

The Gulf Intelligence

Energy Outlook

SECOND QUARTER 2016

**FIND
A WAY
OR
FADE
AWAY**



Oil, natural gas and solar energy – 100,000 women and men

COMMITTED TO BETTER ENERGY



TOTAL
COMMITTED TO BETTER ENERGY

26



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Pearl GTL at Ras Laffan is the largest Gas-To-Liquids plant in the world.



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FOREWORD

POST-BREXIT EARTHQUAKE TREMORS TO SHAKE EVERY GEOGRAPHY AND SECTOR: *Climate Change – What's That?*

BY SEAN EVERS

Managing Partner, Gulf Intelligence

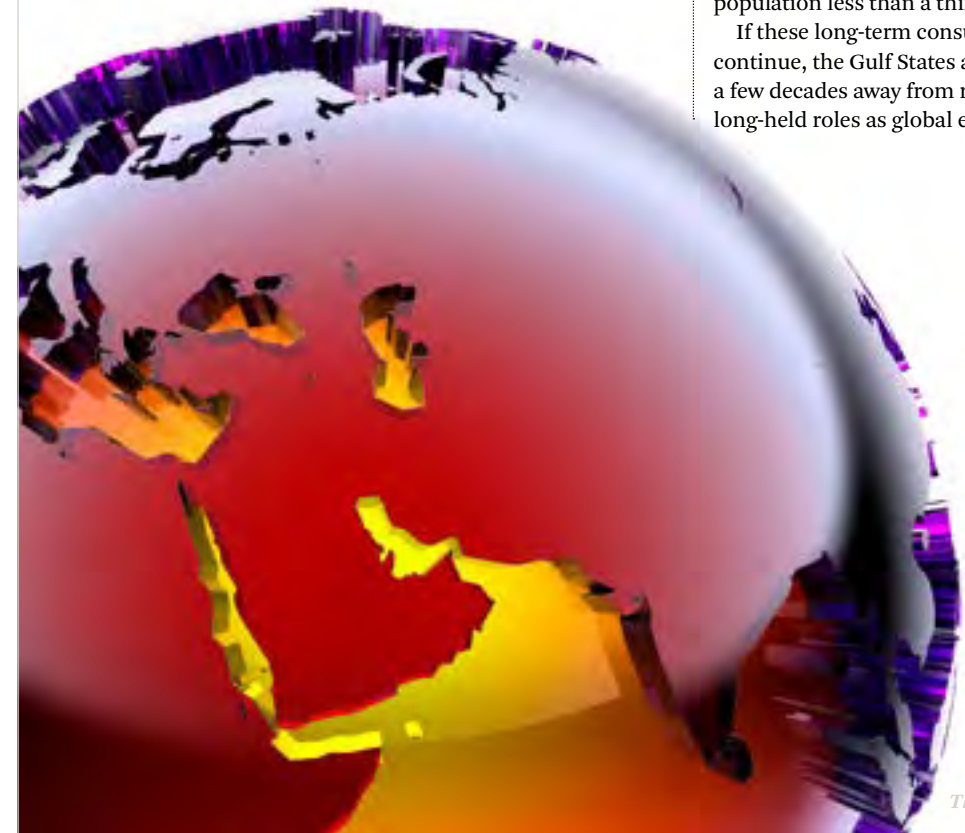
The morning after the night before and the Richter scale impact of the UK's referendum vote to leave the European Union is sending shock waves across the world, including to the US in this critical election year.

There are many layers of autopsy to dissect on the Brexit vote, but on the simplest and most pragmatic level, we have to accept that what may have previously appeared impossible for all the intellectual arguments that one chose to assemble is now possible. The right-wing populist build-a-wall politicians in Europe and America have a real chance of seizing power over the coming 12 to 24 months.

Any isolationist lurch to the right in protection of Nationalist special interests could derail multilateral ambitions to tackle climate change and carbon emissions, removing a much required roadmap for industry and consumption habits. That said, the Middle East would be well placed to stay the conservation course as they attempt to lift subsidies and step down from having the world's highest emissions footprint.

One of the by-products of energy intensity in the GCC is carbon intensity. As is the case with energy, per capita emissions output from the Gulf leads the world. But, unlike energy demand, carbon pollution is a global problem. The implications of a wasteful use of energy thus extend beyond the region's borders, exposing the Gulf States to rising pressure to reduce emissions. Aggregate GCC emissions are nearly as large as those of Japan, despite a population less than a third as large.

If these long-term consumption trends continue, the Gulf States are forecast to be just a few decades away from relinquishing their long-held roles as global energy suppliers. ■



Deregulation of Oil Prices Triggers Investment in UAE Energy and Social Infrastructure

Energy efficiency is a global buzz word and for good reason. As the world's energy resources are depleted by rapidly rising populations, rationalizing their usage is imperative.

BY H.E. SAIF AL FALASI
Group Chief Executive Officer, ENOC

The deregulation of fuel prices in the UAE from August 1, 2015 not only placed the UAE on a more sustainable and environmentally-friendly pathway, but it enabled ENOC to ramp up the group's investments in Dubai's energy and social infrastructure. Both are equally important.

The 9 billion UAE Dirhams (\$2.45bn) a year in savings generated for the UAE by the fuel deregulation gives momentum to the country's goals of continually enhancing energy and social infrastructure in Dubai, including health and education projects.

We will build on our strong strategy of delivering high quality international standard products and world-class customer service by investing in important infrastructure that enables key sectors, such as aviation and tourism, that are contributing to Dubai's GDP.

ENOC is planning to expand its service station network with a further 54 retail stations by 2020 to meet the needs of its customers across Dubai and widening Dubai's downstream sector with a 70,000 barrels a day (b/d) expansion of the 140,000 b/d Jebel Ali condensate refinery by 2020 and a 19km jet fuel pipeline to Al Maktoum International Airport in Dubai South. ENOC is also on the lookout for acquisitions that will enhance Dubai's energy infrastructure, following the company's acquisition of Dragon Oil last year.

We have been trying to accelerate and grow with the handbrake on. When the deregulation was introduced, we had a 180 degree shift almost overnight and changed the game completely.

The UAE government's decision to take the plunge and introduce subsidy cuts last year was a globally-applauded move. True energy prices encourage communities and industries to rationalize the use of energy resources and subsequently, resources are used more wisely.

With oil prices below \$50 per barrel since late-2015, Gulf countries have faced varying amounts of pressure on how to manage their energy resources in an environmentally-

“ We have been trying to accelerate and grow with the handbrake on. When the deregulation was introduced, we had a 180 degree shift almost overnight.”



The deregulation of fuel prices in the UAE began on 1 August 2015.



54

ENOC plans to add another 54 retail stations to its portfolio by 2020.



50%

Enoc is expanding its 140,000 b/d Jebel Ali condensate refinery by 70,000 b/d by 2020.

friendly and cost-efficient manner. The International Monetary Fund (IMF) says subsidy cuts are one of the most critical steps forward – the UAE is ahead of the curve, yet again. Even when oil prices rise and fuel prices increase, smarter social policies will already be in place to support lower income families.

Reducing fuel subsidies in the UAE is part of the government's goal to protect the country's natural resources and contribute to the Paris Agreement made last year at the global climate change conference (Cop 21), which limits the increase in global average temperature to below two degrees above pre-industrial levels.

Saudi Arabia and other GCC countries are following the UAE's lead. Riyadh has stepped up fuel and gas prices by some 60% and will increase electricity prices for heavy users in an effort to cut the country's \$60bn subsidy price tag. Bahrain, Oman and Qatar have also introduced higher fuel prices at the pump starting from January 2016. And Kuwait is following its subsidy cuts from January 2015 with more cuts planned for this year. GCC-wide plans to impose value-added-tax (VAT) on goods and services are also being considered. These evolving subsidy reform policies give gasoline providers in the UAE and beyond the opportunity to rationalize spending to pursue longer-term strategic goals and most importantly, reinvest the profits back into bettering local infrastructure.

In Dubai, as the true financial benefits of subsidy cuts emerge over the coming year, ENOC's strategy to spearhead investments into local energy and social infrastructure will continually gain momentum. There are many more chapters of innovation to come. ■

Water Security is at the Heart of Qatar's Survival

BY H.E. ESSA BIN HILAL AL-KUWARI
President, Kahramaa

Aside from our basic human survival, our geopolitical security, economies, industries and communities all rely on a guaranteed and safe water supply. Accordingly, bettering Qatar's water security outlook is one of the country's three Key Challenges in the National Vision 2030, along with energy security and cyber security.

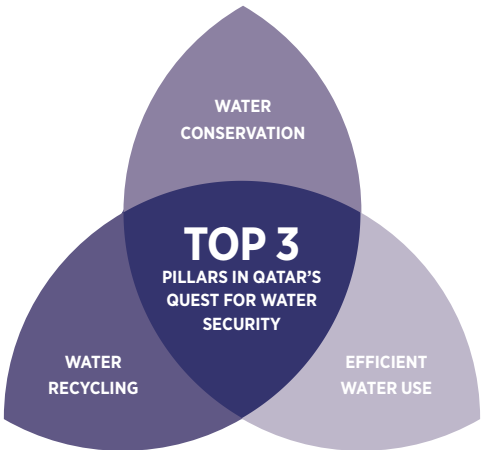
The pressure on Qatar's water resources has grown significantly over the last decade and we are at the beginning of our journey of innovation and behavioral change to ensure that tomorrow's supply is safe. Our water resources today are becoming strained due to the fact that we only get seven inches of rain per year and the country's population is growing – today's 2.5 million (m) residents are forecast to multiply eightfold by 2050. Plus, more water is needed for our expanding agricultural and industrial sectors.

