

**Article written for International Tank Container Organisation (ITCO)
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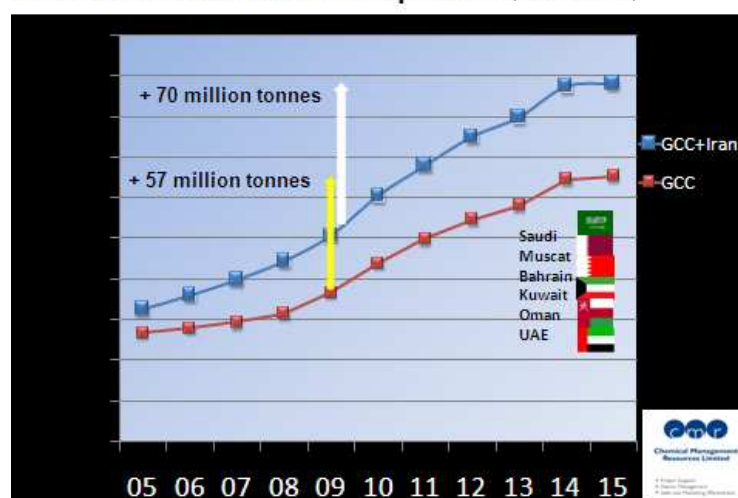
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ISO tank demand ramps up in Middle East

Middle East petrochemical capacity is booming

With more petrochemical capacity coming on-stream, the Middle East is strengthening its position as *the* pivotal player in the global petrochemical sector. Independent research by **Leslie McCune** at **Chemical Management Resources Limited**, a UK-based petrochemical and petrochemical supply chain expert focused on the Middle East, shows capacity growth for the top 18 petrochemical products of 57 million tonnes from 2009-2015 in the GCC* alone. This is an **increase of over 80%** on 2009 capacities and *excludes* a further twenty products that will be produced in the GCC for the first time. These plants are being built and will add a further 12 million tonnes of annual capacity.

GCC/Iran Petrochemical Capacities (million tonnes)



Source: Chemical Management Resources Limited

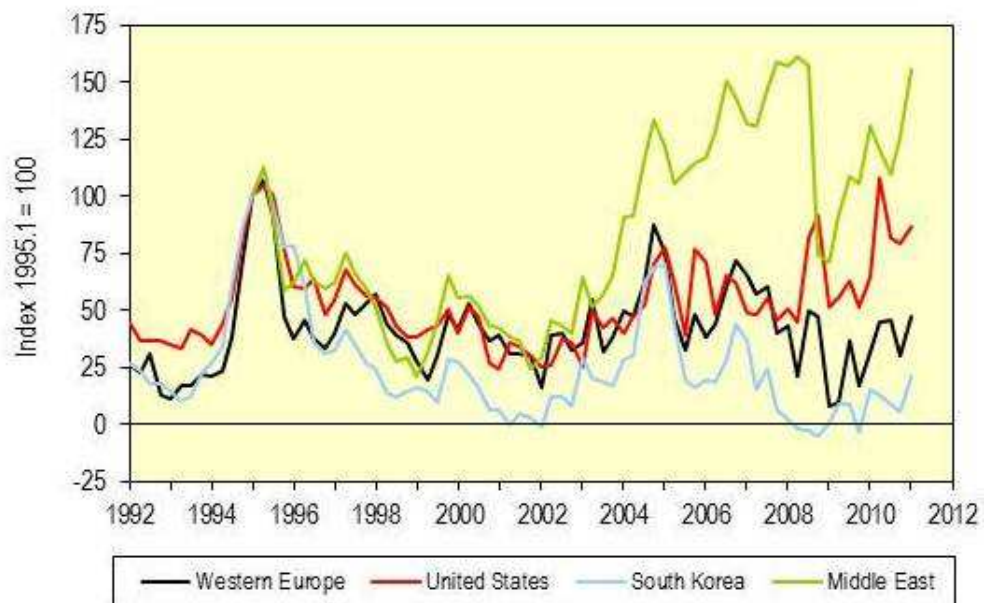
As production increases dramatically, so too does the need for imports of specialist, liquid feedstocks from Asia and Europe. Many of these products require **ISO tanks**, creating head-haul or back-haul movements with strong profitability resulting from minimum repo costs.

