

Oil & Energy
The Academy and the Middle East

15 October 2009

Patrick Haren

SubTopics in Oil & Energy

- **Oil & Gas(LNG) Export Capacity & Infrastructure**
- **Technology in the oil industry**
- **Electricity Generation Capacity**
- **Electricity Transmission & Distribution Network Infrastructure**
- **Gas PipelineTransmission & Distribution Network Infrastructure**
- **Renewables**
- **Nuclear**

Geographic Definition/In-Region Differences

- **Geographic definition (Arabian Peninsula)**
- **Gulf Cooperation Council countries (excluding Yemen):**
 - **Bahrain, Kuwait, Oman, Saudi Arabia, UAE, Qatar**
 - **Some 50% of GDP in region**
- **Differing resource dependencies/opportunities**
 - **Oil: Saudi Arabia, UAE, Kuwait**
 - **LNG: Qatar**
- **Different drivers in: budget deficits, economic/energy diversification**
- **Different positions in status of basic infrastructure**

Pointers in Oil & Gas (1)

- **Focus on oil price of \$60-70+ and the importance of both price & demand to exchequer funding**
- **Projected optimism on demand and continued high levels of investment by government to ride through the recession**
- **Continuing investment in upstream oil development to maintain and expand production capacities**
- **More of a mixed picture in downstream development**
- **Refinery contract cancellations in light of changed demand but also with a view to getting lower prices**
- **Significant downstream investment overseas to secure new markets (eg China)**

Pointers in Oil & Gas (2)

- **In LNG, Qatar continues to commission new LNG liquefaction trains**
- **But current LNG commissioning represents 5-year old decisions**
- **Not so easy to say whether new LNG commitments delayed**
- **But overall, no sense of crisis**
- **Investment in technologies for:**
 - **End-of-life oilfield extensions**
 - **Dealing with more difficult oil quality (viscous, sour)**
 - **Carbon management/sequestration**
 - **More efficient internal combustion engines**
- **Relationships with places like MIT, Stanford and Caltech**

Pointers in Oil & Gas (3)

- **Most countries crying out for local talent (mandated levels of local expertise)**
- **Desire to learn and desire for professional certification**
- **Most countries have Institutes for the oil & gas industry (probably have existing contacts with Energy Institute)**
- **Possible advantage in offering an institutional contact: may be more trusted than large corporates**

Pointers in Electricity & Gas (1)

- **Electricity demand growth typically 8% despite economic downturn**
- **Recent double-digit demand growth, population growth and past under-investment placing massive strains on infrastructure**
- **Power shortages forecast in Dubai, Kuwait and parts of Saudi Arabia**
- **2008 forecast was for \$50bn investment in new generating capacity**
- **Kuwait expected power cuts during Ramadan**
- **Sharjah in UAE experiencing widespread black-outs in September due to network maintenance**
- **GCC generating capacity expected to grow by 44% by 2013**

Pointers in Electricity & Gas (2)

- **Major GCC electricity interconnection being pursued for shared benefits**
- **Qatar investment in surplus generating capacity for export**
- **Oman planning to privatise existing power stations to attract international investment**
- **Regulatory reforms and models of business separation in electricity in the region will echo some of UK experience**
- **Gas distribution infrastructure issues less marked than electricity (?)**
- **Competition for gas forcing utilities to consider alternative sources, including coal, nuclear and solar for the first time**

Pointers in Nuclear

- **Abu Dhabi planning 3 nuclear reactors 2017-2020: ex-IAEA adviser in place as DG, Regulation**
- **King Abdulaziz City for Science & Technology in Riyadh working on plans for Saudi nuclear**
- **GCC nuclear will rely on imported technology, manpower and uranium**

Pointers in Renewables/Energy Efficiency

- **Abu Dhabi 7% renewable energy target**
- **Abu Dhabi Masdar Initiative for carbon-neutral city (\$22bn)**
- **Masdar location for International Renewable Energy Agency**
- **Oman stated planning for 20% electricity from coal in 2020**
- **Bahrain & Oman looking to solar and wind plants for diversification**
- **Qatar Science & Technology Park to test solar technologies**
- **King Abdullah University of Science & Technology focus on solar**
- **Declarations on energy efficiency but real investment in district cooling**

Thoughts on Cooperation

- **Mandated local staffing not met in engineering & management**
- **UK companies also meet staff shortages (also in the UK)**
- **Opportunities for exchange/transfer in education & training and professional certification**
- **Exchange of expertise: Management, Project Management, Infrastructure Planning, Renewables and Nuclear**
- **ICE delegation to Dubai: “Cooperation between engineers in the UAE and their counterparts in the UK (to exchange) expertise and knowledge”**
- **Institutions are identifiable which could act as ‘counterparties’ to exchange**
- **Existing presence of Imperial College, MIT, Energy Institute, UKTI etc**
- **Existing RAE links: Saudi Aramco, Sharjah, Masdar**