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Special Report 2016

A CRITICAL ENERGY OUTLOOK OF THE YEAR AHEAD

CONTENT

ENERGY PLAYERS BRACE FOR A TESTING 2016

By Michelle Meineke, Editor, Gulf Intelligence

The collapse of oil prices at the start of 2016 has comprehensively dashed hopes that a brief bounce in prices in mid-2015 heralded the beginning of the first uptick since June 2014. Oil prices sank below $30/bl in mid-January – hitting a 12-year low. Governments and companies with oil revenues at the heart of their economic security will spend 2016 grappling with budget-crippling prices.

Half of the respondents to a Gulf Intelligence Industry Survey of 250 energy industry professionals operating in the UAE expect oil prices to stay below an average of $40/bl this year. Comparatively, 41% of respondents said oil prices would average $60/bl in 2015 for the same survey last January.

"The oil prices are moving lower faster than the oil barrels can come off the market," said H.E. Dr. Emmanuel Ibe Kachikwu, Nigeria's Minister of State for Petroleum Resources and OPEC President (2015).

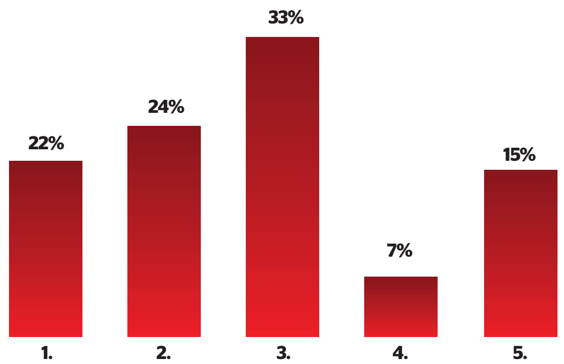
BRUISED BUDGETS AHEAD

The bearish outlook has triggered a wave of redundancies across the energy sector in the Middle East and beyond. Total is shaving 4,000 jobs off its payroll, Royal Dutch Shell is expected to add more cuts to its 7,500 redundancies, while the UAE's Sharjah-based Dana Gas is cutting staff numbers in its headquarters by 40%. Such cuts are indicative of the tense atmosphere in worried boardrooms across the globe, with energy companies retreating from projects that made economic sense this time last year. An estimated $380bn worth of oil and gas projects have been cancelled since 2014, according to Wood Mackenzie, with Shell's decision to step back from the $10bn Bab sour gas venture with Abu Dhabi's National Oil Company joining a rapidly growing list.

Budget deficits and constrained spending in the Gulf will have the biggest economic impact on the region's energy industry, according to 43% of respondents in the GI Industry Survey. Governments in the Gulf are also suffering, including the region's energy goliath, Saudi Arabia. Riyadh declared its largest ever budget deficit for the year ahead at 362bn Saudi riyals ($87bn) – roughly 16% of GDP – and state-owned Saudi Aramco is reportedly eyeing an initial public offering (IPO).

Q What is the most significant take-away from Saudi Arabia's announcement to possibly issue an IPO?

1. Saudi Arabia determined to end role as swing producer and allow markets to determine oil price
2. Saudi Arabia will have little problem navigating lower oil price era as it has many valuable assets
3. Saudi Aramco to join IOCs global trend of divesting refining assets
4. IPO would release a treasure trove of data about the world's largest oil reserves
5. Other Gulf states may look to follow suit with IPOs of their own national oil companies



A third (33%) of respondents said the IPO indicates the world's largest oil company's plans to divest its refining assets, while others (24%) suggested it is a cash-raising exercise. Investors are keeping their excitement in check as Saudi Aramco has not set a date for the IPO in 2016 – or even specified a quarter – but access to the secretive company's treasure trove of data about the world's largest oil reserves would be highly valuable

A myriad of macroeconomic factors outside the Gulf are also set to collide this year. China, the world's second largest economy and largest oil importer, started 2016 by posting its slowest growth rate in 25 years and twice halting trade at its stock exchange. The first increase for nearly a decade in interest rates in the US, the world's other economic superpower, will likely be followed by a second hike in the first half of 2016.

OPEC'S IDENTITY CRISIS

Oil prices around $30/bl heralds an unexpected chapter of economic pain for energy producers. Dr. Kachikwu said an emergency OPEC meeting may be called by April ahead of the scheduled gathering on June 2 in Vienna this year. But genuine agreement between the cartel members remains unlikely with the wealthier Gulf members allied to OPEC linchpin Saudi Arabia's plan to retain market share, while others like Nigeria, Algeria and Venezuela stress the need for a policy that supports oil prices.

Fellow OPEC member H.E. Suhail Mohamed Al Mazrouei, the UAE's Minister of Energy, questioned the value of calling an emergency meeting that would only focus on OPEC's contribution to the oversupply in the global market – a position that will likely last well into 2016.

"I am not convinced that OPEC can unilaterally change this strategy just because we have seen a low in the market," Al Mazrouei said. "We were assuming some level of cooperation when we tried [at previous] meetings, but everyone said 'it is not my problem'. That left it to the market and I think that was the wise thing to do."

After fifteen months of surprising resilience, US shale producers are expected to finally fall to their knees in 2016 under the weight of their burgeoning debt packages. OPEC's attempts to curb higher-cost producers amongst non-OPEC producers, notably US shale oil operators, looks set to succeed this year. The US' production of 9.22mn b/d is likely to slide by 500,000 b/d this year as many producers declare bankruptcy, or turn off wells. Inadvertently, the US may have inherited Saudi Arabia's mantle as the world's swing producer.

Still, the US has 4mn b/d of new supply waiting in the wings if the 5,000 wells that have drilled and not yet fracked come online at 100-200 b/d each – a small amount for a horizontal well – when oil prices climb closer to $50/bl.

The short-term losses in the US may be compensated by Iran's bold ambitions to bring a minimum of 500,000 b/d of oil to the global market this year, following the lifting of sanctions on January 17. The International Monetary Fund (IMF) warned in late-2015 that Iran's reemergence onto the global stage could depress oil prices as low as $20/bl – a forecast made before oil tumbled to $30/bl.

Iran also stands to gain the most from the increased appetite in South Asia (India-Pakistan-Iran), according to 34% of survey respondents, as Tehran leverages its position as owner of the world's second largest gas reserves. Iran's plans to lock in new supply contracts extend to Europe and Asia, with eastern clients dotted along the new Silk Road, stretching from Beijing to Lagos. A sanctions-free Iran means the oft-delayed 2,700km gas pipeline stretching from Iran's South Pars field, through Pakistan and to India's New Delhi may gain traction this year.

But Iran's economy, along with other major gas producers like Qatar, will likely take a hit from lower gas prices in 2016. Investments in new capacity projects,

coal-fired power plants switching to gas in the US and China, plus the EU saying – yet again – it will ease reliance on Russian supply are unlikely to provide enough price support, 69% of respondents said.

The US' decision to lift a four-decade ban on crude exports, bar the 500,000 b/d that is largely already exported to Canada, will fuel a change in African exporters' routes this year. Over a third (38%) of respondents expect Africa's dominant producers – Nigeria, Angola, Algeria, Egypt – to focus on local markets across the continent, which are backed by a population boom and up to 6% economic growth. Equally, Africa's shift away from US markets could create more competition between African and Gulf producers for market share along the new Silk Road and wider Asia.

Africa's annual appetite for gasoil and gasoline is expected to climb by as much as 8% over the coming year, while demand for liquefied petroleum gas (LPG) has hit double digits. The continent's expanding home-grown energy supply will help satisfy some of the swelling demand. Africa produced 8.2m b/d of crude last year – 76% came from Nigeria, Algeria, Egypt and Angola, according to PricewaterhouseCoopers' (PWC) 2015 Africa Oil & Gas Review.

But East Africa is elbowing its way under the spotlight

and will change Africa's energy map in 2016 – a move easily justified by its wealth of oil and gas assets. For example, Tanzania hopes to use its 55tcf of natural gas reserves to become a LNG exporter by 2025, while Tullow and Canada's Africa Oil have identified 600m bls of oil reserves in Kenya's South Lokichar basin.

