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OPPORTUNITIES FOR DUTCH BUSINESS IN THE GULF REGION
ENERGY SECTOR

Holland
Pioneers in international business

ENERGY SECTOR

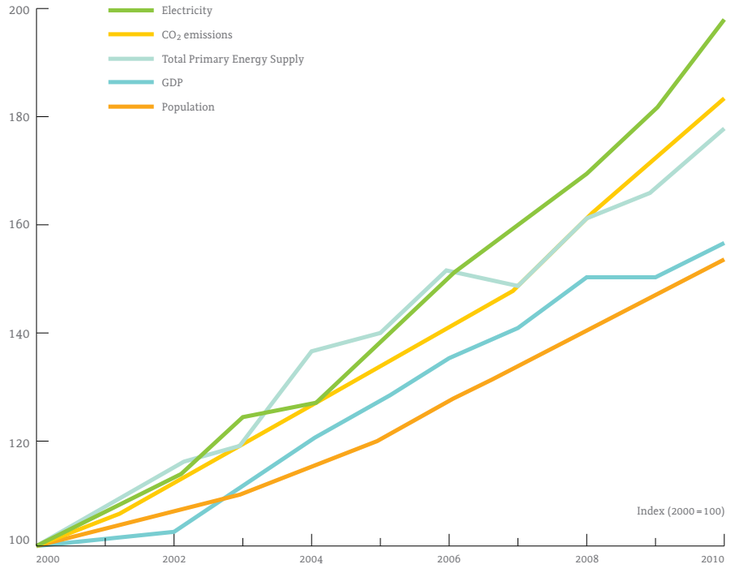
CONTENTS

1 INTRODUCTION

The countries in the Gulf region are major players in the worldwide energy sector. Recent, and also future, developments will broaden their focus, providing new business opportunities for the Dutch. The countries of the Gulf Cooperation Council (GCC) have developed large renewable energy initiatives, next to the hydrocarbons in order to diversify the energy mix.

The GCC region is the largest producer of oil and gas in the world. However, increasing pressure on the natural fossil fuel resources due to growing populations and economies, made the GCC countries focus on diversifying their power generation sources, including renewable energy. Saudi Arabia, United Arab Emirates (UAE), Qatar, Kuwait and Oman have all targeted that 10 per cent of the power production comes from renewable sources of energy by 2020 and they are rapidly moving towards realizing this target.

Table 1: Basic Energy Trends in GCC countries



Source: Based on International Energy Agency Data

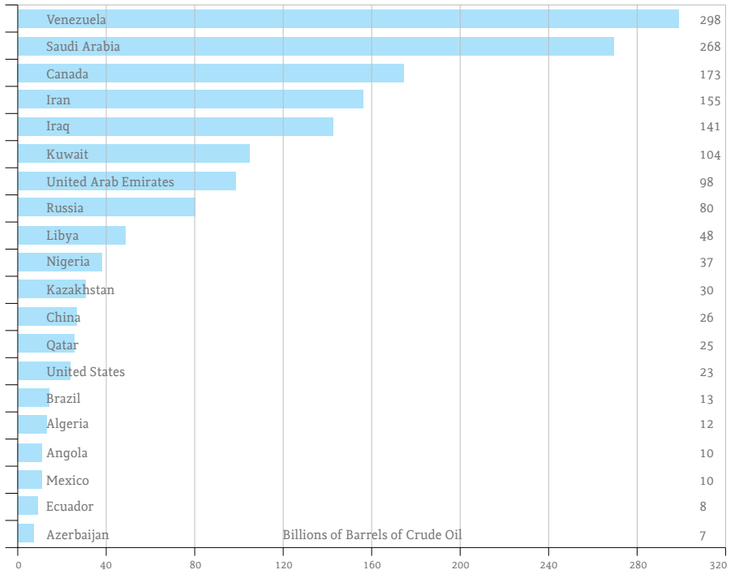
The key to renewable energy development in the GCC region is solar power, as it is the single most abundant renewable source of energy available. The topography of the region gives it immense solar energy potential throughout the year and benefits the space to develop large solar power plants. Almost 85 to 90 per cent of the money spent on renewable energy development is for solar energy. Abu Dhabi's carbon-neutral Masdar City, Saudi Arabia's huge solar heating plant in Riyadh, Dubai's plan to construct a 1GW solar park, and Qatar's Solar Schools project are just a few indications that the region is undergoing a "Green Energy Revolution." The region also has significant wind resources, geothermal and biomass from urban waste.

Oil pump, ©Roberto Giobbi

It is of great importance that the Arab countries switch to more careful use of oil and gas and renewable energy development, as emphasized by the NGO Arab Forum for Environment and Development[1]. To achieve this, energy subsidies could be replaced by private investment and national energy strategies. With the latter focusing on energy conservation through energy and process efficiency measures, while maintaining the same production levels.

Regional electricity consumption is growing at almost 8 per cent a year — meaning generating capacity has to be doubled every decade. Gulf countries will require 100 GW of additional power over the next 10 years to meet demand. Electricity produced from renewables means less domestic consumption of oil and gas, freeing them for export.

Table 2: Top 20 proved oil reserves by country



Source: EIA, 2013

[1] Arab Forum for Environment and Development report 2013 (http://www.afedonline.org/report2013/english.html)

Table 3: Top 20 of proved natural gas reserves by country (in trillion cubic metres)

Russia	44.6
Iran	33.1
Qatar	25.0
Turkmenistan	24.3
United States	8.5
Saudi Arabia	8.2
United Arab Emirates	6.1
Venezuela	5.5
Nigeria	5.1
Algeria	4.5
Australia	3.8
Iraq	3.6
China	3.1
Indonesia	3.0
Malaysia	2.4
Egypt	2.2
Norway	2.1
Canada	2.0
Kazakhstan	1.9
Kuwait	1.8

Source: EIA, 2013

Jumeirah Dubai, ©Phillip Minnis

Liquid Natural Gas tanker, ©Gustav

2 MAJOR DRIVERS PER GCC COUNTRY

2.1 UNITED ARAB EMIRATES

The United Arab Emirates (UAE) is one of the 10 largest producers of oil and natural gas worldwide. The country is a member of the Organization of the Petroleum Exporting Countries (OPEC) and the Gas Exporting Countries Forum (GECF).

All seven emirates – Abu Dhabi, Ajman, Al Fujairah, Dubai, Ras al Khaymah, Sharjah and Umm al Qaywayn – are individually responsible for the production and regulation of their energy industry.

While the UAE is making notable progress in diversifying its economy through tourism, trade, and manufacturing in the near-term oil, natural gas, and associated industries will continue to account for the majority of economic activity in the country. The hydrocarbon economy accounts for over half of the UAE's goods exports and around 80 per cent of government revenues. Approximately 95 per cent of UAE's oil exports are sent to Asian markets, with the largest share going to Japan.

The UAE has one of the world's largest per capita carbon footprints, in part due to the amount of electricity required for desalination and air conditioning. In common with other GCC nations, electricity production is subsidized and supplied to end users at less than the cost of generation.

The UAE is at the forefront of the development of renewable energy in the MENA region, with the establishment of the Abu Dhabi Future Energy Company (Masdar), the construction of the world's first carbon-neutral zero waste city and the annual World Future Energy Summit.

Quick facts about United Arab Emirates

Official Name	United Arab Emirates
Capital	Abu Dhabi
Government Type	Federal, presidential, absolute monarchy
Chief of State	Sheikh Khalifa bin Zayed Al Nahyan, president and ruler
Population*	8.26 million
Land area	83,600 km^2
Languages	Arabic (official), English (business)
GDP Per Capita	USD 41,692 (2012)
Year of Independence	1971

** both UAE nationals and expatriates*

2.1.1 MAIN STRATEGIC GOVERNMENT AGENDA

The UAE holds the world's sixth largest proven oil reserves and the seventh largest proven natural gas reserves. 92 per cent of natural gas reserves in the UAE and 94 per cent of proven oil reserves (92 is natural gas) are located in the emirate of Abu Dhabi. The Abu Dhabi National Oil Company (ADNOC), in partnership with a few international oil companies, dominates production of the oil and gas resources.

The UAE's 97.8 billion barrels of proven oil reserves (about 7 per cent of the world's total) are expected to be able to maintain production at current rates for around 80 years. One of the government's key objectives is to diversify the economy and to reduce dependence on oil, targeting it to comprise 36 per cent share of GDP by 2030, compared to the current 58 per cent.

The country has long been an important supplier of energy, but is becoming an increasingly relevant consumer of energy as well.

The UAE government is committed to the development of renewable energy sources and invests in renewable energy technologies, most notably through the Future Energy Company Masdar initiatives. Abu Dhabi has also taken steps to establish nuclear energy plants. Both renewable and nuclear energy could help meet future electricity demands without having to source for additional suppliers of natural gas.

Abu Dhabi benefits from low cost energy sources, renewable energy will be comparatively expensive. The holistic and innovative strategy is to set one price for all energy production, in which the low-cost energy sources will help bring the renewable energy production cost down.
Two large projects included in the Abu Dhabi government's commitment to renewable energy are the 100-MW Shams solar power plant and the Sir Bani Yas wind farm.

Shams 1 Solar Power Plant

The Shams 1 solar power plant will consist of 768 parabolic trough collectors stretching over an area of 2.5 square kilometers, and will be developed under a 25-year build, own and operate (BOO) contract and is operational since 2011. The plant is stated by Masdar to displace approximately 175,000 tonnes of CO_2 per year, which is the equivalent to the planting of 1.5 million trees.

An important feature of the Shams 1 solar project is the introduction of a "green payment" by which the Abu Dhabi Ministry of Finance will compensate the Abu Dhabi Water and Electricity Company (ADWEC) (the procurer of power under the project PPA), for the shortfall in revenue stemming from subsidized electricity supply and the cost of production. The Abu Dhabi Government anticipates that the production costs of renewable energy will decrease, possibly to such a level that the green payment becomes redundant.

The emirates Dubai and Sharjah work with service contracts to manage their declining oil reserves. In Abu Dhabi and the other emirates, contracts of ADNOC with private actors are long-term, production-sharing agreements (PSAs). The private actors are primarily large international oil companies and the state has a majority share in every project.

