Gulf Times

Gulf plastic sector sees record $5bn investment in 2007

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Business Reporter

DOHA: The GCC plastic sector has seen an estimated investment of about $5bn in 2007, more than 5-fold its levels in 1990.

The number of factories in the plastic industries in the GCC region reached 1,223 with an estimated investment of about $5bn in 2007 compared with 326 factories with an investment of $932mn in 1990, said a study by the Gulf Organisation for Industrial Consulting (Goic).

"The developments and expansions in investment and production that have occurred in GCC member states over the past few years led to the rapid growth of the plastic industries considerably," Goic said.

The successive expansions and developments that accompanied plastic products' industry and improved level of performance of most factories operating in the GCC states resulted in an enhanced utilisation of productive capacity to about 90% in 2006 compared with 68% in 1990.

The production capacities had grown to more than 2.3mn tonnes per annum in 2006 against half a million tonne in 1990, thus making the production capabilities able to cover the apparent consumption in the Gulf region, said Goic, an entity mandated to promote industrial co-operation among the six GCC countries.

Plastic products, relatively a new entrant in the GCC industrial landscape, have achieved "remarkable" development, driven by factors such as growth and increased demand and high pace of economic growth across all the economic sectors in the GCC countries, it said.

"In addition, there is the setup of a highly efficient local industry producing most of the feeding raw materials for plastic products factories in GCC, such as polyethylene, polypropylene and poly vinyl chloride and polystyrene," said Goic, which has partnered with the United Nations Economic and Social Commission for Western Asia in the areas of information technology, technical support, training programmes and expertise exchange.

Founded in 1976, Goic collects and publishes data on industrial projects and policies; suggests viable joint-venture industrial projects; submits recommendations on co-ordination and integration of industrial projects in the region; provides assistance in the preparation and/or evaluation of industrial studies; and conducts industrial data analyses and studies.

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BUSINESS

GCC emerges top petrochemicals, plastics exporter

BY MANU SHARMA

3 January 2007

Print E-mail

DUBAI — With annual petrochemicals production amounting to 40 million metric tonnes, of which 30 million metric tonnes were exports in 2005, the GCC is emerging as the largest producer and exporter of petrochemicals and plastics in the world.

GCC's investment in the petrochemical industry was estimated at $30 billion in 2005, which is approximately 60 per cent of the region's manufacturing sector.

Satish Khanna, General Manger of Al Fajer Information & Services, the organisers of Arabplast said, "The petrochemical industry has witnessed a huge increase in the last decade in the GCC, the value of investments in this sector in 2005 totalled Dh1.3 billion, which represents 22 per cent of the total manufacturing investments in UAE. In fact, Dubai alone contributes about 70 per cent of UAE's foreign trade in petrochemical products."

Even in the plastic industry, UAE is ranked second only after Saudi Arabia followed by Oman, Bahrain and Qatar, according to Gulf Organisation for Industrial Consultancy.

The plastic industry, as downstream activity in the oil industry, has a considerable potential for industrialisation in the country as whole and particularly in Dubai.

"Development of a domestic petrochemicals industry is now gathering pace, which could considerably boost the development of small and medium size plants in the plastic industry," said Khanna.

There are about 2000 companies in the GCC and about 260 companies in the UAE. The UAE companies employ about 16,000 people of which about 40 per cent are in Dubai.

The plastic products market in Dubai is considered to be one of the largest markets in the region. Dubai's plastics sector is diversified into different products such as pipes (48 per cent), packaging (18 per cent), fibreglass (20 per cent), containers (4 per cent), sheets (4 per cent)and miscellaneous (6 per cent).

The number of chemicals, petrochemicals and plastics companies at Jebel Ali Free Zone (Jafza) has increased during 2000-2005 by almost 72 per cent at an annual rate of 14.6 per cent. There is considerable reliance on imported raw material. Almost 60 per cent of the plastic imports are of raw material, namely polymers of different types. The top import sources are Europe, Saudi Arabia, South Korea and Brazil. Meanwhile, the main import source for the final products are China, India and Indonesia.

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QPPC eyes quality, production boost as competition heats up

Publish Date: Monday,2 June, 2008, at 02:00 AM Doha Time

By Pratap John

Hijji ... quality comes at a price

Doha: Qatar Plastics Products Company (QPPC) – a joint venture promoted by Qatar Petrochemicals Company, Qatar Industrial Manufacturing Company and Italian firm Febo – is set to achieve 85% production capacity by mid-2009.

The Mesaieed-based firm has newly introduced two products: 'warning' tape and 'bluesleeving' for industrial applications.

QPPC is one of the biggest downstream companies in Qatar, developing and manufacturing flexible packaging, using low-density polyethylene (LDPE) resin. At its peak, the company can achieve a production level of 11,500 tonnes per year of various products.

Speaking to Gulf Times yesterday, QPPC general manager Mohamed Abdulrahman Hijji said three multilayer German-made machines would be installed shortly in view of rising local demand for strong packaging materials. They will replace the existing monolayer machines.

QPPC converts polymer into packaging materials such as form, fill and seal (FFS) films and shrink film and produces construction foil, general-purpose foil, greenhouse foil, top open bags and heavy-duty bags for construction and industrial sectors.

Bluesleeving, a protective cover for water pipes, and warning tapes which alert the presence of pipes and cables underground, are new products from the QPPC lineup.

"We are on a major expansion drive brought about by Qatar's burgeoning needs for polyethylene packaging films," Hijji said.

QPPC's major consumers are Qapco and Q-Chem. With Qatofin going onstream in the coming months, QPPC will have to meet the polyethylene packaging needs of that joint venture as well.

He sees immense opportunities for QPPC as Qatar's energy and industry sectors are booming.

"There is a huge demand locally for our products and for this reason we are not relying on exports. However, QPPC products do find their way to the neighbouring Gulf countries and Europe. Since various government departments and institutions have approved and cleared QPPC's polyethylene packaging films for purchase, there is a huge local demand for our products," Hijji said.

Set up in 1998, ISO 9001:2000 certified-QPPC utilises sophisticated machines (blown film and printing) from Europe, particularly from Germany and Italy.

The company has also won awards from various government agencies for meeting several product standard requirements.

Hijji said though the plastic products industry is getting affected due to increasing competition, QPPC is not willing to compromise on quality.

"Some buyers ask me why my products are highly priced than others in the market. I tell them I will not dilute quality to gain customers. Those who have tested my products will only come to me. My quality control is of the highest standard and I am not willing to bring it down," said Hijji who till recently headed Qapco's quality control facility.

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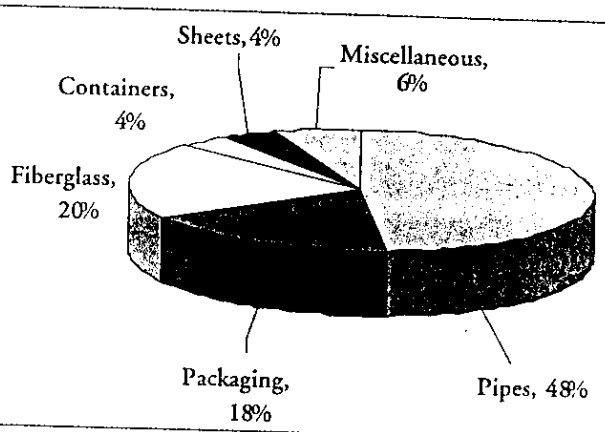
Dubai Plastic Products Market

The Plastic products market in Dubai is considered one of the largest markets in the region. The sector has diversified into different products such as pipes, fiber,..etc. The versatility of plastic makes its industry one of the most heterogeneous, with links to a large number of economic sectors. Figure 1 below shows the structure of the sector by type.

Figure1: Plastic sector Structure by Type



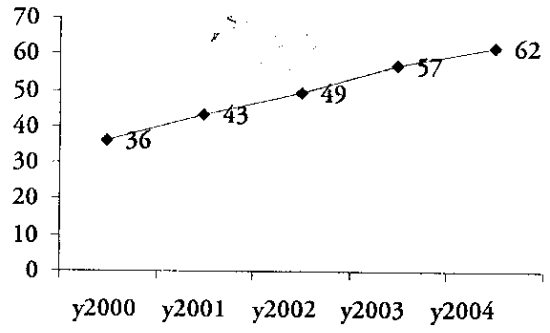
Source: Gulf Organization for Industrial Consultancy (GOIC)

In 2004, the number of plastic establishments in the UAE reached 262 with more than 16 thousands of employees, of which Dubai represented around 40 percent.