Green energy will increasingly dominate energy economics in the Gulf this year, underscored by the region's unprecedented interest in the Cop 21 climate change talks in Paris in December 2015. Aside from Oman, which has long abided to the Kyoto Protocol, the lower oil prices have galvanized the Gulf's appetite for economic diversification into renewables. Conversations over how the Gulf will be part of a global carbon trading system, be it a cap-and-trade mechanism or a carbon tax, are limited, but solar, wind and even tidal power are firm favorites with investors.

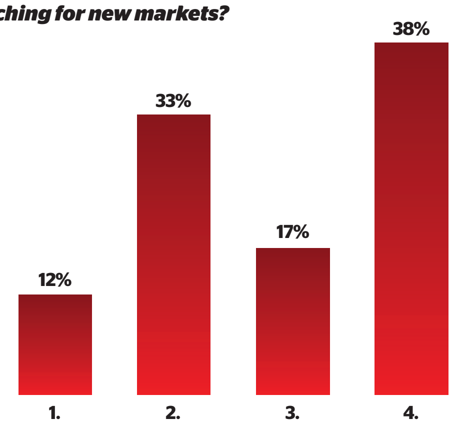
The price equation for renewable projects is also evolving to the point where many theoretical renewable projects can start to be realized on the ground this year. The UAE had a 200MW solar PV auction last year, which yielded the lowest cost of power generation via solar to date; less than six cents/kWh. Prices are expected to decrease further, with the cost of solar PV already as low as 4 cents/kWh in places, including Chile.

Disruptive technologies – innovative tools that displace established methods – will be at the heart of major changes in the energy industry amid low oil prices, according to 77% of survey respondents. Extraordinary market circumstances, easily quantified by $30/bl oil, demand a fresh way of thinking as governments and companies that rely on budgets and strategies based on $100/bl, or even $50/bl, will flounder. Big data and analytics will have a game-changing impact on the oil and gas industry this year, as well as robotics and the advancement of enhanced oil recovery (EOR) technologies.

A hefty mix of unstable geopolitics and macroeconomics is tricky territory for energy producers. Those that are privately and urgently carving out new business strategies in a bid to survive what appears to be a new norm of sub $50/bl oil prices will find disruptive technologies a vital crutch as the energy sector staggers forward in 2016.

Q African oil exports to the US have declined significantly due to the shale oil revolution in America. ***With many more African energy suppliers due in global markets in coming years, what will be the most likely impact of African producers searching for new markets?***

1. Create greater opportunities for partnerships between Africa and the Middle East on the emerging South-South energy corridor
2. Create competition for market share in Asia between African and Gulf producers
3. India and China will provide ample demand for all energy suppliers
4. African producers will increasingly find markets locally, with a population boom and 6% GDP growth across the continent



OPEC OUTLOOK 2016: ENERGY EXPORTERS' PERSPECTIVE

- **H.E. Suhail Al Mazrouei, Minister of Energy, UAE**
- **Moderator: John Defterios, Emerging Markets Editor & Anchor, CNN**

John Defterios (JD): Minister, what is your outlook for volatility in the oil market in 2016?

H.E. Suhail Al Mazrouei: We need to look at the symptoms of what is happening. Last year, I said that we have an oversupply problem that was not created by OPEC, but OPEC were the ones asked to solve it. Everyone said it was not their problem, but it's everybody's problem. The falling oil prices have incentivized everybody to react.

The world is going towards an equilibrium – the market is going to take a bigger share in putting the price in an envelope that is comfortable for all. I don't think any of the international oil companies (IOCs) will tell you that they are comfortable producing in the current price environment. We have seen a significant drop on the level of investment. But we need to look at the bright side as well, because it is working as producers are not growing their production – that's going to eventually fix the glut.

JD: How long do you think it will take to weed out the marginal production? Many thought that oil prices would be around $55/bl – $60/bl b the end of 2015, yet prices fell to a 12-year low in January.

H.E. Suhail Al Mazrouei: Last year, I thought that it would take one to two years, depending on the level of cooperation [between oil producers]. There is still hope that during 2016 we will see a correction. It will not be in the first quarter, or the second quarter – the first six months of 2016 are going to be tough. But we will get out of this mess gradually. Once you have a problem of this magnitude, it is not fair to ask OPEC to come and withdraw 2.7mn b/d from the market just to keep the prices where they were.

OPEC's strategy is working in that we have seen a major reduction in the yearly increase in production from the non-OPEC producers. Let people compete and let the price be the judge. Oil producers will not produce if they are losing money. But if you've already invested in the market, then you are not going to close the wells. The industry will survive this low.

JD: How long do you think it will be before we break out of this $30/bl – $40/bl range?

H.E. Suhail Al Mazrouei: At the beginning of 2015, we were assuming OPEC's production would be 30mn b/d, but we ended up producing 31.5mn b/d. When we said that [30mn b/d], we were assuming that there will be some level of cooperation from the others. OPEC tried to hold meetings, but everyone said it wasn't their problem and that it was someone else's problem. And that left the supply-demand balance to the market, which was a wise thing to do. If people artificially do something to the market, it's not going to last. And then the market will expect them to come again if something happens and do it again.

JD: Do you think there is a good reason for OPEC to call an emergency meeting to discuss its strategy to maintain market share, which was decided in November 2014?

H.E. Suhail Al Mazrouei: I'm not convinced that OPEC alone can make the change and I'm talking here as Suhail Mazrouei, a representative of the UAE. I am convinced that we are going to see a correction before the end of 2016. The increase in demand in 2015 was higher than we expected. We said 1.2mn b/d – 1.25mn b/d and we ended up with 1.5mn b/d.

JD: How much of non-OPEC production outside the US do you see as part of a price correction?

H.E. Suhail Al Mazrouei: The problem with current oil prices goes beyond the US' shale oil market. If you are a producer in the North Sea and you pay all of your taxes, is it economical to produce at $35/bl? Go and ask anyone. Everyone is shying away from investments because they are prioritizing their budgets. I'm not saying they're not investing, but are they investing with the same courage that they used to? I don't know if they are.

"Everyone is shying away from investments because they are prioritizing their budgets. I'm not saying they're not investing, but are they investing with the same courage that they used to?"

JD: How does OPEC accommodate for Iran's return to the market? They have aspirations to bring up to 1mn b/d to the market in 2016.

H.E. Suhail Al Mazrouei: All OPEC members, including Iran, have a right to increase their production. We are not going to restrict anyone. Global demand is increasing, so someone needs to take part of that market share.

The UAE decided in 1999 to increase capacity from 2.8mn b/d to 3.5mn b/d, which is less than a 1mn b/d increase. It cost $75 billion and took us almost eight years to date and we are still not finished. It takes a lot of time to complete projects and come up with a mechanism. Maybe others have a quicker way, but that was our experience. Good luck to anyone who can do it in six, or three months. If you ask any IOC regarding the level of investors' appetite today in the current market, I think they are more focused on developing what they have rather than taking on something new.

JD: Saudi Aramco is contemplating issuing an initial public offering (IPO) of at least some of its assets. Is this going to be contagious?

H.E. Suhail Al-Mazrouei: I'm not the spokesman of ADNOC, or the government of Abu Dhabi. I think it's fair to assume that every government has the right to manage their assets and manage their business. I'm sure no one is going to do something like this (IPO) just like that. It's got to be studied and decided if it's going to positively affect the economy. Let's take Statoil, which used to be state-owned. Then Norway started to make it a company that is partially state and partially public - that model has been proven to work. So, it's not something that has never happened before and international oil companies need to be able to evolve to help their economy. We haven't evaluated it as a model for Abu Dhabi. But I'm not the right person to answer that question.

OPEC: WHAT IS THE NEXT STEP?

• H.E. Dr. Emmanuel Ibe Kachikwu, Minister of State for Petroleum Resources, Nigeria & OPEC President (2015)
• Moderator: John Defterios, Emerging Markets Editor & Anchor, CNN

"At these prices, you begin to feel really challenged. I anticipate [an OPEC meeting] fairly quickly, possibly by the end of February or March."

John Defterios (JD): Minister, what is your outlook for oil prices in 2016?

