

The booming UAE economy also requires an ever-growing supply of energy and water. This is fuelling infrastructure development at an unprecedented scale. In many areas public-private partnerships are gradually taking over the role traditionally held by the government in infrastructure development and management.

### Electrical Power

Approximately 97 per cent of the UAE's electricity production is fuelled by natural gas, with the remaining three per cent produced by diesel generation and steam turbines (primarily in the Northern Emirates). The major players in the UAE's electricity generation sectors are: Abu Dhabi Water and Electricity Authority, which currently accounts for 53 per cent of the capacity, Dubai Electricity and Water Authority (29%), Sharjah Electricity and Water Authority (11%), Federal Electricity and Water Authority, which operates in the Northern Emirates (7%).

Electricity and water in Ras Al Khaimah are provided by Federal Electricity and Water Authority (FEWA). The authority was established in 1999 to generate and distribute electricity and water in the Northern Emirates. FEWA owns and operates six power generating plants and three water desalination plants, producing 1,191 megawatts of power and 18,232.930 million gallons of water per day in 2003.

Dubai and Abu Dhabi's power grids were connected in mid-2006, allowing the two emirates to share energy resources, taking the country one step closer to the planned Emirates National Grid. Upon its completion, planned for 2008, the Emirates National Grid will amalgamate the power generation, transmission and distribution networks of the seven emirates into a single national grid, combining the backup reserves of each emirate and giving greater flexibility and stability to the network. Eventually, the Emirates National Grid is expected to link up with the grid of other Gulf countries. The GCC grid will significantly impact the distribution and rising demand issues of power generation in the entire region.

The electricity supply in the UAE is 220/240 volts and 50 cycles. The socket type is identical to the three point British system. Adaptors can be purchased at any grocery or hardware shop. The price of electricity is currently 20 Fils (0.2 AED) per kilowatt hour.

The escalating scale of urban development is impacting significantly on the demand for electricity. The demand for electricity in the UAE has been growing at double-digit rates for many years and according to all estimates it will continue to do so until at least 2010. In fact, the UAE has the highest projected increase in demand within the GCC region, which is expected to continue to grow at a minimum rate of 10 per cent per annum until 2010, far outstripping the world average of three per cent per annum.

There is currently an insufficient capacity of power generation in some parts of the UAE. Combined with the non-existence of the national grid, this has resulted in the shortage of electricity in certain areas. Some of the new real estate development projects and industrial zones have not been able to secure sufficient power supply and have had to resort to power generators fuelled by diesel or gas.

To meet this demand, the UAE will have to increase its electricity generation capacity by as much as 60 per cent over the next three to five years. By mid-2006 the total capacity for electricity production in the UAE was 16,220 megawatts (MW) compared to 9600 MW in 2001 and industry estimates expect the capacity to rise to almost 26,000 MW by 2010. A number of major power projects are under development or being planned, including the six-phase Jebel Ali Power and Desalination Plant, which will meet nearly 10 per cent of the nation's needs when completed in 2015.

### Water

Over the past two decades, rapid economic development, coupled with steep population increases and a push to achieve self-sufficiency in food supplies, have placed ever-increasing pressure on the UAE's precious natural water resources. This is a real challenge for a country with no rivers and little rainfall. Although groundwater still plays a significant role in meeting agricultural demand throughout the emirates, and more than half of the water distributed by the federal authority (FEWA) in the Northern Emirates is sweet groundwater, a high proportion of the UAE's requirements is being met by an extensive gas-fired desalination programme, with Abu Dhabi accounting for around half of the total desalinated water production in the UAE. In addition, water conservation measures are being implemented throughout the emirates. Tap water is safe to drink though locally bottled mineral water is preferred. The price of the tap water is 3 Fils (0.03 AED) per gallon.

## Natural Gas

With its proven gas wealth exceeding 6 trillion cubic metres at the beginning of 2006, the UAE is the fifth largest gas power in the world and is one of the top LNG producers. In addition, the UAE commenced importing natural gas from Qatar in late 2006. The gas is transported via Dolphin's 370-kilometre export pipeline to a terminal at Taweelah in Abu Dhabi, from where it is piped to the centres of use, such as Fujairah's new power and water complex and Dubai's Jebel Ali complex. Gas mains do not exist in most areas of the UAE, households need to purchase individual canisters and connect them to a gas oven via an outside tap. Currently a 22-kilogram cylinder is sold for AED 91 and an 11-kilogram cylinder for AED 43.

## Petrol

Petrol is supplied through leading companies such as ADNOC and Emirates Petrol Station. The price is 6.25 – 6.75 AED per gallon and diesel is 8.5 AED per gallon.

## Waste Management

Wastewater treatment and solid waste disposal sectors are growing with the increased production of desalinated water and the solid waste generated by the increased numbers of UAE residents. The UAE is one of the three highest per capita producers of solid waste in the world. Most urban and industrial areas and all new development projects are connected to the public sewage system. Solid waste disposal is run by the municipalities and is well developed in the UAE.

## Telecommunications

Please see the Telecommunication factsheet.