(Continue to Page 3)

The number of chemicals and petrochemicals, and plastic products companies at Jebel Ali Free Zone (JAFZA) increased during the period 2000 – 2004 by 72 percent on annual increase rate of 14.6 percent. Figure 2 below shows the plastic establishments in the JAFZA.

Figure2: Petrochemical Establishments in Jebel Ali, 2000 - 2004



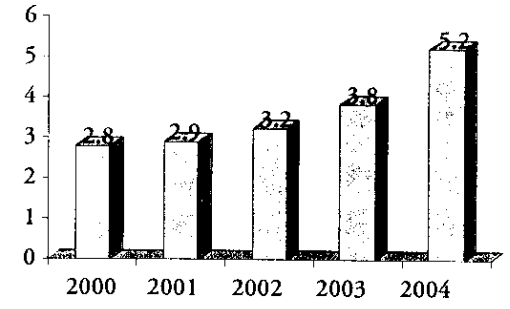
Source: Ports, Customs & Free Zone Corporation

There is considerable reliance on imported raw material. Almost 60% of the plastic imports are of raw materials, namely polymers of different types. The top import sources are Europe, Saudi Arabia, South Korea and Brazil. Raw polypropylene for plastic bags comes for the latter three countries. Meanwhile, the main import sources for the final products are China, India and Indonesia

Dubai foreign trade of plastic

The steady growth of the plastic products market is reflected in Fig. 3, which highlighted the plastic imports during the period 2000 – 2004.

Figure 3: Dubai Plastic imports 2000 – 2004



Source: Dubai ports and Customs Authority

While production is mostly for the domestic market, Dubai plastic industry also exports a significant portion of its output. Packaging products such as bags and containers lead the exports by the tableware/kitchenware category. In 2004, Dubai's direct exports of plastic products reached AED 480 million, while re-exports reached AED 1.9 billion and imports totaled AED 5.2 billion over the same period.

From figure 3, it could be infered that plastic imports increased by 86 percent during the period 2000 – 2004 on annual growth rate of 16.7 per cent.

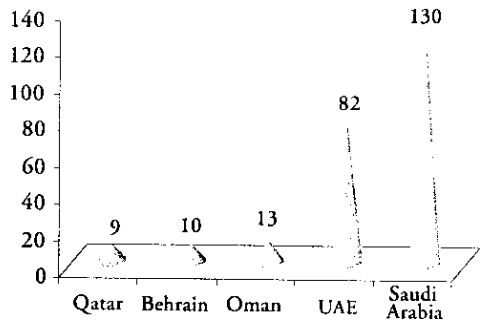
This could be attributed to the boom in the UAE's construction and real estate sectors in general and particularly Dubai is driving the demand for plastic products, especially plastic pipes, seamless tubes, plastic fittings and accessories used in plumbing and electric installations in buildings and drainage. This, in turn, is driving the growth of the plastics industry as well. Other factors is that the demand for household and other consumer plastic products and the need of plastic products for packaging because of a growing population and greater consumer spending.

Plastic Industry in UAE

The larger part of the domestic demand is covered by the manufacturing sector. Around 57 per cent of the demand has been served from local production. With the expansion of the non-oil economy, demand for plastic products has grown steadily.

At the GCC Country level, UAE ranked second in the plastic industry after Saudi Arabia. The most locally produced plastic product is the pipes and household products. UAE invested around AED 504 million, this has led to a growth in plastic production, which over time will reduce dependence on imports.

Figure 4: Plastic firms in GCC Countries



Source: Gulf Organization for Industrial Consultancy (GOIC)

The petrochemical industry in the UAE has witnessed a huge increase in the last decade, the value of investments in the sector in 2005 totaled AED 15 billion, which represented 22 per cent out of the total manufacturing investments in UAE.

According to DCCI membership database, there are 119 establishments manufacturing plastic & rubber products in Dubai. Their paid up capital totaled AED 1.3 billion with turnover of AED 1.3 billion by the end of first quarter 2006.

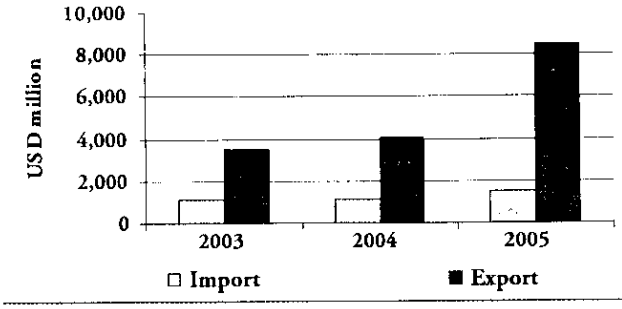
The plastic industry, as downstream activity in the oil industry, has a considerable potential for industrialization in the country as whole and particularly in Dubai. Development of a domestic petrochemicals industry is now gathering pace, which could considerably boost the development of small and medium size plants in the plastic industry.

Foreign companies can benefit from this industry in Dubai as it considered the leading regional trading hub that offers access to a market of outstanding potential in a wide range of sectors.

USA's surplus from trade with UAE Accelerates even as trade with GCC leads to deficit

Trade between USA and UAE continued to be heavily favorable to USA, with surplus in 2005 reaching USD 7 billion, for a 138 % increase from only about USD 3 billion a year earlier (Fig.1). Trade surplus in 2004 was more comparable to the level in 2003 at USD 2.4 billion.

Fig. 1. Level of trade between USA and UAE, 2003 - 2005



Source: Global Trade Atlas

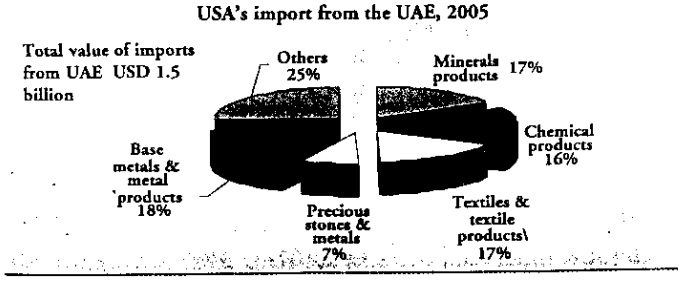
Fig. 2 shows the major products traded between the two countries. More than half (52%) of USA's imports from the UAE were base metals and metal products, accounting for 18%; mineral products and textiles and textile articles, both having a share of 17% each; chemicals and chemical products, 16%; and semi-precious/precious stones and metals and jewelleries, 7%.

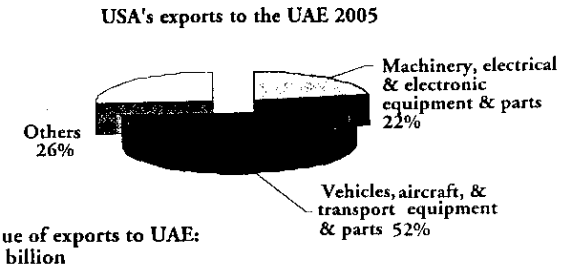
Mineral products imported from the UAE, valued at USD 250 million were mineral fuels and oils and related products. Organic chemicals accounted for 84% of the chemical products, while the rest was made up of essential oils and resinoids, and perfumery and cosmetic/toilet preparations. Imported textiles and textile products were 93% apparel articles and accessories, while 63% of the base metals and metal articles were aluminum and articles of aluminum and 33% were articles of iron and steel.

The bulk of exports to the UAE consisted of machinery and electrical and electronic equipment (17%) and vehicles, aircrafts and parts (52%). All other products had a share of only 26 percent to the total export value. In fact, the high trade surplus in 2005 was mainly due to USA's export of aircrafts and parts, valued at USD 3.3 billion.

Of the machinery and electrical and electronic equipment USA exported to the UAE, 78% were machinery and only 22% were electrical and electronic equipment, while 75% of the vehicles were aircrafts and parts and 25% were other vehicles.

Fig. 2. Major products traded between the USA and UAE, 2005





Source: Global Trade Atlas

USA's deficit from trade with GCC reaches USD 15 billion in 2005

USA's imports of USD 27 billion from Saudi Arabia and USD 4 billion from Kuwait, consisting mainly of petroleum oil, were mainly responsible for the total import value of USD 34 billion from the GCC countries in 2005. Thus, despite the surpluses gained from trade with other GCC countries, USA had a negative net trade (trade deficit) of USD 15 billion during the year (Table 1). Relative to USA's total trade with the rest of the world in 2005, imports from GCC accounted for merely 2%, while exports to the GCC, for only 1%.