H.E. Dr. Emmanuel Ibe Kachikwu: I certainly hope that it doesn't go below $30/bl, for the sake of the survival of everybody on the board of investors and the countries who have heavily invested in this territory. At the time that we held the last OPEC meeting (December 4th) it was clear to all of us that we could not arrive at some structural way to intervene, because whatever we did, the price would slide. We did say that if oil prices hit the $35/bl area, we'd look to see how we can bring the contending parties back to the table. At these prices, you begin to feel really challenged. I anticipate [an OPEC meeting] fairly quickly, possibly by the end of February or March.

JD: Will that change OPEC's strategy of rolling over its policy to maintain market share? OPEC's production averaged 31.7mn b/d in December 2015, higher than the 30mn b/d earlier in 2015.

H.E. Dr. Emmanuel Ibe Kachikwu: That's a big question. Up to 65% of the oil producing market is outside the hands of OPEC. So unless you have all the producers coming back to the table, you really would not make a dramatic difference. My perception – and this is not an OPEC position – is that you will see the oil price get worse and then it'll get better. I expect to see the oil price in the region of $40/bl – $50/bl by the end of the year. How do oil companies even survive in terms of production? Everybody is pulling out investments in these areas. How do countries even adapt? You're going to see a lot more strife. Oil has always been a catalyst for so many things.

JD: OPEC's strategy to retain market share is a policy led by Saudi Arabia, but OPEC is very divided. The big four Gulf States are on one side and members like Nigeria, Angola, Algeria, Venezuela and Ecuador are on the other. How did you as OPEC President bridge that gap between the OPEC members at the December meeting?

H.E. Dr. Emmanuel Ibe Kachikwu: I had to move from emotion to logic. My duty was to make sure everybody left the room united rather than box each other out, which we succeeded in doing. Now, we have a two to three month window before we go back. The prices unfortunately are moving lower faster than the barrels are going off the market.

And to make everything worse, the US' shale producers are going to be there no matter what we do. They may disappear momentarily when the prices are too low for them to survive. But sometime down the road, the US shale producers will be back – they have become a constant equation in the dynamics of the global oil industry.

Hopefully, producers are taking time during this period to look at costs. All of us were spoiled when high oil prices meant there was big money and all kinds of mega projects just didn't make sense. In Nigeria, for example, one of the things that we're doing is looking at our projects and saying: do these projects make sense? A lot of projects today don't make sense [with current oil prices].

JD: And this is what you're suggesting is going to balance the market and reduce the oversupply that is pushing oil prices down?

H.E. Dr. Emmanuel Ibe Kachikwu: Yes, absolutely.

JD: You think that a lack of investment on higher cost projects will bring stability back to the oil market and enable prices to climb to $50/bl – $60/bl by the end of 2016?

H.E. Dr. Emmanuel Ibe Kachikwu: I would not say $60/bl, but I think I would comfortably say the price will get closer to $50/bl, as almost 50% of investments are being pulled out of the market right now. Ultimately, that will impact volume.

JD: Saudi Arabia has added about 1.5mn b/d in the last couple of years to the market and Iran's Oil Minister Bijan Zanganeh said the country still plans to add up to 1mn b/d in 2016. Plus, Iraq wants to go from 4.3mn b/d to 6mn b/d by the end of the decade. This sort of mentality doesn't help solve the equation?

H.E. Dr. Emmanuel Ibe Kachikwu: No, it doesn't. But, if you pack all those barrels into a room and the price continue to fall, it does not make fiscal sense for anybody to keep presenting their natural resource. In Nigeria, diversification is key, because the current oil numbers don't make any sense for us.

JD: Russia is producing at an incredible number, reaching a record high of 10.8mn b/d in December. What has happened to this concept of Moscow showing up to the OPEC meetings and having backdoor meetings?

H.E. Dr. Emmanuel Ibe Kachikwu: Well, that hasn't taken barrels off the field.

JD: No, nobody has. So there's no spirit of OPEC and non-OPEC cooperation in 2016?

H.E. Dr. Emmanuel Ibe Kachikwu: I don't see it. I think you're going to have informal factors bring parties together. It's not going to be formal meetings where parties are agreeing to take barrels off the field. And those informal factors are going to be led by the investors.

JD: It won't be a case of politics bringing producers together?

H.E. Dr. Emmanuel Ibe Kachikwu: I don't see that happening. That's my perception today.

JD: Are you suggesting that there is still no will to give up market share?

H.E. Dr. Emmanuel Ibe Kachikwu: I would say that, yes.

PANIC IN TEXAS AS US SHALE PRODUCERS MEET THEIR NEMESIS

BY CHRIS FAULKNER, FOUNDER, PRESIDENT & CEO, BREITLING ENERGY CORPORATION

It's looking ugly! The US fracking boom will end if oil stays in the $30/bl range and there will be a return to conventional drilling, which can be sustained even if the price drops to just $20/bl.

US shale oil producers have no doubt gone through trials and tribulations since November 2014 when OPEC opted to ring fence its market share and pump at full capacity. Oil prices have since collapsed from the elevated heights of $100/bl to below $30/bl in January 2015 for the first time in 12 years. It marks a rather ominous start to 2016 for what is already a stressed US energy sector that has slashed hundreds of thousands of jobs in recent months.

I think many within OPEC and beyond have been surprised by the ingenuity and resilience shown to-date by the shale producers to maintain output while shutting-in hundreds of wells. But, I fear we have finally met our nemesis with $30/bl. It would be difficult to find anyone who can drill and make money at current prices, with the vast majority of US shale producers operating below the breakeven price required to drill new wells, or turn on wells that were long ago drilled.

After the fracking revolution took off, we grew production in the US by about 500,000 barrels per day (b/d) for a number of years straight and we're still producing 9.22mn b/d day despite the price crash. But if that output drops by 500,000 b/d this year as expected, then we will have inherited Saudi Arabia's mantle as the world's swing producer by default.

Producers in the US have to change their strategy, with some eyeing conventional wells in a bid to curb drilling costs and stay afloat while oil prices are depressed. Operators were just about making it work at $45/bl. Breitling Energy, for example, is now focusing its operations in one area in the US, while it used to drill in six. The company is only drilling in the Permian Basin in far west Texas, where some of the takeaway prices of oil are much cheaper than other areas like North Dakota and Oklahoma.

I'm mostly bullish on oil prices going into 2016, at least back toward $50/bl as shale production capacity declines. But it will be a slow climb – by mid-2016 perhaps – with the WTI-Brent spread still tight as it is now.

In terms of Iran's oil coming to market, the country's only buyer right now is China, who has been snatching supply at a discount. Nobody else needs their oil, so I don't think it's going to have as big an impact as all the gloom and doomers think. With the economic news from China that rattled the market recently, I don't see demand increasing any time soon.

What we do have pending is a reduction in spare capacity. The world is consuming about 96mn b/d of oil and supply is ahead of that by about 750,000 b/d. If the US reduces production by 500,000 b/d within the first half of 2016, then we've almost eliminated the entire spare capacity. This puts us on a very thin margin with tensions building in the Middle East.

There are 5,000 wells in the US that have already been drilled and tested and not yet fracked. Many of these wells represent an intentional backlog of wells that the US stopped fracking as producers wait for the oil price to rebound in the hope that their balance sheets do not fold in the meantime. If all of the 5,000 wells came online at 100-200 b/d – a small amount for a horizontal well – then it could mean the US has 4mn b/d of new supply waiting in the wings.