Water demand in Qatar has grown by an annual average of 10.6% over the ten years, with last year's 535m cubic meters of water consumption expected to hit 900m cubic meters by 2025. If today's business-as-usual approach continues, Qatar will face serious and structural threats to its economic growth and national security over the coming decades.

We are not the only ones readdressing our traditional views of managing our water. The World Economic Forum's Global Risks 2015 Report ranked water as the global risk with the greatest potential to impact economies and societies over the next decade, which will inevitably force all countries to better their water management strategies.

Kahramaa, whose water networks cover 99.8% of Qatar's water supply, ensures that everybody has access to clean water. Water conservation, efficient water use and water recycling are the most important drivers that support Qatar's quest for water security. Kahramaa launched Tarsheed, the national programme for the Conservation and Efficient Use of Water and Electricity, in 2012 with plans to reduce the country's water consumption by 35% within five years.

Kahramaa has also reduced the number of leaks in its water network to below 5%, while the level of non-revenue water losses – water that has been 'lost' in the distribution network before reaching customers – has fallen to



“The pressure on Qatar's water resources has grown significantly over the last decade and we are at the beginning of our journey of innovation and behavioral change to ensure that tomorrow's supply is safe.”



99.8%

Kahramaa's water networks cover 99.8% of the country's supply needs.

75%

The number of countries worldwide that incorporate desalination technologies into their water security strategy.

2.5

Qatar's current population of 2.5m people is expected to grow eightfold by 2050.

around 19%. We are targeting 10% by 2018.

Water recycling and re-use have also undeniably climbed higher on the agenda of Qatar's water-related stakeholders, including the Ministry of Municipality & Environment and the public works authority Ashghal. Now, treated sewage and industrial water are used for garden irrigation, landscaping, construction works and district cooling services.

Desalination plants have evolved rapidly over the last two decades and approximately 150 countries now rely on such technologies to meet their fresh water requirements. In Qatar, water from desalination feeds 99% of municipal demand.

The success of Qatar's desalination technology highlights the importance of investing human and financial capital into water-related research and development (R&D). Such efforts will be integral to developing efficient technologies and scalable infrastructure to meet water demand up to 2030, as well as ensuring we cope well with any natural disasters.

Our R&D team has built strong and cooperative relationships with similar teams in Qatar – a unified effort is the only way we can all succeed. We must collectively improve Qatar's water security by finding solutions that navigate the logistical and cultural barriers that stand in our way. ■



Iran Shifts Tactics to Lock in Global Energy Allies

BY DANIEL COLOVER,
Strategic Oil Market Development Director, S&P Global Platts

Iran's new approach to building energy allies is being revealed as the former powerhouse staggers back onto the global stage. The lifting on January 17 of Western-imposed sanctions has given the country a new lease of life.

Tehran's ability to adapt will prove vital as today's market is more competitive than the one it reluctantly stepped back from more than a decade ago.

Tehran remains confident that the country can boost its current 3.7 million barrels a day (m b/d) of oil production further, enabling it to be able to export 2.2m b/d by the end of the summer. The country's strategy to regain superiority has started well, but some of the spike in volume may be a case of Iran emptying its full storage capacity.

Iran is also planning to introduce new oil contracts, widely known as Iran's Petroleum Contracts (IPCs), and abandon the generally unpopular buyback contracts that were first introduced in the 1990s. The buybacks were introduced as an attempt to bridge the gap between the country's need to attract foreign oil and gas companies and a ban on private foreign ownership of natural resources under the Islamic republic's constitution.

The market remains to be convinced. The new IPCs are essentially risk service contracts where the contractor is paid back by being allocated a portion of the hydrocarbons produced. However, more clarity is required after a key presentation was cancelled in February.

Tehran has adopted a fresh approach to blending in an effort to shrug off its lone-ranger profile and seek collaborative partnerships with energy allies."



In Numbers

2.2

Tehran plans to export 2.2m b/d by the fourth quarter of this year.

17

A historical moment in Tehran's social and economic narrative – the majority of the Western-imposed sanctions were lifted on 17 January 2016.

BLENDING OPPORTUNITY

Tehran has adopted a fresh approach to blending in an effort to shrug off its lone-ranger profile and seek collaborative partnerships with energy allies. Crude oil blending can raise the sale price of a lower grade of crude by blending it with a more valuable grade. This means producers can have a particular variety at the lowest possible cost, which has proved to be a useful trade-off.

In April, Iran joined fellow OPEC members Nigeria, Angola and Algeria with plans to blend its light oil with Venezuela's heavy crude to get a better crude price. Iran's Research Institute of Petroleum Industry (RIPI) signed an agreement with South Africa's state-run PetroSA to jointly pursue research and development (R&D) in crude blending technologies. Iran also signed a long-term cooperation agreement with South Korea at the start of May. This covers a number of areas including gas and telecommunications and serves as a springboard for raising Iranian crude supplies to the North Asian country.

INVESTMENT CULTURE

Sanctions did not completely derail Iran's energy infrastructure, with Tehran funneling cash into the country's major oil and gas sites – refineries, pipelines, drilling sites, roads and so on – to prepare for the lifting of sanctions. The first phase of the Persian Gulf Star refinery with capacity to produce 360,000 b/d will be completed by next March, with the remaining two units scheduled to go online in 2017. While the Persian Gulf Star when finished will add 16m liters/day of gasoline production, the ongoing upgrade at the Bandar Abbas refinery will also add 4m liters/day. Officials say gasoline imports of around 50,000 b/d will not be necessary once the plant is completed. Furthermore, officials have recently said that Iran could even export as much as 10m liters/day of gasoline after the full start-up of the Persian Gulf Star refinery.

Iran's ability to reduce inflation from 45% in 2013 to below 10% in late-2015 and introduce subsidy cuts illustrates Tehran's financial acumen, which will bolster the country's ability to cope with today's lower oil prices. The International Monetary Fund (IMF) expects Iran to deliver 4% growth at a time when others in the Middle East grapple with credit rating cuts and urgently slash energy subsidies in a bid to cushion their strained coffers.

1990s

Iran's unpopular buyback contracts that were introduced in the 1990s are expected to be replaced with the much-delayed Iran's Petroleum Contracts (IPC).

75%

Iran reduced its rate of inflation by more than 75% between 2013 and late-2015 – a nod to the country's financial acumen.

43%

The reinsurance level per tanker for shipping Iranian crude was increased in mid-April 2016 from \$580m to \$830m.

10

Iran could export up to 10m liters a day of gasoline once the Persian Gulf Star Refinery is fully online.

4

Tehran remains confident that the country can ramp up production from today's 3.7m b/d to 4m b/d by 2017.

The freight shortage will likely ease later this year as ships being used for storage are emptied and Iran repairs unused ships to enlarge its fleet, but the delay will inevitably hamper the speed of Iran's re-launch into European and Asian markets..."

CHALLENGES REMAIN

Still, Iran is not free of economic and logistical hurdles. A limited number of ships are curbing Iran's oil exports. In mid-April, the International Group of P&I raised the reinsurance level to a maximum of \$830m per tanker for shipping Iranian crude, from \$580m previously. Although this does not fully make up for the missing US reinsurance cover as a result of the US' ongoing sanctions against Iran, it could be seen as sufficient for Asian buyers such as India and South Korea, or some European importers, for their shipping of Iranian oil. However, the increased reinsurance is still below a full P&I insurance cover of \$7.8 billion.

The movement of Iranian Oil to potential consumers is not helped by the remaining US sanctions that prevent business with Tehran in dollars, or with US companies – oil and tanker trade is priced in dollars. The freight shortage will likely ease later this year as ships being used for storage are emptied and Iran repairs unused ships to enlarge its fleet, but the delay will inevitably hamper the speed of Iran's re-launch into European and Asian markets.

Iran's seemingly more flexible approach is helping accelerate the country's return to the global energy market and the international appetite to deal in Iranian business will deepen every time the country reaches its goals, such as the 4m b/d oil production target. While there is no way to set an exact date, one development is clear – the new Iran has a high chance of regaining its glory of yesteryear. ■



EAST AFRICA'S LNG:

The Global Race Intensifies

BY JOHN ROPER

Head of Middle East, Uniper Global Commodities SE

The vast and well-documented gas reserves in East Africa continue to whet the appetite of investors along the New Silk Road – stretching from Beijing to Lagos – especially as the global population and subsequent energy demand soars. China, Japan, India and the Middle East are particularly hungry for liquefied natural gas (LNG) and so the intensifying global competition amongst LNG exporters means East Africa's window of opportunity is facing stiff competition.

Tanzania and Mozambique are home to East Africa's largest natural gas reserves with a combined capacity of nearly 250 trillion cubic feet (tcf) and must quicken their pace as the race for supply contracts accelerates. East Africa benefits from convenient geography, with the coastline acting as a springboard to market for the rising demand in the Middle East, India, China, Southeast Asia and Northern Europe.

Global LNG production hit 250m metric tonnes (m/t) last year, rising by 4m m/t on 2014, according to a Wood Mackenzie report. The consultancy cautions that a further 125m m/t of LNG under development means that the majority of market growth will come post-2016. East Africa's plans to ramp up its LNG exports in the early 2020s will face strong competition from both emerging and established exporters, with everyone jostling to lock in Asian clients where possible.