2.1.2 OPPORTUNITIES, INVESTMENTS, DEVELOPMENTS

OIL

Producing an average of 2.8 million barrels of crude oil per day, the UAE ranks eighth worldwide in terms of production and is a major exporter. In Abu Dhabi the Supreme Petroleum Council (SPC) determines the objectives and policies for petroleum. The Abu Dhabi National Oil Company (ADNOC) runs daily operations. In Dubai the whole energy policy is developed and coordinated by the Dubai Supreme Council of Energy (DSCE). In the other five emirates the oil sector is relatively small.

A well-developed pipeline network links oil fields with processing plants and export terminals. The newest export pipeline (June, 2012) is the Abu Dhabi Crude Oil Pipeline, which runs 370 kilometres from Hadshan to Fujairah with a capacity of 1.5 million barrels per day, aiming for 1.8 million barrels per day in the near future.

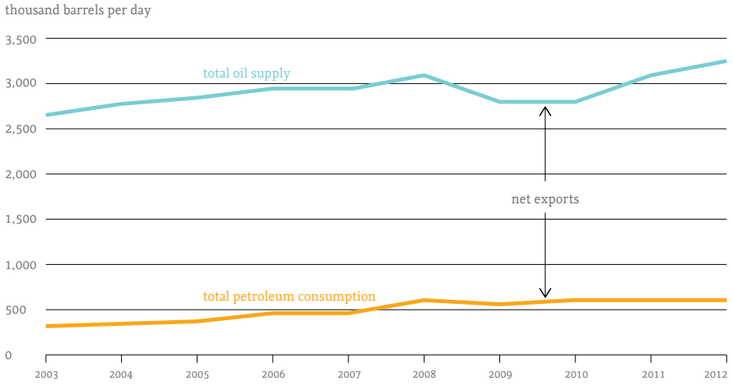
Currently, the UAE has six export terminals with the capability to handle crude oil. Only the terminal in Fujairah is free from the risks associated with the Strait of Hormuz, the world's busiest energy chokepoint. Already one of the world's largest bunkering ports, the export terminal in Fujairah is slated to expand its capabilities significantly. With a storage capacity of 8 million barrels of crude oil – and plans to increase that total to 12 million barrels in the near future – Fujairah is quickly becoming a critical node in the export network.

The UAE has five refining facilities; total refining capacity reached over 770,000 barrels per day by the end of 2012. A new investment of USD 3 billion on a new Fujairah refining complex with a targeted capacity of 250,000 barrels per day will be the second largest in the country, after the facility in Ruwais. Refining plans include the construction of a jointly operated refinery by the UAE and Oman, and in Dubai by DSCE and China Sonangol.

It is improbable that more major oil discoveries will be made. However, enhanced oil recovery (EOR) techniques are successfully used to increase the extraction rates of the UAE's existing mature oil fields. Leaders in the UAE hope to increase crude oil production to 3.5 million barrels per day by 2020. This will be mainly in the emirate Abu Dhabi. Exploration and production in the other six emirates is limited due to exhaustion of reserves and increasing costs of recovery.

The UAE has one of the highest rates of per capita petroleum consumption in the world, (seventh in 2011). It consumed nearly 620,000 barrels per day in 2012.

Table 5: UAE total oil supply and total petroleum consumption, 2003-2012



Source: U.S. Energy Information Administration, International Energy Statistics

NATURAL GAS

The UAE has 6.45 trillion cubic metre (tcm) of proved natural gas reserves, ranking it seventh in the world. The Abu Dhabi Economic Vision 2030 report laid out the strategies for enhancing economic growth in the coming decades, and increasing the viability of domestic natural gas production plays a key role in that plan. As in the oil sector, the production and regulation of natural gas are the responsibility of the emirates individually. In Abu Dhabi the sector is led by ADNOC and in Dubai by DSCE. The UAE is both importer and exporter of natural gas. The country exports over 7 billion cubic metre (bcm) of liquefied natural gas (LNG) per year, mainly to Asia.

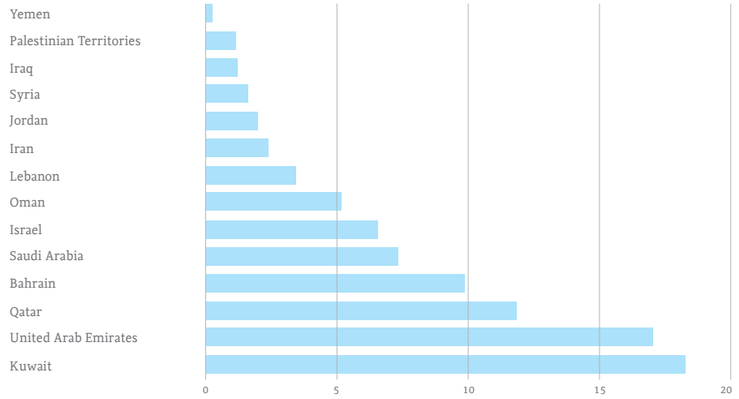
Nearly 30 per cent of natural gas produced in recent years was re-injected into existing fields as part of enhanced oil recovery (EOR) techniques. Government strategies stress the importance of greater sour (high sulfur) gas development, as well as research into alternatives to natural gas re-injection in the oilfields. A possibility is to use carbon dioxide, which would serve the parallel goal of advancing the country's carbon capture and storage (CCS) capabilities.

The country's inefficient and rapidly expanding electricity grid relies on natural gas for the majority of its feedstock. Most of the UAE's electricity is generated using gas-fed thermal generation. Plans to integrate the seven emirates' gas distribution networks will help alleviate some of the peak-demand shortfalls experienced in the past. These issues are exacerbated by on going subsidy programs that keep domestic prices artificially low, and contribute to wasteful energy practices.

Plans to develop domestic natural gas for use in electricity generation are underway. In 2013, the UAE announced the decision to add a second re-gasification terminal – Emirates LNG – offshore at Fujairah, with and initial capacity of 17 MMcm/d and the potential for expansion to 34 MMcm/d. Its location in the Gulf of Oman ensures that the country could still receive LNG shipments if the Strait of Hormuz were to become impassable.

Table 6: Middle East per capita electricity consumption

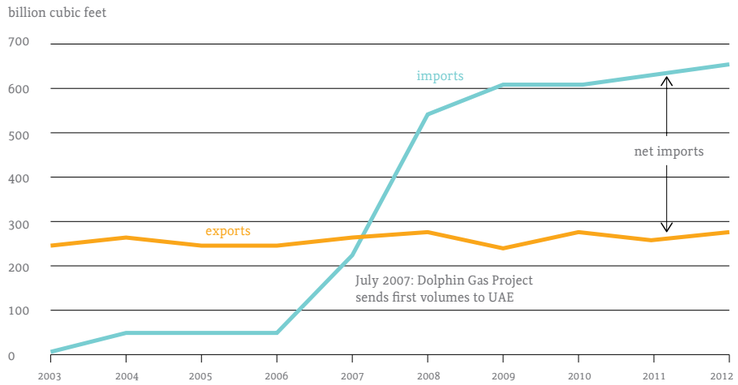
billion kilowatt hours per million population



Source: U.S. Energy Information Administration, International Energy Statistics

The UAE's natural gas has relatively high sulfur content that makes it highly corrosive and difficult to process. The technical difficulties of producing this sulfur-rich (sour) gas once posed a great impediment on the development of the nation's reserves. To help meet the growing demand for natural gas, the UAE boosted imports from neighbouring Qatar via the Dolphin Gas Project's export pipeline. However, advances in technology make the country's vast reserves an enticing alternative to imports.

Table 7: UAE's natural gas imports and exports, 2003-2012



Source: U.S. Energy Information Administration, International Energy Statistics

RENEWABLE ENERGY

The UAE has the most ambitious renewable energy program of the GCC, if not the whole MENA region. A main motivator for this is the availability of natural gas. It is estimated that demand for natural gas will treble to 170 billion cubic feet a day by 2020. This means that, even with the supplies from the Dolphin Gas Project, the UAE will struggle to meet demand. Additionally, and although the UAE holds some of the largest deposits of hydrocarbons in the world, the country is planning to diversify its energy mix beyond hydrocarbon-based electricity generation, including renewable and nuclear energy. The development and export of green technology is considered as means to do this.

Dubai is targeting that 5 per cent of final energy coming from renewables by 2030. Abu Dhabi intends to have 7 per cent of its electricity generation capacity coming from renewables by 2020[2]. Main reasons for this are the ability to meet the natural gas demand and the contribution to diversifying the economy by developing and exporting green technology. Currently at 1 to 2 per cent, there is a challenge to be faced.

The Future Energy Company Masdar plays a significant role in this development. UAE's flagship project is Masdar City, a global clean technology hub and home to IRENA. It aims to be the world's first carbon-neutral city by relying on solar, wind and other renewable energy resources. Its research includes sustainability production, energy transmission and distribution, energy storage (solar), energy efficiency and bio-materials. Scheduled for completion in 2016, Masdar City will use 70 per cent less electricity and 60 per cent less water than a conventional city. The projected cost of the project is USD 22 billion and will result in savings of USD 2 billion in oil over 25 years.

Masdar is also planning to build the Gulf's first geothermal energy facility. The USD 11 billion project will be used to power the city's 5 MW air conditioning system[3].

[2] Wood Mackenzie (a UK-based energy consultant)

[3] Renewable energy by Norton Rose Fullbright (2010)
http://www.nortonrosefulbright.com/knowledge/publications/33580/renewable-energy-in-the-united-arab-emirates

Solar

MBM Solar Holding Inc. built a solar-grade polysilicon plant in the UAE. The USD 400 million project will be the first upstream plant to be constructed in the country and is the largest planned solar plant in the region, anticipated to cover a total area of approximately 250,000 square meters with a total capacity of 2,500 tons per annum of high quality solar-grade polysilicon product.

Water

The UAE has one of the highest consumption rates of water and energy per capita in the world. A UAE resident uses on average 550 liters of water and 20-30 kilowatt hours (kWh) of electricity a day against the international average of 170 to 300 liters and 15 kWh per day respectively. Better conservation practices can save 14 to 17 per cent of water and energy.