. and will maintain its global competitiveness

The **Middle East** (or more accurately, the GCC and Iran) is set to **maintain its global petrochemical competitiveness** in commodity petrochemicals. This is despite low-cost US shale gas, a return to ethylene competitiveness for European crackers (driven by co-product credits) and increasing feedstock prices in the Middle East – one of the original motivations for the current \$0.75/million Btu cracker feedstock gas price in Saudi was to guarantee attractive Returns On Investment for the international partners that were necessary to provide world-competitive process technologies and rapid market access for Saudi producers.

Middle East petrochemical producers are enjoying **record volumes and profits** but anxieties remain on the sustainability of demand by China as it becomes more self-sufficient and addresses inflationary pressures.

Regional Petrochemical Profitability - Cash Margin compared to 1995



Source: Nexant

. but will produce large volumes of specialty chemicals requiring **ISO tanks**

The GCC has until recently been primarily a commodity polymer and large volume liquids play in terms of supply chain logistics. **The most significant recent change is the move to hazardous, specialty chemical production.** For polymers, managing volume is the key challenge; for liquids, managing hazard is the key challenge. The move to downstream liquid production has been driven by heavier cracker feedstocks, the desire to retain more added-value in the region,

the medium-term threat of over-supply in the critical China market and the strategic priority of economic diversification (and with it, job creation).

Oil-producing countries in the Middle East and North African continue to rely on producing and selling oil and gas to fund 90% of their fiscal budgets. These countries have produced approximately 250 billion barrels of crude oil to date, leaving only 500 billion barrels of oil reserves available for future production – this is equivalent to only 6 years of global demand. As importantly, the hydrocarbon sector is not labour intensive and will not provide enough jobs to meet the higher aspirations of the next generation (in Saudi Arabia, the median age is 24 while unemployment among 20-24 year olds is 39%).

Iran petrochemical exports increase

Iran continues to be a ‘no-go’ area for many **ISO tank** operators but has the region’s second largest petrochemical capacity, which is approximately 60% that of Saudi’s and a third of the GCC’s capacity. The EU, US and UN sanctions are intensifying and causing difficulties but Iranian trading inventiveness and willing trading partners in China, Russia, South Korea and Malaysia ensure that large volumes are exported. Petrochemical exports were over 13 million tonnes in the 10 months to 20 Jan 2011 (up 67% compared with the same period a year ago). But most exports are bulk liquids requiring bulk product tankers or chemical parcel tankers so **ISO tank demand is relatively limited** and some operators have been left with stranded tanks in Iran.

Middle East supply chain costs are highly visible

Middle East petrochemical plants typically cost 20% more to build than those built in the US Gulf Coast, the principal international ‘benchmark’ location. As a result, the **logistics costs of a Middle East petrochemical production facility will, over its lifetime, exceed the plants’ construction costs.**

Most Middle East petrochemical plants have very low variable costs. As a consequence, supply chain costs are a much higher percentage of total variable costs than is usual in the rest of the world. This focuses board-level attention on the supply chain architecture and cost structure. As a result, many Middle East producers promote their most talented staff into supply chain functions.