5.2

Mozambique could earn \$5.2bn a year by 2026 from the country's LNG exports, if current development plans stay on track.

70,000

Mozambique's LNG sector could create 70,000 local jobs over the next decade.

3%

Africa's likely growth rate in 2016, according to the IMF.



China, Japan, India and the Middle East are particularly hungry for LNG and so the intensifying global competition amongst LNG exporters means East Africa's window of opportunity faces stiff competition."

250

Tanzania and Mozambique are home to East Africa's largest natural gas reserves with a combined capacity of nearly 250 trillion cubic feet (tcf).

"Flows of cross-border trade, investments, human capital and politics are entrenched throughout Africa's economies and Tanzania's bullish streak can support the continent's sliding performance."

7%

Tanzania's likely growth rate in 2016, according to the IMF – in line with its 2015 performance.

Qatar remains the world's biggest LNG exporter, while Iran, home to the world's second largest gas reserves, has started increasing its marketing efforts in Europe, India and Pakistan after the Western-imposed sanctions were lifted on January 17. Russia, a long-time European supplier, is also focusing on Asian clients, while Australia is in the running to displace Qatar's leading role by 2018. Westwards, the first LNG exports from Sabine Pass in the US in February marked a milestone in the country's journey from an energy importer to an exporter. In addition, China and some Middle East energy producers – notably Kuwait – are looking to possibly develop their shale gas reserves, which could narrow the LNG import market over the medium to long-term if successful.

Amid this abundant supply, natural gas prices are unlikely to recover in 2016, according to 69% of respondents to a GI Industry Survey in January. Despite this hefty competition, investors are still eager to develop infrastructure that leverages East Africa's coveted gas assets. The Dubai-based Dodsai Group has discovered natural gas reserves estimated at 2.7 tcf in the Ruvu Basin near Tanzania's Dar es Salaam, which they estimate to be the country's largest onshore gas discovery with a value of \$8-\$11 billion (bn). The company has earmarked \$300m to invest in Tanzania over the coming two years.

State-run Tanzania Petroleum Development Corporation (TPDC) is working alongside Shell, Statoil, Exxon Mobil and Ophir Energy after securing a land deal for a LNG plant on Tanzania's coastline in January. The plant is well-positioned to utilize the country's offshore gas reserves when it starts up in the early 2020s.

The national significance of Tanzania's LNG export market is vast; the country's central bank expects LNG to be the main

driver of the country's transformation into a middle-income nation by 2025. This is a valid target considering that the International Monetary Fund (IMF) expects Tanzania to continue reporting the 7% growth it achieved in 2015. Tanzania will also partly help fill the economic vacuum left by the weak economic performances in historical powerhouses Nigeria and South Africa. Flows of cross-border trade, investments, human capital and politics are entrenched throughout Africa's economies and Tanzania's bullish streak could support the continent's sliding performance. Low commodity prices mean the IMF has put Africa's 2016 growth rate at 3%, down from the initial 4.3% outlined last October.

Meanwhile, the incentive for Mozambique to nurture political stability and lure more investors to Maputo is clear; the country could earn up to \$5.2bn a year by 2026 from LNG exports, creating over 70,000 jobs in its gas sector.

The country's national oil company ENH, South Africa's SacOil Holdings, China Petroleum Pipeline Bureau and China Petroleum & Technology Development Corp are pushing ahead with a joint-venture to build a \$6bn natural gas pipeline by 2020. The 2,600km gas pipeline will run from Rovuma Basin in northern Mozambique to South Africa's Gauteng province, where there will likely be offtakes for others in the South African Development Community – Botswana, Namibia, Zimbabwe, Angola and Malawi to name a few. Mozambique supplies two-thirds of South Africa's current demand and is also eyeing supply deals with India.

The vast potential of East Africa's LNG reserves faces little debate. But, Tanzania and Mozambique must quickly court investors to leverage their assets and secure clients in Africa and along the New Silk Road before other LNG exporters cross the finish line. ■



India Quickly Rekindles Economic Ties with Tehran Post-Sanctions

BY MICHELLE MEINEKE
Editor, Gulf Intelligence

Economic and political developments in India and Iran have climbed higher on the global agenda this year and their futures are increasingly intertwined.

Iran, home to the world's fourth largest oil reserves, would benefit from a secure and significant home for its exports, while India may need up to 10 million barrels of oil per day (m b/d) by 2040, according to the International Energy Agency (IEA).

This marks a new supply-demand chapter for the two countries, following Iran's previous position as India's second largest oil supplier before Western-imposed sanctions slashed Iran's production. The accelerated nature of the two countries' trade relationship is not as unlikely as it seems.

India pushed back against US-led encouragement for New Delhi to cut all ties with Iran during the sanctions era. Within legal parameters, trade between Iran and India not only continued, but swelled and

The positive sentiment surrounding Iran-India's alliance suggests there will be more abstract handshakes between Tehran and New Delhi, as the countries lock in crude and gas supply contracts and rejuvenate lagging infrastructure deals."

770

Of India's 1.5bn people, around 770m lack access to basic sanitation, which means the country's appetite for energy resources – notably power and water – will only accelerate.

certain Indian exports to Iran nearly doubled between 2009 and 2013.

The ink covering the lifting of the Western-imposed sanctions on Iran on January 17 has drenched global newspapers. Tehran's ambition to boost its economic prowess after years under sanctions can partly be translated through its pledge to boost its oil production from today's 3.7m b/d to more than 4m b/d in 2017. The validity of the

country's strategy remains to be seen. It had to funnel large portions of its financial and human capital resources during sanctions towards maintaining the country's energy infrastructure.

Indian Prime Minister Modi's ongoing global tour illustrates the country's need to befriend multiple energy partners, with a flight to Tehran in late-May following a thorough tour aimed at charming those spearheading energy policy in the Gulf. India's search for allies will be supported by the country's strong growth projections – 7.5% this year and next, according to the International Monetary Fund (IMF). Iran's outlook is not too shabby either, with 4% growth anticipated this year.

India's reliance on energy imports could climb to 90% within a decade, which is a poor outlook for the country's energy security and means its appetite for fuel will only accelerate. Couple this with the 'Make in India' programme – plans to transform the country into a manufacturing behemoth – and Iran's oil export market seems to be onto a sure thing.

Iranian crude heading to India surged from 190,000 b/d in January this year to 540,000 b/d in March, potentially displacing imports from Iraq and Nigeria, according to market intelligence firm Genscape.

And although Iran is suffering in the current low oil price environment, the blow might be somewhat alleviated by the fact that every dollar drop in the price helps reduce the Indian government's costs by up to \$1 billion. This financial boost will only strengthen India's plans to become a refining superpower by 2025, which could be helped by local refineries' ability to process Iranian-grade crude.

But it is not all clear sailing – Iran's export plans are facing a freight hurdle. Many of the ships that Iran needs in order to ramp up its exports are either being used for storage as traders sit and wait for oil prices to rise, or are not seaworthy. The treasury's funds earmarked for maintenance only stretched so far during sanctions.

The accelerated nature of the two countries' trade relationship is not as unlikely as it seems. India pushed back against US-led encouragement for New Delhi to cut all ties with Iran during the sanctions era."

x2

Within the legal parameters outlined by the sanctions on Iran, Indian exports to Iran nearly doubled between 2009 and 2013.

7.5%

The IMF expects India to post 7.5% growth for 2016 and 2017, which would come against a backdrop of reduced growth rates and credit rating cuts in several Asian and Gulf countries.

4%

Iran's economy could grow by as much as 4% this year, according to the IMF.

2025

India plans to become a refining superpower in less than a decade.

4th

Iran is home to the world's fourth largest oil reserves.

Oil and tanker trade is priced in dollars and remaining US sanctions disallow any business traded in dollars or with US companies, causing some foreign ship owners to avoid Iranian cargoes. This could slow Iran's re-launch into the European market. New Delhi and other Asian customers are no doubt keeping a close eye on developments.

The Iran-India strategic alliance has wider economic benefits, with India, Iran and Afghanistan wrapping up a trilateral agreement that allows India to bypass Pakistan and access Afghanistan through Iran's Chabahar port. India is offering a \$150m credit line for the development of the port on the Gulf of Oman.

The successful agreement, beset by potential economic and political pitfalls, puts the spotlight on Iran and India's other much-delayed and major energy projects, such as the 2,700km Iran-Pakistan-India pipeline. Tehran reaffirmed its appetite for the project this year, though New Delhi's questions linger over whether the pipeline will reach as far as its borders considering its oft-aggravated relationship with Pakistan.


The positive sentiment surrounding Iran-India's alliance suggests there will be more abstract handshakes between Tehran and New Delhi, as the countries lock in crude and gas supply contracts and rejuvenate lagging infrastructure deals. The best allies are always the old ones. ■

Establishing Independent Oil Products Benchmarks in the Gulf: Next Steps?

BY ALBERT W. STROMQUIST

Managing Director Landstrom Advisors

Independent and successful benchmarks are underpinned by transparency, robust methodologies and a level playing field that allow price formation to take place in the open, rather than behind closed doors. This gives all market participants robust pricing data and insights on which to base their trading activities. The demand for commodities, including oil products, is steadily shifting from west to east and the Gulf is well-placed at the heart of the global crossroads.


72%

Independent Middle East oil products benchmarks are urgently required, according to 72% of respondents to a GI Industry Survey.

