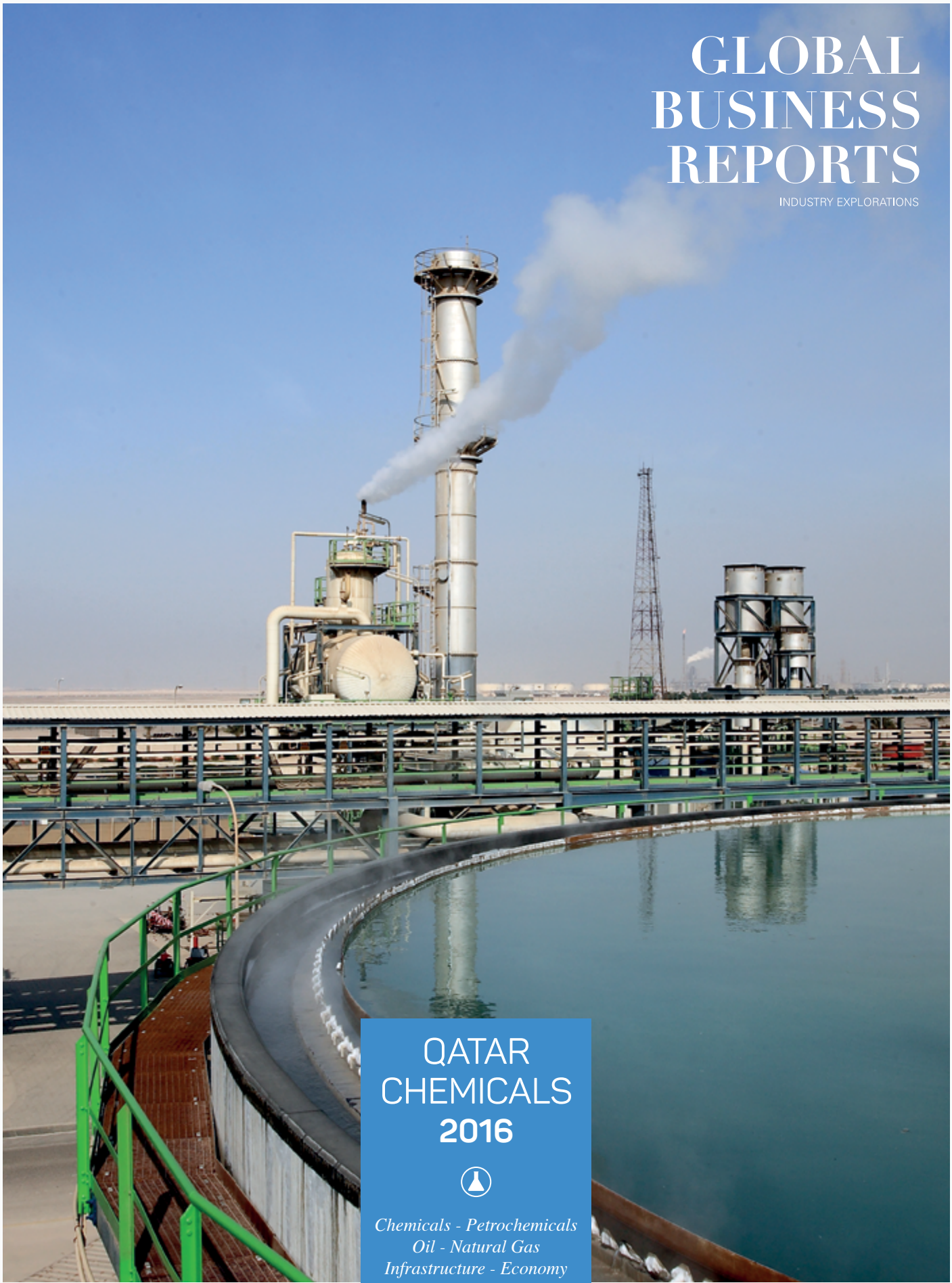


GLOBAL BUSINESS REPORTS

INDUSTRY EXPLORATIONS

QATAR CHEMICALS 2016

Chemicals - Petrochemicals
Oil - Natural Gas
Infrastructure - Economy
Private Sector