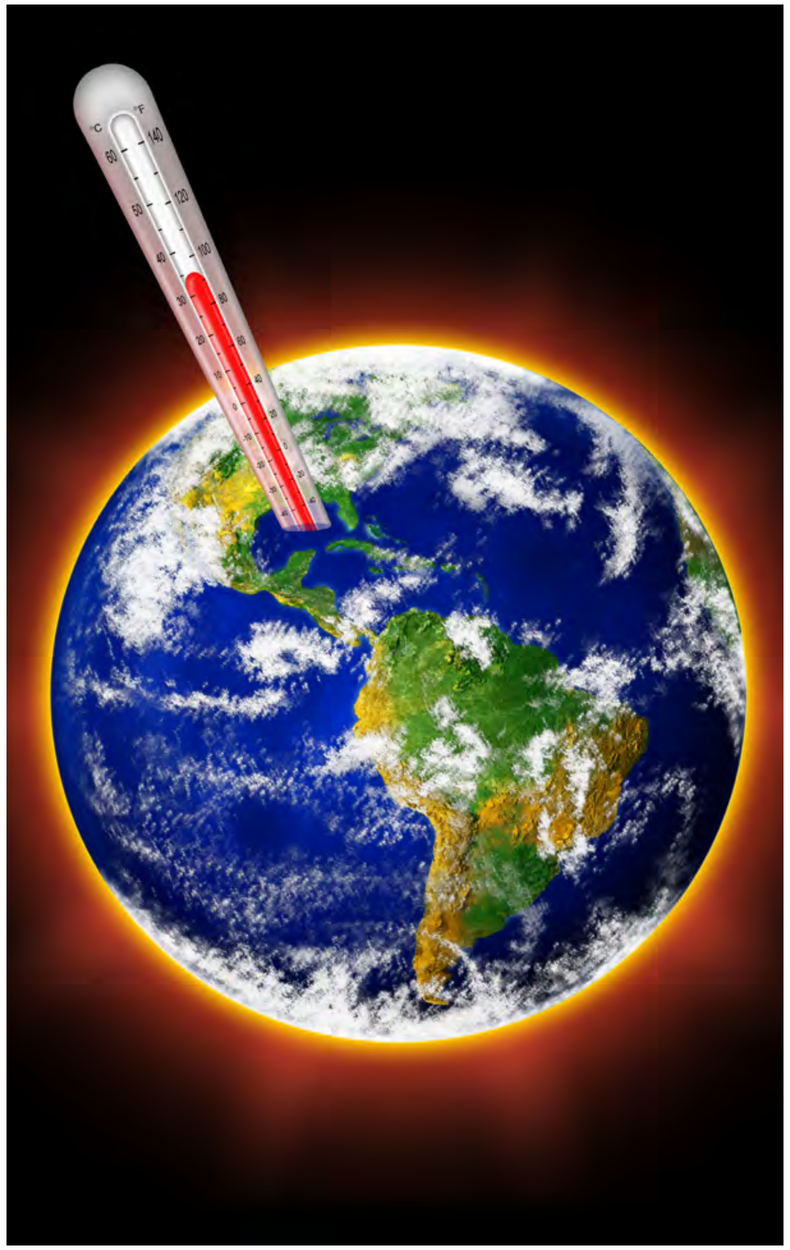
But the smaller companies that are holding a lot of leveraged debt will find it difficult to survive the latest wave of even lower oil prices, with many being forced to restructure their debt, or declare bankruptcy. It makes economical sense for the US to resume fracking if oil prices climb above $50/bl, even if this could in turn bring new supply to market that then stymies any sort of long-term price rebound.

The US' oil producers are going to have to learn – yet again – how to drill more effectively. Just three years ago, the breakeven price for oil was $75/bl in the US and the country went through an efficiency process. US shale oil producers are definitely not down and out, but there are challenging times ahead. Better times await in 2017, but we have a long road to get there.

As we say with gasoline prices – they tend to float up like a feather and drop like a rock. We've already had oil prices drop like a rock and from a producers' perspective, we'd be happy if they'd start floating up like a feather.

THE GREEN OUTLOOK AFTER COP 21

BY ADNAN Z. AMIN, DIRECTOR GENERAL, INTERNATIONAL RENEWABLE ENERGY AGENCY (IRENA)



At Cop 21 in Paris, world leaders unanimously adopted a historic agreement for decisive global action on climate change. The Paris Agreement in December 2015 sets a clear objective to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. It also sends a clear signal that we envision a world that significantly reduces greenhouse gas emissions and promotes sustainable development.

Decarbonizing the energy sector, which accounts for two thirds of global carbon emissions, will be central to achieve this. The Paris Agreement will speed up a global energy transition that is already underway and is driven by the strong business case for renewable energy deployment.

In recent years, the level of ambition in relation to renewables has increased significantly. In the US, Congress has just approved the extension of the tax credits for renewable energy technology. China is changing its trajectory and the scale and ambitions of its renewable targets grows every year. Can you imagine a country that commits to a target to increase solar photovoltaic (PV) capacity by 150GW in a period of five years? The scale of that is impressive.

We have also seen the price equation change. If you look in the UAE, we had the 200MW solar PV auction last year in Dubai. This yielded the lowest cost power generation for solar to date; less than six cents/kWh. Prices are expecting to decrease further, and we have seen in countries like Chile that the cost of solar PV has gone down to 4 cents/kWh.

That price competes quite favourably with gas and has begun to displace coal. We might be seeing the end of coal as a major component of power generation for the future. So, there is rapid change and it is disruptive.

With disruptive change comes opportunity. What does it mean if we start to clean up power generation and decarbonise our economies? What do we do with our remaining assets in oil? Much can happen in the future with petrochemicals and alternative uses for oil. With the growing momentum for climate action and decarbonisation, gas generation is going to grow quite substantially. Perhaps not immediately, but in the medium-term we are going to see rising gas demand. All of these forces are changing the world of energy.

As far as the climate discussion is concerned, we need to bear in mind that we are between a rock and a hard place. The rock is the weight of scientific evidence and public expectations about a safe and secure future in which future generations can live. The hard place is how we make decisions that are so disruptive to our current ways of doing business, to our current industrial patterns and to our current resources that have been dominant. How do we achieve a win-win outcome?

The real significance of the Paris Agreement was not about whether it was a successful legally binding agreement, or not. The agreement proved that there is a huge amount of political will to make a change, which now needs to be translated into concrete action in terms of looking for win-win solutions for the future.

"We might be seeing the end of coal as a major component of power generation for the future. So, there is rapid change and it is disruptive."

OIL SUPPLY – BRACE FOR CHANGE

What are the top five drivers that will most impact oil prices in 2016?

EXECUTIVE SUMMARY:
A gloomy outlook descended on global oil markets as the Brent crude price slid below $30/bl in mid-January, but the play book in 2016 is far from certain. The math surrounding oil prices is simple and comes down to a few questions – notably, will demand hold up?

China is in the throes of a fiscal rethink that may affect its energy demand and its status as a holy grail for exporters has producers in the Gulf and beyond on tenterhooks. Beijing has offered few hints as to what the year ahead may hold, but one certainty will buoy China's demand; the need to fill its strategic petroleum reserves to at least 500mn bls by 2020.

Perhaps the rapid demand growth in India, which will be 90% dependent on energy imports by 2020, or East Africa's booming middle class population will help fill the potential gap in China's appetite? The International Energy Agency (IEA) expects the oversupply to be around 1.5mn b/d in the first half of 2016, so producers will keep seeing red dotted across their balance sheets.

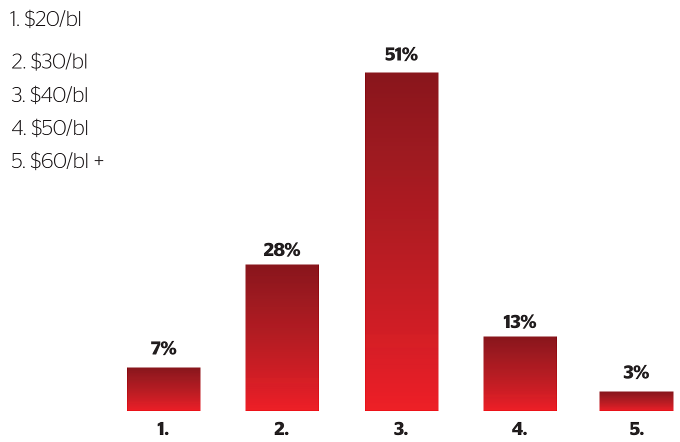
Still, such forecasts are just educated assumptions as geopolitics has a habit of muddying economic theory. Aside from the region's warfare, issues to watch out for include the swelling dispute between Saudi Arabia and Iran and the new energy dynamics between Iran and Iraq. On a positive note, energy-related opportunities are set to bloom along the new Silk Road.