The paradigm shift for oil flows has been particularly obvious in the last eighteen months, with the volumes through Platts' Dubai price assessment process hitting record highs. Last year's total volumes reported through the Platts Market on Close (MOC) process were seven times higher than in 2009.

But fortunate geography and rising appetite does not immediately translate into independent oil products benchmarks. As the Gulf ramps up its refining capacity and

“While Fujairah is continually growing, it is not even close to matching the might of Singapore where approximately 120 companies actively trade refined products. But, establishing independent oil products benchmarks would significantly help leverage the region's position as a serious global trading hub.”

energy consumption soars, independent Middle East oil products benchmarks are a must have, according to 72% of respondents to a Gulf Intelligence (GI) Industry Survey in April 2016. Nearly a quarter (22%) said independent benchmarks would be nice to have, but not critical, while 6% said there are already plenty of global price points.

Prices made in Singapore are used to value most of the refined products produced, consumed and traded in the Middle East. Even pump prices in the UAE are determined by Platts Singapore. Yet, the netback pricing from Singapore does not reflect trade flows in the Gulf.

Gasoline, diesel, jet fuel and naphtha are the main oil products in the Gulf's trading

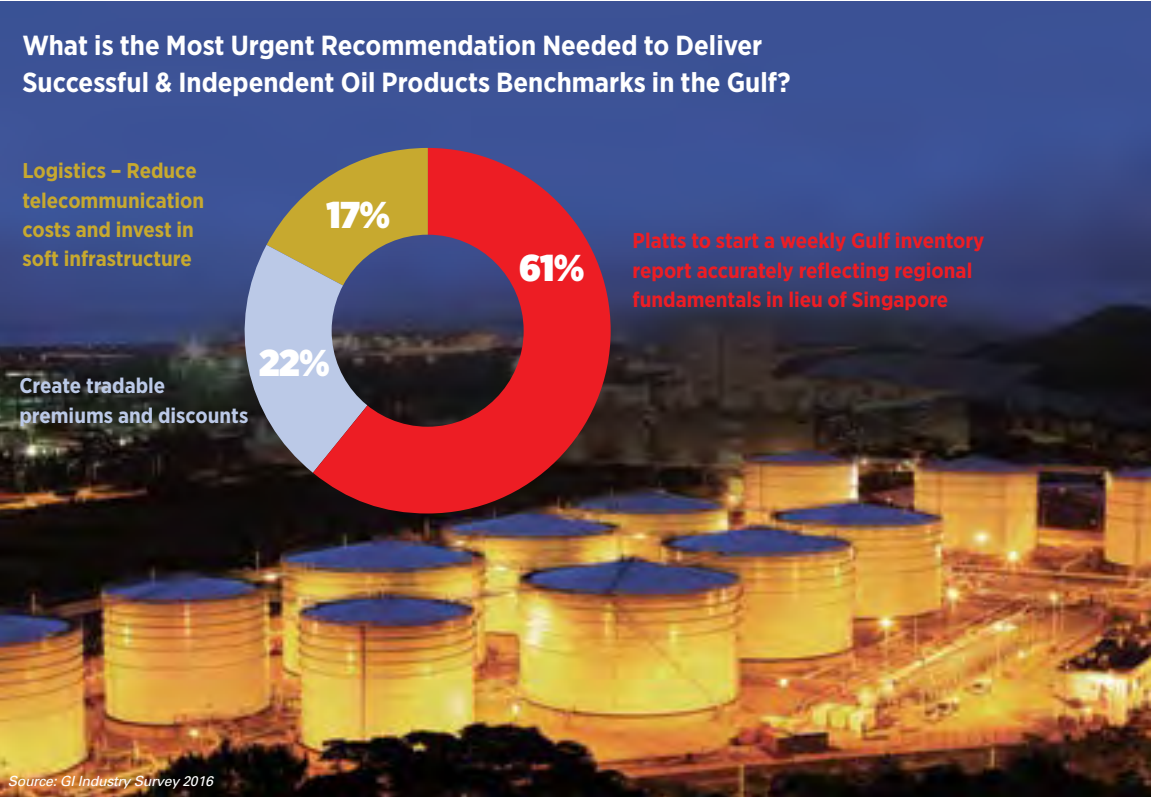

120

The approximate number of companies that actively trade refined products in Singapore.

ecosystem. While Fujairah is continually growing, it is not even close to matching the might of Singapore where approximately 120 companies actively trade refined products. But, establishing independent oil products benchmarks would significantly help leverage the region's position as a serious global trading hub.

It is a critical time for Fujairah to fine-tune its potential. China, the world's largest crude importer, is looking to establish its own crude derivatives contract. Beijing hopes it will evolve into the world's third global crude benchmark, alongside London's Brent and the US' West Texas Intermediate (WTI). If realized, trillions of dollars would flow through the Shanghai International Energy Exchange (INE) and it would be considerably harder for Fujairah's independent benchmarks to gain traction on the global trading circuit.

An awareness campaign that not only highlights Fujairah's rapid infrastructure



expansions, but also the key points surrounding trading would be hugely beneficial on several levels – a champion to communicate the region’s ambitions.

Enhancing awareness would add to the current momentum to establish independent oil products benchmarks in the Gulf, highlight the UAE’s appetite to attract trading and legal talent and remind global competition that Fujairah’s journey towards global prominence is unabated.

Such a campaign could potentially be done by the price reporting agencies (PRAs). Platts launched a window in Japan for Japanese domestic refined products in late-April, which encompassed a wider awareness campaign, for example.

The Dubai Mercantile Exchange (DME) also plans to list the Middle East refined products on its first platform from May 16, which opens the way for traders to directly hedge fuel oil delivered in the Gulf region and to trade the important spread between the Middle East and Singapore fuel oil

“ It is a critical time for Fujairah to fine-tune its potential. China, the world’s largest crude importer, is looking to establish its own crude derivatives contract.”

markets. A handful of participants said the launch is directionally positive for the DME, but it holds little value for Fujairah’s longer-term ambitions as the pricing is pegged to the MOPAG’s 180cst and MOPAG 380cst assessments.

The three final recommendations that emerged from the Oil Markets Workshop aim to develop a stronger and more transparent springboard from which independent oil products benchmarks can be launched. ■

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Creating the greatest possible long-term value from the nation’s resources is essential to achieving Qatar’s National Vision 2030. Together with Qatar Petroleum for over 20 years, we have developed a unique understanding of a unique oilfield, Al-Shaheen, transforming the field into the country’s largest oil producer.

And by drawing on our industry experience we are also providing rewarding careers for local talent, supporting the local supply chain and delivering meaningful and impactful contributions to Qatari society in health, education and the environment.

TACKLING PRODUCED WATER: QATAR

What are the best strategies that the oil and gas industry in Qatar can use to maximize the shared economic value of its produced water?

Oil and gas operations usually generate significant quantities of water from reservoirs – globally, the average ratio is three barrels of produced water for one barrel of oil. Water-strained Qatar faces a tricky outlook, as it is the world's largest liquefied natural gas (LNG) exporter and also produces 680,000 barrels a day (b/d) of oil.

Qatar's produced water is either treated and then re-injected into a reservoir to help sustain the pressure, or it is directed to a disposal well. The economic incentives for oil and gas companies have to improve so that produced water is nearly always reused, or recycled. There is an

urgent need to establish standard treatment procedures of produced water, but such efforts have not yet gained traction in Qatar. Industry and water experts argue that the government has not defined firm guidelines for quality standards and that there is little context in terms of international best practice.

Produced water is a potentially valuable source of water and could prove highly useful for Qatar's bid to improve its long-term water security, as per the National Vision 2030. The economic argument for reusing, or recycling produced water can be justified if low cost treatment plants and technologies are applied to the process.

But, treating produced water using today's measures is expensive, as produced water tends to be a poorer quality than sea water – which is used for desalination – and requires advanced treatment. The process is made more complicated by the fact that there are only tailor made solutions for treating produced water – the quality differs in every field – and there is a further distinction between the treatments of gas associated water and water generated during oil production.

This means Qatar must explore multiple solutions, which has both cost and human capital implications.

Qatar aims to reduce around 30% of its total produced

water over the medium-term, which is a considerable goal given the aforementioned ratio of 3:1. Qatar has a window of opportunity to place its research and development (R&D) teams and industry at the forefront of the global wave of water innovation by leveraging the country's strong academic base and industrial infrastructure.

Exporting knowledge on how best to recycle and reuse produced water in a cost-efficient manner, especially against the backdrop of low oil prices, will elevate Doha's intellectual profile and support its goal to both improve its water security and become a knowledge-based economy by 2030.

1 Explore Innovative Re-injection Processes

R&D teams can focus more strongly on improving today's produced water re-injection processes at oil reservoirs to reduce any loss of injectivity. Re-injection can take place either in the producing reservoir, which is the preferred configuration, or in disposal wells in a non-producing reservoir. In both cases, it is important to have the technologies that are able to treat the water at required specifications to avoid loss of injectivity and ultimately, keep costs low. R&D teams can either develop solutions with innovative technologies, or optimize existing technologies.

Total, for example, has developed and validated Flex technology through an industrial pilot, which aims to reduce the cost of produced water re-injection for pressure maintenance. It is based on ceramic membranes and allows the treatment of both sea water and produced water. In this case, a unique plant replaces two specific plants and cuts costs and boosts efficiency. Re-injecting produced water into an oil reservoir can also be used for chemical enhanced oil recovery (EOR) by mixing it with a modified ionic composition, or with even more sophisticated EOR processes. EOR is increasingly needed in Qatar and the wider Gulf – Oman, Kuwait and the UAE, for example – to enhance the performance of maturing oil fields.