CHEMICALS IN QATAR: TAKING A STEP BACK

QATAR AT A GLANCE

Source: CIA World Factbook

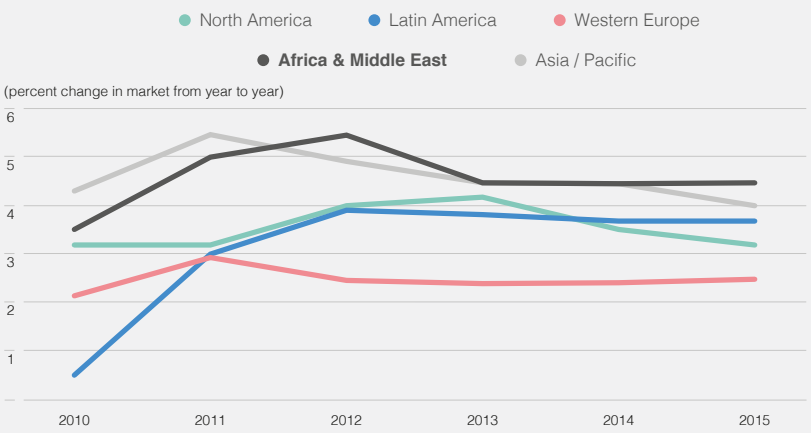
Population: 2,194,817 (July 2015 est.)
Land Area: 11,586 sq km
Official Language: Arabic
Capital: Doha
Chief of State: Amir Tamim bin Hamad Al Thani (since June 2013)
Head of Government: Prime Minister Abdallah bin Nasir bin Khalifa Al Thani (since June 2013)
Growth Domestic Product: $306.6 billion (2014 est.)
Growth Rate: 4% (2014 est.)
GDP per Capita: $137,200 (2014 est.)
Economic Sector Breakdown: agriculture: 0.1%, industry: 68%, services: 32.1% (2014 est.)
Exports: $131.6 billion (2014 est.): liquefied natural gas (LNG), petroleum products, fertilizers, steel
Imports: $38.23 billion (2014 est.): machinery and transport equipment, food, chemicals
Major International Trade Partners: Japan, South Korea, India, United States, China

Energy is power, and Qatar's power comes from its abundance of cheap energy through its natural gas reserves. Qatar attained the title of the largest global exporter of liquefied natural gas (LNG) through the diligent efforts of its government to develop the industry through the necessary infrastructure, capital investments, and foreign partnerships for the export market. Having established a world-class LNG export industry and local feedstock system, Qatar has begun to diversify its rich economy by looking toward the downstream sector and has taken significant steps toward developing its industrial base, including chemicals and petrochemicals.

Qatar Petroleum (QP), the national oil and gas company that owns a stake in nearly all the major chemical projects in the country has long sought to be a worldwide player, but the country needed the expertise and systems from abroad to achieve the highest international standards within the designated industrial areas. An example of how the country has created state-of-the-art industrial areas can be seen in Gasal, a partnership formed between QP, Air Liquide, and Qatar Industrial Manufacturing Co. (QIMC). Air Liquide brought the technology and operational know-how; QIMC was already present with local nitrogen production capacity and contributed its own vision for how the market should develop based on its local knowledge. Through the efficient cooperation of these three entities, "Gasal has been able to plan its development efforts in order to meet the need for a highly reliable, cost-effective, and safe supply of industrial gases," according to Eid Mubarak Al-Muhannadi, CEO of Gasal.

ANNUAL PRODUCTION GROWTH IN GLOBAL CHEMICAL INDUSTRY BY REGION, 2010-2015

Source: Statistica



As a result of the investment in Gasal and other initiatives, Qatar now boasts a vibrant chemical sector as evidenced through world-class companies such as Qatar Petrochemical Co. (QAPCO), Qatar Vinyl Co. (QVC), and Qatar Fertiliser Co. (QAFCO) to name a few. In 2014, chemical exports from Qatar amounted to 3.19% of its $101 billion total exports, with nitrogenous fertilizers being the biggest chemical product exported at $1.33 billion, followed by acyclic hydrocarbons ($536 million) and ammonia ($334 million).

Clearly, the country has taken the necessary steps to develop a robust chemical and petrochemical sector, yet, given that Qatar's small population results in the highest GDP per capita in the world and job creation is less of a concern, the question remains whether now is the time for the country to further pursue its industrial ambitions? An important dynamic at play is the difference between Qatar's earnings from gas sales in comparison to what Qatar could potentially earn from the added value of a developed downstream industry.

Al Karaana and Al Sejeel: Nipped in the Bud

As competition increases from Australia and potentially the United States and East Africa, Qatar's position as leader in the global gas export market will be challenged in the next decade. As a response, Qatar is seeking a diversification strategy for export and revenue streams by expanding its downstream and petrochemical sectors. To that end, Qatar's energy minister Mohammed Al-Sada, stated in 2012 that the country was actively looking to diversify away from exporting LNG to using the valuable resource to boost industrial enterprises and domestic power generation, in order to double petrochemical output to 23 million metric tons (mt/y) by 2020, a long way to go from the 2014 output of 10 million mt/y.

When the price of oil is down, however, everything is down. "The fall in oil prices since the middle of 2014 by about 55% has had an impact on petrochemical product prices and has raised buyer uncertainty," states the Gulf Petrochemical Association (GPCA) in its annual report, "The new reality creates new scenarios which impacted some planned projects in the GCC region."

