2017 and 3.7% in 2018 in non-oil GDP.
- However, the energy segment could contract as the forecasts of the Energy Agency and some other external sources suggest that the oil price may soften more in the near term and slump to USD30 – 40 per barrel.
- The economy is policy driven - when oil prices decline, government spending rises to compensate for shrinking revenues.
- Wealth is still not evenly distributed across all the Emirates.
- Ongoing fiscal consolidation is one of the key priorities for the UAE as it will help balance the budget.
- The UAE Dirham, the local currency, experienced a continued appreciation relative to the US dollar and some other major trading partners, which negatively affected its competitiveness.
- Financing of government spending was mainly deposited from banks, thereby reducing liquidity. In 2016, government deposits improved while mobilizing some credit abroad. Employment started to drop with fiscal rebound expected in 2017.
- The growth of infrastructure dominating the country's spending has slowed down notably.
- 85% of the workforce is estimated to come from abroad. The incentives to raise the number of local employees are not attractive enough and Emiratis are still not well encouraged to work and to compete with foreigners.
- The immigration strategy is unsustainable and requires further improvement, for example, as expats are not allowed to get residence permit, they normally transfer cash to other countries.
- Entrepreneurship and start-ups have limited access to finance, for instance, because they lack credit records, experience, and potential for financial independence. Since SMEs are an important economic element of a nation, their healthy relationship with banks should be improved.
- Mubadala Development Company (MDC) and IPIC have merged into **Mubadala Investment Company (MIC)**, as part of a strategy to cut costs and consolidate holdings triggered by plummeted commodity prices. IPIC is focused on energy refining and distribution; Mubadala's more eclectic holding is broader - from energy production to aircraft parts.
- To mitigate further negative impact of low oil prices on its economy, the UAE is focusing more on revenue diversification, speaking about such sectors as infrastructure, services, tourism, airlines, and other industries that have a low coefficient to oil prices.

2017 Energy Mission to the United Arab Emirates

- **Abu Dhabi Investment Authority (ADIA)**, the world's third largest Sovereign Wealth Fund and MIC play a vital role in assisting with this target.



The participants with Mr Bahattin Buyuksahin, Head of Energy Analysis, Department of Strategy and Planning, ADIA

Oil & Gas Sector

- The UAE has the world's 8th and 7th proven oil and gas reserves respectively; the majority in Abu Dhabi.
- The hydrocarbon sector is the key contributor to the government coffers.
- **The Abu Dhabi National Oil Company (ADNOC)** is the 12th largest global oil producer albeit it took thirty years to find its first oil in 1980s. ADNOC wields the dominating power over the country's energy sector.
- Facing the current market turmoil, ADNOC emphasized its target to maximize value across the whole supply chain from upstream to downstream: 'stretch the dollar, get maximum out of it'.
- Petrochemical production is anticipated to triple up to 11.4 million tonnes per annum by 2025.
- ADNOC has no activities outside the country, however, it seeks to be recognised as an international player while improving efficiency and operational excellence.
- Saying that, in 2016 ADNOC sold to BP a 10% share in ADCO in return for a 2% stake in BP worth of USD 2.2 billion. As a result, ADNOC gained access to some global reserves and maintain the long-term relationship with an important partner.
- In early 2000s, the landscape in the UAE was like in all other GCC states. The government wanted to stabilise production and revenues.
- In summer 2006, the UAE witnessed a 'mini-energy crisis', following the late delivery of the Dolphin gas project from Qatar. It was a wake-up call requiring efforts to ensure energy security of the country.
- The government then created an energy working group, which included the **Executive Affairs Authority (EAA)**, to re-determine the base line demand case for energy requirements and available supply options.
- The UAE set an ambitious target to boost crude production by more than 10% up to 3.5 million barrels per day by 2020. Gas production is also planned to increase to meet growing demand, slash dependence on imports, and diversify the fuel mix.
- Additional challenges remain, these are primarily: the availability of drinking water and its current desalination process (efficiency, cost issue and environmental impact), and shortage of domestic gas.