Table 1. Value of USA's trade with GCC countries, 2003 - 2005

(in USD million)

Country	2005		2004		2003	
	Import	Export	Import	Export	Import	Export
Bahrain	432	351	405	302	378	508
Kuwait	4,335	1,974	3,231	1,519	2,277	1,507
Oman	555	593	418	330	695	322
Qatar	448	986	387	455	331	408
KSA	27,228	6,830	20,959	5,257	18,069	4,596
UAE	1,469	8,477	1,143	4,086	1,128	3,508
Total GCC	34,467	19,211	26,543	11,949	22,878	10,850
Net trade	-15,256		-14,594			-12,028

Source: Global Trade Atlas

Saudi Arabia was the largest import market of the USA in the region. About 79% of USA's imports from GCC, valued at USD 34.5 billion, were from Saudi Arabia while 13% were from Kuwait. Of the remaining, 4% were from UAE while Bahrain, Oman and Qatar had nearly equal shares. On the other hand, UAE was the largest export market of the USA in the GCC. Of the USD 19 billion exports to the GCC, 44% were destined to UAE; while 36%, to Saudi Arabia; 10%, to Kuwait; 5% to Qatar; 3% to Oman and 2% to Bahrain.

Although trade with GCC remained low compared to the level of trade of USA with its major trading partners, the rate of increase of trade with the former far exceeded the average rate of growth. The USA has signed or is scheduled to sign FTAs with GCC countries; further raising expectation for greater acceleration in trade between the USA and the GCC.

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BUSINESS

Emaar Economic City and Savola Group in plastic industry tie-up

(By our correspondent)

11 July 2008

Print E-mail

JEDDAH - Emaar, The Economic City, and Savola Group are to establish a plastic industry cluster in the Industrial Zone of the King Abdullah Economic City.

As per the memorandum of understanding (MoU), Savola Packaging Systems (SPS), the wholly owned subsidiary company of Savola Group will be the strategic partner of Emaar EC in carrying out necessary studies to identify product lines and determine raw material prices, optimum volume, capacities and product research and development for maximum value generation, and in creating a global plastic industry hub within the KAEC Plastics Valley.

For the purpose, Emaar EC, the Tadawul-listed company developing KAEC, has signed a MoU with Savola Group through SPS.

Fahd Al Rasheed, CEO and board member, Emaar EC, and Dr. Sami Baroum, managing director, the Savola Group, signed the MoU in Jeddah recently, according to information made available to Khaleej Times here yesterday.

SPS is a wholly owned subsidiary of the Savola Group, a Saudi joint stock company with diversified business interests. It is a leading Saudi player in the plastics packaging industry locally and internationally.

“The KAEC Plastics Valley, which was unveiled by Custodian of the Two Holy Mosques King Abdullah during his recent visit to KAEC, has already become an investment destination for plastic industries from around the world. SPS is a leader in the plastics industry regionally and has proven its competencies through sustainable growth models,” said Al Rasheed. “By joining hands with SPS in driving forward the development of the KAEC Plastics Valley, Emaar EC is creating a vibrant hub for the plastics industry,” he added.

“This is in line with the vision of the Saudi Arabian General Investment Authority (SAGIA), KAEC’s prime facilitator, to make Saudi Arabia one of the top-ten most competitive economies in the world. The Plastics Valley initiative will lead to employment generation and the growth of ancillary industries, thus complementing our developmental vision of ushering in socio-economic prosperity,” he said.

Baroum said that the KAEC Plastics Valley is a significant opportunity for growth for the region’s plastics industry. SPS is a leader in the plastics sector, and the MoU with Emaar EC will help shape plastic industry cluster that will make KAEC the regional and global hub for the industry.

“Through the MoU, SPS will serve as an anchor tenant or manufacturer in the Plastics Valley, and work to strengthen the involvement of international investors as co-anchors. Our objective is to align the plastics industry to meet the needs of our clients and major raw material suppliers,” commented Mohammad Amin Kashgari, CEO, of SPS.

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Plastic for the people

The growth of the Gulf petrochemicals industry continues unabated. But the availability of cheap feedstock, high liquidity and strong demand in Asia cannot be taken for granted. How much longer can the boom last?

Oliver Klaus reports

Few, if any, industries have gone through more profound changes than the Gulf petrochemicals industry in the past 20 years. From infant industry to world-scale player, giant petrochemical complexes such as those in Saudi Arabia's twin industrial cities of Jubail and Yanbu and in Iran's special economic zones at Bandar Imam and Bandar Assaluyeh bear witness to the scale of development.

But although billions of dollars have been poured into ramping up capacity across the region, the investment boom is far from over. On the contrary, the next – and largest – investment phase in the Gulf is now under way. Up to $35,000 million is expected to be pumped into new projects in the coming five years and production will hit new highs by the end of this decade, when most of the world's new petrochemical capacity will be located in the region.

"Approximately 50 per cent of the world's new olefin and polyolefin capacities will be installed in this region within the next five-seven years," says Hubert Puchner, chief executive of Abu Dhabi Polymers Company's (Borouge's marketing arm). "The reason is very obvious: to capitalise on the huge availability of very competitively priced feedstock. We see a similar pattern all over the region as countries reduce their dependency on crude oil business and go one step down the value chain."

The bulk of the investments will flow into projects converting ethane – the region's preferred feedstock – into ethylene and ethylene-based derivatives such as polyethylene (PE) and mono-ethylene glycol (MEG). As a result, regional ethylene production will be close to the 15 million-tonne-a-year (t/y) mark in 2005 – about 15 per cent of the world's total production. By 2010, ethylene capacity is set to reach nearly 25 million t/y – driven primarily by new additions in Iran and Saudi Arabia, where at least 15 cracker projects are due to come on stream in the next six years (see table 3). According to US-based CMAI, Middle East PE capacity will grow by 10.4 million tonnes between 2002-10.

The numbers are impressive, particularly as ethylene production capacity in the Middle East stood at less than 1 million t/y only two decades ago. However, questions about the sustainability of the petrochemical boom in the Gulf are already being asked. Will ethane feedstock continue to be made available and how will it be priced? Do the regional companies have the required marketing capabilities to sell their products? Will global demand be sufficient to absorb the sheer volume of output?

> **"There is going to be a much heavier reliance on non-associated gas"**
>
> Roger Newenham, group manager, Jacobs Consultancy

Associated gas

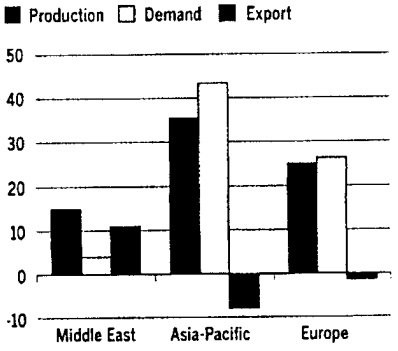
The rationale behind the ethylene build-up is clear. The low cost and wide availability of ethane have meant regional projects that crack ethane into ethylene have an edge over the largely naphtha and natural gasoline-based – and thus oil price-dependent – industries in Asia, Europe and the US. The competitive edge is reflected in ethylene production costs, especially in a high oil price environment. According to UK-based Jacobs Consultancy, the cash cost of ethylene production in Saudi Arabia was $80 a tonne in July, compared with about $294 for natural gasoline-based ethylene produced on the US Gulf coast and almost $215 a tonne for naphtha-based Chinese product.

Ethane crackers and ethylene-based downstream units have provided the main opportunities for Gulf producers to cash in on this feedstock advantage. So far, companies such as Saudi Basic Industries Corporation (Sabic) and Iran's National Petrochemical Company (NPC) have been at the forefront of setting up world-scale olefins complexes. Other regional players with major production sites and expansion plans under way include Borouge, Kuwait's Equate Petrochemicals Company and Qatar Chemical Company (Q-Chem). Moreover, the opportunities have not gone unnoticed by the private sector – especially in Saudi Arabia, where a growing number of highly liquid players have started to carry out major olefins projects in the past 18 months.

However, the supply of ethane derived from associated gas is increasingly restrained in the Gulf, as most of it has now been allocated to new projects and little additional crude oil capacity – and therefore associated gas – has been brought on stream in the past decade.

1. TRADE TRENDS

Expected polyolefins trade between the Middle East, Europe and Asia-Pacific in 2007
(million tonnes)



Source: CMAI

"Overall, our Gulf ethane supply/demand balance shows it is getting tight," says Roger Newenham, group manager of the refining, chemicals and petrochemicals practice at Jacobs Consultancy. "But certainly up until 2010 there is just enough supply to meet anticipated demand in projects across the region."

