Energy: Significant development

While the long-running debate in Kuwait's National Assembly over how to facilitate a bigger foreign presence in Kuwait's oil and gas sector continues, the sector looks set for a sustained period of major investment and growth. The Government has said it plans to increase oil production by up to 20 per cent over the next decade, expand domestic refining capacity, and as part of its policy to reduce the use of oil for power generation, is boosting natural gas output and looking to make greater use of renewables.

Kuwait has made a number of important announcements over the last 12 months, from new capital expenditure commitments, to a deal with Royal Dutch Shell, which has stimulated investment. Meanwhile, some $51 billion worth of upstream and downstream oil sector projects have been under implementation for the last four years, and will continue to 2013.

Increasing oil output

Kuwait's current capacity stands at 3.2m barrels per day (bpd) and the government hopes to achieve actual production levels of 3.5 m bpd by 2015 and 4m bpd by 2020. Over the last decade, Kuwait has slowly increased output, from 2.17m bpd in 2003 to current production levels of around 2.6m bpd. With reserves of some 104b barrels, Kuwait is currently the fifth-largest producer in OPEC, behind Saudi Arabia, Iran, Iraq and the UAE, contributing around 10 per cent of global supplies.

Historically, Kuwait has relied on its abundant reserves of light crude oil to serve its petroleum industry. The Burgan field has been the main source of Kuwait's oil since the 1940s, and is the second largest oil field in the world, only behind the Ghawar field in Saudi Arabia.

But like all Middle East producers, Kuwait faces the challenge of declining production from ageing oil fields, many of them over 60 years old. Kuwait's main field, the Burgan, discovered in 1938 and commenced production at the end of World War II, has passed peak production. The country's other fields, in the north, are also being depleted: Ahmadi dates to 1952, Magwa to 1951. Raudhatain was discovered in 1955, and Sabriya in 1957. To maintain its place in the OPEC Group, Kuwait must continue redevelopment of old fields.

The Kuwait Oil Company (KOC) last year revealed that the Burgan field would have more oil resources than previously thought, identifying new oil resources with a capacity of 12 billion barrels. Kuwait, like other oil producers worldwide, is racing to bring new projects online and faces challenges in finding contractors, skilled labour as well as buying technology and ensuring environmental standards.

Kuwait has for years been looking at allowing foreign firms to enter its hydrocarbons sector to carry out large exploration projects, mainly in the north of the country, which sits on around a tenth of the world's proven oil reserves.

Project Kuwait, which dates back to 1998, aims to create the incentives for attracting increased foreign participation in the country's oil and gas industry. The contract structure outlined in Project Kuwait was, however, deemed unconstitutional by the National Assembly. Kuwait's constitution bars foreign ownership of the country's natural resources, which precludes product-sharing agreements (PSAs) that normally provide the incentive for investment. To allow IOC involvement, an 'incentivized buyback contract (IBBC)' was created, which does not involve production sharing or concessions. The structure of the IBBC agreements allows the Kuwaiti government to retain full ownership of oil reserves, control over oil production levels, and strategic management of the ventures. Foreign firms would be paid a "per barrel" fee, along with allowances for capital recovery and incentive fees for increasing reserves. In May 2007, the Kuwaiti ruling family conceded the responsibility to approve each related IBBC for Project Kuwait to Parliament.

Project Kuwait aims to increase the country's oil production capacity from the northern fields of Raudhatain, Sabriya, al Ratqa, and Abdali, which KOC recognizes will require the help of the IOCs. The Royal Dutch Shell agreement of February 2010 is an indication of progress in this regard.

Downstream activities

Kuwait is also planning to build two olefins plants as part of a $270bn development of projects to be completed over the next 20 years. Of that investment, $81bn is allocated for the next five years and is to be split evenly between production, refining and distribution. There are currently three refineries in Kuwait – Mina

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Abdulla, Mina Ahmadi and Shuaiba – with KNPC serving as the refining arm of KPC.

Kuwait is a large exporter of refined products, with refining capacity about three times the level of domestic demand for petroleum. Kuwait Petroleum International, also known as Q8, manages KPC's refining and marketing operations internationally. It's operations include around 4,000 refining and marketing operations across Belgium, Spain, Sweden, Luxembourg, and Italy. An important office is located in London.

Kuwait wants to cultivate downstream interests in markets with high potential demand growth, and in particular China, Vietnam, and Indonesia. Kuwait Petroleum Company (KPC), China Petroleum, and Chemical Corporation (Sinopec) will build a refinery complex with an estimated investment of $ 9bn on China's Donghai Island, near Zhanjiang City in Guangdong Province, as a joint venture. The new refinery is expected to be operational from 2014-15. It will process 100% Kuwaiti crude oil, supplied by KPC, with a refining capacity of 300,000 bpd, equivalent to 15m tonnes per annum.

Natural Gas

Kuwait's estimated 63 trillion cubic feet (tcf) of proven natural gas reserves are not substantial, and the KPC is pushing for an extensive drive in natural gas exploration. Vast discoveries of non-associated gas in the north of the country have attracted the interest of the IOCs. However, the new discoveries are more geologically complex, and require more costly equipment to exploit them.

All gas resources are owned by the KPC. The Kuwaiti Constitution prohibits any use of PSAs that allow for an equity stake by an IOC in development projects. As a result, Kuwait is using technical service agreements to bring in IOCs to develop more difficult projects. In February 2010, Shell signed an enhanced technical service agreement for the 2006 natural gas discoveries in the north, known as the Jurassic fields, amounting to 35 tcf.

Current natural gas output is around 1.17 bcf per day, up 8 per cent on the figure for 2009. Kuwait increasingly requires supplies of natural gas for electricity and water utilities. The country is shifting its exploration drive to focus on natural gas discoveries to offset LNG imports and decrease the proportion of oil used domestically. KOC has announced a production target of 4 bcf/d by 2030.

Nuclear and renewable energy

In the long-term, Kuwait is planning to use nuclear energy. In March 2009, the Government said it was setting up a nuclear commission. In January 2010, the head of the National Nuclear Energy Committee announced a 20-year cooperative deal with the French Atomic Energy Commission to develop nuclear power in Kuwait. Kuwait says that it is considering four nuclear power plants, set to become operational by 2022.

Kuwait has an average insolation of 5.2 kWh/m2/day. The country has a high potential for uptake of solar energy, with an estimated 73 ktoe of energy potential daily from utilising 10% of Kuwait's total land area for photovoltaics.

With an estimated 4.4 full-load wind hours per day, Kuwait also has good wind energy potential. A co-operation agreement has been signed between the Kuwaiti Institute for Scientific Research (KISR) and the Dar Saleh Al Qallaf engineering consultancy for the design of sustainable buildings with integrated renewable energy systems, in particular, wind power. F

Vast discoveries of non-associated gas in the north of the country have attracted the interest of the IOCs

Oil production tanks in Kuwait's Burgan oil field