“Exporting knowledge on how best to recycle and reuse produced water in a cost-efficient manner, especially against the backdrop of low oil prices, will elevate Doha's intellectual profile.”

30%

Qatar aims to reduce around 30% of its total produced water over the medium-term.



9.5bn

Today's global population of 7.4bn is expected to soar by 28% to 9.5bn by 2050, which will increase the world's demand for energy.

3 Support the Emerging Biofuels Market

The treatment of produced water can be costly and greater R&D efforts should be focused on how the raw material of produced water can be used for economic benefit. Reducing the associated costs with treated produced water will also help incentivize the oil and gas industry to proactively find disposal solutions. One such example is the production of biofuel using grasses and plants that are able to tolerate the irrigation of produced water directly, or at least after a relatively few low-cost treatment steps.

R&D into identifying and then screening the grasses and plants that are most able to survive the irrigation of produced water would be highly valuable and save costs over the long-term. This process would have multiple benefits, including pioneering a low-cost treatment of what is effectively a waste product. It would also elevate oil and gas companies' environmental ethos – important as relevant legalities gain traction – and it would help decrease global warming by increasing the world's grass and plant populations.

2 Investigate Desalination Applications

A greater emphasis on R&D also sits at the heart of the re-processing of produced water through desalination, which can ensure the water is suitable for industrial and irrigation use, for example. Technological innovation, or the use of crossover technologies – tools used in other industries that can be adapted to enhance water management strategies – are key. Today's desalination technologies, which focus on a separation process used to reduce the dissolved salt content of saline water to a usable level, are largely inapplicable to produced water.

For example, the salinity in produced water is often too high for reverse osmosis, which is a technology that removes a large majority of contaminants from water by pushing the water under pressure through a semi-permeable membrane. A promising new technology that could be applied to desalinating produced water is forward osmosis, which may be a more energy efficient route compared to reverse osmosis.

Water Jargon – what does it mean?

Produced water: Oil and gas operations usually generate significant quantities of water from reservoirs, which is known as produced water.

Reverse osmosis: A technology that removes a large majority of contaminants from water by pushing the water under pressure through a semi-permeable membrane.

Wetland engineering: A natural biodegradation of hydrocarbon contaminants in the produced water.

Phytoremediation: The use of plants to help breakdown contaminants in produced water.

4 Tighten Treatment Standards

The government needs to provide guidance on the quality standards that must be applied to the treatment and management of Qatar's produced water, especially in terms of local legislation and international best practice. The standards of produced water treatments should meet the quality standards of the final objective. For example, treated produced water used for industrial purposes will encounter different quality standards than produced water allocated for environmental discharge, or irrigation.

Clarifying the correlation between the untreated produced water and its final use will help R&D teams and energy companies pin down the treatment technologies they require. Streamlining this correlation has the potential to reduce the level of water and economic waste.

There is a surplus of produced water in Qatar and huge volumes are earmarked for environmental discharge. Using low cost and more extensive produced water treatments, such as phytoremediation and wetland engineering, will encourage the natural biodegradation of hydrocarbon contaminants in the produced water. Plus, the treated produced water from such wetlands tends to be high quality and has useful downstream applications for industry and agriculture.

Treatment systems that include creating artificial wetlands also have the benefit of enhancing ecological biodiversity in Qatar, where such habitats have been radically impoverished in recent years. Qatar's academia, such as the Environmental Science Centre at Qatar University, is well-placed to explore this innovative and environmentally friendly route alongside the oil and gas industry.

5 Establish a National Management Framework

There is little argument that produced water is a significant problem for the oil and gas industry, an environmental threat and a regulatory challenge. Cost-effective and environmentally sound strategies and technologies can transform Qatar's produced water into a valuable asset. But, there is one vital ingredient – a nationwide framework to coordinate efforts.

The objective of this framework would be to identify, quantify, evaluate and assess both the challenges and opportunities posed by the management of produced water in arid Qatar. The integrated approach would also consider the large volume of produced water generated by the gas-to-liquids (GTL) industry.

The framework could include the characterization and classification of produced water in different categories of treatability and it would identify the quantity of produced water from oil, gas and GTL industries.

The evaluation and assessment of the potential environmental impact of produced water would be incorporated into the new regulations. There would also be a comprehensive assessment of existing and emerging treatment technologies and integrated and hybrid configurations to treat produced water. The framework would bring produced water collection and treatment facilities under water sharing agreements and the establishment of a beneficial reuse matrix. This would consider both the natural and engineered conveyance systems, water qualities and agricultural application. ■

FOR THE **CLICK**
FULL REPORT **HERE**

SEIZING COMMODITY INVESTMENT OPPORTUNITIES: THE GULF

An ABN AMRO industry roundtable was held in Dubai on May 19 where senior stakeholders in the local and global energy and financial markets discussed the best strategies to navigate the opportunities and risks within the Gulf's commodity market.

Investors who are eyeing opportunities in the Gulf's commodity market are battling against the economic pressures of low oil prices and a sluggish local lending community. Against this challenging backdrop, how can the Gulf elevate its trade finance activity with minimal risk?

Rising above the noise of daily trades and price fluctuations, the statistics circulating the global commodity markets suggest a bullish long-term outlook for investors and traders. The world's population is set to soar by nearly a third from today's 7.4 billion (bn) to 9.5bn by 2050 and the US' Energy Information Agency (EIA) forecasts a 48% increase in global energy consumption by 2040.

In the Gulf alone, the 220 million (m) tonnes of oil consumed in 2001 nearly doubled by 2010 and is expected to nearly double again by 2020. Europe's dying refining sector is being reborn in the form of complex and large scale refineries in the Middle East and Asia, with a greater emphasis on petrochemical facilities. The vast majority of the 7.1 million barrels a day (m b/d) of new distillation capacity in the pipeline in 2015-2020 will be from the Middle East, China and the wider Asia-Pacific, according to OPEC's 2015 World Oil Outlook.

While the Gulf's commodity market is home to many opportunities, there are also risks. Some of which are more difficult

to hedge, such as volatile oil prices and economic and political instability. The domino effect of low oil prices – Brent has largely hovered below \$50 a barrel throughout the second quarter – means the short-term outlook is proving to be a financial assault course for foreign and local investors alike. Though a single commodity, oil holds immeasurable global significance to daily economics and trade, as components are used in thousands of mainstream products.

Oil also forms the nucleus of most Gulf countries' economies and, in turn, it significantly impacts their political influence on the global stage. This year, ratings agency Moody's has reduced the long-term issuer rating on Saudi Arabia, the world's largest oil producer and exporter, by one notch to A1, while Oman and Bahrain were downgraded to Baa1 and Ba2, respectively. As expected, political instability tends to negatively impact the accessibility of local trade finance. Bar turbulence in Iraq, politics and security in the Gulf Cooperation Council (GCC) is relatively stable. But, political and security challenges are occurring in the wider Middle East, as seen in Syria, Lebanon, Egypt and Yemen, for example.

IGNITING LOCAL BANKS' APPETITE

In the Gulf, local and national banks' appetite to support trade finance can sometimes be more subdued when compared to foreign investors' appetite to provide debt packages that support the region's low-risk infrastructure projects. Whether national and local banks' reluctance to grow their presence in the region's trade finance market is due to a lack of interest or a lack of understanding is an oft-debated topic amongst investors.

On a macro level, increasing local and national banks' trade finance activity would help accelerate the region's commodity flows, especially considering highly-competitive lenders in Europe, the US and Asia. Foreign banks with a presence in the Middle East – Citi, JPMorgan, SMBC and HSBC, for example – are well versed in trade finance, be it via bonds, syndicated loans or mezzanine financing.

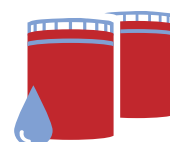
The Gulf's potential as a global commodity hub is underpinned by its position at the heart of the New Silk Road – which stretches from Beijing to Lagos – so blossoming economies in Asia and Africa are on the Gulf's doorstep."

Some argue that despite local banks' significant financial reserves, they have little inclination to explore new lending avenues and prefer to support property deals, for example. But, continually treading only the well-worn financing paths just enables foreign banks to step in and fill the vacuum, which means that local banks' lending architecture does not mature as quickly as it could.

Others counter that national banks are receptive to building their trade finance desks, but a gap in local knowledge and the subsequent need to hire foreign workers curbs local entities' progress. The region's small local talent pool is partly explained by Gulf countries' young age demographic and small populations – most are below 5m, bar Saudi Arabia's population of 31m.