In Saudi Arabia, the next addition of ethane capacity is expected in 2008, with the completion of a 3,800 million-cubic-feet-a-day straddle plant and the Hawiyah gas plant and Juaymah fractionation plant expansions. Thereafter, new ethane supplies will either be linked to increased crude production or will have to be derived from non-associated gas resources. The latter are expected – but by no means certain – to be discovered in the country's southern Rub al-Khali (Empty Quarter), where four international consortia in partnership with Saudi Aramco have started their gas exploration activities.

The situation is similar in Kuwait. Associated and non-associated gas resources are limited. The country has looked at options to import gas from neighbouring Iran, Iraq and Qatar but none are likely to be implemented any time soon. Despite these restraints, Dow Chemical Company of the US and the local Petrochemical Industries Company (PIC) still plan to set up the Equate II olefins complex, which includes an 850,000-t/y ethane cracker. However, further projects of this kind are unlikely in the near future.

"What has happened in recent years is that some of the new projects which came on stream, such as Equate and Borouge, were actually the result of new associated gas finds," says Newenham. "But going forward, I think there is going to be a much heavier reliance on non-associated gas and that is certainly the case in Qatar and Iran."

While the need to focus on non-associated gas developments and a temporary limitation on ethane availability will push up the price of feedstock, which in turn will have the unwelcome side-effect of eating into the Gulf's competitive advantage, the region's strong export position will remain sustainable, analysts say. In addition, Iran and Saudi Arabia are already putting greater emphasis on using alternative feedstocks for ethylene production, such as propane, heavier condensates and naphtha – although these are economically less attractive.

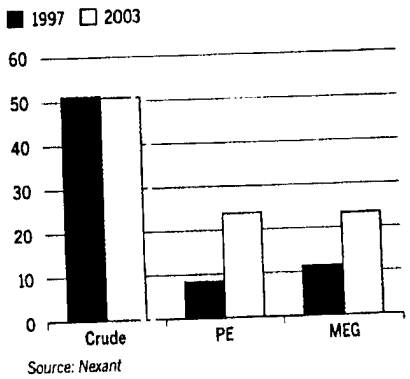
Ethane will remain the feedstock of choice in the Gulf due to its unparalleled cost advantage. Ensuring ethane availability even at a higher price will thus be vital in the next decade when another wave of ethylene-based projects is planned in the region. Securing ethane and producing derivatives is one thing, marketing and selling the product yet another.

Markets

"We can see that by 2010 there will be about 24 million tonnes of ethylene that will be converted into MEG and PE," says Hamad al-Terkait, president and chief executive of Equate. "Where are the markets to come from to cover this figure?" Despite the Gulf's growing population and a comparatively low per capita polyolefins usage of 12-50 kilos a year – compared with 110 kilos in the US – regional growth will not be sufficient to absorb the bulk of the products. Analysts say that Asia will remain the prime market for Gulf producers, with China, the world's fastest-growing economy, taking a leading role. In 2003, PE and MEG from the Middle East accounted for 23 and 24 per cent respectively of China's total imports of these products. In 2007, the Asian giant is expected to require about 13 million tonnes of PE alone, half of which is to come from imports, according to

2. CHINESE DEMAND

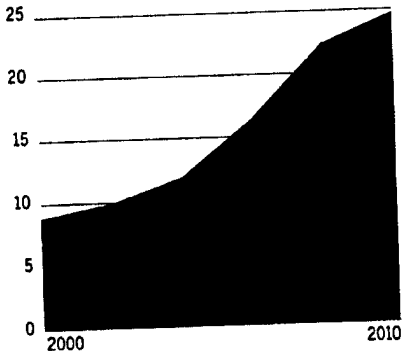
Middle East crude oil and chemical exports to China, 1997-2003
(percentage share of total imports)



Source: Nexant

3. ETHYLENE CAPACITY

Middle East ethylene capacity, 2000-10
(million t/y)



Source: MEED; Equate

UK-based consultant Nexant ChemSystems. German chemical group BASF estimates the number of Chinese consumers of chemical products to grow almost 10-fold, from 76 million in 2001 to 701 million in 2015.

"Besides the massive move of volumes from here [the Gulf] to the eastern world, mainly to China but also more often to India, other markets like Europe will turn from export markets to import markets and even in the US we will see some significant changes," says Borouge's Puchner. "We can expect further market growth in Asia, India, the Middle East and Africa in the range of 6-10 per cent a year, although the industry is maturing and entering a lower growth phase of its lifecycle on a global basis."

Even though the outlook for world demand is positive, the olefins industries of the Gulf will have to ensure the best possible access to consumer markets. This will include improving marketing capabilities and setting up dedicated sales organisations, instead of relying on traditional networks of traders, agents and distributors. Investments similar to the one undertaken by Sabic, with the 2002 acquisition of DSM Petrochemicals of the Netherlands, is another possibility, enabling Gulf producers to access new markets and crowd out their foreign competitors.

Reliance on the international markets would also be reduced by the development of a Gulf downstream plastics industry, a move that would create much-needed employment. Finally, some regional players contend that the Gulf needs to present a more united front overseas, with the establishment of a regional plastic industry association as a possible first step. The challenges facing regional petrochemicals producers are huge, but they are not insurmountable. And the potential returns will continue to drive one of the fastest-growing and most exciting industries in the world. ■

Regional attraction for Tractebel

Belgium's Tractebel has returned to the Gulf private power market with a vengeance this year. The company's chief executive for the Middle East, Guy Richelle, talks to Clare Dunkley about Tractebel's regional strategy

Why did Tractebel stop bidding in the Middle East market in late 2002?
Our parent, [France's] Suez Group, put in place an action plan, the main objective of which was to reduce debt exposure. This was driven by the absence of liquidity on the global market, in turn driven by problems in the international economy. To reduce debt, the company was looking at fewer opportunities worldwide. Now that the action plan has been completed, Tractebel is again looking for openings, although in a conservative manner.

What are the particular attractions of the region for developers?
Middle East projects offer a predictable rate of return, which can offset riskier but more lucrative opportunities elsewhere. Developers get long-term PPAs [power purchase agreements] with creditworthy governments carrying investment-grade ratings. And the revenues are dollar-denominated, insulating us from exchange rate risk. We have been in the region for more than 10 years – going back to the Al-Manah project in Oman – so we are very accustomed to dealing with the region's governments. And there are multiple opportunities opening up there at the moment. Obviously the long-term political problems in the Middle East are something we constantly assess, but the countries where we are active are very stable.

Having just signed up for both the Al-Ezzal independent power project (IPP) in Bahrain and the Sohar independent water and power project (IWPP) in Oman, what are the particular attractions of these projects?
In Bahrain, we got a 20-year PPA from the government, which has a very good sovereign credit rating, and, again, revenues are dollar-denominated. The kingdom has a well established legal framework. It diversifies our regional portfolio, but that was not a major factor in our going for the project, which was assessed on its own merits. The process was very smooth and transparent, with the Ministry [of Finance & National Economy] hitting all its deadlines. In Oman, we got a 15-year PPA and it is a market we know well.

"Middle East projects offer a predictable rate of return, which can offset riskier but more lucrative opportunities elsewhere"

Some of the competitors were surprised at your price on Al-Ezzal, which was 16 per cent lower than your nearest rival. What would be your response?
To put together such a bid, you need competitive EPC [engineering, procurement and construction], O&M [operation and maintenance] and financing prices. Our Al-Ezzal bid met Tractebel's normal internal profitability criteria.

Are there enough developers and EPC contractors to ensure a competitive market?
There was some talk among developers about a year ago about capacity and some concerns were expressed on the government side in Oman, but then Al-Ezzal got five bids and Sohar got four, which suggests that there isn't a problem. We have had no troubles finding good EPC contractors.