In Abu Dhabi, the Water Resources Management Strategy, in line with its 2030 plan, aims to reduce the pressure on water sources. Abu Dhabi's total consumption of water resources reached up to 3.3 billion cubic meters in 2011 and it is expected that the demand for water will increase for up to about 5 billion cubic meters by 2030. The current using of groundwater reservoirs is about 15 times more than the natural recharge rates. With the increase of population, demand for fresh water resources has also increased and the emirate bears high cost of desalination of sea water. The emirate's five year strategy aims to minimize the impact of water production, transmission and distribution on climate, air, soil and marine water quality[4].

Estidama initiative

Abu Dhabi launched the Estidama initiative to make the emirate the sustainability capital of the Middle East by the implementation of a program for sustainable buildings and communities. The program was initiated by a group of government agencies and developers, including the Abu Dhabi Urban Planning Council (UPC), Abu Dhabi Municipality (ADM) and Masdar. The program forms part of Abu Dhabi's Plan 2030, which is an Urban Structure Framework Plan published by the UPC in September 2007.

As part of the Estidama a new Abu Dhabi building code (the Code) has been launched. The Code incorporates mandatory sustainable building principles. The Abu Dhabi Urban Planning Council has also introduced a rating system against which new buildings will be assessed.

Dubai's Green Building Code

Dubai's Green Building Code was approved by the government in 2010 and will be rolled out in phases. The Green Code, jointly developed by DEWA and Dubai Municipality, sets out optional and mandatory regulations in order to make buildings in Dubai compatible with environmental requirements aiming to reduce electrical energy consumption, rationalize water consumption and optimize the use of renewable energy.

Dubai Carbon Centre of Excellence (DCCE)

This centre was established under the directives of the Supreme Council of Energy with a view to leveraging Dubai's carbon potential through a clean development mechanism in cooperation with the United Nations Development Programme (UNDP) for both technology and competence transfer into the emirate.

Founding shareholders include DEWA, Dubai Aluminum, Estidama, ENOC, and Emirates Airline. Main objectives are to create the region's leading knowledge repository on carbon matters, establish a climate change fund to provide capital and incentives to attract global leading technology companies, and create a portfolio of Dubai-based environmental credits and advising emission reduction projects to meet the needs of Dubai institutions and achieve carbon-neutrality.

[4] According to the Federal Water and Electricity Authority (FEWA)

Projects in Abu Dhabi's government renewable energy commitment

	Capacity (MW)	In operation
Masdar Shams 1 Concentrated Solar Power Plant	100	2012
Sir Bani Yas Wind Farm	28.8	
DEWA – Dubai Solar Power Plant	10	2015
DEWA – Mohammed Bin Rashed Al Maktoum Solar Park	1,000	2030
DEWA – Mohammed Bin Rashed Al Maktoum Solar Park – Phase 1	10	2013
Masdar – Noor 1 Photovoltaic Solar Power Plant	100	2013
Masdar – Abu Dhabi Solar Power Tower	50-70	tbc

NUCLEAR ENERGY

For long an important supplier of energy and now becoming an increasingly relevant consumer too, the UAE needs to develop other sources of electricity to meet future demand and to ensure the development of its economy. Analysis conducted by official UAE entities has concluded that the national annual peak demand for electricity is likely to triple by 2020, reflecting a cumulative annual growth rate of roughly 8 per cent from 2007 onward.

The UAE established a Nuclear Energy Program Implementation Organization which set up the Emirates Nuclear Energy Corporation (ENEC). ENEC is an Abu Dhabi public entity, with the remit to evaluate and implement nuclear power plans within the UAE. It will also act as a government investment arm by making strategic investments in the nuclear sector, both domestically and internationally.

The UAE has a USD 20 billion contract with the Korea Electric Power Corporation (KEPCO), which provides for the construction of the first two 1,400-megawatt reactors. The first one will reportedly function in 2017; the second is expected to be completed by 2020. The UAE will become the second country in the region after Iran to have a domestic nuclear program.

Offshore jack up rig. ©James Jones Jr.

2.1.3 MAJOR PLAYERS AND COMPANIES

OIL

Supreme Petroleum Council – SPC: Each of the seven emirates is responsible for the regulation of the oil industry within their borders. In Abu Dhabi, the SPC is the entity charged with setting petroleum-related objectives and policies. Given Abu Dhabi's status as the central player in the UAE's oil industry, the SPC is the most important entity in the country when it comes to establishing oil policy.

Abu Dhabi National Oil Company – ADNOC is a main government vehicle that dominates the Abu Dhabi upstream oil and gas sector in partnership with a few large international oil companies under long-term concessions. It focuses on undiscovered reserves and the optimization of hydrocarbon recovery by the improvement of the reservoir management. The company often takes a 60 per cent share in the major oil projects.

ADNOC has 15 subsidiaries:

1. **Abu Dhabi Gas (ADGAS)** - processing, marketing and distribution of liquefied petroleum gas and liquefied natural gas
2. **National Drilling Company (NDC)** - offshore and onshore drilling
3. **Abu Dhabi Company for Onshore Oil Exploration (ADCO)** - oil exploration, production and export from onshore oilfields
4. **Abu Dhabi Marine Operating Company (ADMA-OPCO)** - joint venture between ADNOC (60 per cent), BP, Total, and JODCO that operates the offshore oil and gas fields
5. **Zakum Development Company (ZADCO)** - oil production of the upper Zakum field
6. **National Petroleum Construction Company] (NPCC)** - construction of oil facilities
7. **Abu Dhabi Gas Industries Ltd (GASCO)** - production, operation of liquefied gas products
8. **ESNAAD** - production and marketing of mud chemicals, material handling services, waste management, chemical blending and manufacture
9. **Abu Dhabi Oil Refining Company (TAKREER)** - refining of crude oil, production of chlorine and related chemicals, sulfur granulation
10. **Abu Dhabi Petroleum Ports Operating Company (IRSHAD)** - operations of oil exporting ports such as Ruwais and Jebel Dhanna
11. **Ruwais Fertilizer Industry (FERTIL)** - production and marketing of urea and ammonia in the Ruwais plant
12. **ADNOC distribution** - distribution, storage and transport of refined products
13. **Abu Dhabi National Tanker Company (ADNATCO)** - transportation of crude oil and refined products
14. **Abu Dhabi Polymers Company (Borouge)** - processing and production of ethylene and polyethylene
15. **National Gas Shipping Company (NGSCO)** - shipments of liquefied gas products from Das Island

Shell - holding a 15 per cent stake in GASCO and is developing the Bab sour gas reservoirs in Abu Dhabi in a 30-year joint venture (40 per cent equity stake) with ADNOC

EPC Consultants & Contractors - The EPC field (engineering, procurement, construction) is highly competitive with most major players present and well established in the UAE. Among the consultants present are Foster Wheeler, Fluor, SNC Lavalin, Technip, Mott MacDonald, WorleyParsons Engineering, Tecnicas Reunidas, Veco Engineering, Petrofac and J Ray McDermott. Among the larger contractors present are companies such as Technip, Fluor, GS Engineering, Saipem Hyundai, Daewoo, Samsung, and large local contractors (for example Al Jaber and the National Petroleum Construction Company (NPCC)).

Petroleum Institute - PI is a university in Abu Dhabi, established in 2001 with the aim of training the local oil and gas engineers. The institute is funded by five major oil companies: ADNOC, Shell, BP, Total, and Japan Oil Development Company. Currently, 1200 students study at PI. A major goal of PI is to be a renowned research centre in the field of oil and gas.

GAS
Abu Dhabi Gas Industries - GASCO: is an ADNOC subsidiary, created as a joint venture between ADNOC, Shell, Total, and Partex, tasked with processing Abu Dhabi's onshore natural gas, as well as the associated gas recovered from onshore oil operations.

Abu Dhabi Gas Development Company - Al Hosn Gas is responsible for the development of the sour-gas reservoirs in Abu Dhabi's large Shah field.

Abu Dhabi Gas Liquefaction - ADGAS controls the production and export of Abu Dhabi's liquefied natural gas (LNG) and liquefied petroleum gas (LPG).

ENERGY
Abu Dhabi Future Energy Company - Masdar is a government-owned entity, founded in 2006, and a subsidiary of Abu Dhabi's state-owned Mubadala Development Company. Three integrated business units spearhead Abu Dhabi's drive to become a model of sustainability regionally and worldwide:
Masdar Capital (investing in clean energy and sustainable technology companies);
Masdar Clean Energy (developing and investing in large-scale renewable power projects such as solar and wind farms); and
Masdar City (the flagship project: a clean tech cluster and special economic zone under contraction as a sustainable urban development, aiming to be the world's first zero-carbon city, located 17 kilometres outside Abu Dhabi).

Abu Dhabi National Energy Company (TAQA) is a government controlled energy company that operates worldwide and is listed on the Abu Dhabi Securities Exchange (ADX). TAQA is the sixth largest independent power producer in the world and a long-term investor committed to growth through the development, implementation and exploitation of energy projects. In the Netherlands TAQA is involved in the Bergermeer gas storage facility.

Abu Dhabi Water and Electricity Authority (ADWEA) - researches and develops ways to more efficiently produce, distribute and consume water and electricity.

Dubai Electricity and Water Authority (DEWA) - providing the population of Dubai with electricity and water.

Emirates Nuclear Energy Corporation (ENEC) - working to deliver safe, clean, efficient and reliable nuclear energy to the UAE grid by 2017.

Federal Electricity and Water Authority (FEWA) - catering to the needs of electricity and water for the population of the Northern Emirates.

Sharjah Electricity and Water Authority (SEWA) - generating and distributing electricity, water and gas to the population of Sharjah.


Solar panels, ©Trossofoto

ENERGY SECTOR

2.1.4 MARKET ACCESS / FOREIGN INVESTMENT

Abu Dhabi's concession system allows foreign oil and gas producers to acquire equity in hydrocarbon resources from the emirate, always with ADNOC as the majority shareholder. When current concession licenses expire (in 2014 and 2018), opportunities arise for new parties to boost their presence into the UAE's energy sector.

