GULF STATES

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The Gulf States seem to be synonymous with oil and as oil prices burgeon, so do their economies. **Kuwait** has excess oil production capacity and hosts about 9% of the world's total reserves, some 96.5 Bbbl. With last year's estimated GDP at over US$27 billion and real GDP growth projected at 5.5%, this year's oil windfall should make for handsome returns. Nevertheless, the period of lower oil prices in 1998 encouraged Kuwait to trim its subsidies and start privatising state-owned businesses outside the oil sector. Although foreign ownership of Kuwait's mineral resources are not allowed, the government is considering allowing foreign investment in upstream oil development, but this has met with considerable opposition.

Most of Kuwait's oil reserves are located in the 70 Bbbl Greater Burgan area, perhaps the world's second largest oilfield whose Burgan, Magwa and Ahmadi structures produce roughly 1.6 (Mbbl/d) combined. Other smaller fields include the 250,000 bbl/d Raudhatain, 160,000 bbl/d Sabriya, 60,000 bbl/d Minagish and 60,000 bbl/d Umm Gudair fields. The Ratqa field is a southern extension of Iraq's huge Rumaila field and has been disputed, but a UN survey team put all of the existing Ratqa wells within Kuwaiti territory after the Gulf War. Kuwait Petroleum Corp. has also been conducting seismic survey work on its largest island, Bubiyan, near Iraq. The Neutral Zone includes a 6,200 square-mile area partitioned equally between Kuwait and Saudi Arabia and contains an estimated 5 Bbbl of oil and 1 trillion f^3 (cubic feet) of natural gas and oil production is over 500,000 bbl/d. New gathering centres have been expanding upstream capacity.

Last July Kuwait said it intended to launch an international tender later in the year for a package of additional infrastructure improvements which would allow it to increase its export capacity to 3 Mbbl/d. Plans include the construction of two additional mooring buoys at Mina al-Ahmadi, additional storage capacity, and additional pumping stations. Most of Kuwait's oil exports go to Asian countries and it hopes to increase its production capacity from the current 2.4 Mbbl/d to 3.5 Mbbl/d by 2005. As of 1999, Kuwait's domestic refineries had a combined capacity of around 864,500 bbl/d. Mina al-Ahmadi is the country's largest refinery with capacity of 427,500 bbl/d. Other large refineries include Mina Abdullah (247,000 bbl/d) and Shuaiba (190,000 bbl/d). Last June there was an explosion and fire at the Mina al-Ahmadi refinery, which had to be shut down with an estimated US$330 million worth of damage.

Kuwait is keen to hasten development of its petrochemical industry. In the past its Petrochemical Industries Company (PIC) has mainly manufactured low-value products such as urea, ammonia, and fertiliser for export, and it is now moving into producing higher value products. It may increase production at its polypropylene plant by 20% to 120,000 t/y if the market price of polypropylene continues to rise. The EQUATE joint venture, involving PIC and Union Carbide, is the country's largest petrochemical project. The US$2 billion industrial complex at Shuaiba includes a 650,000 t/y ethylene cracker, two polyethylene units with a capacity of 450,000 t/y, and a 350,000 t/y ethylene glycol plant. The fire at the Mina al-Ahamdi refinery cut off ethane for the EQUATE plant, which was temporarily shut down, but is back in operation.

Natural gas production in Kuwait has been in the region of 330 billion f^3 most of it associated gas from oil production, and there are plans to increase its use of natural gas particularly for electricity generation. There is exploratory drilling at the Rawdatain oilfield. Last July, Kuwait and Qatar signed a memorandum of understanding (MoU) for export of Qatari gas from its offshore North Field to Kuwait. ExxonMobil, the operator of the North Field, is conducting a feasibility study. Kuwait also signed an MoU with Iran for the import of gas via pipeline in the same month. At the same time, Saudi Arabia and Kuwait agreed to share equally their gas resources on the offshore Dorra gas field, but there are continuing negotiations with Iran over its claims to the field. The industrial mineral sector includes hydrated lime, clay, cement, and increasing amounts of chlorine and caustic soda. Arabian Light Metals Co.'s extrusion capacity has been restored to over 5,000 t/y and demand for aluminium product has grown with post-war construction; a US$1 billion alumina refinery at Boubyan Island has been proposed.