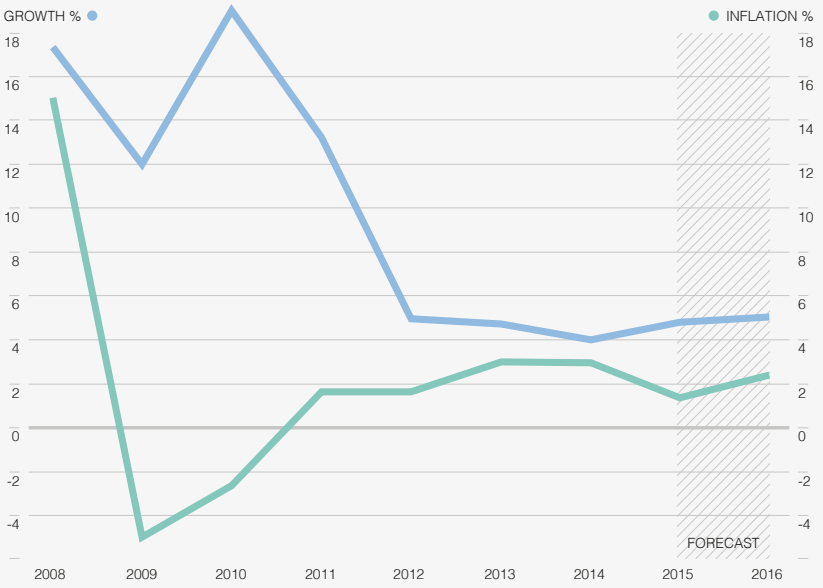
Natural-gas-rich Qatar was no exception to this commodity plunge and has taken action in light of the depressed prices. Shortly after oil prices began to fall in 2014 with no end in sight, Qatar halted its two multi-billion-dollar, world-class petrochemicals projects: Al Karaana and Al Sejeel.

Al Sejeel, a venture to construct a world-scale ethylene cracker between QAPCO and the state energy company QP valued at $6 billion was put on hold, in an effort to re-evaluate and assess alternative investments and petrochemical projects that will yield better economic returns.

The Al Karaana development, QP's 80-20 partnership with Shell, intended to produce 1.5 million mt/y of mono-ethylene glycol and 300 kilotons per year of linear alpha olefin, would have been significant and in line with Qatar's petrochemical industry expansion and ambitions. It was an ideal project given Qatar's cheap and plentiful gas feedstock combined with Shell's technology and expertise in building large-scale plants for processing petroleum into various industrial chemicals. Al Karaana, despite its promise, was shelved due to *continued on page 7 >>*

QATAR GROWTH VS. INFLATION (2008 TO 2016)

Source: International Monetary Fund



Qatar Petroleum (QP) Company Profile

HISTORY

Qatar Petroleum (QP) was created in 1974 following the government's nationalization of the oil sector. It acquired full ownership of all onshore and offshore concessions by 1977.

LEADERSHIP

Mohammed bin Saleh Al-Sada, Chairman and Minister of Energy
Saad Sherida Al Kaabi, Managing Director

EXPLORATION, APPRAISAL & DEVELOPMENT OPERATIONS

LQP has concluded EPSA and DPSA with the following major international oil and gas companies: ExxonMobil, Anadarko Qatar, Maersk Oil Qatar, Talisman Energy Qatar, Wintershall Consortium, and Marubeni.

MESAIEED INDUSTRIAL CITY

Mesaieed Industrial City (MIC) is located approximately 40 kilometers south of Doha on the east coast of Qatar. The City has transformed itself over the years from a simple port facility exporting crude oil into Qatar's main industrial city and center for petrochemical and oil refining activities.

MIC's industrial area accommodates an oil refinery, a fertilizer complex, petrochemical complexes, natural gas liquids plant and a steel mill, in addition to oil receiving terminal and export facilities. The existing infrastructure and utilities network is being completely upgraded to ensure state-of-the art facilities and services in support of existing as well as new industries. A separate industrial zone for light and support industries is also being upgraded to attract new investors.

Qatar Rials (QR) Millions	December 2014	December 2013	December 2012
Sales Revenue	138,872	152,192	154,129
Net Income	112,613	118,643	115,029
Net Cash Flow from Operations	62,711	58,751	51,554
Capital Expenditures	10,555	9,100	10,249
Total Assests	400,512	396,503	370,790

QP REFINING

Wholly owned by QP, the main finished products are liquefied petroleum gas (LPG), petrochemical naphtha, premium gasoline, super gasoline, jet fuel, diesel and marine fuel oil (MFO). At its current capacity of 137,000 barrels per day (b/d), the refinery is capable of meeting local demand until 2020.

QP's refining activities include the processing of crude oil and condensate into domestic and export petroleum products as well as the production and export of GTL, LNG and NGL. In addition, the main activity of the refinery is to process crude oil and condensate into various finished products to meet domestic demand as well as for export.

Gas-to-Liquids (GTL)

The Oryx GTL plant in RLC started production in 2006 with a design capacity of 34,000 barrels per day (b/d) (naphtha, diesel, LPG) with future expansion to reach 100,000 b/d.

Natural Gas Liquids (NGL)

There are four NGL plants in Mesaieed Industrial City (MIC) producing propane, butane, and condensate, which are mainly produced for export.

Liquefied Natural Gas (LNG)

Qatargas is a joint venture originally formed to operate three LNG trains with a design capacity of two million metric tons per year (mt/y) each, exported to Japan and

Spain. Three new LNG trains (Qatargas 2, Qatargas 3 and Qatargas 4) were added and operational by 2011, raising the total production to 42 mt/y in 2012.

RasGas, a joint venture producing LNG, has a total production that exceeds 36 mt/y after expanding in 2010. RasGas has a 25-year contract to sell 4.8 mt/y to South Korea and another agreement with India to sell 7.5 mt/y for 25 years. Other agreements are signed to provide LNG to several countries, including the United States and Italy.