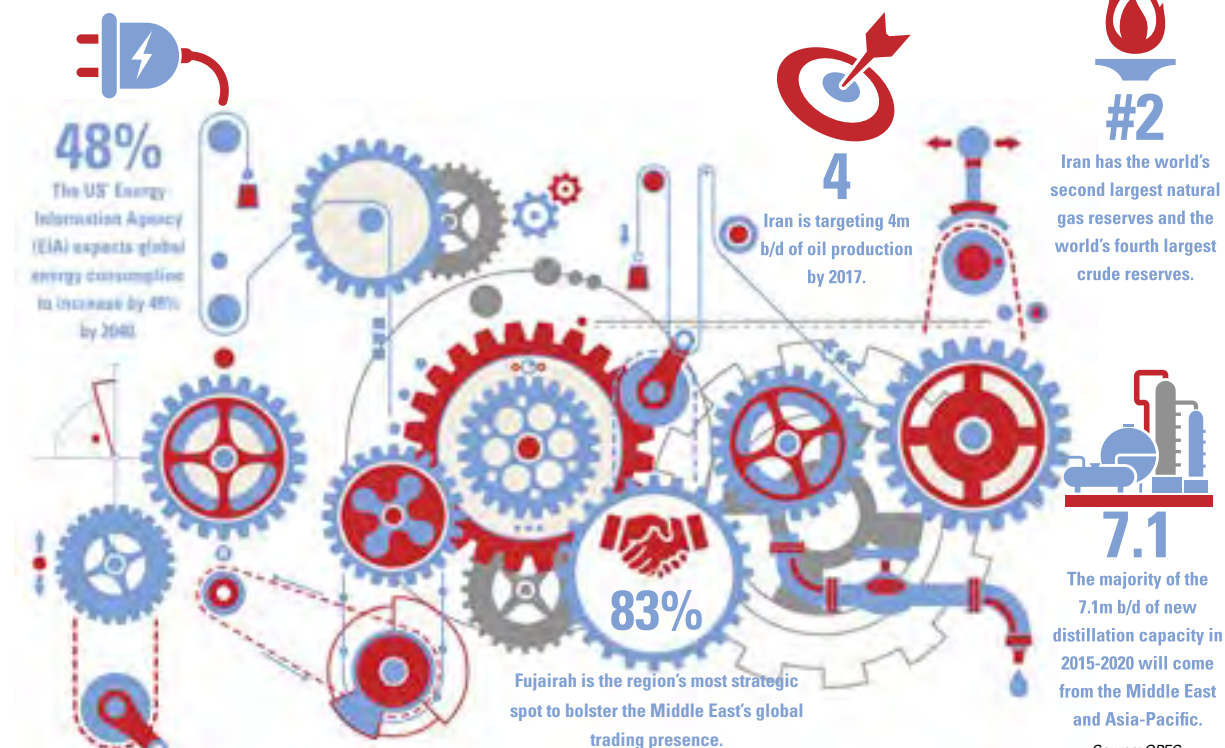
Foreign investors and trading houses can help plug the Gulf's local knowledge gap by importing talent from other commodity hubs where trade finance is the norm, such as Singapore, Hong Kong, London, Chicago and New York. But, this would serve as a short-term solution and fail to address the need for local lenders to elevate their employees' capabilities and increase nationalisation in the Gulf, with the latter being a key long-term goal for all Gulf countries.

Bolstering local banks' lending capabilities could prove transformational for small and medium-sized enterprises' (SMEs) ability to expand, especially as SMEs have been earmarked by local governments as vital players in the push for diversified economies. Such support would be well-received, as low oil prices and a limited local talent pool have especially shrunk SMEs' profit margins.



55%

Today's 9m tonnes of oil storage at Fujairah is expected to climb by over 55% to 14m by 2020.



Source: Gulf Intelligence (GI) Industry Survey – 2016

JOIN FORCES, CUT RISK

As expected, the Gulf's regulatory and financial rule book is not as sophisticated as other global commodity hubs; London has had centuries to fine tune its expertise, for example. To accelerate the Gulf's progress, local banks with an appetite to become adept at trade finance could benefit from foreign investors' guidance and make a concerted effort to participate in international lenders' syndicated loans, or tripartite deals. Either route would enable novice trade finance lenders to hedge their risk and familiarise themselves with the characteristics of highly competitive financing packages, which are becoming increasingly common in the Gulf. While this may require local banks to lower their price points, such a short-term adjustment would enable them to competitively access the region's rapidly evolving commodity markets.

LEVERAGING THE REGION'S EMERGING HUBS

Geography is at the crux of the Gulf's potential as a commodity hub on par with behemoths Singapore and Rotterdam. Nestled in the heart of the New Silk Road – stretching from Beijing to Lagos – and on the doorstep of blossoming economies in wider Asia and Africa, the increasingly extensive facilities at Fujairah's port in the UAE, for example, could act as a strategic parking space. Asia's ravenous energy demand continues to be spearheaded by China and India; now the world's first and fourth largest energy consumers, respectively.

National banks in the UAE have the opportunity to support Fujairah's ambition to establish itself as the Gulf's local commodity hub for regional and global trade, especially as the port is already the world's second largest bunkering hub after Singapore. Fujairah's location south of the Straits of Hormuz makes it the region's most strategic spot to bolster



84

Iran's population of 80m is expected to soar to 84m by 2021.



“Iran’s vast potential is gold dust for investors, but financiers and traders need to tick off two key criteria – transparency and a refined regulatory structure.”

the Middle East’s global trading presence, according to 83% of respondents to a Gulf Intelligence (GI) Industry Survey in April 2016. Surprisingly, Sohar in Oman and Bahrain did not receive a single vote, with 11% preferring Dubai.

Fujairah’s current 9m tonnes of oil storage is expected to climb to 14m tonnes by 2020 and the port’s multi-million dollar investment to launch a new very large crude carrier (VLCC) jetty in June 2016 will sharpen the Gulf’s competitive edge as the region aspires to rival the size and global importance of Rotterdam and Singapore by the 2020s. Elevating the Gulf’s trading profile on a global basis could be accelerated by the establishment of independent Middle East oil pricing benchmarks.

THE REGION’S NEW DAWN?

The geopolitical shift most likely to significantly impact the Gulf’s commodity market so far this year is the lifting of the Western-imposed sanctions on Iran on January 17. Saudi Arabia’s recently-announced Vision 2030, which details an overhaul of the world’s biggest oil producer’s economy, is a close second.

The jury is still out on whether the lifting of sanctions signals a new dawn for Iran, or a false start. Investors are tentatively confident that Iran will actualize its pledge to leverage



220

The Gulf’s oil consumption of 220m tonnes of oil in 2001 is expected to nearly double by 2020.



9.5

Today’s global population of 7.4bn is expected to soar by nearly 28% to around 9.5bn by 2050.

the country’s position as home to the world’s second largest gas reserves and the fourth largest oil reserves. Tehran plans to increase its oil production by over a third on sanction levels to 4m b/d of oil production by 2017 and lock in several gas supply contracts in Europe, Asia and the Gulf, namely Oman.

But, Iran’s largely archaic financial architecture – some aspects mirroring the 1960s – means the country will remain in the gloomy wings of the global growth story without foreign support. Some of the country’s food safety management techniques are also decades behind developed countries’ standards.

Still, Iran’s population of 80m – nearly 60% of whom are under thirty years old and well-educated – need a myriad of commodities, including iron, steel and agriculture. Financiers and traders who patiently navigate the country’s financial and regulatory hurdles will be rewarded with “mountains of trade”.

Investors operating in the Gulf with links to US-based companies will inevitably take a while longer to embrace Iran’s need for and supply of commodities. Washington and Tehran’s political ties need to strengthen, with greater clarity likely to depend on the outcome of the US elections and Iran’s ability to stick to its revised nuclear rule book.

Opportunities in the Gulf’s ever-growing commodity market abound, but local investors need to act fast to ensure their balance sheets and talent are part of the long-term economic boom. Those, on both the local and international front, who embrace collaborative strategies this year will especially thrive, as heftier coffers will ease the blows from what will inevitably be a rocky road. ■

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The 2016 Abdullah Bin Hamad Al-Attiyah International Energy Awards

The Awards recognize individuals for their lifetime achievement in the advancement of the global energy industry via six categories: Qatar's Energy Industry; OPEC; Renewable Energy; Producer-Consumer Dialogue; Education; and International Energy Journalism. The esteemed winners, each with decades of experience in the energy markets, share their thoughts on what may emerge in the turbulent narrative of oil markets in the second half of this year.



HAMAD RASHID AL-MOHANNADI

Senior Advisor, Qatar Petroleum (QP) and ABHAF Board Member

Winner: Lifetime Achievement Award for the Advancement of Qatar's Energy Industry

"We expect the oil market uncertainties to continue during the second half of 2016, before moving towards a more balanced market during the first half of 2017. However, this will depend on several factors, such as global demand growth, OPEC's production levels and the rate of decline from higher cost producers, including non-OPEC."



MARGARET MCQUAILE

Retired Senior Correspondent, Platts

Winner: Lifetime Achievement Award for the Advancement of International Energy Journalism

"The oil market appears to be moving back towards balance, particularly in view of the impact on supply following the outages in Canada and Nigeria and amid a seemingly solid growth in demand."



H.E. DR. MAJID A. AL-MONEEF

Advisor to the Royal Court of the Kingdom of Saudi Arabia

Winner: Lifetime Achievement Award for the Advancement of the Organization of Petroleum Exporting Countries (OPEC)

"2016 is a year that will mark the ability of OPEC and the other oil producing countries to adjust to the new oil price cycle by promoting continued market vigilance and cooperation with other stakeholders to bring stability back to the oil market and by taking the necessary country reforms for such adjustments. The next half of the year will witness gradual market recovery and a new and more sustainable equilibrium – the beginning of which is already underway."