Products and services can be provided to EPCs, if the company:
- is active in a niche market
- can stand severe competition on price
- can deliver very high standards on specs
- preferably already has a track record with large consultants and EPCs (such as Fluor, Petrofac, Foster Wheeler, etc.)

Products and services can be provided to ADNOC related companies, if the company:
- is represented locally by an agent or has an office
- is ready to spend time and efforts on increasing visibility in local market as well as relationships
- is active in a niche market or has a uniquely competitive product (there is a natural tendency towards US/UK/AUS brands which one has to outweigh)
- is familiar with local culture and business customs

In November 2013, a Memorandum of Understanding (MoU) was signed by the Ministry of Energy of the UAE and the Ministry of Economic Affairs of the Netherlands on cooperation in the fields of energy.

2.1.5 LEGISLATION (TENDERS, CERTIFICATION)

There are various ways to market your product or service in the UAE. With the appropriate import licenses one can sell directly to local clients. This is recommended for single supplies or to test the quality of a potential agent.

When the exporting company has gained confidence in the market or when the company has found the right local trading partner appointing a local agent is recommended.

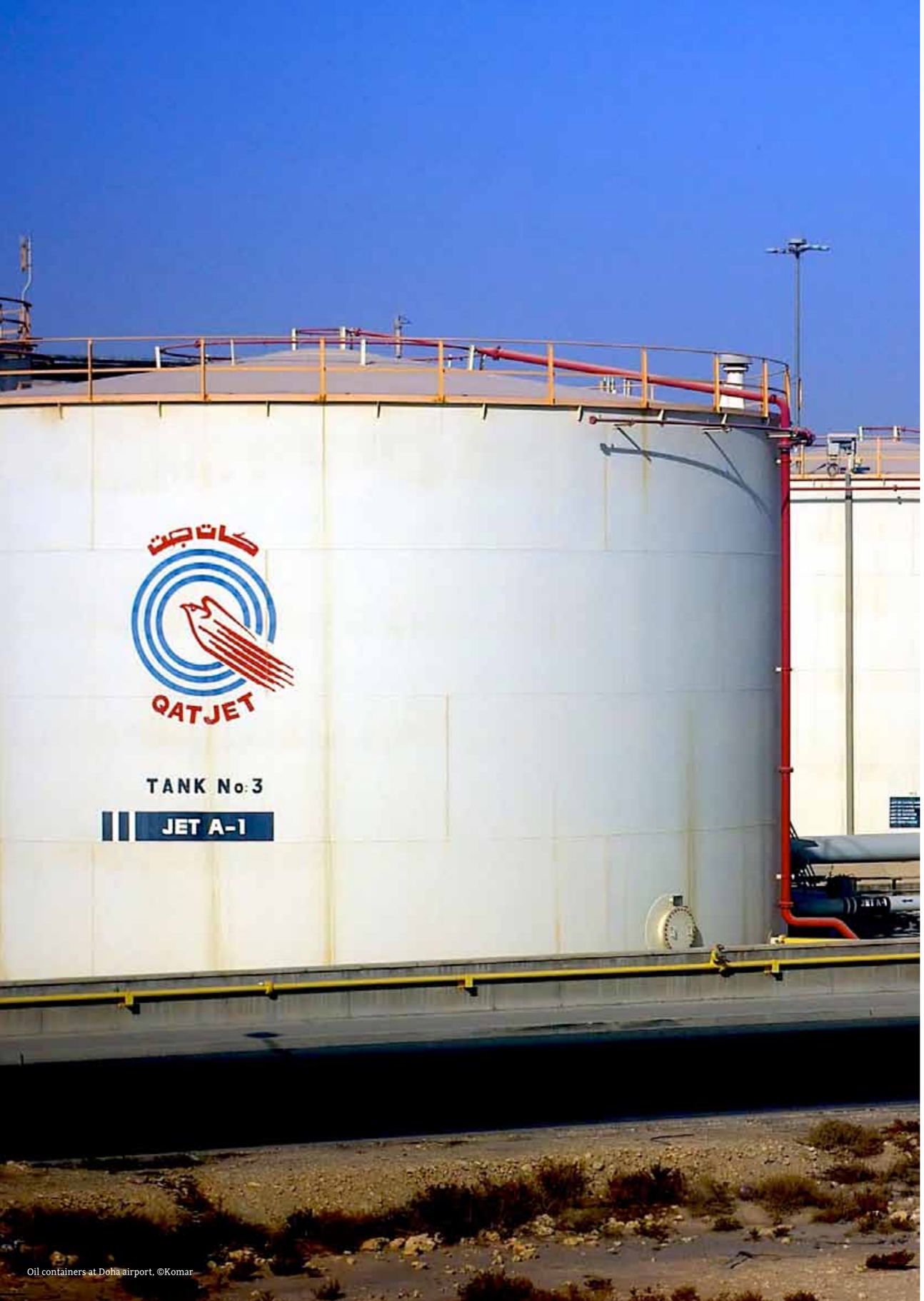
To cooperate with government related entities it is often required to have local presence in the form of an established office or agency. An agent is also required for prequalifications with NOC, even if a company physically sells to an EPC.

Contracts in the public sphere are awarded through tenders. To register, one has to be prequalified and be represented by a local agent or project sponsor. The quality of the local agent is therefore of crucial importance.

In a joint venture, the foreign party cannot have more than a 49 per cent share in the company. However, a law is drafted to make this possible. In so-called free zones, 100 per cent foreign ownership is already a possibility.

2.1.6 MARKET TRENDS

In the last two years, Asian contractors – mainly from South Korea – have established a firm position next to traditionally present EPCs. When asked, local companies state that Asian contractors tend to compete well on three factors, respectively: price, cohesiveness (total package of contractors works well together) and delivery on time.



Oil containers at Doha airport, ©Komar

2.2 QATAR

Oil was discovered in Qatar in 1940 and economic growth has been almost exclusively based on the petroleum and natural gas industries. Qatar has oil reserves in excess of 25 billion barrels and the world's third largest natural gas reserves, accounting for 13 per cent of the world's total gas reserves. This has fueled Qatar to become the world's richest country per capita and achieve the highest human development in the Arab World. The country was an early member of OPEC and a founding member of the Gulf Cooperation Council (GCC).

Qatar holds the 9th largest oil reserves in OPEC and 13th largest in the world. The production of crude oil and lease condensate ranks 19th in the world, with most of the country's production sent abroad as exports. Given its small population, Qatar's energy needs are met almost entirely by domestic sources of oil and natural gas.

Qatar is currently undergoing transformation under the National Vision 2030, in which it expects to achieve an advanced, sustainable, and diversified economy. In the next ten years, Qatar will invest over USD 120 billion in the energy sector.

2.2.1 MAIN STRATEGIC GOVERNMENT AGENDA

According to several reports Qatar's peak in energy production halted in 2013. The main concern of the country is to sustain the present yield at the 10 current operation fields. Despite the advancement in enhanced oil recovery techniques (EOR) maintaining current capacity is going to prove a challenge.

At present Qatar Petroleum (QP) is developing two strategies to help mitigate against a fall in its oil production: first is to invest heavily in EOR at existing fields; second is to initiate an aggressive exploration schedule aimed at discovering new fields. Moreover, QP has a strategy to form partnerships with international oil companies, by increasing their shares wherever and whenever possible.

Qatar pursues a program of "Qatarisation", under which all joint venture industries and government departments strive to move Qatari nationals into leadership positions. Growing numbers of foreign-educated Qataris, including many educated in the UK and the US, are returning home to assume key positions formerly occupied by expatriates.

Quick facts about Qatar

Official Name	State of Qatar
Capital	Doha
Government Type	Absolute monarchy
Chief of State	Emir Tamim bin Hamad Al Thani
Population*	2 million (2013 est.)
Land area	11,571 km^2
Languages	Arabic (official), English (business)
GDP Per Capita	USD 93,352 (2013)
Year of Independence	1971

** of which approx. 15 per cent Qatari nationals*

2.2.2 OPPORTUNITIES, INVESTMENTS, DEVELOPMENTS

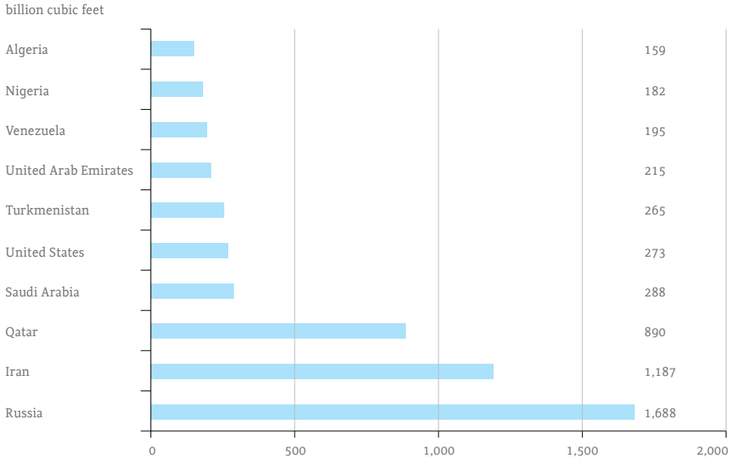
OIL
As of 2014, Qatar has proven oil reserves of 25 billion barrels. Oil production will not long remain at peak levels of 730,000 barrels per day (2013), as oil fields are projected to be mostly depleted by 2023.

In the challenge of maintaining current capacity Dutch knowhow will be welcomed by the Qatari Authorities, where solutions to arrest future declines in oil production are offered. Redevelopment and initiation of EOR will prolong and in some cases double production. This could apply to both oil and gas yields.

NATURAL GAS
Currently, Qatar focuses on the development of the gas-related industry. All electricity capacity in the country is gas-fired. Gas fields account for 13 per cent of the global reserves, which is the third-largest total in the world behind Russia and Iran. The proven reserves of gas exceed 26.9 trillion cubic metres (tcm). The majority of the natural gas reserves are located off Qatar's northeast coast in the immense North Field. The North Field is key to Qatar's natural gas development and production plans, as the site of nearly all of the country's natural gas reserves. Qatar produces condensate and natural gas liquids (NGL) alongside its natural gas production.