OPEC: WHAT NEXT?
OPEC's controversial strategy that it adopted in November 2014 to protect market share instead of supporting the oil price is likely to change in 2016 – the economic pressures may become too uncomfortable for Gulf oil producers. An emergency meeting could take place during the first quarter this year in an effort to address how to support oil prices as they slide to a 12-year low, H.E. Dr. Emmanuel Ibe Kachikwu, Minister of State for Petroleum Resources, Nigeria and OPEC President (2015) said in mid-January. The next scheduled meeting is June 2, but another four months is a long wait for the OPEC economies – Nigeria, Venezuela, Algeria, for example – that are particularly struggling. OPEC's internal disagreements on production policy will intensify by mid-2016.

Arab Gulf states' economies are buffered by ample foreign reserves, but each is feeling the pinch, including OPEC linchpin and the region's economic goliath, Saudi Arabia. Riyadh posted the largest budget deficit in the country's history in late-2015 and sliced fuel subsidies, pushing petrol prices up by 50%.

OPEC's strategy to push out the higher-cost producers, including US shale oil companies, has worked to a degree. The list of US shale oil companies filing for bankruptcy will get longer in 2016, but many will just shed debt and move their assets to continue muted operations elsewhere until prices rise to $50/bl. In part, OPEC's dominant members will push their economic diversification because the US' shale market fails to crumble and fade; it is permanently embedded in the fabric of global oil dynamics.

Q WHAT WILL BE THE AVERAGE PRICE FOR BRENT IN 2016?



SHALE JUGGERNAUT STUMBLES
A wave of US shale oil producers are expected to stand down in 2016 as OPEC's fifteen-month attempt to dampen higher-cost producers takes hold – but only temporarily. US fracking is expensive, second to oil sands production in Canada, and the current $30/bl range is proving too painful. Oil prices would need to climb up to $50/bl for US shale oil producers to put down capital to drill new wells, or activate current wells. The US' production of 9.22m b/d will probably fall to 8.3m b/d by late-2016.

The US has around 5,000 wells that have been drilled and not yet used, which translates into around 4mn b/d of supply waiting in the wings for when oil prices rise. The country's potential capacity is significant. There will be more clues in the year ahead about the tangible impact of the US' decision to lift a four-decade ban on crude exports in December 2015. The ink was barely dry on the legislation before the first crude export left the US and arrived in France three weeks later on January 20.

CENTRE STAGE: CONVENTIONALS
Conventional oil production will shift back into focus in 2016, stealing the global buzz from the higher-cost production of shale oil fields and enhanced oil recovery (EOR) technologies. US producers, which have revolutionized the country's economy by turning it into a largely self-dependent producer with export potential, are feeling the pinch. Countries that are most reliant on costly EOR technologies to squeeze resources from mature and challenging fields may ease funding into research and development for new tools until the economic outlook is clearer. Conventional production is not without its challenges, as reserves are likely to take a knock in the first quarter. Major oil firms will be obliged to significantly trim their proven probable reserves, as such reserves must be economically viable at prevailing market value. Very few, if any, find economic viability at $30/bl.

IRAN TESTS THE WATER
The escalating discord between the Middle East's vying hegemons, Saudi Arabia and Iran, will add another element of geopolitics to what is already a convoluted picture. The ongoing wars and security unrest in Syria, Libya, Iraq and Yemen have had a manageable impact on global oil supply. However, the significance of the long-running power struggle between Riyadh and Tehran gained momentum in January, following Saudi Arabia's execution of prominent Shia cleric Sheikh Nimr al-Nimr and the lifting of the P5+1 sanctions on Iran. Against a backdrop of accusations of proxy wars and economic angst, January's events have set a potentially treacherous tone for 2016.

Iran is likely to come to the market with 500,000 b/d this year – far less than the 1mn b/d initially touted by Tehran – at the same time as the country seeks massive investments to ramp up its energy infrastructure. Still, Iran's potential should not be underestimated. For example, the country reduced its rate of inflation from 45% in mid-2013 to around 10% in 2015 – an impressive feat under sanctions and a stark contrast to economic management in the wider Middle East.

Tensions could also grow between Iran and Iraq over the coming year, as Iran looks to grab back the market share that Iraq took while the former was under sanctions. Historical conflicts will inevitably distract the market from resolving the economics behind the muddied supply-demand balance.

On a lighter note, the emerging energy alliances along the new Silk Road – stretching from Beijing to Lagos – are expected to be well-timed, for Iran especially. Tehran has already reaffirmed the historic Sino-Iran trade links by securing a 25-year deal with China that will also generate $600bn worth of bilateral relations by 2026.

CAPEX CUTS INTENSIFY
Squeezed budgets have sparked a wave of redundancies across the energy sector in the Gulf and beyond in early 2016 – a trend that is set to continue. Total has trimmed 4,000 jobs from its global payroll in exploration and production, Chevron may cut staff numbers by 7,000, while the UAE's Sharjah-based Dana Gas is cutting 40% of staff at its headquarters. Bruised budgets are also one of the reasons behind Royal Dutch Shell's decision to withdraw from a $10bn development of the Bab sour gas reserves with the Abu Dhabi National Oil Company.

The number of mergers and acquisitions and joint ventures will climb in 2016, as energy companies eagerly charm their competitors in the hope of locking in an economic buffer. The planned $47bn merger of energy giants Shell and BG Group could set the pricing benchmark for other major energy entities that are urgently readdressing their strategies.

Longer-term, the deep budget cuts today risk exacerbating the talent gap in the oil and gas sector over the coming years, as cuts tend to push the brightest minds into better-paid sectors. The archaic industry needs a public relations overhaul as appetite in the Gulf and beyond for renewable energy gains momentum. Globally, there was a record high of $329bn invested in clean energy in 2015, climbing 3.5% on the previous record of $318bn in 2011, according to Bloomberg New Energy Finance.

ASIA'S NEW SILK ROAD – WEST ASIA

What are the top five points of competition along Asia's new energy corridor?

EXECUTIVE SUMMARY:
A new era in energy trade and transportation along the historic Silk Road is emerging, stretching from Beijing to Lagos. New alliances and energy partnerships are evolving from a historic web of maritime trade routes that have long hosted crude oil and LNG trades from the Middle East to the shores of South Asia and East Asia. As energy demand rises, Central Asia has assumed a more integral role in wider Asia's energy supply strategies, evidenced by the long-anticipated ground breaking for a natural gas pipeline linking Turkmenistan, Afghanistan, Pakistan and India.

Plus, progress is being made on the gigawatt-scale regional power transmission systems supplying Pakistan from Tajikistan and Kyrgyzstan and intermodal sea and rail links connecting India through Iran to central Asia are emerging. China's new foreign policy and investment strategy, which has been branded the One Belt, One Road programme, have placed Beijing as a primary, if not the dominant, influence along the new Silk Road. The One Belt, One Road programme seeks to combine maritime trade routes with land bridges to Central Asia and Europe by leveraging rail, roads and pipelines into efficient, interconnected transportation networks.

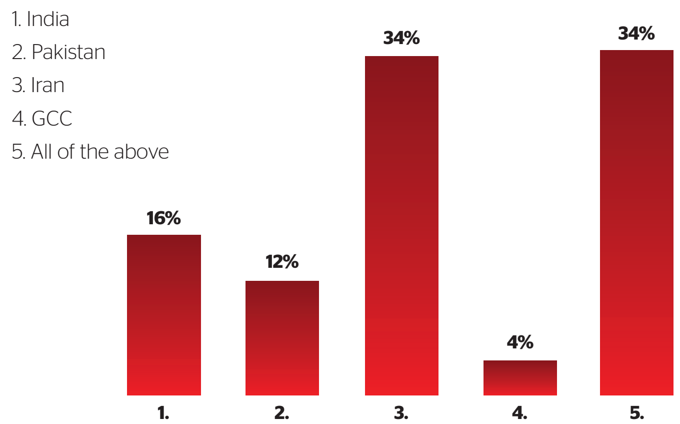
The historic Sino-Iran trade accord is also expected to regain momentum following the highly-anticipated lifting of sanctions on Iran on January 17. Tehran is also eagerly eyeing energy supply and infrastructure agreements with its neighbours, notably Pakistan and Oman.