. . . and today’s supply chain infrastructure cannot meet future growth

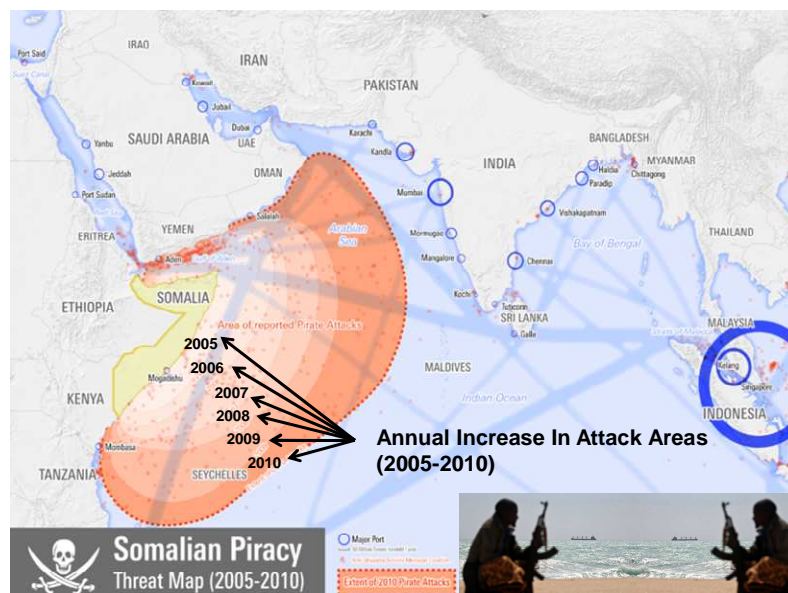
Massive supply chain infrastructure investments are being made in the region to serve the petrochemical exports associated with this ramp-up in capacity. These were highlighted in a recent 500-page study by Leslie McCune which identified the petrochemical capacities, exports and supply chain infrastructure in the GCC and Iran from 2005-2015. In the short term, most of the ports in the region are being privatised and expanded – there have been recent major expansions in the key ports of Jeddah and Jebel Ali. Jubail is being transformed and will be one of only 14 ports that can handle the new 17,500 TEUs container vessels (the ‘A380’s of the seas’).

Terminals are one of the most attractive investment opportunities in the region, 3PLs are expanding and partnering with others who provide complementary logistics services (e.g. transportation, handling, cleaning, storage), **ISO tanks** are in short supply with all export tanks leaving full, and liquid storage and drumming facilities are being expanded. Cleaning facilities in key locations are at full capacity, resulting in lower service levels. Companies with longer-term perspectives (such as well-established, family companies with leading market positions) are busy positioning for the intermodal opportunities of the Saudi Land Bridge, the rail link between the Arabian Gulf and Jeddah in the Red Sea – from 2009 to 2014, the increase in polymer exports to Europe from the GCC is forecast to be greater than the increase in polymer sales to China.

Piracy is a major concern

At the petchem business level, the **Arab Spring has had a minimal impact** on the petrochemical sector. Saudi and Dubai have benefited from re-directed money flows; border closures have occasionally cut supply links (such as in Syria) causing Middle East producers to redirect material into other markets.

At the **geo-political level, what most concerns GCC producers is Somali-based piracy**. SABIC, for example, has 16 ships. With average ransoms reported to be over \$5 million and over 800 hostages in Somali waters there are understandable human and financial concerns. This topic will be covered in future Middle East updates.



Source: Chemical Management Resources Limited/National Geospatial Intelligence Agency

*Potential Middle East partners of **ISO tank** operators look for operational excellence and high safety management capabilities*

The region is chronically under-resourced in terms of supply chain expertise and assets and with petrochemical production facilities under construction, demand growth for supply chain service providers is guaranteed. In a recent **ISO Tank** Global Market study conducted by Leslie McCune, **European operators were viewed by Middle East producers and investors as having world-leading expertise in ISO tanks.** Operational excellence and European/US-level safety management capabilities are the two most desired attributes sought by potential Middle East partners.

The high-growth Middle East **ISO tank** market is still in a formative stage. **Several global ISO tank players are reviewing their formal and informal relationships in the region - others are refining their market entry strategies.**

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For expert advice on Middle East petrochemicals and the petrochemical supply chain opportunities, contact:

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*GCC member states = Saudi Arabia, Kuwait, Bahrain, UAE, Qatar, Oman