What are you looking at next? Is there a certain balance you look for between greenfield and brownfield projects?
We are still looking at the documents for the Shouaiba and Marafiq [Power & Water Utilities Company for Jubail & Yanbu] IWPPs [for which requests for proposal were issued in July] in Saudi Arabia and we will look at the pros and cons of each before deciding whether to bid on one or both. We submitted a bid for UAE's Taweelah B and came second highest to [Japan's] Marubeni [Corporation]. There is no particular balance we are looking for in the region between greenfield and brownfield. Again, each project is looked at on its own merits. ■

TRACTEBEL MIDDLE EAST PROJECTS

Location	Project	Year	Capacity (MW)	Involvement
Oman	Al-Manah IPP	1994	270	Sole developer
Abu Dhabi	Taweelah A1 IWPP	2000	1,430	Joint developer with France's Total
Bahrain	Al-Ezzal IPP	2004	1,000	Joint developer with Kuwait's Gulf Investment Corporation
Oman	Sohar IWPP	2004	585	Sole developer
Abu Dhabi	Taweelah B IWPP	2004	1,070	Second highest bidder with the UK's International Power for acquisition of existing plant and expansion to 2,000 MW

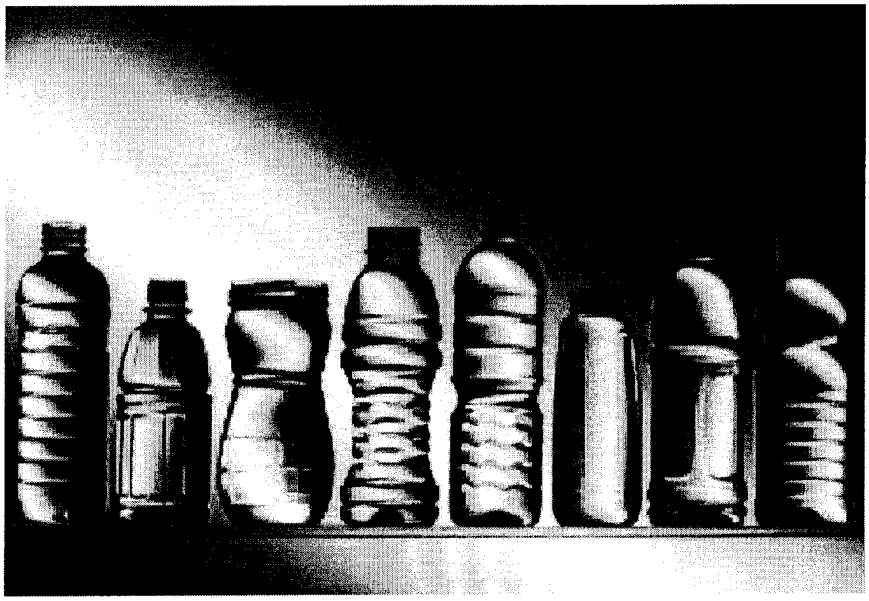
IPP: independent power project; IWPP: independent water and power project; na: not available Source: Tractebel

Polymer satisfies commodity as well as value-added market needs

Be it molecular weight distribution, the selection of copolymers, or the adjustment of the molecule structure, the properties of polypropylene (PP) can be affected by a variety of parameters.

The wide range of performance characteristics and properties of PP enable its penetration into very diverse markets—automotive interior and exterior applications, packaging and housing, fibers, pipes, and medical devices, just to mention a few.

Polypropylene is no longer regarded as an inexpensive material for making mass-produced articles at the lowest possible price. Now the material (in fiber-reinforced form, for example) has begun to conquer new application areas in which engineering plastics are used, such as automotive bumpers (90% are made of PP). As a result, manufacturers such as LyondellBasell Industries, the world's largest polyolefins producer, are not just suppliers of PP; they also serve as problem solvers, employing a material with an ideal cost-to-properties balance.



Polypropylene can offer some material advantages such as lower density in blowmolded containers and hot-fill capability that competitive resins such as PET, polystyrene, or vinyl don't provide.

Commodity driven

Between 2003 and 2007, worldwide polypropylene consumption increased by nearly 5%/yr toward 45 million tonnes. At present, extensive new capacity is being created in the Middle East.

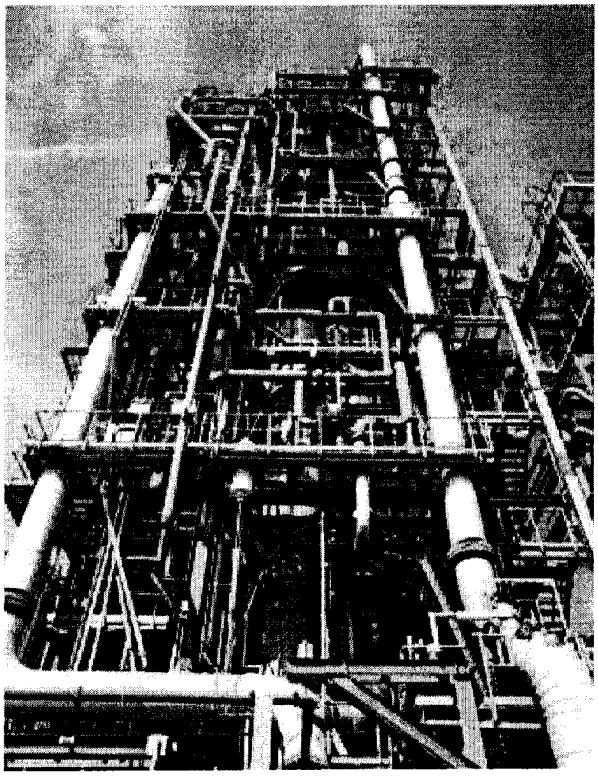
Until recently, the PP market was mainly commodity-driven, primarily standard applications in which price counts. As a result, these resins can only be produced economically by worldscale plants. Although transport costs have to be added, it is possible to bring competitive products to the market, especially when a close link to the requisite raw material source is assured. This is the case in the Middle East, and also in backward-integrated companies. The worldwide PP capacity is currently close to 50 million tonnes/yr. The highest capacities are in Asia (20 million tonnes/yr), North America, including Mexico (10 million tonnes/yr) and Western Europe (10 million tonnes/yr). The Middle East currently has a capacity of 3.3 million tonnes (up from 2 million tonnes in 2003), but it will double existing capacities within the next two years.

New processes

Global development is mainly driven by Asia-Pacific—and especially China. Growth rates up to double digits are currently forecast for this region. More than 50% of global PP production is currently manufactured using LyondellBasell's Spheripol process. The company's Spherizone process technology has now been added to this, which facilitates the production of PP variants with selectively adjusted, multimodal molecular weight distributions through the use of multizone reactors. The Spherizone process has already been installed in 10 facilities worldwide, corresponding to an output of about 3 million tonnes.

Driver in packaging

This trend has contributed toward increasing the market weight of PP specialties over the recent past. It includes an industry trend toward wall thickness reductions in packaging production. Thin-walled products help save raw material costs. One example of current new developments is LyondellBasell's new Clyrell EC340R, which is characterized by a combination of rigidity and flowability, leading to a wall-thickness reduction of up to 10% in ice cream packaging. Another advantage of PP packaging grades is the density—the difference compared to PET is approximately 30% (compared to PS: 20%,



LyondellBasell's Spherizone PP process technology permits producing polymer varieties with selectively adjusted multi-modal molecular weight distributions.

PVC: 25%)—and the higher production throughput of PP. All in all, this can lead to significant cost advantages for PP materials, shifting the balance more and more in favor of PP solutions, despite volatile raw material prices.

In injection stretch blowmolding, new PP grades permit a broad processing window through a defined molecular mass distribution. One example is LyondellBasell's Stretchene resin, a PP material characterized by advantages in terms of stiffness, transparency, impact strength, and production efficiency compared to conventional PP grades. Furthermore, the lightweight material (density: 0.9 g/cm^3) is used in thin-walled bottles that are stacked on pallets and are hence not permitted to deform under load.

Another argument in favor of PP is the temperature resistance compared to PET, which permits the largely germ-free filling of hot liquids. PET grades with comparable temperature resistance are more expensive. One example of an innovation in this field is Clyrell RC 514L: The resin provides not only a higher level of transparency but also the required stiffness and ease of processing in customer applications.

Thus, this material can be used in the form-fill-seal process, which has thus far been dominated by PS and (with some limitations) PET. Adstif HA740J has been the PP material of choice for customers producing preformed multilayer barrier food packaging. The new resin is a nucleated, high-crystalline PP material used in sheet extrusion and thermoforming applications, offering improved processing, high transparency, and stiffness without loss of impact resistance.

In the states of South East Asia too, there is a trend toward higher-grade film packaging, even though the solutions do not need to be as sophisticated as in the West. It is expected that the packaging sector—and hence the PP used in this field—will experience above-average growth rates in the future.