The **United Arab Emirates** (UAE), a federation of seven emirates (Abu Dhabi, Dubai, Sharjah, Ajman, Fujairah, Ras al-Khaimah and Umm al-Qaiwai) with an estimated GDP last year of US$63.2 billion and estimated growth rate of 10.5%, host 98 Bbbl or almost 10% of the world's proven oil reserves as well as the world's fourth largest natural gas reserves (212 trillion f^3). Oil production in the last quarter of 2000 was estimated to climb to 2.35 Mbbl/d and total capacity is 2.60 Mbbl/d. The UAE has insisted on an agreement to share production from the contested Shaybah field, which has seen Saudi development and has estimated reserves of 13 Bbbl of crude oil. With a relatively diversified economy its real GDP growth was projected at 10.5% last year and this year also looks promising.

The two largest emirates, Abu Dhabi and Dubai, contribute over 80% of the UAE's income and the latter accounts for some 70% of non-oil trade. Indeed, the non-oil sectors of the UAE's economy actually contribute more than two-thirds of total GDP and some 30% of its total exports. The government has invested significantly in aluminum production, tourism, aviation, re-export commerce and telecommunications, and agriculture also plays an important role.

Each emirate controls its own oil production and development and Dubai does not consider itself part of OPEC. Proven oil reserves in Abu Dhabi have doubled in the last decade (Abu Dahbi holds 94% of UAE reserves) and it continues to identify new finds particularly offshore as well as maximising existing fields. The Abu Dhabi National Oil Co., restructured in 1998, operates two refineries: Ruwais, upgraded in 1995, has a capacity of 145,000 bbl/d and by 2003 with further expansions its total capacity will be some 415,000 bbl/d. Four smaller refineries include the recently expanded Umm al-Nar in Abu Dhabi (88,500 bbl/d capacity), Metro Oil's Fujairah refinery (75,000 bbl/d), the Emirates National Oil Co.'s Jebal Ali condensate refinery in Dubai (140,000 bbl/d), and ISO Octane's Jebal Ali privately-owned refinery (40,000 bbl/d second hand gasoline unit) that opened last May. Gas reserves are projected to last for about 150-170 years. The largest are in Abu Dhabi with 196.1 Tcf and its non-associated Khuff gas reservoirs under the Umm Shaif and Abu al-Bukhush oil fields are among the world's largest. Sharjah, Dubai and Ras al-Khaimah have smaller reserves.

During the past ten years, consumption of gas in Abu Dhabi has doubled and by 2005 it is projected to reach 4 billion f^3/d, while Dubai's is anticipated to grow by nearly 7%. Gas-related projects include: plans for the Dolphin Project to interconnect the gas grids of Qatar, the UAE and Oman; the transformation of the Taweelah commercial district into a gas-based industrial zone; the 1999 Asab development which processes around 830 million f^3/d of associated wet gas and up to 100,000 bbl/d of condensate for processing at the Rusais refinery; and the current US$1 billion OGD-2 onshore gas development programme at the Habshan natural gas complex awarded to Italy's

Snamprogetti in 1998. Construction was scheduled to be finished in 2001 and includes three or four gas processing trains to process 1 bcf/d of gas, 300-500 t/d of natural gas liquids, 35,000-55,000 t/d of condensate and up to 2,100 t/d of sulphur.

The Dubai Aluminium Co. (DUBAL) started operations in 1979 and has a primary aluminium production of 536,000 t/y incorporating a power generating capability exceeding 1,400 MW and seawater desalination plant capable of providing up to 25 million gallons of potable water daily. It has expanded three times and most recently the Condor project provided a 35% increase in capacity at a cost of US$725 million. In May 1999, DUBAL gained the environmental accreditation ISO 14001 certification for its entire operations. The UAE has one of the best developed desalination systems in the world, which has helped transform its shoreline and foster construction.

Other metal and mineral activities include chromite mining in Fujairah and the Ahli Steel Co. has a 70,000 t/y steel plant for reinforcing bars in Dubai. Solo Industries Ltd. has a 800 t/y lead refinery for scrap recycling in Sharjah, and Lucky Recycling Ltd. a copper scrap facility in Dubai. ADNOC subsidiary, National Chlorine Industries, produces caustic soda, chlorine and salt at its Umm Al-Nar plant. Silica sand demand should increase with a 280 million bottle per year glass factory in Dubai, and a plate glass plant is being considered by Abu Dhabi Investment Co. There has been perhaps an over-expansion in the container glass market in the Gulf States, until recently a highly profitable business, but it will need to see improvements in Asia for more profitable growth. Expansions have occurred at Fujairah Cement Industries and at the Ras al Khaimah Co. for white cement and construction material; cement is also manufactured in six of the seven emirates. High quality rockfill and aggregate are quarried near Fujairah's port and Ras al Khaymah where rockwool factories using doleritic feedstock have been operating.