PETROCHEMICALS & FERTILIZERS

Qatar Fertilizer Company Ltd. (QAFCO)

QAFCO's total production capacity is 2 mt/y of ammonia and 3 mt/y of urea, making QAFCO the world's largest single site producer of urea. QAFCO's expansion (QAFCO-5) added around 4,400 metric tons per day (mt/d) of ammonia and 3,500 mt/d of urea to QAFCO's production capacity.

Qatar Petrochemical Co. (QAPCO)

QAPCO was established in 1974 as a joint multinational venture to utilize associated and non-associated ethane gas from petroleum production. QAPCO's facilities consist of an ethylene plant with a capacity to produce 720,000 mt/y, two plants with a 650,000 mt/y capacity of low density polyethylene (LDPE) and a sulfur plant producing 70,000 mt/y. QAPCO markets its products worldwide and serves about 4,000 customers in 35 countries.

Qatar Vinyl Co. (QVC)

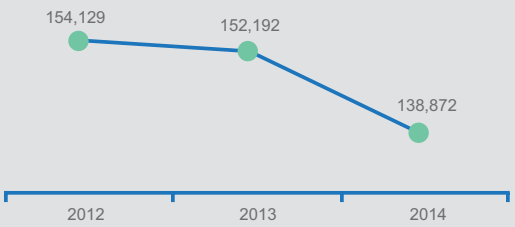
QVC was established to produce intermediates in the PVC industry. The company produces 180,000 mt/y of ethylene dichloride, 350,000 mt/y of vinyl chloride monomer (VCM) and 370,000 mt/y of caustic soda.

Qatar Chemical Co. Ltd. (Q-Chem)

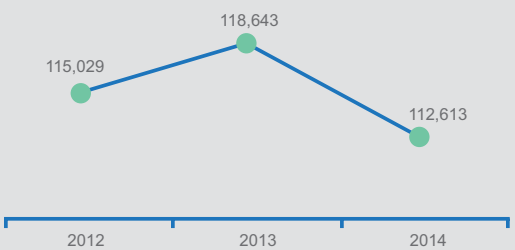
Q-Chem is a joint venture between QP and Chevron Phillips Chemical Co. Q-Chem's world-class petrochemical plant produces 453,000 mt/y of high-density polyethylene (HDPE) and 47,000 mt/y of 1-hexene (alpha olefin) using CPChem's proprietary technologies.•

SALES REVENUE - QR MILLIONS

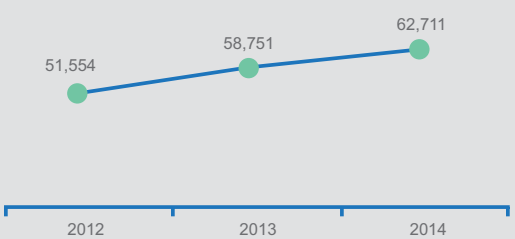
1 U.S. dollar equals 3.64 Qatari Rials.



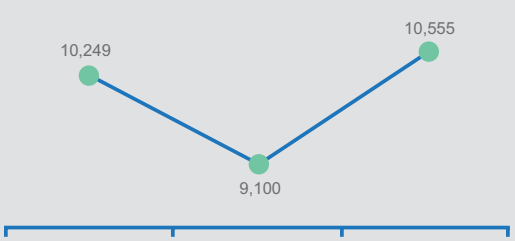
NET INCOME - QR MILLIONS



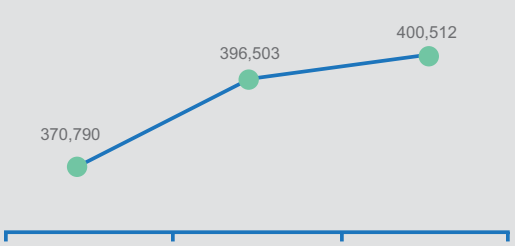
NET CASH FLOW FROM OPERATIONS - QR MILLIONS



CAPITAL EXPENDITURES - QR MILLIONS



TOTAL ASSETS - QR MILLIONS



FOR ALL GRAPHS AND CHARTS, Source: Qatar Petroleum (QP) 2014 Annual Report

H.E. Hamad Rashed Al-Nuaimi

CEO
QATAR VINYL CO. (QVC)

Can you please provide us with a brief history and introduction to QVC and its current operations in Qatar?

Qatar Vinyl Co. (QVC) is a fully Qatari-owned company that was established in 1997. Up until 2013, QVC maintained foreign ownership, but the shareholder percentages have shifted such that there is currently no foreign participation, though the operations themselves have not changed. When QVC was first founded, it was on a learning curve and needed the expertise in operations and the transfer of knowledge from its foreign shareholders. Today, the company is able to function independently and is able to operate more closely with Qatar Petroleum (QP), from which QVC receives the majority of its ethylene feedstock.

The QVC plant comprises four major units: a chlorine unit producing approximately 370,000 metric tons per year (mt/y) of caustic soda for export and local sales, an ethylene dichloride (EDC) unit producing approximately 180,000 mt/y of EDC for export, a vinyl chloride monomer (VCM) unit producing approximately 355,000 mt/y of VCM, and a power unit.

QVC prides itself on being a low-cost, high-quality and efficient vinyl producer. What strengths allow QVC to fulfill these goals?