ADNAN Z. AMIN
Director General,
International Renewable
Energy Agency (IRENA)

Winner: Lifetime Achievement Award for the Advancement of Renewable Energy

"The business case for renewable energy is stronger than ever. Renewable energy capacity grew at its fastest rate ever in 2015, while investment reached a record \$284 billion. IRENA's latest employment figures show that 8.1 million people now work in the renewable sector. IRENA's analysis shows that it is possible to double the global share of renewable energy in the global energy mix to reach 36% by 2030. Such doubling is not only economically and technically feasible, but would save up to \$4.2 trillion annually – 15 times higher than the costs – thanks to avoided expenditures on climate change and air pollution."



DR. BASSAM FATTOUH

Director, Oxford Institute for Energy Studies

Winner: Lifetime Achievement Award for the Advancement of Education for Future Energy Leaders

"In the second half of 2016, the oil market will continue to rebalance with non-OPEC production both in the US and outside the US declining, while demand picks up and commercial inventories fall. The biggest source of uncertainty will remain OPEC's output and its policy. But, with inventories at record levels and a rather weak flow of macroeconomic data, the price recovery is not likely to be smooth. There will be bumps on the way."



3RD ORYX GTL STUDENT AWARDS 2016

Competitive spirit is rife in today's technical and scientific professional circles, which means the continual enhancement of post-graduate education in Qatar is vital. The national importance of students' drive to succeed has far-reaching consequences.

Students are at the heart of Qatar's goal to become a knowledge-based economy – one based on intellectual value, rather than hydrocarbons – as per the country's National Vision 2030.

Developing students' post-graduate technical and scientific knowledge is vital for Qatar's economic and cultural future as a global hub of intellectual expertise and research and development (R&D) up to 2030 and beyond. This is why recognising students' achievements through the 3rd ORYX GTL Student Awards 2016 is so important.

The Awards were held at Qatar University's Research Complex in April to celebrate five recently-graduated Masters and PhD students – four of whom are Qatari – for their academic contribution to Qatar's future. Kahramaa's President, H.E. Essa Bin Hilal Al-Kuwari, Dr. Hassan Al-Derham, President of Qatar University and Mr. Mohamed Al Enazi, ORYX GTL Chief QHSE Officer presented the Awards in the presence of over 150 senior executives from over 50 entities representing Government, Academia & Industry.

"The brightest minds in Qatar will spearhead the country's mission to become a knowledge-based economy by 2030. These awards are a crucial step in recognizing that Qatar is on the right path and will succeed," said Dr. Hassan Rashid Al-Derham, President of Qatar University.

QATAR'S BRIGHTEST MINDS

Dhabia M. Al-Mohannadi won an Award for her Masters in Chemical Engineering from Texas A&M University at Qatar where her research focused on the systematic assessments of low carbon technologies, including sustainable design and process integration – critical work that she plans to explore further through a PhD.

“Reducing our carbon footprint is a multidisciplinary goal and involves different decision-making processes, as well as the need for regulations and policies,” said Al-Mohannadi, who is also a member of Qatar Foundation’s Qatar Research Leadership Program (QRLP).

“This problem is not only important to Qatar, but for the world as we face ambitious emissions reduction targets, depleting resources and a growing demand for energy as the global population grows.”

Jassim Al-Mejali won an Award for his first class Masters in Material Science and Technology from Qatar University. Al-Mejali also works at Qatar Aluminium Company (Qatalum) as a Process Engineer in reduction electrolysis and was recently promoted to Senior Booster Developing Engineer. There is a valuable link between Mejali’s two worlds – his professional expertise and his studies – as all companies in Qatar are keen to streamline their expenditure and become as efficient and cost-effective as possible.

“In aluminum smelters, impurities are one of the critical factors that significantly impact companies’ financial results and my studies have helped Qatalum’s management solve this technical aspect,” said Al-Mejali.

Tejvir Singh, who won an Award for his PhD studies in Sustainable Energy at Hamad Bin Khalifa University,

said the industry’s recognition of his post-graduate work has bolstered his confidence to pursue his professional ambitions. Singh’s previous experience studying abroad, including in Europe and India, has sharpened his multi-dimensional knowledge. In India, for example, Singh worked with government officials and developed proposals for the sustainable development of villages.

“Within the next five years, I hope to set up an organization in collaboration with GTL to work on the water-food-energy nexus, as these are crucial issues on our road to sustainable development,” said Singh. “My target is to help various countries around the globe – including Qatar – resolve their national sustainability issues. There are various new technologies and policies that must be scaled up to an industrial level to fulfill Qatar’s National Vision 2030.”



80% OF THE WINNERS OF THE 3RD ORYX GTL STUDENT AWARDS FOR THE ADVANCEMENT OF POST-GRADUATE EDUCATION IN QATAR ARE QATARI

The esteemed International Selection Committee

- **Mr. Mohamed Al Enazi** – Chief QHSE Officer, ORYX GTL
- **Dr. Rashid Alammari** – College of Engineering, Qatar University
- **Dr. Mounir Hamdi** – Dean, College of Science, Engineering & Technology, Hamad Bin Khalifa University
- **Dr. Eyad Masad** – Vice Dean, Texas A&M University at Qatar
- **Dr. Bhanu Chowdhary** – Associate VP for Research & Strategic Initiatives, Qatar University
- **Dr. Iain Macdonald** – Senior Program Manager, Qatar Carbonates and Carbon Storage Centre, Imperial College London

The Winners of the 3rd ORYX GTL Student Awards 2016:



DHABIA AL-MOHANNADI
Degree: Bachelors and Masters in Chemical Engineering
Alma mater: Texas A&M University at Qatar
Area of Interest: Sustainable Development. Dhabia is member of Qatar Foundation’s Qatar Research Leadership Program.



JASSEM AL-MEJALI
Degree: Bachelors in Chemical Engineering and Masters Degree in Material Science and Technology
Alma Mater: Qatar University, Qatar; University of Leeds, UK
Area of Interest: Engineering Sciences. Jassim has just been promoted to Senior Booster Developing Engineer at Qatar Aluminium Company.



SAAD ALI AL-SOBHI
Degree: Bachelor of Science in Chemical Engineering; Masters of Science in Chemical Engineering and PhD Chemical Engineering
Alma Mater: Qatar University, Texas A&M University at Qatar and the University of Waterloo, UK
Area of Interest: Modeling, simulation and optimization of natural gas processes. Saad is an Assistant Professor in the Chemical Engineering Department at Qatar University.



TEJVIR SINGH
Degree: Bachelor of Technology in Mechanical Engineering and Joint European Masters in Management and Engineering of Environment and Energy
Alma Mater: Rajasthan Technical University, Kota; UPM Madrid, EMN France and KTH Royal Sweden
Area of Interest: Water-food-energy nexus. Tejvir is pursuing his PhD in Sustainable Energy at Hamad Bin Khalifa University in Qatar.



YOUSUF AL-JABER
Degree: Bachelor of Science Degree in Chemical Engineering; and Executive Masters in Energy and Resources
Alma Mater: Hamad Bin Khalifa University, Qatar; Texas A&M University at Qatar and HEC Paris
Area of Interest: Energy analysis. Yousef Al-Jaber is currently Head of Corporate Social Responsibility and Institutional Relations at Total E&P Qatar.

18

Qataris were nominated for The 3rd ORYX GTL Student Awards, which has increased three-fold since the 2015 campaign

Yousef Al-Jaber won an Award for his Executive Masters in Energy and Resources from Hamad Bin Khalifa University in Partnership with Georgetown University, Texas A&M University and HEC Paris. Al-Jaber is currently working as Head of Corporate and Social Responsibility and Institutional Relations at Total E&P Qatar. Saad Ali Al-Sobhi’s Award celebrated his PhD from Canada’s University of Waterloo, which focused on modelling, simulation and the optimization of natural gas

processes. Al-Sobhi is also an Assistant Professor in Qatar University’s Chemical Engineering department.

“We have been highly impressed by the depth and complexity of the studies submitted by the winners of this year’s awards, plus all the nominees,” said Mohamed Al-Enazi, ORYX GTL’s Chief Quality, Health, Safety and Environment (QHSE) Officer. “We look forward to discovering more innovative ideas from the brightest and talented young minds in Qatar for next year’s awards.” ■

Qatar: A Global Intellectual Hub

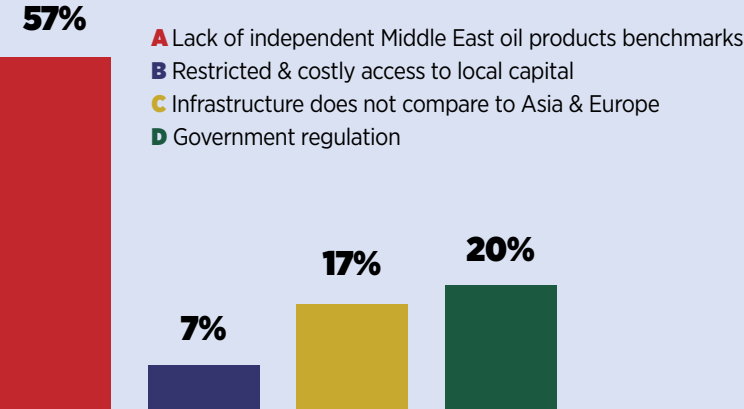
Qatar’s National Vision 2030 outlines three Key Challenges; securing Qatar’s energy security, cyber security and water security. To become a knowledge-based economy, numerous factors have to work in parallel. Putting in place infrastructure, fostering innovation and facilitating research and technology developments are some of the essential building blocks that are being employed to realize the country’s vision. The need to continually enhance post-graduate education sits at the heart of this vision. The post-graduate contributions made by the Award winners all contribute to Qatar’s push to establish Doha as a global hub of intellectual activity and innovation by 2030.