Growth in pipes

PP also exhibits increasing demand in pipe systems. Already in use for more than four decades in this application, the highest development potential lies in waste water and drainage applications, where PP materials offer good physical properties for solid-wall and structured-wall pipes. Producers of PP pipes place emphasis on better stiffness and service life in order to provide an alternative to more traditional materials such as concrete or clay. One of the newest materials used by pipe producers is LyondellBasell's Hostalen PP H2483 produced with the Spherizone technology. This grade is characterized by a high tensile modulus of elasticity (1750 MPa) and is used by customers especially in sewage- and drainage-pipe applications.

Metallocene-based PP

In addition to this, producers such as LyondellBasell, with its Metocene resins, are launching PP grades based on metallocene catalysts. Their narrow molecular weight distribution means they exhibit a high degree of purity, improved dimensional stability, and particularly high transparency. These resins are used by customers in nonwoven textiles that are required to have high strength, such as in nonwovens for respiratory masks, as well as in laboratory technology products.

Medical devices

Another key market segment increasing in significance is medical devices. PP is growing up to 6%/yr in Europe alone, i.e., faster than in the region in general—and not only as the basic material for one-way syringes. The market calls for materials that not only offer a high degree of purity but also specific quality assurances and customized service packages. Purell resins from LyondellBasell, for example, are not only replacing glass, which can readily fracture, but they can also meet users' needs through the valuable quality assurances regarding the composition of the polymer. This helps the customers to recover the costs of the certification procedures through a long market presence and to avoid renewed tests on the applications in the event of changes to the material.

Outlook

PP still has significant potential to substitute other materials such as PVC and PS, as well as ABS and PET. Worldwide polypropylene consumption is therefore expected to continue to grow at a rate of about 5%/yr during the next five years.

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BUSINESS

Abu Dhabi unveils 'Polymers Park'

By Haseeb Haider

10 June 2008

Print E-mail

ABU DHABI — Abu Dhabi unveiled its ambitions to setup the Middle East's first 'Polymers Park' to convert its hugely available polyolefins into value-added finished goods for export purposes, in an effort to diversify emirate's oil-dominated economy.

Abu Dhabi Basic Industries Corporation (ADBIC), a subsidiary of government of Abu Dhabi's industrial arm-General Holding Corporation, unveiled the plans, with a model of 'Abu Dhabi Polymers Park', ,to be developed on 4.5 square kilometers, at the Industrial City of Abu Dhabi.

“Once completed, the project will fetch foreign and local investments estimated at $4 billion”, said Jim White CEO ADBIC, while speaking at a Press briefing.

He said that leading names in plastic goods industry from Japan, India, Europe, Australia, US have already expressed their deep desire to benefit from the exciting offering and pre-launch bookings till date have been overwhelming with 30 per cent of the available plots reserved.

Ten top industry giants are in active negotiations to set up their manufacturing units , while one Belgium firm would soon setup its facilities. hoping to come on stream during 2009.

All the projects planned to be launched in the park are expected to go to full capacity by 2012.

The Polymer park will host around 50 plastic product manufacturers, and is set to have conversion capacity of no less than one million tonnes per annum, of which the majority will be exported.

Regional polymer production capacity is expected to double to 33 million tonnes by 2011, and The Park is uniquely placed to take advantage of the increase in raw material availability.

The products to be made will include packaging material , original equipment manufacturing, construction and infrastructure segments including value added goods such as pipes, cables and intermediate blow moulded containers.

Speaking on dynamics of the Polymer Park, Hussain Al Nowais, chairman of ADBIC, said that Abu Dhabi is strategically focusing its resources on diversifying its economy and building a strong manufacturing base.

“ADBIC acts as a catalyst in establishing an industrial base that will compete globally, and the Abu Dhabi Polymers Park is a prime example of this initiative,” said Al Nowais.

Abu Dhabi Polymers Park was attracting both regional and international plastic converting manufacturers who are poised to take advantage of the growth of regional polymer supply, and will deliver best in class technology and industry expertise, ADBIC chairman said.

The investors will benefit from competitive long-term lease rates, utilities and quality labour, access to a secure supply of raw material, and state of the art onsite logistics and technical centres.

Abdullah Al Darmaki, vice-president for Petrochemicals at ADBIC, added that, “Abu Dhabi is uniquely placed to become a world centre for plastics conversion with ready access to raw materials and export routes."

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A full package from Saudi plastics

Advanced polymer synthesis has been a goal of joint-venture tie-ups under the Kingdom's industrial diversification programme. Now plastics in general and packaging in particular are bringing in export earnings of US$2 billion plus, from Asia in particular.

ESTABLISHED 50 YEARS ago the Kingdom's sophisticated and world-class plastics industry is playing a key role in diversifying the economy away from oil and gas, while valorising surplus gas resources at the same time. It is also contributing a major share of the world's thermoplastic products and intermediates trade, keeping prices reasonable for the 20th century's most important new manufacturing material and ensuring future security of supply through co-operation with long-established chemical industry partners like Mitsubishi Heavy Industries and Sumitomo Chemical. And it is successfully forging links with newer operators like Fujian Petrochemical in China, which country is now the largest single global source of plastics-based consumer products. Saudi Arabia's concentrated, diversified and well served industrial districts like Jubail now provide splendid investment opportunities for further participation in this sector of the booming Saudi economy.

The Kingdom now exports from its own suite of modern factories a wide variety of thermoplastic resins, tubes, intermediate products for further processing and finished polymer-based merchandise, as well as a more limited range of thermoset plastic commodities. These all represent significant value adding and employment creation from its surplus energy resources. Thermo resins output began back in 1987 when key downstream operator Sabic started supplying the many import-dependent plastics factories already sited independently around the country; combined polymer output is in excess of 4mn tpa.

Plastics manufacturing as practised in Saudi Arabia today is based on advanced polymer synthesis from the abundant hydrocarbon resources, and local compounding of the resulting intermediates through the use of a wide range of special additives which give desired physical properties to the resulting bulk resins such as colour, light resistance, temperature stability, flame retardancy and even lubrication. Alloying as carried out by some of the polymer manufacturers produces a range of tradable chips, powders or other forms which combine several of these properties and which are snapped up by consumer goods manufacturers in the Far East.

Polyethylene, widely used because of its extreme flexibility in the packaging industry (see below), PVC (construction products), polypropylene (fibres and packaging) and polystyrene (many consumer products) are the most important Saudi plastics products, but the industry's complete offerings include a wide range of specialised aromatics (for further processing) also.

The commodity resins are relatively low-tech products indistinguishable from foreign competitors', except that they can be produced at exceptionally low cost from gas in this country and are therefore targeted by foreign investors with an eye to trading overseas – especially in Asia. Many foreign competitors, even Sabic's own manufacturing division in Europe, have to use naphtha. Advanced technology for the more specialised intermediate and engineering resins is now being sought out by individual Saudi plastics producers because these command much higher prices internationally, and because there is a large unfilled market for them at home, too.

Sabic itself is the key operator in this huge industry, and its key manufacturing units include:

SABIC - Key Manufacturing Units

Business	Location	Products
National Plastic Co/Ibn Hayyan	Jubail	VCM, PVC
Arabian Industrial Fibres Co/Ibn Rushd	Yanbu	aromatics, various chips
Jubail Petrochemical Co/Kemya	Jubail	polyethylene
Arabian Petrochemical Co/Petrokemya	Jubail	ethylene, polystyrene, aromatics, other
Saudi Petrochemical Co/Sadaf		ethylene, styrene, other
Eastern Petrochemical Co/Sharq	Jubail	LLDPE
Ibn Hayyan Plastic Products Co/Tayf	Jubail	boards
Saudi-Yanbu Petrochemical Co/Yanpet	Yanbu	ethylene, polyethylene
Jubail United Petrochemical Co	Jubai	ethylene
Amongst the many independents are the following, most of which are key customers of Sabic:		
Al-Zamil Plastic Industries	Al Khobar	industrial, consumer finished products
Arabian Plastic Compounds Co	Riyadh	PVC compounds
Omran M Al Omran Corp	Riyadh	construction and other materials
Jubail Chevron Phillips	Jubail	aromatics
Rowad National Plastics	Riyadh	misc sheets
Saudi Plastic Products Co	Dammam	UPVC and PE fittings
United Plastic Co	Jeddah	polyethylene film

Apart from those exceptionally low combined raw material and energy costs today's Saudi plastics industry is firmly underpinned by the government's industrial diversification policy. This includes the encouragement of FDI and the import of production technology via the General Investment Authority. The recent investment law allows full ownership by foreign investors, and in other ways puts them on a par with locally-owned businesses as well as reducing the corporate tax bills they face.