From its inception, QVC has strived to provide a high-quality product at a low cost, which is what the global vinyls market demands from companies to stay competitive. QVC has always sought to keep the organization lean and maintain fixed costs under tight scrutiny. In addition, QVC has been able to remain competitive in its energy costs by integrating itself with the gas that QP provides. The products are still sold at market price, but they cost less to produce. The goal in the near future is to fulfill the ethylene requirement locally and no longer seek to import. This will allow QVC to further lower the cost of production and expand its operations.

The global economy is currently operating in an environment of low oil and gas prices. How does this affect QVC's operations?

The low oil and gas prices have a mixed effect on QVC's operations. The price of ethylene, which has fallen as a result of the fallen oil and gas prices, constitutes a large portion of the variable cost to QVC, such that lower prices reduce this cost significantly. There is also a slight benefit on the freight costs as the fuel for ships has dropped. However, lowered prices can be harmful if they remain low for too long. A prolonged drop in oil and gas prices increase the amount of vinyl chloride monomer in the market, which can depress prices. Furthermore, looking at the larger macroeconomic picture, low oil and gas prices affect an array of manufacturers; this ultimately affects QVC as its intermediate products are in less demand.

What do you consider to be the greatest challenge facing the chemical industry in Qatar?

Access to feedstock and depressed oil and gas prices are elements that chemical companies must address seriously, but they are not necessarily operational challenges. A key challenge to the chemical industry is maintaining a consistently high level of recruitment as this can affect the way your operation is run and the ambitions for the culture you hope to achieve for your organization. QVC is very diligent in this regard by partnering with local universities to recruit talented individuals and also by maintaining high standards of training within the organization.

"The price of ethylene, which has fallen as a result of the fallen oil and gas prices, constitutes a large portion of the variable cost to QVC, such that lower prices reduce this cost significantly. There is also a slight benefit on the freight costs as the fuel for ships has dropped."

Health, safety and environment (HSE) are concerns that are becoming ever more present within the chemical industries of the world. Can you tell us about QVC's approach to HSE?

HSE has been engrained in the story and culture of QVC since the initial environmental impact studies were being undertaken. In the construction of the plant, QVC imported international standards so that the facility could stand up to the global vinyl industry standards. QVC has implemented several European standards of safety and is working closely with the Ministry of Environment to improve certain aspects. For example, QVC recently installed an additional incineration unit and is well known throughout the chemical sector here as the only plant that is not flaring. QVC is also currently engaged in a project that aims to recycle as much water as possible to avoid discharging liquid to the sea. Due to our processes that require washing with industrial salt, salt water must go out to the sea, but it is no more than salt water.

If GBR returned in five years, how would QVC have changed?

QVC's main objective is to remain low-cost. The company must strive to maintain the same level of organizational and operational efficiency as well. In addition to the company's core operations, QVC will continue to work to improve the public understanding of the chemical industry. This sector is not necessarily looked on favorably or understood by the public and QVC believes that it has a duty to approach the public to help it better understand what we provide and the kind of business that we are running. •

its high capital costs, which would render it commercially unfeasible in the current economic climate.

Such cancellations are not unique to Qatar, however. The huge drop in the price of oil also forced SABIC and Shell not to pursue the development of the planned polyurethane project in Jubail, Saudi Arabia. "Before oil and gas prices fell," said Evonik's Ehret, "the decision was clear to develop the downstream to diversify the country's income. At the moment, there seems to be a critical discussion amongst Qatari decision makers as to whether the country should enhance more downstream or keep the business model of producing as much gas as possible and then selling it to the world market at a good price."

For the time being, it seems that QP is shifting its focus to its core business, oil and gas. In an official statement released in 2015, QP's president and CEO Saad Sherida Al-Kaabi stated: "We are in a period of oversupply in the industry and need to be very efficient as an organization. While we have no control over the markets and prices, we do have control over our cost and expenditure... We have 'right-sized' our organization to be more dynamic and efficient, and to be able to cope with our strategic needs in the new business environment. We now have total company focus on core businesses, and are exiting any non-core businesses activities."

Clear steps have been taken. The Al Sejeel and Al Karanaa projects are neither postponed, nor to be reevaluated. The projects, the way they were defined, have been cancelled.

Challenging Times Ahead

Qatar's drive towards petrochemicals development over the medium term has significantly slowed down due to the cancelation of the Al Sejeel and Al Karanaa projects, while shrinking Qatar's stake in global production growth, further preventing the country's plans of achieving multi-billion-dollar revenues from its strategy of downstream diversification.

The petrochemical sector is further hampered by the fact that "Qatar is currently very busy with major infrastructure projects, which have been prioritized, given their capital and resource intensity in view of completion time," according to Ali Vezvaei, president of Linde Engineering, Middle East and North Africa.

Additionally, Qatar's competitive edge in the petrochemicals sector has been undermined due to a combination of factors, including the rise in construction costs, the surge in shale gas production in the United States, and the diminishing cost advantage of ethane, the country's main feedstock.

Analysts believe that Qatar's reliance on ethane as a feedstock has also limited the range of by-products that it can produce in comparison to its competitors, which may cause the country to be sidelined in the special chemicals market.

The Qatari government, however, is actively looking to redress the balance with mixed crackers and other industries, while also seeking to capitalize on the growth in global demand.