In March 1999, the UAE offsets Group (UOG) and the Qatar General Petroleum Corp. (QGPC) signed a Statement of Principles for the Dolphin Project; Mobil Oil Qatar also signed a memorandum of understanding covering its participation in the upstream component in July 1999. The US$8 to US$10 billion project will begin a subsea pipeline from Ras Laffan in **Qatar** to a landfall in Abu Dhabi, which will then be extended to Dubai and northern Oman. Qatar hosts the third largest natural gas reserves and the largest non-associated gas field in the world and as an OPEC member exports over 600,000 bbl/d of oil. Projected real GDP growth rate for 2000 is 4.6%, and around 5% after 2000, based mainly on rising production and sales of natural gas. Estimated nominal GDP last year was US$9.6 billion. Qatar is also pursuing a policy of economic diversification, and production increases have been notable in the cement, fertiliser, and steel industries, although hopes for the future are really pinned on gas. The resurgence of crude oil prices and start of deliveries from the RasGas LNG project have eased its debt payment burden (nearly US$12 billion in 1999) accrued from oil and gas infrastructure investment. Recoverable oil reserves are 3.7 billion barrels, of which about 2.2 billion barrels are located in the Dukhan field, Qatar's only onshore field. The other proven 1.5 billion barrels are held in six offshore fields.

To increase oil production, the government has recently improved the terms of exploration and production contracts and production-sharing agreements to encourage foreign oil companies to improve oil recovery in producing fields and to explore for new oil deposits. Qatar's National Oil Distribution Co. (Nodco) is upgrading its refinery at Umm Said and this should increase capacity from 57,500 bbl/d to 83,000 bbl/d. A 30,000 bbl/d condensate refining unit also is being built on the same site and the projects should be finished by the end of this year. The US$400 million 80,000 bbl/d-condensate refinery at Ras Laffan should be completed next year. In 1997 Phillips Petroleum Co. signed a US$1.1 billion deal with QGPC to build a petrochemical plant, Q-Chem which will be able to produce 500,000 t/y of ethylene and 467,000 t/y of polyethylene, including high-density and linear low-density polyethylene. Exports are expected next year.

Qatar's proven natural gas reserves are 30 trillion f^3 and most are located in its North Field, the largest known non-associated gas field in the world. The Qatargas LNG plant consists of three, 2 Mt/y (97 billion f^3) trains; the third train was completed in 1999 with plans to add a fourth by next year. Rasgas, Qatar's second LNG project, consists of two 2.5 Mt/y (122 billion f^3) trains, the first was completed in early 1999 and the second train came on stream in April 2000, with a tender for planned third and fourth trains thereafter. Last May, ExxonMobil and QGPC signed a final development and production-sharing agreement for the North Field. The initial phase of the project will produce 500 million f^3/d, with eventual capacity projected to rise to 1.75 f^3/d.

Qatar and Bahrain have long disputed their rights to waters between them in the Persian Gulf and ownership of the Hawar Islands, and finally sent their dispute to the International Court of Justice in The Hague. Although **Bahrain** also relies heavily on its oil industry, it has become a significant financial and banking centre. Last year's real GDP grew by 4.5% Aluminium Bahrain's smelter has been one of the largest in the Middle East with a 460,000 t/y capacity; aluminum has accounted for about a quarter of total exports and has fostered new downstream industries. With proven oil reserves of a modest 148 Mbbl all in the Awali field, it is producing some 35,000 bbl/d of crude oil, which is nearing depletion. Last May a two-year contract was awarded to CGG Corp. to study the future prospects of the field, and both Texaco and Chevron are involved in exploration. Its refineries are significant however: one south of Manama has a capacity of 248,900 bbl/d and Bapco's modernisation programme is due to be finished in 2004. (The corporate structure of its state-owned petroleum sector was consolidated, merging the upstream Bahrain National Oil Co. (Banoco), into Bapco in January 2000.) A project by the Saudi firm Petroma to build a 500,000 bbl/d refinery has been approved. Bahrain has natural gas reserves of some 3.9 trillion f^3, most of which consists of associated gas from the Awali oilfield. The 293 billion cubic feet of natural gas produced in 1998 were all consumed locally and Bahrain may need to become a gas importer in view of its fuel demands for energy. Gas production and processing are the responsibility of the majority state-owned Bahrain National Gas Co. (Banagas).