Foreign direct investment in plastics production is also encouraged by the existence of strong and growing youth-based markets for attractive materials of all types, both within the Kingdom and in the nearby region, for plastics-intensive products such as packaging and builders' hardware – enhanced by the fact that alternative timber-based materials are hard to find nearby.

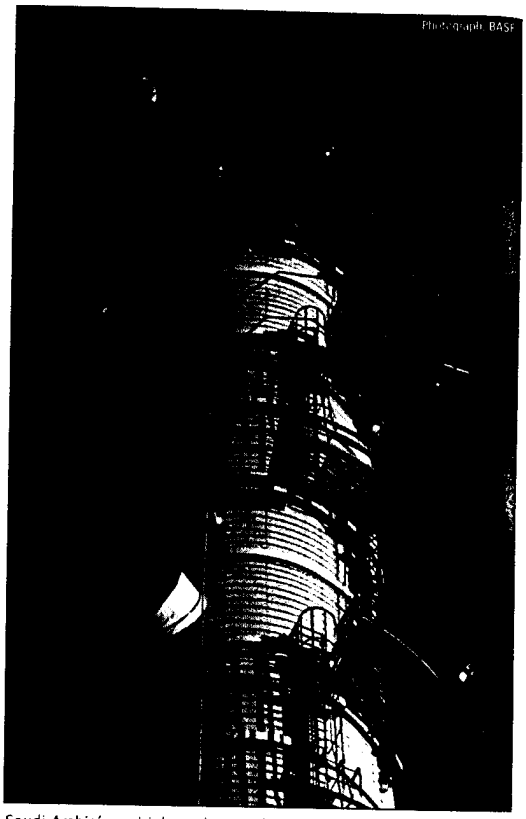
A key staging post in the development of the Gulf's largest downstream processing industry was the purchase by Sabic of a polymers subsidiary of DSM (of the Netherlands) just four years ago, a landmark deal creating Sabic Europe which brought with it advanced production technologies for polyethylene and

polypropylene as well as a central position in one of the world's largest markets for other intermediate plastics products.

Relying on non-associated gas Saudi Arabia's multiple and expanding crackers are amongst the world's lowest cost producers of the essential building block ethylene, which is principally converted into flexible polyethylene and accounts for nearly half of the region's (including North Africa's) entire output of polymers.

Petrokemya, Sadaf, Aramco, United and Yanpet are the key producers, with the first, one of the Sabic affiliates, now producing over 2.5mn tpa alone. New plants now under construction will be coming on stream in Al Jubail and Yanbu in 2008, adding 2.8mn tpa to the Kingdom's capacity

As a result the supply of some of the industry's essential polymer intermediates will soon be abundant, with Sabic's output alone now well in excess of 7mn tpa, including production from its acquired facilities overseas. This means its family members are able to produce at very low cost the essential derivatives such as LDPE, LLDPE, HDPE, PET and PVC, as well as a wide variety of polyesters, polystyrenes and the more complex thermoset resins which can be fed into the downstream plastics industry. This latter now comprises more than 500 individual companies, and as many again involved in moulding and other processing to manufacture a wide variety of international-grade consumer, construction and industrial products.


Photograph: BASF

Saudi Arabia's multiple and expanding crackers are amongst the world's lowest cost producers of the essential building block ethylene, which is principally converted into flexible polyethylene

Key producer

And the slated brand-new cracker and petrochem ca. complex at Rabigh in the west will boost this output of ethylene even higher, with a range of new polypropylene polymers and specialty chemicals included in the planned product line-up.

However domestic polymer producers cannot yet turn out all the bulk materials needed by what is now a very sophisticated industry indeed, so the Kingdom remains a key import market for suppliers of fine petrochemical products based abroad despite its commanding status in not just regional but also global polymer production.

In particular Saudi Arabia is rapidly becoming the world's key producer of polyethylene the basis of so much flexible packaging production, with Sabic itself now being amongst the top four producers worldwide because of its increasing advantage in production costs.

As investment and technology has flowed in the once basic Saudi plastics industry has diversified its output into sophisticated products such as heat and attack-resistant composites and the sort of engineering plastics now used in the automotive, plumbing, aerospace and electrical hardware industries. The main at-home outlet for these is still in the sophisticated packaging industry, especially food and beverage applications, and in the production of special materials for pipework, building fittings, electrical and insulation facilities and specialised wall and floor surfacing materials, all needed to feed the Kingdom's unprecedented building boom.

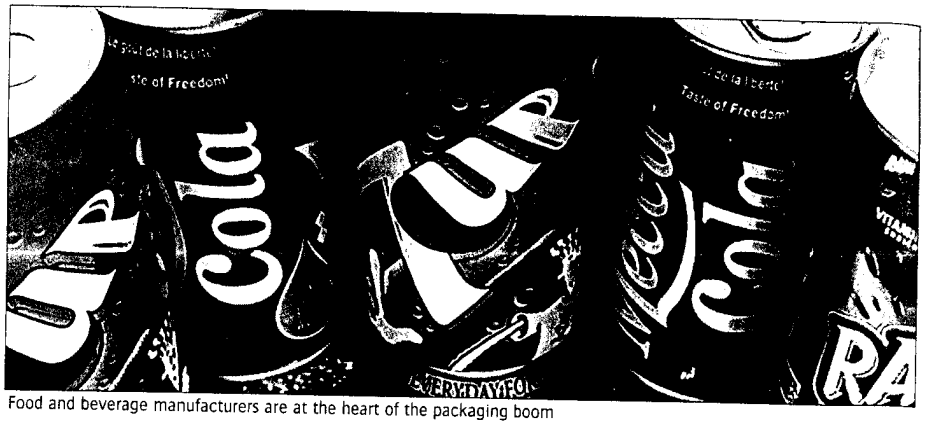
The phased development of these state-of-the-art industries in association with foreign partners such as Mitsubishi and Sumitomo has allowed Saudi Arabia to export nearly US$2bn worth of intermediates, bulk plastics and chips, and finished products such as packaging each recent year. ●

Packaging paramount

'PLASTIC PACKAGING IS expected to make continued inroads at the expense of paper and paperboard in competitive export markets through 2008,' said the US-Saudi Arabian Business Council in a special January 2006 report on the packaging sector*. 'Saud' Arabia has been able to capitalise on the abundance of necessary raw materials for plastics product'on as well as its proximity to growing markets in Asia, to export its plastics and plastics products.'

It pointed out that the Kingdom also has by far the largest and fastest-growing packaging market in the Middle East, accounting for nearly three-quarters of sales in GCC countries.

Amongst the factors driving the industry's development today are the supply capability of the polymers industry (main feature), the sheer size of the food processing industry in part cular (whose growth has been strongly encouraged by the duty-free status for exporters to GCC markets), the performance and potential of the construction ndustry throughout the southern Gulf, and a youthful population used to consuming attract've convenience and snack foods. As a result personal consumption of plastics in the Kingdom is now around 40kg/yr, more than twice the regional average.



Food and beverage manufacturers are at the heart of the packaging boom

Food and beverage manufacturing customers are at the heart of this Saudi packaging boom, said the Business Council which points out export opportunities for US companies. These are exemplified by the huge Al Safi Danone and Al-Marai agribusinesses, who both run very large integrated da'ry farms in the Kingdom and who process milk right through to its aseptic packaging in plastics-based containers

Number-one operator Tetra Pak Saudi Arabia has invested US$65mn in a spec al p ant in Jeddah wh ch supplies the specialised fibre- and plastics-based materials needed for completely safe liquid foodstuff packaging on a region-wide scale. And similar examples of success can be drawn from the construction hardware and other industr'es, for whom plastics products and their packaging (eg mo sture-excluding resealable twin-skin bags for powders) are an essential part of reg onal export growth. These plastics-based packaging products are also widely exported to Southern As'a and the Far East; some even reach Europe too.

The Council pointed out that, as part of its catchy 'Beyond petroleum' de.elopment strategy BP-owned petrochemical business Innovene has recently partnered w th loca. company De ta International to bu ld a new US$2 billion plast cs packag ng plant r Jubail, supp ed w th ethylene from ts very ow cracker - an excellent examp e of integration with n the Kingdom's d versificat on programme. Like so mar , others this new complex w ll serve the As an export markets pr mari ,. ●

* www.us-saudi-business.org

Plastics demand grows in Dubai

WITH THE EXPANSION of the non-oil economy and flourishing construction industry, demand for plastic products has grown rapidly in Dubai. This has lead to a growth in plastic production, which has, over time, reduced dependence on imports. At present, the plastic products market in Dubai is considered one of the largest markets in the region.