Moving into 2016 and 2017, experts expect a reevaluation and either a reallocation of the gas that was previously set for Al Sejeel and Al Karaana to a different project, or a distribution of it into two or three smaller projects in order to diversify the risk, and have a better control of the production, regardless if an economy of scale is not realized.

With that, Linde *continued on page 9 >>*

Eid Mubarak Al-Muhannadi

CEO
GASAL CO.

Gasal Co. was formed in 2006 as a joint venture between Air Liquide, Qatar Petroleum, and Qatar Industrial Manufacturing Co. (QIMC). Can you tell us how this partnership came to be and how the three entities work together today?

Gasal was formed as an answer to Qatar Petroleum's need to have a stable industrial gas partner in Qatar. Prior to the creation of Gasal, Qatar Petroleum entities had to rely extensively on liquid supplies by trucks, which largely came from outside Qatar, and small production units spread out between its different operating entities, which led to sub optimized and insecure supplies. In addition, at that point in time, Qatar Petroleum had the intention to grow larger quickly; it made sense to have a large industrial gas player in Qatar to invest in central manufacturing facilities and distribution pipeline systems. From the Air Liquide side, the company recognized a need for its products and services in the Middle East and was willing to invest further in the region. The third partner in Gasal, QIMC was already present with local nitrogen production capacity before the partnership was formalized and helped to form the first leg of Gasal.

The partners that form Gasal each contribute to the work that the company performs in supporting the development of the Mesaieed and Ras Laffan industrial cities. Air Liquide is the foreign partner that has brought the technology and operations know-how. Qatar Petroleum brings the vision as to how these industrial areas should develop. QIMC, which is the historical partner, also brings its own vision of how the market should develop. Through the efficient cooperation of these three entities, Gasal has been able to plan its development efforts in order to meet the need for a highly reliable, cost effective, and safe supply of industrial gases.

What are Gasal's current supply capabilities and how has it prepared itself for future customer needs?

In 2006, Gasal first invested in oxygen and nitrogen plants in Mesaieed to supply the industrial city end users by pipeline, as well as other customers in the country by cryogenic tankers. In 2008, Gasal began operations at its nitrogen plant in Ras Laffan. At present, Gasal has five air separation units that produce oxygen and nitrogen with an additional unit in construction. As of 2015, the company's industrial pipeline networks for the delivery of oxygen, nitrogen, and hydrogen to customers is nearing 50 kilometers.

Gasal is an integral piece of the infrastructure puzzle that Qatar Petroleum is putting in place in Ras Laffan and Mesaieed. Everything that the company has invested in thus far has been done thoughtfully, keeping in mind that business will grow and those new enterprises will need to be connected to systems that will enable them to grow easily. For example, in Ras Laffan, Gasal has developed a large pipeline network that covers the entire industrial city, making it easy for current and future operators to benefit from its offering.

To foreign investors looking to invest in the country's chemical sector, how would you describe Qatar's industrial infrastructure at present?

Qatar is a small country but with strong leadership that has had the foresight and manpower to develop. As a result, Mesaieed and Ras Laffan have state-of the art infrastructure, are well operated, and are on par with industrial basins that you find in mature economies such as Europe and America. Looking at the industrial gas sector transformation as an example, before Gasal, the supply of industrial gases was done by trucks. With the pipeline system that we have today, the process is centralized, meaning that the supply is more sustainable in the longer term (e.g. less trucks on the roads leading to a reduced risk of accidents and a much reduced carbon footprint). In addition, Gasal brought the safety standards to unprecedented levels, bringing along better reliability in production and supply. Ultimately, this lead to cost optimization for end users, for example through shorter time required to restart after maintenance turnarounds. The Mesaieed and Ras Laffan industrial cities are well designed with foreign investors in mind.

"Mesaieed and Ras Laffan have state-of the art infrastructure, are well operated, and are on par with industrial basins that you find in mature economies such as Europe and America."

Qatar's chemical and petrochemical industry is considered by many to be at a standstill. What are your future expectations for this sector?

In recent months, following the sudden drop in crude oil prices, several large projects got cancelled or postponed. The sector is now waiting to see how Qatar Petroleum decides to move the petrochemical sector forward. Regardless, the industry's fundamentals are very strong. In Qatar, there is available feedstock, and the country has the investment capabilities meaning that financial considerations are not a constraint. In addition, as already mentioned, the country has the infrastructure in place.

How will Gasal evolve in the next five years?

Gasal expects to be larger, supplying to a number of customers in both the petrochemical and steel industries, yet certain basic principals will not change, such as Gasal's focus on maintaining a strong safety record.

Engineering's Vezvaei argues favorably that the "growth aspiration for the petrochemical industry is still there and will emerge in a smarter and more efficient structure, whether in the previous size or a different constellation...Perhaps diversification of feedstock and integration of the value streams would be an avenue to be explored. A flexible, mixed-feed cracker with carefully selected derivative streams could yield a competitive return on investment, if executed properly."

Private Players Committed to Qatar and its Value Proposition

Macro issues aside, the petrochemical industry in Qatar is still at an emerging phase, as the country has for years been focused on building its world-class LNG industry, and the capacity and growth rates are yet to catch up with other major players in the Gulf.