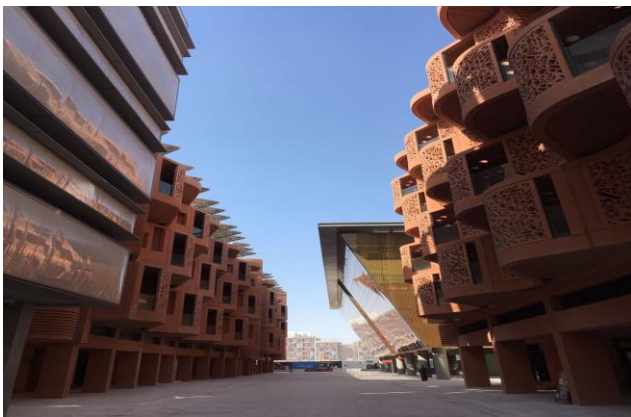
Lord Howell opening the dinner. Guests included: HE Philip Parham CMG, the British Ambassador to the UAE; HE Vasilis Polemitis, the Cypriot Ambassador to the UAE, and representation from ADIA, ADNOC, ENEC, Energy Institute, Mubadala, and Shell.

Alternative Energy

- The UAE is dedicated to diversifying its energy portfolio to ensure the sustainability of energy resources and to have optionality of switching to alternative sources, including renewable energy, nuclear energy, and clean fossil fuels.
- The integration of alternative energy sources was further stimulated by the country's commitment to the Paris agreement and the UAE Energy Plan 2050.
- The latter sets a target to have alternative sources make up 50% of power generation by 2050, of which 44% and 6% will come from solar and nuclear plants respectively.
- The 2050 Vision also requires a 40% reduction of energy demand and a 70% reduction in CO₂ emissions.
- The strategy is under the supervision of the federal government, represented by the **Ministry of Energy** and the Ministry of Cabinet Affairs and The Future.

2017 Energy Mission to the United Arab Emirates

- **The Environment Agency – Abu Dhabi (EAD)** is a governmental agency established to protect and enhance air quality, groundwater and the biodiversity of desert and marine ecosystem and promote sustainable development in Abu Dhabi.
- **The Abu Dhabi Sustainability Group (ADSG)**, established in June 2008, is a forum of members who have signed the ADSG Declaration, committing to adopt best practices of sustainability management.
- The UAE affirmed its desire and capability to boost renewable energy development through a number of ‘green’ projects and proposals, such as:
 - **Masdar city** - the world’s most sustainable eco-city that promotes low usage of energy and water, and energy efficiency using recycled materials and densely populated buildings to provide shade. Over 40,000 residences will be able to occupy the city by 2030, when the city is completed.



Masdar Institute buildings won the “Environmentally Sustainable Built Project Award” in the 2012 International Awards for Livable Communities

- Sweihan Solar Plant (Abu Dhabi, 2019) - the project, initially slated for a capacity of 350 MW. However, following world’s record low bids of less than 2.44 US cent/kWh, ADWEA looked to develop its capacity up to 1.177 GW. In May 2017, a consortium of Marubeni Corporation and JinkoSolar signed a power purchase agreement.
- Barakah Nuclear Power Plant (Abu Dhabi, 2017-2018) – the UAE’s first power station with four reactors planned to be online between 2017 and 2020.
- Al Reyadah CCUS (Abu Dhabi, 2016) – the world’s first fully commercial carbon capture storage (CCS) project, developed by a JV between ADNOC and Masdar.

- Shams 1 (Abu Dhabi, 2013) Solar Station - one of the world’s largest and the biggest Concentrating Solar Power Station (CSP) in the Middle East. Installed capacity accounts for 100 MW powering more than 20,000 homes.
- Mohammed bin Rashid al Maktoum Solar Park (Dubai, 2013), generating a capacity of 13 MW at Phase 1 and 200 MW at Phase 2. Phase 3 will be constructed with a capacity of 800 MW for 2.99 US cent/KW.

- While solar costs have decreased over time, challenges remain. For instance, solar PV performance is not as efficient under extreme heat and humidity and is affected by dust.
- Energy efficiency and demand are more affected by public education, policy and tariffs than by economic and population growth. Are increasing tariffs the answer? Distribution companies are doing a consultation on the impact of tariffs.
- The UAE’s on-going investments in alternative energy are focused on research and technological innovation - the two key components to improve efficiency, reduce costs and minimize adverse effect on the environment while ensuring sustainability.



The mission’s delegates enjoying the driverless car - Masdar City Personal Rapid Transit (PRT) system

Role of women and youth

The UAE stands out not only regionally but also globally in terms of its dedication to promoting the role of women and youth in the energy sector.

- Women are estimated to represent around 60% of the Ministry of Energy and 20% of the technical staff operating nuclear projects.