Natural gas meets the vast majority of Qatar's domestic energy demand, so the country is able to export most of its liquid fuels production. It is the single largest supplier of liquefied natural gas (LNG): current production stands at 77 million tonnes per annum (mta), mostly exported to Asia. It makes Qatar the world's leading LNG exporter. Its LNG sector is dominated by Qatargas, which operates four major LNG ventures. RasGas and Qatargas have 14 LNG trains currently online.

Table 7: Largest proven reserve holders of natural gas



Source: Oil and Gas Journal

Production and maintenance of the four current natural gas plants (Masaeieed 1, 2, 3, 4) are of great importance in Qatar's plans. The plants provide natural gas that supplies plant fuel for ancillary QP facilities and its gas distribution grid. Also the production of other products such as propane, butane and condensate are stored for either export or local production.

Qatar's growing natural gas production has increased its output of condensates and natural gas plant liquids, which are valuable by-products of natural gas production. Qatar is also at the forefront of gas-to-liquids (GTL) technology, which uses a refining process to turn natural gas into liquid fuels such as low-sulfur diesel and naphtha, among other products. Qatar is one of the few countries to have operational GTL facilities. Qatar's Oryx GTL project and Pearl GTL project are in operations. Pearl GTL (a joint venture between QP and Shell) achieved full capacity in October 2012. The country is the largest producer of GTL, with an overall production of 174.000 barrels per day.

The largest contract to be awarded is the offshore Barzan Gas Project. In addition to feeding power plants, it will supply natural gas to fuel water desalination plants and other industrial users, while processing propane and butane for export.

Qatar Petroleum (QP) plays a dominant role in Qatar's natural gas sector, leading upstream and downstream projects. Qatar's focus on natural gas development tends to be on integrated large-scale projects linked to LNG exports or downstream industries that use natural gas as a feedstock. Therefore, foreign company involvement has favored international oil companies with the technology and expertise in integrated mega-projects. QP has maintained a majority share in most of its gas projects - in particular, the dominant companies in Qatar's LNG sector Qatargas, which operates four major LNG ventures, and RasGas. The LNG companies handle all upstream to downstream natural gas transportation themselves, while the Qatar Gas Transport Company (known as 'Nakilat') is responsible for shipping Qatari LNG. Qatar does not anticipate building any more LNG facilities in the near-term future and any additional capacity increases will be the result of improvements in the existing facilities.

The main opportunities lie in the transfer of knowledge, technologies and services. Another area identified is the support and the maintenance of the built and technical maintenance capacities. New technologies and innovations are needed for the support to the optimization of the exploitation activities.

One of the short-term opportunities due to their great potential will be the development and deployment of LNG in both transportation and power generation to create and secure a clean, efficient and lasting role for the combination of gas and renewables (small scale LNG).

PETROCHEMICALS
Since recently Qatar aims to increase the production of petrochemicals. Qatar Petroleum Company (QAPCO) is conducting multi million dollar projects, to establish plants that can increase the production capacity of petrochemicals such as low-density polyethylene and sulfur from ethane feedstock.

Another major petrochemical project (Al Karaana) is the establishment of the USD 6.4 billion Ras Laffan Olefins Project (a joint venture between QP and Shell), that will covert gas from the Qatar North Field into ethylene and other base chemicals which will be sold to the international market.

Aligned with the goal of Qatar National Vision 2030 to develop a competitive and diversified economy, the state-owned organization Muntajat consolidates all marketing and distribution efforts for the chemical, polymer and fertilizer exports.

RENEWABLE ENERGY
Qatar aims at leading the GCC nations in the renewable energy sources arena by trying to establish itself as the "green capital" of the Middle East. It begins to deploy its Qatar Sustainability Assessment Systems (QSAS) on a wide scale in building construction, which provides opportunities for developers and investors to implement energy efficient technologies and currently focuses on solar, wind and nuclear powered energy. Many projects are still in the early phases, which gives opportunities for new partners to join. In 2013 a 200 MW solar initiative has been announced.

WATER & POWER
There is a direct relationship between oil and gas production and the supply of water and electricity in Qatar. Comprehensive solutions servicing both sectors can be attractive for Qatar and serve as an outstanding opportunity for cooperation.

Population growth and significant energy consumption will soar electricity demand to 172 per cent in the next 10 years. Most of this extra capacity will be provided by thermal power plants. Qatar has ventured into several initiatives aimed at improving its utilities sector, for example the Ras Laffan Independent Water and Power Project. Despite rising electricity demand, Qatar had a surplus generating capacity of approximately 2.5 gigawatts, or nearly 30 per cent, in 2012.

Gas and oil pump, ©Creative Nature

2.2.3 MAJOR PLAYERS AND COMPANIES

OIL
Qatar Petroleum (QP) (www.qp.com.qa) is state-owned and managed and closely linked with the Ministry of Energy. QP controls all aspects of Qatar's upstream and downstream oil and natural gas sectors.
Shell (www.shell.com.qa) has invested almost USD 20 billion into Qatar. A major development is the Pearl GTL, the world's largest gas-to-liquids plant. Shell participates in several other projects such as the petrochemical site Al Barzan.
Qatar International Petroleum Marketing Company (Tasweeq) (www.tasweeq.com.qa) performs all marketing and sales of hydrocarbons in Qatar.

GAS
QatarGas (www.qatargas.com.qa) is an operating company established in 1984 dedicated to the production of LNG (42 million tonnes per annum (mta)). Several production sites have been created in joint venture with ExxonMobile, Royal Dutch Shell, Total ConocoPhillips and Mitsui.
RasGas (www.rasgas.com) is an operating company for the production of 35 mta of LNG. RasGas is 70 per cent owned by QP and 30 per cent by ExxonMobil.

PETROCHEMICALS
Qatar Petrochemical Company (QAPCO) (www.qapco.com) is one of the leading producers and suppliers of ethylene and polyethylene from the Middle East to the global market.
Qatar Chemical Company (Qchem) (www.qchem.com.qa) is a joint venture between Qatar Petroleum (51 per cent) and Chevron Phillips Chemical International Qatar Holdings (49 per cent) and has established world-class petrochemical plants capable of producing high-density and medium-density polyethylene.
Qatar Fertilizer Company (QAFCO) (www.qafco.com) is owned by Industries Qatar (75 per cent) and Yara Netherlands (25 per cent). Its inception in 1969 as a joint venture company to produce chemical fertilisers was the first and a significant step in Qatar's industrial diversification program to utilise its abundant natural gas resources.
Qatar Chemical and Petrochemical Marketing and Distribution Company (Muntajat) (www.muntajat.qa) holds the rights to purchase, market, distribute and sell Qatar's production of chemical and petrochemical regulated products to the global market. Muntajat has opened their global headquarters in the Netherlands in 2013.

ELECTRICITY
Qatar Electricity and Water Company (QEWC) (www.qewc.com) owns and manages the country's electric and desalinization plants.
Qatar General Electricity & Water Corporation (Kahramaa) (www.km.com.qa) owns and operates the country's electricity and water distribution networks.

RENEWABLE ENERGY
Qatar Energy and Environment Research Institute (QEERI) (www.qf.org.qa) addresses challenges associated with the energy and the environment of natural and built systems, from their source to their societal impact. Priorities include: solar energy, water security, and clean air.

2.2.4 MARKET ACCESS / FOREIGN INVESTMENT

There is an MOU in place. The Dutch and Qatari relevant Ministries - in cooperation with the embassy - are working on activating the MOU.

2.2.5 LEGISLATION (TENDERS, CERTIFICATION)

Qatar Petroleum regularly issues tenders for supplying materials, equipment, works and services for various departments. All prospective suppliers and contractors interested in the tenders must register and obtain a QP SAP vendor code. More information on: www.qp.com.qa.

Today, more than half of Qatar's oil production comes from foreign oil companies via production sharing agreements (PSAs). However, Qatar recently began moving toward using more joint venture agreements, which tend to offer higher returns to the state.

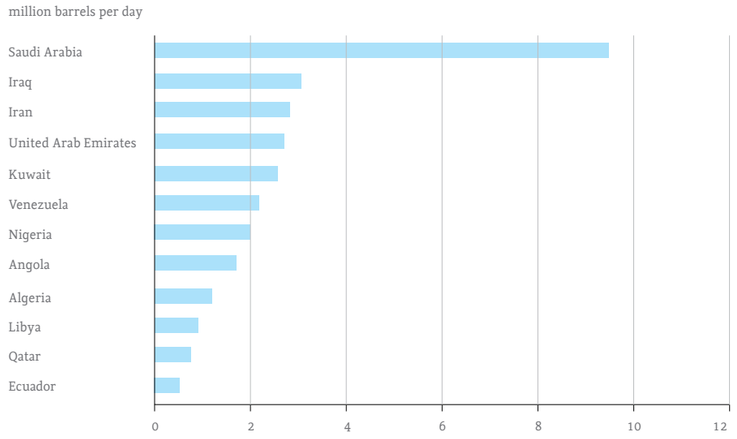
Saudi oil pipes in Bahrain. ©Joakim Lloyd Raboff

2.3 KINGDOM OF SAUDI ARABIA

The Kingdom of Saudi Arabia is a rich and prosperous country (rank 19th) in terms of gross domestic product and purchasing power parity. Its wealth is largely based on oil revenues. The country is a founder and key member of OPEC and member of the G20 Group.

Saudi Arabia has 20 per cent of the world's oil reserves. The country is the largest producer and exporter of petroleum liquids in the world and has the world's largest oil production capacity. Currently Saudi Arabia produces 10 million barrels per day.

Table 8: OPEC crude oil production, 2013



Source: U.S. Energy Information Administration, Short-Term Energy Outlook

Oil was first explored in the Eastern Province in 1933. Over time foreign firms were granted concessions to develop the oil resources across the country. The 1950s and 1960s saw increasing call for governments in all oil producing nations to take greater control over their natural resources. Negotiations in the 1960s and 1970s resulted in the Saudi Government taking full control of its oil resources.