Variable costs, on the other hand, are decisive for a chemical company's ongoing operations. When considering a company's cost position, a very important factor is the sourcing of raw materials; being able to produce near the source can drive costs down significantly. "Qatar, in that respect," argues Evonik's Ehret, "can offer one of the best platforms.

Gasal likewise remains positive, as Al-Muhannadi explained: "The industry's fundamentals are very strong. Qatar is a small country but with strong leadership that has had the foresight and the manpower to develop the country. As a result, [the industrial areas] Mesaieed and Ras Laffan have state-of the art infrastructure, well operated and are on a par with industrial basins you find in mature economies such as Europe and America."

Conclusion

The price of oil is one of the most important factors to consider when evaluating investments in Qatar and the GCC. Commenting on QVC's current downstream operations, CEO Hamad Rashed Al-Nuaimi said: "The low oil and gas prices have mixed effects. On one hand, the price of ethylene, which has dipped as a result of the low prices, constitutes a large portion of the variable cost to QVC, such that low prices reduce our input costs significantly. There is also a slight benefit on the freight costs, as the fuel costs for ships has dropped...Low prices, however, can be harmful if they remain low for too long. A prolonged drop in oil and gas prices will increase the amount of vinyl chloride monomer in the market and that can depress prices for this product. But looking at the larger macroeconomic picture, low oil and gas prices affect an array of manufacturers, which ultimately affects QVC as its intermediate products are in less demand."

The GCC region is slowly moving into the next phase of product development— specialty and intermediate chemicals instead of only commodities. The amount of chemicals produced by the region has almost doubled between 2005 and 2013, with total production capacity reaching 147million mt/y. Qatar will be no exception to this trend. Once oil prices recover, Qatar will once again turn its eyes to its long-held desires to further develop its downstream capacity. For global specialties companies, like Evonik, they can hardly wait: "Evonik is closely watching how this decision-making process unfolds and remains behind Qatar every step of the way, ready to come in with its technological expertise and potentially establish a manufacturing presence as well. Evonik is convinced that the Qatari cost-position would be one of the best in the region," said Ehret. •

Tilman Ehret

President, Middle East & North Africa
EVONIK

> *"At the moment, there seems to be a critical discussion amongst Qatari decision makers as to whether the country should enhance more downstream or keep the business model of producing as much gas as possible and selling it to the world market at a good price. Qatar is rich in globally sought-after raw materials, but has a small local population, which means that GDP per capita is one of the highest in the world and that job creation is less of a concern."*

Could you please provide us with a brief history and introduction to Evonik's operations in the Middle East?

With roots in the German chemical industry, Evonik began its operations in the Middle East nearly 50 years ago, as it was looking to expand its sales activities. Now we sell our specialty chemical products through seven offices in the region. In 2014, Evonik established a major production presence in the region through a joint venture in Saudi Arabia, of which Evonik owns 25%. Partnering with Saudi Acrylic Acid Co. (SAAC), we formed the Saudi Acrylic Polymer Co. (SAPCO) to produce super absorbent polymers, an area where Evonik is a worldwide leader. These superabsorbents are largely used in baby diapers and are sold to multinational consumer goods companies.

At present, Evonik's primary markets in the Middle East are Saudi Arabia and Egypt in terms of both population and industry. Amongst other options, Evonik is also considering Qatar or the United Arab Emirates as a hub for downstream production. Evonik's products work primarily in a certain level within the value chain of the chemical industry; as such, Evonik's customers normally have advanced processes that really need specialized applications with added value.

How is Evonik evaluating opportunities to expand its operations into Qatar?

Evonik's portfolio is very broad and serves various industries, like consumer goods and healthcare, which are attractive for this region. A main objective of Evonik is to participate in the downstream industry not only through selling, but also by working as an active producer. Evonik would be interested to have more exposure in Qatar by producing there and then exporting a good part of the products, as the Qatari market is still very much export-oriented.

The products that Evonik offers to the petrochemical industry are also sold into Qatar, but in order to increase our sales further, the downstream industry still needs to grow there. Qatar's current business model has been largely based on producing and selling the gas, though there is some big volume industry like fertilizers that has been growing impressively.

At the moment, there seems to be a critical discussion amongst Qatari decision makers as to whether the country should enhance more downstream or keep the business model of producing as much gas as possible and selling it to the world market at a good price. Qatar is rich in globally sought-after raw materials, but has a small local population, which means that GDP per capita is one of the highest in the world and that job creation is less of a concern. As such, the decision comes down to how much Qatar earns from the gas versus how much it will earn from the downstream industry that it develops. Before oil and gas prices fell, the decision was clear to develop the downstream to diversify the country's income. The government is now reevaluating which route to take.

Evonik is closely watching how this decision-making process unfolds and remains behind Qatar every step of the way. We will still be there, when Qatar has decided which way to go. Evonik would be ready to come in with its technological expertise and potentially establish a manufacturing presence as well. Evonik is convinced that the Qatari cost-position would be one of the best in the region.

Can you elaborate on the advantages of the Qatari cost-position and other benefits that companies like Evonik see in doing business in Qatar? What are some of the challenges?