Qatar has focused on becoming an energy R&D hub since 2006, when the government decided to allocate 2.8% of GDP annually to promote technology and innovation via the Qatar National Research Fund (QNRF). Since then, Qatar has invested heavily in developing its education – including bolstering students’ appetite for post-graduate studies – and R&D capabilities by opening the Qatar Science & Technology Park (QSTP) and unveiling the Qatar National Research Strategy (QNRS). Qatar hosts more tier-one US universities than any other country in the Middle East and North Africa (MENA), which have largely been championed by the non-profit organisation, Qatar Foundation.

GI Oil Markets Workshop Survey – Results

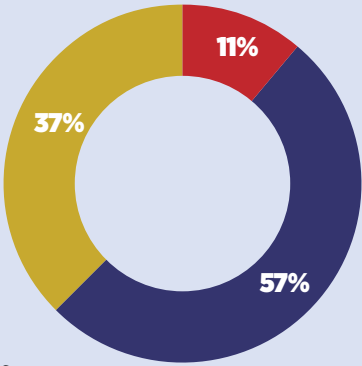
The Gulf Intelligence Industry Survey held at the Oil Markets Workshop revealed local traders and energy stakeholders' views on how the Gulf can best elevate its position as a global commodity trading hub.

What is the main obstacle to the UAE's ability to evolve into a mega trading hub and rival behemoths Singapore and Rotterdam?

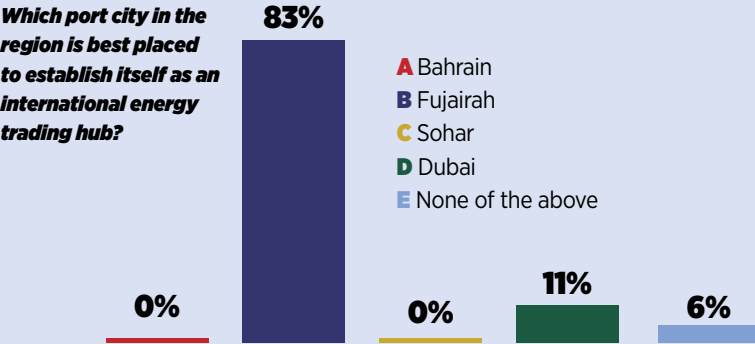


How long will it take for the Middle East to evolve its global trading presence and rival other major global hubs, like Singapore and Rotterdam?

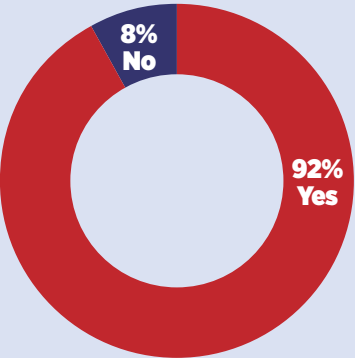
- A 1 year – The trade is there, but needs an independent benchmark
- B 2-5 years – It is a big undertaking & will not happen overnight
- C 5 years + – Politics, governance and regional competition will curb progress



Which port city in the region is best placed to establish itself as an international energy trading hub?

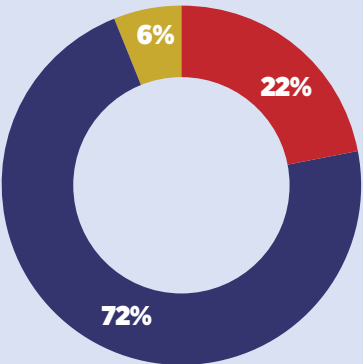


Would Abu Dhabi and the wider UAE benefit from maximizing the opportunity of hosting a global trading hub?



As the Gulf ramps up its refining capacity and energy consumption, independent oil products benchmarks would be...

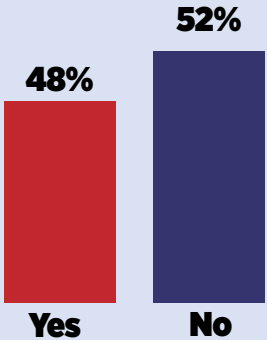
- A Nice to have, but not critical
- B Urgently required – it is imperative for price accuracy
- C Forget it – there are enough global pricing benchmarks



GI Qatar Industry Water Security Forum Survey – Results

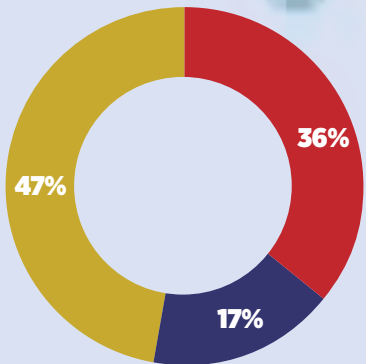
The Gulf Intelligence Industry Survey held at the Qatar Industry Water Security Forum put a spotlight on what leaders in government, industry and academia believe should be the next steps to improve arid Qatar's water security, which is one of the Three Challenges in the country's National Vision 2030.

Would Qatar benefit from consolidating all of its in-country water research laboratories into a Master Plan, with the intellectual property shared by all?

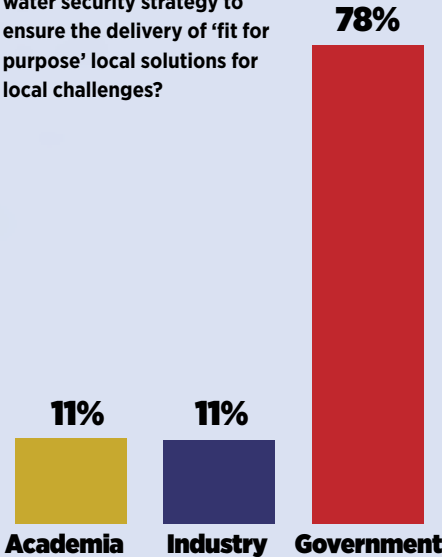


Which technology strategy should Industry-Academia prioritize to better Qatar's water security as quickly as possible?

- A Focus R&D investment on improving efficiencies of existing technologies
- B Today's technologies are not advanced enough – invest in new solutions
- C Crossover technologies – adopt and adapt technologies across industries



Which entity should take the lead in coordinating Qatar's water security strategy to ensure the delivery of 'fit for purpose' local solutions for local challenges?





TWO ENERGY WORLDS

The energy landscape has shifted. Changing customer behavior, new technology, and increasingly global markets are creating two distinct energy worlds.

The classic energy world has the indispensable task of ensuring supply security. Alongside it is emerging the new world of distributed energy solutions. Uniper's portfolio will combine large-scale power generation and the effective management of global and regional energy supply chains. E.ON will focus on the new energy world with renewables, distribution networks, and customer solutions. Both worlds require distinctive business models and capabilities. Both worlds present challenges and opportunities. Both worlds are needed to meet the world's energy needs in the decades ahead.

A strong energy company

Uniper has the right assets, knowledge, and skills to succeed in the classic energy world. We have a deep understanding of global and regional energy markets, regulatory regimes, and market designs. We have a wide range of capabilities in the construction, management, and operation of large-scale energy assets as well as the optimization and risk management of assets and contracts. And we have long-standing relationships with industrial customers, municipal utilities, system operators, and our suppliers. These strengths and networks reinforce one another.

There are three main areas in which we deploy our strengths:

- We help ensure security of supply in Europe as it transitions to a low-carbon future
 - The growth of intermittent renewable generation increases the need for flexible power plants that can meet fluctuating demand at short notice; our generation portfolio is well suited to this task. In addition, our midstream gas business helps ensure supply security through a diverse portfolio of long-term gas contracts along with gas storage, transport, and regasification capacity.
 - Our trading activities connect global commodity markets
- Global trading in commodities like natural gas and coal is bringing energy markets from America to Asia closer together. As markets become more interconnected and dynamic, they create more opportunities for



Why Uniper?

We're well positioned to play a key role in ensuring supply security. We have:

- a broad geographic footprint with positions in Europe's main generation markets and in Russia
- comprehensive capabilities in the operation and management of individual generation assets and optimization of generation fleets
- profound technical knowledge gained in the development and use of energy technologies
- the market access of a proven trading and optimization platform at Europe's key trading points and on global markets along with a significant position in the midstream gas business
- a detailed picture of the interrelationships between market participants, technologies, and energy systems
- deep expertise in regulatory regimes and market designs

companies that can build bridges between regional markets, respond swiftly to changes in supply and demand, and use their knowledge of supply chains to better manage commodity risk. Uniper has a flexible portfolio of long-term gas import contracts, coal, and LNG. This portfolio not only enables us to meet our own fuel needs but also to provide our customers with bespoke products and services.

- We support the development of power markets outside Europe with our own generation activities and our services for third parties

Uniper has a significant platform of technologically advanced generation assets across Europe and in Russia. As the demand for dispatchable generation capacities is growing in a number of markets, we're well positioned to market our capabilities in building and

operating assets and in supplying fuel to third parties. From gas fields and power stations to customers: Uniper helps keep energy reliable

We offer a broad range of energy products, services, and solutions. Our business portfolio encompasses most of the stages of the energy value chain. We have a stake in a gas production business in Russia and procure climate-friendly natural gas under long-term supply contracts and at trading venues. With LNG becoming a more prevalent source of gas, we're active in sourcing, transport, and regasification. In addition, our hydro, coal and gas power stations play an important role on the upstream end of the electricity value chain.

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