These and other transformative developments along the Asian energy corridor require unfettered flows of capital and economic and political stability to achieve their intent. But the hard reality is that they are all evolving in a global époque of political tumult and economic volatility in 2016. The year ahead will reveal whether countries' energy demand will transcend these temporal factors, or be curbed by politics and cross-border security.

CHINA: ONE BELT, ONE ROAD
All eyes in 2016 will be on China's One Belt, One Road programme, a foreign policy initiative promoted by President Xi Jinping. Questions over social and political sustainability aside, China's bold strategy aims to secure a long-term supply of energy and other resources by becoming a stakeholder in multi-lateral infrastructure development along the new Silk Road. China's investment pathway includes facilitating capital that African and South and Central Asian countries are reluctant, or unable to mobilize independently. China is Turkmenistan's largest gas export customer with deliveries ranging from 3bn-3.5bn cf/d, for example, and China's state-owned CNPC is potentially supporting the construction of the Turkmenistan-Afghanistan-Pakistan-India (TAPI) natural gas pipeline. China is also looking to back Pakistan's Gwadar – Nawabshah pipeline and is eyeing plans to participate in Pakistan's upstream oil exploration sector in 2016.

IRAN REJOINS ENERGY ARENA
The lifting of sanctions on Iran on January 17 will have a far-reaching impact on both political and energy dynamics along the new Silk Road. Iran is highly ambitious about its plans to utilize its vast oil and gas resources, with the country's Oil Minister Bijan Namdar Zangeneh saying the country can bring as much as 1mn b/d to market by the end of 2016. Although 500,000 b/d is more likely, Tehran's announcements reveal their confidence in their growing energy network within Asia and the Gulf. Iran's reemergence is expected to not only provide new impetus to Iran's current blueprints that have long gathered dust, but also help kick start the Iran-Pakistan-India gas pipeline and memorandum of understanding for gas supply contracts to Oman and Turkey. It is still unclear whether Iran will adopt long-term gas sales pricing formulas, or revert to its preference for an annual price reopener – a condition that has dissuaded investors and stymied previous contract discussions. For energy producers in the Gulf, Iran's reemergence is a wake-up call as regional competition for European and Asian clients will be tougher in 2016.

Q South Asia (India-Pakistan-Iran) is one of the world's least integrated regions. Plans for a gas pipeline stretching from Iran's massive South Pars field to New Delhi are constantly delayed, for example.
Which country/countries stand to gain the most from greater integration between the states of South Asia?



INDIA PUSHES ENERGY AMBITIONS
India's recent fiscal reforms have lifted direct foreign investment ceilings in key sectors – defense, insurance and transportation – and inflation, interest rates and current account deficits have fallen. With revenues also expanding, energy investors are taking note of India's potential and hopes of becoming a refining superpower by 2025.

India's economic growth – distinguishing it from fellow BRIC members; Brazil, Russia and China – illustrates the country's ability to become a player along the new Silk Road. But it is still not on a competitive footing with China. China's refining capacity exceeded 14mn b/d in 2015, while India's hovers below 5mn b/d.

A lack of energy resources is proving to be India's Achilles heel, as the country's energy dependence may rise to 90% by 2019. India cannot afford to rest on its laurels. The country has opened the mining sector to private companies for the first time in 40 years in a bid to close the gap on domestic energy supply and relieve India's balance of payments. The New Exploration Licensing Policy (NELP) has delivered disappointing results through the previous nine rounds, as the contract fails to match up with commodity prices and the technical profiles of petroleum discoveries. NELP 10 is expected at the end of the 2015-16 budget year and is aiming to offer new fiscal incentives that could potentially unblock the logjam in the systematic discovery and development of India's energy resources.

THE YEAR OF TAPI?
The Turkmenistan-Afghanistan-Pakistan-India gas pipeline has been under discussion for over two decades, but the consortium partners' ground breaking ceremony in southeastern Turkmenistan last December could mean the $10 billion project is finally ready to go. Pakistan's national energy strategy especially relies on the successful completion of TAPI, which is now expected to be completed by 2020. But will the security in Afghanistan, which has long halted progress as the pipeline runs through Kandahar, impede construction yet again? The Kabul government has made considerable gains to pacify the nation, but the resurgence of the Taliban could mean more delays. The political discord between Pakistan and India remains a question mark, as it does with the 2,700km Iran-Pakistan-India pipeline – another gas pipeline beset by constant delays, despite its importance to energy and societal security in the region. Rivalries between India and Pakistan reached a fever pitch after the Mumbai terrorist incident in 2008 and have been fractious since. But there is hope now the soil has been broken for TAPI in Turkmenistan; just Afghanistan, Pakistan and India to go.

SILK ROAD ALLIANCES
A rise in joint ventures and multilateral agreements will be a key theme for energy players hoping to gain traction along the new Silk Road in 2016. Sanctions aside, Iran has already been collaborating with Turkmenistan and Kazakhstan on the development of the International North–South Transport Corridor, which is anchored by the Iran–Turkmenistan–Kazakhstan rail link to the southern terminus port of Bandar Abbas, and joined to India's west coast ports with intermodal sea links. The corridor opens Central Asian and Russian markets to Indian products and energy trade via Iran's Hormuz Strait ports. Turkmenistan and China have aligned with Central Asian states in the construction and operation of major gas export pipelines serving China, while China advances its plans for a container rail service into Central Asia.

Written by Albert Stromquist, Partner & MD, Lanstrom Advisors

GAS – EMERGING COMPETITORS

What are the top five factors in 2016 that will drive the gas market up to 2020?

EXECUTIVE SUMMARY:
Significant changes loom over the global gas and liquefied natural gas (LNG) market in 2016, as emerging players backed by huge reserves start to elbow established suppliers aside. Will a sanctions-free Iran, home to the world's second largest gas reserves, realize its regional supply agreements? And how will Qatar, the world's largest LNG exporter, react now that both the US and Australia are capable of stealing its crown by 2020?

Questions abound, but there is a level of consensus amongst energy professionals. It is likely that there will be a rise in LNG spot market activity in the three primary hubs over the coming year; Europe, the Middle East and Asia and the US. Prices are expected to stay depressed by the oversupply throughout 2016 at the very least, but most likely until 2019 as an already abundant supply is swamped by volume from emerging suppliers, notably the US and Iran.

The LNG market is expected to continue the growth it reported in 2015, despite weakened demand and the impact of the oil price crash. LNG production hit 250mn metric tonnes (m/t) last year, rising by 4mn m/t on 2014, according to a Wood Mackenzie report. The consultancy cautions that a further 125mn m/t of LNG under development means that the majority of market growth will come after 2016.

New supply contracts, such as the 5.8mn m/t of LNG for Jordan, Egypt and Pakistan, are expected to be supplied via fast-tracked floating storage and regasification units (FSRU) – rising competition means plugging into new markets quickly will prove key. Overall, the future for gas, in pipeline or LNG form, is still bright.

> ***"The LNG market is expected to continue the growth it reported in 2015, despite weakened demand and the impact of the oil price crash."***

US MARKET AWAKENS

The first LNG exports in early 2016 from the US' Sabine Pass will mark a key milestone; it will signify another surprise move in the US' journey from an energy importer to an exporter, sparking a shift in the global gas market dynamics. Conservative estimates put the US as one of the world's top LNG suppliers by 2020, coming third to Qatar and Australia, respectively.

The US' first LNG export is expected to be shipped by Cheniere Energy from the Sabine Pass plant by early March, with a wave of mega LNG infrastructure projects also underway in 2016.

The export of Henry Hub linked gas from the US could allow Henry Hub to emerge as the global price marker, while the geographic convenience and underused import infrastructure in Europe could tempt US exporters to the continent. The US' new LNG market is also expected to find clients within the Pacific Rim and possibly even the Far East via the newly expanded Panama Canal.