Quick Facts about Saudi Arabia

Official Name	Kingdom of Saudi Arabia
Capital	Riyadh
Government Type	Absolute monarchy
Chief of State	King Abdullah bin Abdulaziz Al-Saud
Population*	29.2 million (2013 est.)
Land area	2,149,690 km^2
Languages	Arabic (official)
GDP Per Capita	USD 25,852 (2013)
Year of Independence	1932

** both nationals and expatriates*

2.3.1 MAIN STRATEGIC GOVERNMENT AGENDA

Saudi Arabia is leading the growing trend in the region towards the adoption of alternative and renewable sources of energy in the foreseeable future. There is a keen interest to harness new technologies in order to increase energy efficiency instead of reducing the price support to internal consumption.

No less than 25 per cent of Saudi Arabia's oil production is consumed domestically, mostly used for electricity production. Due to the extreme warm and dry climate 70 per cent of the electricity production is consumed for air conditioning.

In parallel with the increasing demand, the Saudi government is raising its electricity production and distribution capacity. Saudi Arabia relies primarily on production plants to generate the bulk of its electricity needs, with some privately-owned power companies supply the remaining portion.

Saudi Arabia ranks fifth worldwide in terms of gas reserves. Natural gas production is still limited, but it increased significantly in the past decades. The country utilizes gas for domestic use and it is a key part of its industrial strategy. It was the driver of a wide range of petrochemical projects.

With a budget of USD 109 billion Saudi Arabia is making major investments in alternative and renewable energy sources. The government strives to generate as much as a third of its domestic energy demands using renewable energy (54 GW) by 2032, and aims to generate 18 GW of nuclear energy.

2.3.2 OPPORTUNITIES, INVESTMENTS, DEVELOPMENTS

OIL & GAS

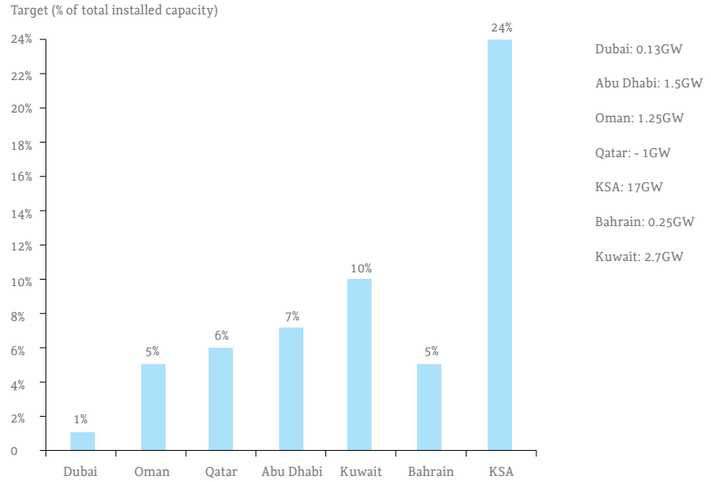
The petroleum sector in Saudi Arabia accounts for roughly 92.5 per cent of budget revenues, 55 per cent of the GDP and 90 per cent of the export earnings. About 25 per cent of oil production is used domestically, 54 per cent is exported to Far East Asia.

Gas has been the main source for the growing domestic demand but the importance of wind and solar energy is increasingly acknowledged in bringing more balance in the energy mix.

RENEWABLE ENERGY

Countries of the Gulf Cooperation Council (GCC) intend to spend more than USD 250 billion on energy projects over the next decade. Saudi Arabia alone is taking up over USD 100 billion of this to spend on constructing and modernizing power plants and distribution networks. The country plans to build six independent power plants to increase production capacity, of which a thermal plant at the port of Yanbu on the Red Sea, with a capacity of 850MW and the world's largest power and desalination project the Raz Al Khair point in the Eastern Region, with a production capacity of 2,400MW.

Table 9: Renewable Energy Targets in the GCC, 2020



Source: Frost & Sulivan analysis of stated targets and plans by GCC countries

Furthermore there is a big focus on solar energy – Saudi Arabia aims to produce 5 gigawatts of solar energy by 2020. Solar energy production exceeds local demand, in order to be able to reach exportation capacity, as is the case with oil.

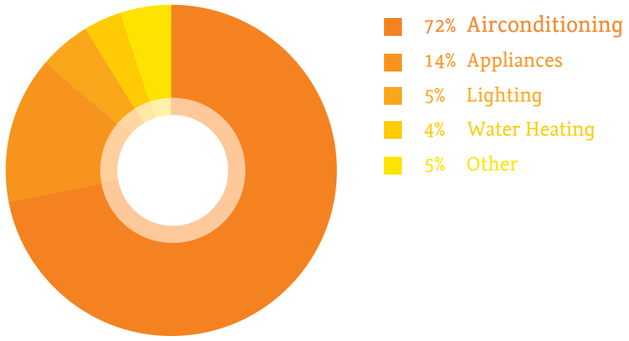
The Polysilicon Technology Company (PTC), a joint venture between the Mutajadedah Energy Company (Saudi Arabia) and the KCC Corporation (South Korea) signed a USD 380 million contract with Hyundai Engineering Co. and KCC Engineering and Construction Co. to build a solar cell plant on the Gulf coast, capable of producing 3,350 tons of polysilicon for use in the production of solar energy.

Renewable energy source	**Total**
Solar of which • Concentrated Solar, Power (CSP) 25 GW • Photovoltaics (PV) 16 GW	41 GW
Wind (specifically for water desalination plants)	9 GW
Waste to energy	3 GW
Geothermal	1 GW
Nuclear	18 GW

ELECTRICITY & WATER

Electricity consumption in Saudi Arabia increased sharply due to rapid economic development. Peak loads reached nearly 24 GW in 2001 - 25 times their 1975 level - and are expected to approach 60 GW by 2023. The investment needed to meet this demand may exceed USD 90 billion. Consequently, there is an urgent need to develop energy conservation policies for sustainable developments.

Chart: Saudi Residential Power Demand Split



Saudi Arabia's steadily growing population and a shortage of water distribution networks increase the need for desalination plants. To meet the demand, the government has announced plans to increase the absorptive capacity of the water. Growing demand is accompanied by significant growth in the water desalination industry amounting to 6 per cent annually, the highest in the world. The Ministry of Water and Electricity is signing contracts and embarking on multi-million projects to dig tube wells, build dams, and establish networks, reservoirs and pumping stations, as well as sewage treatment facilities.

Offshore oil rig, ©Artur Synenko

2.3.3 MAJOR PLAYERS AND COMPANIES

The energy sector (oil & gas, water & electricity, renewable energy) is in hands of the Saudi government. The exploration and production of oil and gas is monopolised by the state owned enterprise Saudi Aramco.

Ministry of Petroleum and Mineral Resources (www.mopm.gov.sa) is responsible for implementing all policies concerning oil, gas and natural minerals. It also oversees companies operating in these sectors, such as Saudi Aramco, together with the Supreme Council for Petroleum and Minerals. The ministry also works closely together with Petromin, the general petroleum and mineral organisation. Through Saudi Arabian Basic Industries Company (SABIC, www.sabic.com), established in 1976, the Ministry oversees the operation of petrochemicals and other heavy industry projects, as drivers of the diversification of the economy.
Saudi Aramco (www.aramco.com) is the national petroleum and natural gas company. It holds the monopoly of oil and gas production. It also is active in the fields of solar, wind and geothermal energy sources by its Power Systems division, as well as petrochemical, for example by SADARA (a joint venture with Dow Chemicals).
Ministry of Water & Electricity (www.mowe.gov.sa/ENIndex.aspx) (MOWE) is responsible for all water and electricity related matters. The Minister of Water & Electricity chairs the boards of: **Saudi Electricity Company** (www.se.com.sa), responsible for providing power generation, transmission and distribution throughout Saudi Arabia. Its major shareholders are the Ministry of Water & Electricity (74.3 per cent), Saudi Aramco (6.9 per cent) and public shares (18.8 per cent). **National Water Company** (www.nwc.com.sa) (NWC), established in 2008, contracts out water distribution services for individual cities to the private sector under management contracts.
King Abdullah City for Atomic and Renewable Energy (K.A. CARE) (www.kacare.gov.sa), was established in 2010 as an independent organisation which has the responsibility to develop the atomic and renewable energy program in Saudi Arabia.
King Abdulaziz City for Science & Technology (KACST) (www.kacst.edu.sa) was established as an independent scientific organisation, responsible for the promotion of science and technology in Saudi Arabia. In collaboration with the Ministry of Economy and Planning, it developed the National Science, Technology & Innovation Plan, which promotes 15 strategic technologies, among others nuclear energy and fossil energy.

2.3.4 MARKET ACCESS / FOREIGN INVESTMENT

Saudi Arabia is a network economy. It is not only important what you want to sell, but even so to whom you want to sell it and how. You have to be willing to invest in personal relationships with Saudi business partners and for a large part also their network.

For foreign companies it is difficult and expensive to operate in Saudi Arabia without a local business partner. A partnership with a local company is essential. More information about doing business or investing can be found on the website of the Saudi Arabian General Investment Authority (www.sagia.goc.sa).

2.3.5 MARKET TRENDS

The Saudi citizen is among the world's biggest consumers of electricity. In 2010 the electricity consumed in the country per capita was at a rate of approximately 8m per hour annually (i.e. 22 kWh/day).

Saudi Arabia secures 40 per cent of its needs in drinking water from 36 desalination plants on the Arab Gulf and the Red Sea. The General Establishment of Sea-Water Desalination recently announced a huge project to build the largest desalination plant in the world in the region of Yanbu on the Red Sea, a plant capable of producing 15 million gallons of water a day.

2.4 STATE OF KUWAIT

Oil reserves in Kuwait were first discovered in 1937. Exploration was delayed until after World War II and the use of oil began in 1951. By 1952, the country became the largest exporter of oil in the Gulf region.

Currently, Kuwait is – after Saudi Arabia, the United Arab Emirates and Qatar – the fourth-largest market in the Gulf. The country has a geographically small, but wealthy, relatively open economy with crude oil reserves of about 102 billion barrels, estimated to be 10 per cent of the world's reserves. Kuwait's oil industry accounts for 75 per cent of government revenue. Petroleum and petrochemicals account for nearly half of the country's GDP and 90 of export revenues. The government has committed to increase oil production to 4 million barrels per day by 2020.