2017 Energy Mission to the United Arab Emirates

- ADNOC has developed the Women's Network and Women's Leadership Development Program to attract more women to the sector, educate, support, and help build strong career.
- The program is undoubtedly special, with its bold 2020 targets, primarily to:
 - Appoint one female CEO at least across the group of operating companies;
 - Ensure 15% Senior Management across the ADNOC Group are female;
 - Increase the number of new Emirati female recruits by up to 30%.



A warm welcome at ADNOC

- ADNOC is a pioneer in its plans to make one of the oilfields the first one fully managed by women, with Al Rumaiha oil field as a potential target.
- To secure social stability and sustain economic prosperity, the UAE is also addressing the challenges faced by young Emiratis through diverse programs and in collaboration with different, such as the **Emirates Foundation**.
- These programs cover different aspects including but not limited to: youth wellbeing and independence, creation of opportunities for youth engagement, promotion of entrepreneurship and the private sector, leadership skills development, as well as classically training, education and unemployment.
- **The New York University Abu Dhabi** conducts research on energy, climate change and environment, as part of Research Fellowships in the Humanities and

Centre for Global Sea-Level Change Research (CSLC).

- **The Masdar Institute of Science and Technology**, collaborating with Massachusetts Institute of Technology (MIT), is the world's first graduate-level university focusing on advanced energy and sustainable technologies.
- **The Masdar's Initiatives** include:
 - The Abu Dhabi Sustainability Week (ADSW);
 - The Zayed Future Energy Prize (equivalent of Nobel prize for Energy) that recognises and rewards today's Innovators with a USD 4 million prize annually;
 - Women in Sustainability, Environment, and Renewable Energy (WiSER) that encourages greater female participation in STEM fields and shares knowledge with young women through mentorships and industry opportunities.
- Several technology solutions have been proposed by students of the Masdar Institute, for example, biofuel for aviation from local plant, biofuel for fertilizers from growing fish and shrimps, renewable energy storage, battery, and water desalination from renewables.
- **The Emirates Diplomatic Academy (EDA)** (established in Abu Dhabi in 2014) is a prestigious platform that combines the best of academia, research and practice. It equips the UAE's current and future diplomats with the knowledge and multi-disciplinary skills to effectively serve their nation.



Closing the visit with a highly informative meeting at the Central Bank of Abu Dhabi

Testimonials

“I wanted to thank you sincerely for the invaluable experience that you have made possible for all of us. The access to crucial networks in the industry that has been made available to us will prove extremely useful for our various careers and aspirations. Thank you once again for your time, energy, and effort.”

- Rana Kassas, University of Kent

“I was new to this part of the world and it has been a truly amazing experience, both from personal and professional sides, for which I would like to sincerely thank you all”

- Gonzalo Nicolas Vazquez Vicente, Axpo/ London Business School

“I was honored to take part in this project representing GEF and joining a select group of energy professionals seeking to engage with the key stakeholders in the energy sector of a country with a distinct energy profile and history. Back-to-back meetings in the course of a four-day visit to Abu Dhabi indeed provided unique insights to the members of the Mission allowing us to discover and take some deep dives into the long-term energy and investment strategy of UAE, including women engagement initiatives integrated in the latter; oil price forecasts and energy diplomacy in the Gulf. I would like to thank you again for organising the first Energy Mission of AccessWIE - taking part in it was indeed a great experience on both professional and personal level.”

- Daria Nochevnik, Greek Energy Forum

“The trip was very insightful and Masdar City was epic! I have been telling my friends how important it is to step outside, see the bigger picture, and what's being done elsewhere. Thank you all for your efforts in making that trip happen.”

- Jessica Obeid, United Nations Development Programme (UNDP)

“The meetings arranged were of excellent quality and gave me a comprehensive overview of the energy industry and policy in the region. I met with people of high caliber and made new friends. During this trip, we enjoyed a good balance between visits to government institutions, educational organisations, companies as well as site visits e.g. Masdar City & Institute and the dinner reception gave us the opportunity to network with several officials and experts. I would like to thank Dr Nakhle, Lord Howell and AccessWIE for the rich agenda and the overall impressive experience.”

- Eleni Papadopoulou, Cheniere Marketing

Access for Women in Energy (AccessWIE) aims to establish a community of practice, offering women a peer-group platform to meet with their contemporaries both female and male in the private and the public sectors across the world of energy.

The group engages its members in regular informed debates on global energy related issues and provides educational support to those who want to venture into new aspects of the energy industry or simply expand their knowledge. The group also provides energy experts a valuable networking platform and offers an opportunity for graduates to establish useful connections within the industry as they shape their careers and carry forward their own projects.