IRAN WADES BACK IN

Iran, home to the world's second largest gas reserves, has long declared it will be a major gas and LNG supplier as soon as sanctions were reversed. The P5+1 lifted sanctions on January 17, loosening Tehran's economic shackles. Now, all eyes are on how quickly Tehran will be able to action its gas memorandums of understanding with Oman, Turkey and Europe.

Within Central Asia, a sanctions-free Iran means that the 2,700km Iran-Pakistan-India gas pipeline – first touted in 2002 – may finally gain traction. Indian and Pakistani energy officials say the vast economic and societal benefits of the gas pipeline through their lands could override their fractious relationship. However, given Pakistan's proximity to Iran it is likely they will be the immediate beneficiary of an Iranian pipeline gas long before India. In addition, such energy infrastructure demands complex and vast infrastructure, which in turn demands equally vast investments – both will take time. Political and economic clarity surrounding Iran's gas supply agreements and pipeline projects is likely in 2016, but the country will not be a contender for Qatar's crown for a while yet.

AUSTRALIA'S QUIET BOOM

Australia is getting ready to become the world's biggest LNG exporter by 2018, with the country ramping up its capacity to satisfy growing Asian demand. Japan's net imports of LNG will likely reduce over the medium term, due to the bringing online of more of its nuclear reactors. But Australia is ideally placed to provide more LNG in the future, even if price will be the big decider.

Australia's plans to widen its Asian client portfolio in 2016 have had a strong start, with a tentative agreement for the country's largest gas project, Gorgon, to fulfil a LNG supply contract to China. The 10-year deal from 2018 will supply around half a million tonnes per year. Like all LNG exporters, Australia will have to navigate the slight softening in Asia's demand, with Wood Mackenzie seeing demand fall to 245mn m/t as natural gas production rose to 250mn m/t in 2015.

RUSSSIA JUGGLES POLITICS

Russia will push to retain its spot as a top regional gas supplier in the year ahead, but geopolitical issues in Europe, Ukraine and Turkey muddy the country's potential. The weakening relationship with Europe, illustrated by Europe's frequent and oft-empty threats to curb the relationship, puts Moscow under renewed pressure to improve its public relations strategy.

The emergence of US LNG exports could tempt Russia's traditional customers to look westwards, where supply contracts may not be so bogged down in political turmoil. Lithuania, for example, has signed supply agreements with US LNG exporters, including Cheniere Energy. Still, the marginal costs for Europe to seek additional imports from Russia should sharpen Moscow's competitive edge. Russia's gas players could always carve out homes in China and wider Asia, but the region's appetite is expected to be slightly subdued in 2016 and Australia and the Gulf have largely cornered that market.

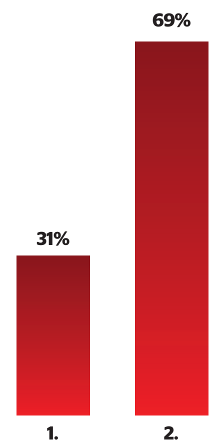
GREEN CREDENTIALS

As the Middle East and beyond ramp up their awareness of the economic and environmental benefits of exploring renewable energy, gas is increasingly replacing the use of oil and coal for power generation. Natural gas production, which many argue is a 'clean' non-renewable, will become increasingly popular under the umbrella of green directives laid out by ever-evolving green energy policy. The shift in Gulf countries' thinking was demonstrated by their unprecedented interest to participate in the Paris Agreement at the Cop 21 climate change conference in December 2015. While not legally binding, those that signed the agreement committed to keeping the global temperature rise below 2 degrees Celsius and to limit the temperature increase even further to 1.5 degrees Celsius above pre-industrial levels.

Meanwhile, Europe's conversion of existing generation boiler plants into gas, or biomass firing could help ease the oversupply of gas in the medium-term and help buoy prices.

Q Will natural gas prices recover in 2016 as investments in new capacity are shelved, gas displaces coal-fired power plants in the US and China and the EU diversifies its supplier base away from Russia?

1. Yes
2. No



MACROECONOMICS – SHAKY TERRITORY

What are the top five factors that will dictate the health of the global economy in 2016?

EXECUTIVE SUMMARY:

A myriad of macroeconomic factors are colliding this year to create a string of uncertainties that have worried energy producers around the world. It is still unclear how Beijing plans to manage China's first major economic wobble in nearly three decades, subsidy cuts in Gulf countries that have long enjoyed oil wealth are still underway and the US has raised interest rates for the first time in a decade.

Plus, the Saudi Arabian riyal fell to a record low against the US dollar in the one-year forwards market in mid-January and state-owned Saudi Aramco, the world's largest oil producer, is eyeing an initial public offering (IPO) this year. Questions abound over whether region's economic goliath is falling. Europe is still posting minimal economic growth and the majority of the BRIC economies (Brazil, Russia, India and China) are struggling to find their fiscal feet.

All of these macroeconomic factors feed into what underpins the character of the global economy – confidence. The bearish sentiment means many investors that have typically rushed to funnel cash into oil and gas projects are now treading gingerly, including those in the Middle East. Tightened budgets is one of the reasons behind Royal Dutch Shell's decision to withdraw from a $10bn development of the Bab sour gas reserves with Abu Dhabi National Oil Company, while Total is reducing its global workforce by 4,000 and the UAE's Sharjah-based Dana Gas is cutting its headquarter workforce by 40%.

Perhaps confidence in the macroeconomic outlook will improve as the year progresses if China's economy stabilizes, the US' plan to increase interest rates becomes clearer and the subsidy cuts in the Gulf help boost coffers.

CHINA'S FISCAL TRANSFORMATION

The treasury of the world's largest economy faces a challenging year and energy producers are not immune, but China's outlook is not as bleak as global headlines suggest. The devaluation of China's currency, the yuan, last August fuelled fears that China's debt-driven burst onto the global stage over the last decade could crumble and take the bulk of Asia's energy demand down with it. But the Chinese economy is still expected to grow by around 7% in 2016 – albeit the slowest full-year growth since 1990 – and Beijing's double-freeze on China's small stock market in early January primarily affected sentiment, rather than actual business.

Beijing's plans to start switching to more sophisticated market reforms in 2016 could lead to a safer and consumer-based economy – clarity that will benefit economies worldwide. Energy producers in the Middle East are expected to benefit from China's historical trade links that have endured for over two millennia, with Beijing now ramping up its One Road, One Belt programme along the new Silk Road. Trade between the UAE and China is already growing at 16% annually and China is the UAE's second largest trade partner – volumes stood at $54.8bn in 2014. Beijing's aversion to wade into regional politics will continue to charm trade partners like Oman, the UAE and Iraq and the historic Sino-Iran trade accord will regain momentum following the lifting of sanctions on Iran in January.

SAUDI ARABIA ENTERS UNCHARTED TERRITORY

Budget deficits, subsidy cuts and initial public offerings are not terms usually associated with the Kingdom. Saudi Arabia's oil-centered economy, where petroleum accounts for 80% of its revenues, will spend less this year, rapidly trying to balance the weight of lower oil prices and the escalating costs of the Saudi-led coalition's first year of operations in the Yemeni war. Financial pressures mean the Kingdom's initial subsidy cuts, which saw petrol prices rise by up to 50% in late-2015, could deepen this year. So far, Saudi Arabia's forecast budget deficit of 326bn Saudi riyals ($87bn) equates to 16% of GDP.

The possibility of an IPO of state-owned oil giant Saudi Aramco is to many an indication of how the cash-strapped Kingdom is looking to raise finances. Some energy professionals counter that Riyadh's vast foreign exchange reserves will protect the treasury from the worst of the low oil prices this year, saying that Saudi Aramco's move reflects the country's confidence and effort to introduce market reforms. The tentative IPO could also reaffirm Riyadh's attempt to ring fence its market share by inviting international partners into the fold; the announcement came as sanctions on Iran, the Kingdom's top regional competitor, were lifted.