Kuwait energy statistics

Oil reserves	101,5 billion barrels
Oil production	2,8 million barrels a day
Gas reserves	1,78 trillion cubic metres
Gas production	12,8 billion cubic metres a year

In August 1990, Kuwait was attacked and overrun by Iraq. A US-led, UN coalition began a ground assault on 23 February 1991 that liberated Kuwait in four days. Kuwait spent more than USD 5 billion to repair oil infrastructure damaged during 1990-91.

Quick facts about Kuwait

Official Name	State of Kuwait
Capital	Kuwait City
Government Type	Constitutional monarchy with a parliamentary system of government (National Assembly)
Chief of State	Sheikh Sabah Al-Ahmad Al-Sabah
Population*	3,996,899 (2014 est. by Kuwaiti government)
Land area	17,820 km^2
Languages	Arabic (official), English (widely spoken)
GDP Per Capita	USD 56,367 (2013)
Year of Independence	1752 (end of treaties with the UK in 1961)

** Kuwaiti nationals (approx. 31%), non-nationals (approx. 69%)*

2.4.1 MAIN STRATEGIC GOVERNMENT AGENDA

In Kuwait, the focus of investment is on infrastructure development projects, such as ports/airports, power and water, hospitals, residential cities, oil pipelines, rail and metro systems, roads and bridges, educational institutions, refineries, oil sector modernization.

2.4.2 OPPORTUNITIES, INVESTMENTS, DEVELOPMENTS

Although 2011 and 2012 saw a slow growth in contract awards, major contracts, such as the PPP project (Al Zour North IWPP, USD 2 billion) and the Clean Fuel Project (USD 12 billion), were awarded in 2013 and early 2014. An investment of USD 10 billion is expected in the oil and gas sector in 2014 alone, half of which will be invested in the New Refinery Project.

OIL
While the production of oil nowadays hovers around 2,8 million barrels per day, Kuwait is aiming for a growth in production to 4 million barrels per day by 2020. The growth needs to be achieved by upgrading existing facilities as well as developing new facilities: a development, which is scheduled to cost around USD 80 billion. Most of the investments will be in upstream activities with a scheduled expenditure of over USD 55 billion. Downstream projects are scheduled to cost around USD 25 billion. There are also plans to increase the production in Kuwait's northern fields from 600.000 barrels per day to 900.000 barrels per day.

Local demand for oil has increased over the past decade, jumping 67 per cent between 2002 and 2012. Domestic use is expected to continue to grow, with demand for power - which is generated largely by oil-burning plants - rising by 6-8 per cent each year, the Ministry of Electricity and Water (MEW) has said.

GAS
Gas is growing to become a more important asset for Kuwait. Most of the gas production in Kuwait is used for domestic purposes, especially for power generation. The primary aim is to replace the use of fuel oil for the power stations by using gas, which is more environmentally friendly and cheaper.

At the moment, the production of gas is not keeping up with the demand. Especially during the summer months, when the demand for power is immense, there is a shortage in gas production. For this reason, Kuwait has for a couple of years now, been relying on the delivery of LNG bought on the spot market. In the meantime Kuwait is looking for a more durable solution. The biggest chance is to develop the gas field in Jurassic layers in the north of Kuwait and the Dorra and Khafji gas fields in the divided zone.

Kuwait's major oil and gas fields (alphabetical order):

Onshore fields	Abdali, Ahmadi, Bahra, Burgan, Greater Burgan, Magwa, Marrat, Minagish, Raudhatain, Rugei, Sabriva
Neutral Zone	Wafra, South Fawaris
Offshore fields	Al-Hout, Khafji (Neutral Zone), Al Dorra (Neutral Zone)

RENEWABLE ENERGY
In 2010, Kuwait passed an economic development plan that pledges to spend up to USD 130 billion over five years to diversify the economy away from oil, attract more investment, and boost private sector participation in the economy, though much of these funds have yet to be allocated.

The Gulf state has one of the highest energy consumption rates per capita in the world, with the average Kuwaiti using 22 times more resources than the country provides per person. Kuwait aims to generate 15 per cent of its electricity from renewable sources by the year 2030, as it seeks to cut back on its oil consumption. The abundance of sun and wind generates high potential in harvesting energy from these elements.

In 2013 Kuwait invited proposals for the first phase of a 2,000 MW clean energy park that will be located west of Kuwait City and completed by 2030. Phase I of this Shagaya energy park is expected to produce 70 MW of electricity, including 50 MW from solar-thermal plant, a 10 MW solar photovoltaic facility and 10 MW from wind.

2.4.3. MAJOR PLAYERS AND COMPANIES

The Supreme Petroleum Council governs the nationalized oil industry, which is run by the Kuwait Petroleum Corporation (KPC). The KPC subsidiaries are:

Name of Company	Principal Activities
KOC (Kuwait Oil Company) www.kockw.com	Exploration for and production of crude oil & Gas in Kuwait; local processing and export
KNPC (Kuwait National Petroleum Company) www.kpc.com.kw	Refining, gas liquefaction, exports & local marketing of refined products
PIC (Petrochemical Industries Company) www.pic.com.kw	Production, distribution and marketing of Fertilisers and petrochemical products including " Equate" jv with Dow Chemicals
KOTC (Kuwait Oil Tanker Company) www.kotc.com.kw	Marine transportation of crude oil, LPG and refined products; marine agency; local bottling and distribution of gas
KUFPEC (Kuwait Foreign Petroleum Exploration Company) www.kpc.com.kw kufpec.htm	Overseas exploration for and development of oil and gas
KAFCO (Kuwait Aviation Fuelling Company) www.kpc.com.kw kafco.htm	Supply of aviation fuel in Kuwait
Kuwait Santa Fe for Engineering and Petroleum Projects Company	Provision of design, engineering and related services
ODC, (Oil Development Company) www.odckw.com	Management of Project Kuwait & Northern Fields
Sante Fe (Sante Fe International)	Contract drilling, development and production services for the international oil company
KPC (Aruba) AEC	Refining and product marketing
KPI (Kuwait Petroleum International) www.q8.com	Co-ordination of international sales and marketing
Petrochemical Industries	Investment and financing activities

** Source: BP*

Other major players:
Al Zahem International Group Trading & Contracting Company
http://alzahemgroup.com/

Alghanim International General Trading & Contracting Company
www.falghanim.com

Ahleia Switchgear
www.ahleiasg.com

Kuwait Pipe Industries and Oil Services
www.kpios.com

Alghanim Mechanical Engineering and Contracting Company
www.mecckw.com

Heavy Engineering Industries & Shipbuilding Company (HEISCO)
www.heisco.com

2.4.4. MARKET ACCESS / FOREIGN INVESTMENT

There are significant opportunities for international contractors, especially for pipeline, oil and gas infrastructure projects and storage tanks projects. Any international company, which has an interest to work in Kuwait should sign an agency agreement with a Kuwaiti partner. Furthermore, the company should choose under which category it wants to be included so that it can get the appropriate approval and accordingly will be invited to bid to projects.

Western firms wishing to do business in Kuwait are advised to operate through a local agent or joint venture partner. This is especially required for government contracts. The agent/partner can facilitate the required registration on approved supplier lists of appropriate government entities and firms. Choosing the right agent or partner and formulating an equitable agency agreement is therefore a critical element of doing business in Kuwait.

The law and regulatory system in Kuwait is dynamic and subject to frequent changes in application and interpretation. Kuwait shares many characteristics with other GCC markets, but in view of the extent of government involvement in the market, strategies need to take careful note of public tender procedures, as well as the time required for market development, and its related costs.

Strategy and Network
Developing sound business relationships takes time, but with the degree of public sector overlay, time-to-market in Kuwait can be longer than in other GCC countries where privatization has been more extensive. It can take several years before new entrants develop profitable business. It requires investment of time and money before they can generate income and their return on investment. A Western firm that intends to enter the Kuwaiti market has to adopt an appropriate long-term strategy. Therefore it has to analyse the market, the competition, the infrastructure, the gaps and its characteristics.

It is also highly relevant to build up a network to gain information about the most essential aspects of developing business in Kuwait, like regulations, procedures, opportunities and barriers and the business culture. By developing and maintaining this network with (key) people from public and private sectors, a Western firm gains a competitive advantage and increases its channels of information of upcoming opportunities. This may even allow a firm to enter specific tenders.

2.4.5. LEGISLATION (TENDERS, CERTIFICATION)

Rules and Regulations
Kuwait's Commercial Companies Law provides for the establishment of the following types of firms and ventures: Limited liability company, Shareholding company; Partnership; Joint venture (JV); Commercial agency and Branch. All of these, with the exception of joint venture possess a separate legal identity.

Tender Process
Public authorities in Kuwait are required to commission work and purchase equipment and commodities through an independently administered tender process. Tender processes are usually administered by the Central Tenders Committee (CTC). A client institution (i.e. the public body requiring the goods or services) draws up the specifications and the particular conditions that it wishes to apply, reviews the pre-qualified firms and evaluates the bids on a technical basis. Some public bodies may have their own tendering procedures, but no matter who administers the tender, the procedures applied must be the same as tenders administered directly by the CTC. Tender announcements, invitations to pre-qualify, pre-tender meetings, and amendments to the conditions and specifications, are only published in Al-Kuwait Al-Youm, the official gazette.

More information about tenders
Overview of tenders in Kuwait; www.kuwaittenders.com
Future projects: http://www.knpc.com/sites/ssc/news/Pages/FutureProjects.aspx
E-Tendering portal supported by the Kuwaiti Oil Company http://mcsetender.kockw.com/ET/Services/Common/Home.aspx
Kuwait National Petroleum Company website, section Commercial Department. General tender information and vendor registration is also available. https://www.knpc.com/commercial/page.php?l=1

Oil storage, ©Forden

3 OPPORTUNITIES AND CHALLENGES FOR DUTCH BUSINESSES IN THE GCC REGION

3.1 Dutch businesses opportunities and challenges

Given the scale and scope of the projects in the Gulf region, most Dutch companies will work either on smaller partial tender packages or as subcontractors to the larger EPC's. Several well-known Dutch companies are present and active in the field including Tebodin, Frames, Hytec, BAM, Royal Haskoning, as well as Boskalis and Van Oord (constructing new oil exploration islands).