There are 119 establishments manufacturing plastic and rubber products in Dubai. Their paid up capital totalled Dh1.3 billion (US$354mn) with a turnover also of Dh1.3 billion (US$354mn) by the end of Q1, according to the DCCI membership database.

The plastic industry in Dubai has diversified into different products especially plastic pipes, seamless tubes, plastic fittings and accessories used in plumbing and electric installations in buildings and drainage. This, in turn, is driving the growth of the plastics industry as well. These factors have also led to an increased demand for household and other consumer plastic products.

Salamullah, general manager of Kangaroo Plastics told Khaleej Times, "In the last decade, the greater growth spurt has come from plastic products for packaging because of a growing population and greater consumer spending. Our company manufactured polyethylene sheets, pharmaceutical grade paper with a turnover of Dh60mn (US$16.34mn) in 2005. Along with its sister concern Emirates Technopack the company is setting up a new factory at Jebel Ali Free Zone by the end of this year. This new facility will cater the huge demand of plastic and packaging products in the local and export market effectively."

He also added: "We are setting up the new plant to fulfil the demands of our products in the AGCC countries and at present we have a production capacity of 7,200 to 8,400 tonnes per year with huge demands for polyethylene construction sheets, aluminium foil lids, and warning tapes."

At the AGCC Country level, the UAE ranked second in the plastics industry after Saudi Arabia. The most locally produced plastic product is pipes and household products. UAE invested around Dh504 million, this has lead to a growth in plastic production, which over time will reduce dependence on imports.

While production is mostly for the domestic market, Dubai plastic industry also exports a significant portion of its output. Packaging products such as bags and containers lead the exports by the tableware/kitchenware category.

In 2004, Dubai's direct exports of plastic products reached Dh480mn (US$130.79mn), while re-exports reached Dh1.9 billion (US$517mn) and imports totalled Dh5.2 billion (US$1.41 billion) over the same period. The petrochemical industry in the UAE has witnessed a huge increase in the last decade, the value of investments in the sector in 2005 totaled Dh15 billion (US$4.87 billion), which represented 22 per cent out of the total manufacturing investments in UAE, according to a DCCI report.

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تصنيع منتجات البوليسترين

Polystyrene Products Industry

Polystyrene industry - Polystyrene products belong to the petrochemical industry, produced from high-density spherical beads of polystyrene. Among consumer goods, it is visible as the thick, soft white moulded blocks used in the packaging of consumer electronic goods and as disposable crockery. However, the larger application of polystyrene products is as insulation materials in construction. The raw material, high density beads, is itself an industrial product, produced by large-scale polymer plants. The global industry is dominated by large scale plants found in China, Taiwan, Europe and USA, which have developed huge petrochemical capacities. In contrast to the large scale raw material producers, the downstream polystyrene products industry is dominated by SME's (small and medium sized enterprises).

Polystyrene Products - The raw material (plastic beads) can either be expanded or extruded to produce two types of products, viz. Expanded Polystyrene (EPS) and Extruded Polystyrene (XPS). While the raw material is exactly the same, the production process leads to different products with different features and different applications. The key application of polystyrene products is in buildings insulation, packaging and disposable crockery.

Production process of Expanded Polystyrene - EPS is a short, lightweight, rigid, plastic foam insulation material produced by the expansion and fusion of plastic "beads" – by using small amounts of pentane gas dissolved into the polystyrene. This final expansion is approximately 40 times of the original polystyrene bead. Subsequently, the EPS beads are moulded into appropriate forms. Extruded Polystyrene begins as a continuous mass of molten material. Polyurethane foam results when two separate ingredients (an isocyanate and a polyol) are mixed and react with one another.

Polystyrene insulation - Expanded or extruded polystyrene provides the long-term energy efficiency now demanded in the construction industry. Heating and cooling account for 50-70% of the energy costs in an average building, and the stable thermal performance of these insulation materials can result in significantly lower heating or cooling costs. The flexibility of the material and products means that they can be used in every part of a building – foundations, walls and roofs. The saving in energy translates into conserving non-renewable fuel supplies, and the lower deployment of fuel resources also means lower air pollution.

EPS and XPS - Globally, approximately 65% of the demand for EPS products comes from the construction industry, and the remaining 35% from packaging. In construction, it is used for insulating and energy saving in the walls and roofs. EPS mouldings are inserted into wall materials like hollow blocks and bricks. It is a major insulation material for construction and is in usage for this purpose for over 40 years. Depending on the application, market shares of EPS solutions vary from 95% (ground floor insulation) to 10% (cavity wall insulation). XPS products in construction are more applied in roofs as the requirement is for flat sheets and not mouldings. Besides this, disposable crockery is its next most important application.

Energy saving - The Dubai electric company estimates that the power requirement of the buildings in the country can be reduced by up to 40% by installing thermal insulation systems in buildings. Consequently, since 2002, Dubai municipality has made the installation of thermal insulation system in all the new buildings obligatory. The guidelines and technical specifications for thermal insulation are specified separately for roofs and walls. This is specified by R value (a measure of resistance to heat flow) of insulation material to be used for thermal insulation in the building.

Construction regulation and demand - The demand of EPS products in construction is considerably boosted by government construction regulations in many countries, which makes it obligatory to use insulation material in construction. In countries without such regulation, there is less demand for construction, and their demand is dominated by packaging and disposable crockery.

Extruded Polystyrene possesses 30% higher R-Value (5/inch of material) as compared to its expanded polystyrene (3.85/inch of material). This, roughly, translates to an additional 30% extra EPS material requirement to obtain the same heat flow resistance. The administrative order issued by the Dubai Municipality is a significant development and expected to boost the demand for building thermal insulation and thus increase demand for extruded polystyrene (XPS).

Rapid demand growth – The construction boom in the country has led to rapid increase in demand for expanded polystyrene products. The value of net imports has doubled between 2001 and 2005, growing at an average of 18% per year. The rise in imports (weight) has been somewhat modest, viz. 17% in four years.. Industry sources estimate only 15% of the total imports are for expanded polystyrene and rest for polystyrene products.

Net Imports of Expanded Polystyrene and Polystyrene Products, In tons and 000 AED

Year	Imports		Re-Exports		Net Imports	
	Qty.	*Value*	*Qty.*	*Value*	*Qty.*	*Value*
2001	15,997	47,021	258	1,317	15,739	45,704
2002	13,349	37,749	260	668	13,089	37,081
2003	16,796	55,632	370	838	16,426	54,794
2004	13,594	59,432	93	325	13,501	59,107
2005	18,381	89,781	72	456	18,309	89,325

Source: Trade Statistics of various Emirates

EPS manufacturing in U.A.E. – There are three manufacturers of expanded polystyrene in U.A.E., one in Dubai and two in Sharjah. Manufacturing started with the first plant established in Sharjah in 1979, by a company which has pioneered production and marketing of polystyrene products in the country. It produces mostly insulation material for construction and controls over 50% of the market for expanded polystyrene in the UAE. A second plant was set up in Dubai in 1984 as a sole proprietorship and manufactures expanded polystyrene insulation material in forms of boards and blocks. The last plant was set up in Sharjah in 2000.

XPS manufacturing in U.A.E. - Domestic production of XPS products in U.A.E started in 2003, and is currently estimated to be in the region of three thousand tons per annum. As a result of domestic manufacturing, imports have come to a virtual halt, and almost the entire demand is being met by domestic manufacturing (exports and re-exports are negligible).

There are two specialized processing units for manufacturing extruded polystyrene in the UAE, one each in Sharjah and Ajman. The first in Sharjah is a pioneer in the production and marketing of polystyrene products in the UAE. . It started producing EPS products in 1979 and controls almost half the market for such products. In 2003, it entered extruded production with nominal production capacity of more than 4500 square meters per day. The other firm specializes in the production of extruded polystyrene insulation boards.

Outlook – According to industry sources, the global usage of EPS/XPS products in construction is increasing at about 10% per annum, while the usage in packaging/crockery is growing even faster at more than 15% per annum. One constraint in growth is the environmental problem which is an issue with most plastic products. This does not apply to usage in construction, where materials "disappear" in civil works. The problem is with disposing packaging waste and polystyrene crockery. While the materials can be recycled, collection is an issue. Very often the products get contaminated, particularly disposable crockery, which increases the cost of recycling. Consequently, there may be some constraints in EPS/XPS consumer goods applications, and already there is a shift to pulp for packaging of smaller products. However, role of this industry in construction is set to grow with obligatory regulation for energy saving.