Variable costs are decisive for a chemical company's ongoing operations. When considering a company's cost position, a very important factor is the sourcing of raw materials; being able to produce near the source can drive costs down significantly. Qatar, in that respect, can offer one of the best platforms. In addition, the ease of doing business in Qatar is rather good, with reliable business partners, who are often educated outside of the country and have worked in the United States or Europe, diminishing the intercultural differences. There is also a strong financial structure, tested by European and international companies, as well as a variety of companies that offer attractive financing options. Since the Qatari population is comparatively small, a company will need foreign employees, which Qatar is prepared for by being open to receiving foreigners. Foreign companies, however, must understand that Qatari enterprises can stand on their own in many ways, and that when establishing partnerships or joint ventures, foreign companies will need to give the majority share to the Qataris, which is mandated by law anyway.

At the same time and in close coordination with a potential Qatari partner and authorities, Evonik would make sure that sustainability and responsible care are guiding principles. We take our worldwide responsibility for our business, our employees, the environment and the local community that we are part of very seriously.

Ali Vezvaei

President, Middle East & North Africa
LINDE ENGINEERING

Can you provide us with an introduction to Linde and Linde Engineering?

Linde group is the world's largest gases and engineering company with approximately $18 billion in revenue and 65,000 employees. Gases, Engineering and Healthcare are the main divisions of Linde group's unique portfolio. Linde Gas, a leading industrial gases pioneer, invests, owns and operates plants around the globe and delivers the much-needed gases to various energy and industrial sectors. Linde Engineering is the group's technology and EPC arm, focusing not only on building the plants for the Gases division but also being a technology focused EPC player in the oil and gas and petrochemical arenas. The third pillar is healthcare, which is a growing part of the group's portfolio that has been further strengthened through the acquisition of Lincare in USA. Healthcare's main focus is in the respiratory sector and homecare services.

Linde Engineering is headquartered in Munich and operates globally out of four regions: the Americas; Middle East & North Africa; India (covering South East Asia); and the China region.

What are the strengths of Linde Engineering within the chemical sector in the Middle East and, more specifically, Qatar?

Linde Engineering is a major player in the natural gas, chemicals, and petrochemical markets thanks to a technology-rich portfolio of offerings, the execution capability for large-scale projects, and the very unique value proposition that comes from being an EPC company on one hand and a world-class operator on other hand. The synergies here are of a high relevance and value to customers, especially when technology, constructability, and operability are jointly taken into account when developing a project.

Linde Engineering has been involved in some of the flagship projects in the MENA region, such as Bourouge 3, the world's largest ethylene cracker in the UAE, and SABIC's United CO2,the world's largest CO2 purification and liquefaction facility in Saudi Arabia. They represent the commitment of Linde Engineering to the region and, above that, the close and trustful relationship with our customers and partners, which is the most valuable asset for us in the region.

Linde Engineering has different product lines that are the foundation of its technology portfolio and enable us to address a wide range of upstream, midstream, and downstream projects, from gas treatment to mid-size or world-scale LNG to mega crackers in petrochemical industry; the interesting part is that it all gravitate towards the fascinating world of gases.

Linde has been involved both in industrial gases and petrochemicals in Qatar. We built the air separation plant for the Pearl project with Shell and have been closely involved in the Al- Karaana and Al-Sajeel petrochemical projects.

Do you expect the projects to come back on line in the near future, and if so, what aspects would need to be different?

Although the projects changed direction in response to the changing hydrocarbon industry dynamics, there will be future opportunities given the growth aspiration of Qatar and the need to diversify its value chain. Sustainable growth requires the uplifting of the hydrocarbon value chain, as well as a strategy to diversify export and revenue streams. Qatar is currently very busy with major infrastructure projects, which have been prioritized, given their capital and resource intensity in view of completion time. Yet the growth aspiration is still there and will emerge in a smarter and more efficient structure, whether in the previous size or a different constellation. Given the impact of the low oil price on the feedstock and derivatives, perhaps diversification of feedstocks and integration of the value streams could be explored. A flexible, mixed feed cracker with carefully selected derivative streams could yield a competitive return on investment, if executed properly.

What is your assessment of the petrochemical industry in Qatar and where do opportunities lie?

The opportunities within Qatar's petrochemical industry are built upon the wealth of competitive gas as a feedstock, which provides options and alternatives. Also, the efficiency enhancement in better utilizing the existing feedstock and the installed capacity, through smart revamps and retrofits, will boost the return on existing assets. Last but not least is diversification of feedstock, not only to gain flexibility through market cycles, but also to optimize the derivatives and the revenue streams. Qatar's commitment to sustainability has been well portrayed through the NQV 2030. Implementation of some of the key sustainability measures in the downstream industry, perhaps around carbon dioxide capture and reutilization, would also unlock some new potential.

Where will Linde Engineering be in five years?

We will be right here, close to our customers and partners as their reliable technology partner of choice. Our commitment to our customers goes beyond selling and building a plant. Our plants life cycle services are aimed to help our clients in operational excellence, revamps, retrofits and also training their staff to not only meet but also exceed their goals. The Middle East, one of the world's largest petrochemical clusters, has a unique potential and an undisputed role in the future of the petrochemical industry, which will translate into exciting opportunities. •

GLOBAL BUSINESS REPORTS