Technical services and maintenance will be a possible area for cooperation, in oil, gas and petrochemical plants. For example, Qatar Petroleum has signed technical services agreements with Total, Shell, Fugro, ExxonMobile and Conoco Philips.

Due to old political and economic ties there is an overwhelming presence of companies from the US and UK in the Gulf region. Recently, Korean and Chinese companies have taken an increasing share of the market, competing on price and delivery-on-time.

Scale, capacity, and commitment of the provider or supplier remain key, and smaller companies may find it difficult to compete effectively. Typically, successful Dutch exporters will have a niche product or service and international experience.

The likelihood of further major oil discoveries in the Gulf region is low, but enhanced oil recovery (EOR) techniques are being successfully used to increase the extraction rates of mature oil fields. Dutch business can bring in their experience in EOR and their innovative yet proven techniques. The Netherlands can offer swift and enhanced exploration services.

The oil and gas infrastructure in the Gulf region currently in place is in need of rehabilitation, which also offers opportunities in the brownfield contracting sector. This applies to all segments of the upstream and downstream sectors of the business.

In the Gulf region water and energy are closely linked together, as in the Netherlands these sectors are separated. When approaching opportunities in the GCC energy sector, the Netherlands can bring in the links between its expertise in energy production and water treatment and management. A focus can be the promotion of the Dutch integrated "nexus" approach towards issues relating to energy use, water use and food production.

Opportunities for Dutch businesses (private sector, public sector and knowledge institutes) also lie in energy efficiency. Dutch know-how exists in supporting a more efficient use of available resources. This could be in the area of smart grids, smart buildings, or any other smart alternative to high-energy use. Increased prosperity, increased mobility and growing population lead to a growing demand for houses, office buildings and airports; new projects, as well as renovation.

Smart lighting and ventilation and air conditioning solutions also provide opportunities for Dutch businesses to introduce energy efficient solutions. With the boom in urbanization the lighting market is recording further growth and a rising demand for various types of lighting (factories, power plants, airports), energy lighting systems in offices and houses, and a broad range of innovative lighting solutions in the economic cities and universities. With rising world temperatures and mega construction projects, the region witnesses an increasing need for innovative ventilation and air conditioning solutions and techniques able to meet the growing demand both quantitatively and qualitatively. Annual growth in this sector in Saudi Arabia alone is estimated between 30 and 50 per cent in the coming three years.

The whole process of registration and prequalification is a long-term process. Patience and determination are needed. Commitment to developing a long-term business in the Gulf is essential and it is important to invest in relationships. It could prove a hurdle to find the right agent or sponsor to engage in a long-term relationship.

3.2 Support by the Dutch government

The Netherlands government network in the Gulf region offers a number of products and services that can help you prepare and establish your business. These services focus on providing market information, identifying potential partners and advising you in setting up a business in the GCC.

Communication about opportunities
Information about opportunities, like tenders and commissions, often arrive after it is too late. The Netherlands government network in the Gulf region can play an important role in providing this information in time to Dutch parties. The economic departments of the Netherlands embassies in the GCC countries can provide a list of current tenders.

Moreover, activating an MoU (between Dutch and relevant Gulf ministries) can serve the need for a more clear and committed way of sharing information.

Trade requests
Do you have a trade request about doing business in the GCC? The embassies and consulate general are more than happy to assist you. Besides offering concrete answers to your questions relating exporting and investing abroad, they can also assist you in efforts to discover potential market opportunities.

Business partner scan and matchmaking
A business partner scan gives you an overview of potential business partners in your target market. These partners can be agents or distributors, but also manufacturing partners. The network looks for parties that meet your specified criteria and are interested to work with you. Further information on:
www.rvo.nl/onderwerpen/hoi/netwerkpart¬ners-zoeken/internationale-zakenpartners/zakenpartnerscan (in Dutch).

Company check
The embassies and consulate general can run a company check at the request of Dutch companies about a potential business partner. The check verifies if the company is legally registered with a local authority.

Trade missions and delegations
Trade missions, delegations and joint submissions for exhibitions are organised from the Netherlands to the Gulf Region. In the Gulf several trade fairs take place that can be of great interest to Dutch businesses. The embassies and the consulate general can provide you with the right information, advise you in participating and help you to meet potential local partners.

Trade disputes
Trade disputes range from differences in interpretation of contracts and agreements, to liability for breach of local regulations and requirements. The embassies and the consulate general can provide a list of local attorneys who may be able to assist you in the process.

Other services
- Access to the broad network of the embassy and the consulate general
- Introduction to contacts at different levels
- Advice on lawyers and accountants
- Advice on the Orange Carpet visa procedure
- Holland promotion

Support tools
The embassy and consulate general work closely together with organisations and ministries in the Netherlands. For example with RVO, which has several tools to support Dutch companies with ambitions abroad, both starting and seasoned entrepreneurs.

4 REFERENCES, EVENTS AND USEFUL LINKS

EVENTS:
ADIPEC (Abu Dhabi, UAE) - www.adipec.com, is the largest oil and gas show outside of North America.
Basra Oil & Gas Conference and Exhibition (Basra, Iraq) - www.basraoilgas.com, largest platform in Iraq from government institutions, national oil and gas companies, private sector, and industry professionals.
Doha International Oil and Gas Exhibition (DIOGE) (Qatar) - dioge.qatar-expo.com, most influential trade event for the oil & gas industry in Qatar.
Doha Carbon and Energy Forum (Doha, Qatar) - www.dcef-qatar.org, organised by Qatar Petroleum, Qatar Foundation and ExxonMobil this forum addresses carbon capture and storage, climate change, energy efficiency, and solar energy.
Energy Qatar (Doha, Qatar) - www.energy-qatar.com, is an international trade fair for energy, electricity, alternative energy, lighting, solar and air conditioning.
Gas Tech Cairo Exhibition and Conference (Cairo, Egypt) is where the commercial and technical gas worlds meet.
Global Oil & Gas Conference and Exhibition (GOGCE), Kuwait. Local, Arab and international companies presenting technical papers. Annually organized by KOC.
International Petroleum Technology Conference (Qatar) - www.iptcnet.org, is organised to further the advancement of scientific and technological knowledge related to the exploration, development, production, transportation, and processing of oil and natural gas.
Kuwait Electricity and Water Conference and Exhibition. Annually in May, under the patronage of the State of Kuwait.
Kuwait Oil & Gas Conference and Exhibition is a relatively small event, with most stands taken by local service companies and equipment suppliers; aimed at the domestic market.
Kuwait Oil & Gas Show and Conference (KOGS). Local and international companies. Annually in October. Set to be the largest gathering of the oil and gas industry in Kuwait. International exhibition of oil and gas hardware and services and a high level, organised by the Society of Petroleum Engineers.
Middle East Oil & Gas Show (MEOS) (Manama, Bahrain) - www.meos2015.com, well-established exhibition and conference of oil and gas products and services, the largest and best attended technical event of its kind in the region.
Qatar International Environment Protection Exhibition (ECO-Q) (Qatar) - www.eco-q.org, is a multi-sector environment trade fair addressing advancements in environment protection.
PE Heavy Oil Conference and Exhibition, Kuwait. International audience: Middle East, Asia, Europe, North Africa. Annually in December. Organized by KOC and others.
Saudi Energy (Riyadh, Saudi Arabia) - www.saudi-energy.com, is one of the largest energy exhibitions of the region.
Sustainability Week UAE:
World Future Energy Summit (WFES) (Abu Dhabi, UAE) -www.worldfutureenergysummit.com, is the world's foremost event dedicated to renewable energies, energy efficiency and clean technologies.
International Water Summit (IWS) (Abu Dhabi, UAE) - www.iwsabudhabi.com, is a global platform for promoting water sustainability in arid regions.
Zayed Future Energy Prize (Abu Dhabi, UAE) - www.zayedfutureenergyprize.com, honours winners for their achievements and excellence in advancing renewable energy and sustainability.
WEPower (Water, Electricity & Power Generation Conference and Exhibition) (Saudi Arabia) - www.wepower-sa.com, Saudi Arabia's largest gathering for the global water, electricity and power generation industry.
Water, Energy, Technology and Environment Event (WETEX) (Dubai, UAE) - www.wetex.ae, this exhibition showcases the latest technologies and equipment from and builds awareness about the water, energy and environment technology industries.
Solar Qatar Summit - www.solarqatarsummit.com, is Qatar's leading platform for project updates, knowledge sharing and high level networking for the solar industry.
Project Qatar - www.projectqatar.com, is established as Qatar's most important exhibition for highlighting the latest products and services needed for Qatari's fast growing construction sector.

ORGANISATIONS \ COMPANIES:
Rijksdienst voor Ondernemend Nederland (RVO) - www.rvo.nl
Association of Dutch Suppliers in the Oil and Gas Industry (IRO) - www.iro.nl
Nederlandse Energie Maatschappij (NEM) - www.nle.nl
FME / Dutch Energy Solutions - www.fme.nl / www.dutchenergysolutions.nl
Energieonderzoek Centrum Nederland (ECN) - www.ecn.nl
Nederlandse Organisatie voor Toegepast-natuurwetenschappelijk Onderzoek (TNO) - www.tno.nl
EIN enterprise - www.einenterprise.com
Netherlands embassies in the Gulf Region

USEFUL LINKS:
MEED - Middle East Business Intelligence – www.meed.com
Abu Dhabi Water & Electricity Authority (ADWEA) – www.adwea.ae
Dubai Electricity & Water Authority (DEWA) – www.dewa.gov.ae
Federal Electricity & Water Authority (FEWA) – www.fewa.gov.ae
Middle East Solar Industry Association (MESIA) – www.emiratessolar.com
Projects, tenders, enquiries and business deals in Saudi Arabia. – www.sauditenders.com
Saudi Arabia Energy EPC projects (Saudi Arabia) – www.saudiepcprojects.com
Ministry of Energy Kuwait – www.moo.gov.kw
Qatar Ministry of Energy & Industry – www.mei.gov.qa / investment-opportunities-en
Qatar Tenders – www.qatartenders.com
Qatar Projects Magazine – www.qatar.tpg-media.com
Kuwait Chamber of Commerce & Industry – www.kcci.org.kw

Offshore dredging, ©Tideway

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