US INTEREST RATES

The much-anticipated increase in US interest rates – the first in a decade – will have far reaching consequences in 2016, raising borrowing costs for both corporates and consumers at a time when low oil prices are triggering budget deficits. Another hike to interest rates is expected in March, so companies at home and abroad that have not already factored in the change need to adjust quickly to the US' new fiscal landscape. Emerging market currencies are expected to move as they absorb the shock, especially in emerging economies like Turkey, Malaysia and Brazil. But the Philippines, India and Korea are likely to remain stable.

The low oil price combined with rising interest rates marks the final straw for many small and medium US shale oil companies as they declare bankruptcy, curbing both shale production and new infrastructure projects until oil prices climb above $50/bl. The US has 5,000 drilled and unused wells that could bring another 4mn b/d to the market when oil prices rise.

AFRICA'S MIDDLE CLASS EMERGES

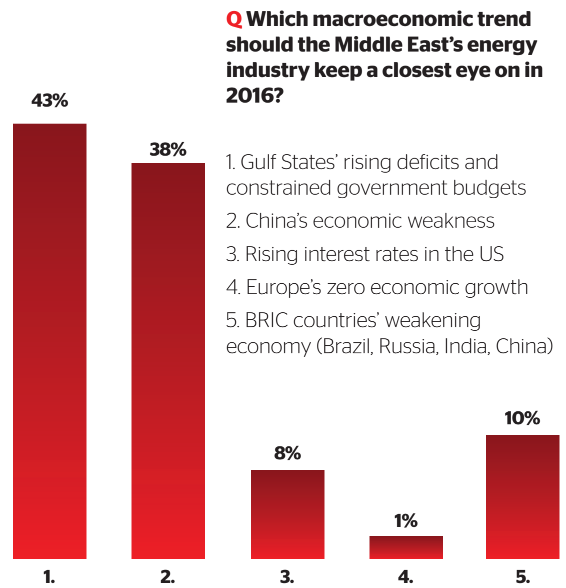
With many energy hubs in the Middle East and North Africa beset by political strife, Gulf and Asian investors are eyeing the largely stable democracies in the East African Community (EAC). Tanzania, Kenya and Uganda are spearheading East Africa's economic prowess; growth forecasts for the region are 5.6% and 6.7% for 2015 and 2016, respectively. Middle class households in eleven sub-Saharan African countries – including Tanzania, Kenya and Uganda – are expected to more than double from 15m people to over 40m by 2030, according to Standard Bank's research. The subsequent economic growth and appetite for oil products from the continent's own reserves, as well as from Gulf and Asian suppliers, is vast.

The EAC hopes to invest around $1.5bn to build 1,454km of intraregional and domestic pipelines over the next few years. The longest pipeline will be the 784km route through Kenya – Uganda – Rwanda, which should significantly bolster fuel trade between the three countries. Tanzania, Kenya and Uganda are amongst several East African countries addressing wobbly regulatory frameworks by establishing bidding rounds – a more transparent way to allocate resources. Tanzania hopes to use its 55tcf of natural gas reserves to become a LNG exporter by 2025, while Tullow and Canada's Africa Oil have identified 600m bls of oil reserves in Kenya's South Lokichar basin.

INTERRUPTING POLITICS

Economics and geopolitics are permanent bedfellows and the year ahead sees major changes in both. The political turmoil in the Middle East is unlikely to improve in the short-term, with souring relations between Saudi Arabia and Iran adding a fresh dose of uncertainty to a backdrop of war in Syria, Iraq and Yemen. Wars are costly and the Yemen war in particular is weighing down Saudi Arabia's economy as it spearheads a coalition into a second year of airstrikes and fighting on Yemeni soil against the Houthis.

Saudi Arabia's attention is also firmly fixed on Iran's economy, which has been streamlined by nearly a decade of sanctions. The country's inflation rate has dropped from around 45% in mid-2013 to 10% in 2015. While Iran lacks the economic might of Riyadh, it is highly ambitious and has already built a network of relationships for potential energy supply contracts that stretch into Europe, Asia and the Gulf. Outside of the Gulf, geopolitics are putting a strain on Europe's economy as an influx of refugees squeeze budgets, especially in countries that are also grappling with rising unemployment.



LIST OF SURVEY PARTICIPANTS

UAE Ministry of Energy
Ministry of State for Petroleum Resources, Nigeria
Ministry of State For Petroleum and Natural Resources, Pakistan
IRENA
Mubadala Petroleum
OGDCL (Pakistan's National Oil Company) and Ministry of Petroleum and Natural Resources
Oando PLC
Breitling Energy Corporation
Platts
Standard Chartered Bank
Energy Aspects
GlassPoint Solar
MIT Energy Initiative and Tata Center for Technology and Design
Wearable Intelligence
Indian Ambassador to Saudi Arabia, Oman & UAE
Gulf Petrochem
LR Senergy Group
Emirates NBD
Baringa Partners
Maersk Oil
Schneider Electric
Al Hosn Gas
Horizon Energy
ARDECO
Mubadala Petroleum
ADNOC
MENA Energy Partners
Royal Norwegian Embassy in UAE
The Royal Danish Embassy, UAE
Embassy of Nigeria, UAE
Shell in Abu Dhabi
Total EP UAE
Al Mansoori Specialized Engineering
Emirates Foundation
Horizon Energy
National Petroleum Construction Company (NPCC)
Emirates Steel
Wouters Ltd
Al Yasat Company
Dubai Multi Commodities Centre (DMCC)
Oilserv Oilfield Services Company
Total Abu Al Bukoosh
GASCO
Dolphin Energy
Chevron Alkhalij
Port of Fujairah
Environment Policy & Planning, Environment Agency - Abu Dhabi
Emirates LNG
Dolphin Energy
Al Nowais Investments
Ministry of Foreign Affairs, UAE
Abu Dhabi Education Council (ADEC)
U.S. Embassy, UAE
OMV
Dana Gas
Abu Dhabi Investment Company (Invest AD)
Masdar Institute of Science and Technology
National Bank of Abu Dhabi (NBAD)
Lanstrom Energy Advisors
Abu Dhabi Water & Electricity Company (ADWEC)
ProSep
Petromar Energy Services
OMV Pakistan
OMV Yemen
NYU Abu Dhabi
First Gulf Bank (FGB)
Dubai Mercantile Exchange (DME)
Wintershall Middle East

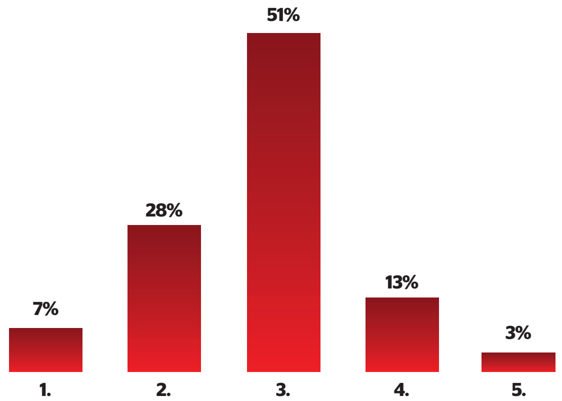
2016 Outlook

The results of a Gulf Intelligence Industry Survey of 250 energy professionals operating in the Middle East

MACRO OUTLOOK FOR 2016

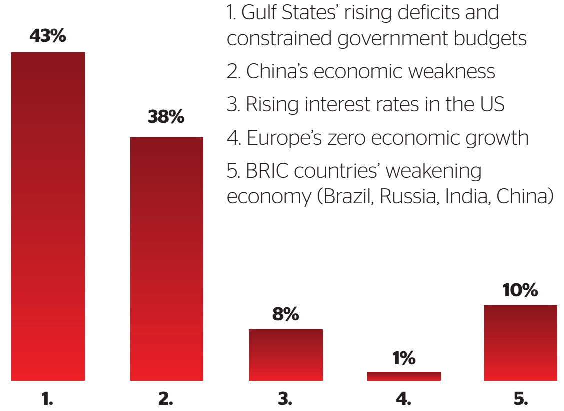
Q1 At the forum last year, 41% of the audience voted Brent would average $60/bl in 2015, while 28% said it would average $50/bl. It ended up being about $54/bl. What will be the average price for Brent in 2016?

1. $20/bl
2. $30/bl
3. $40/bl
4. $50/bl
5. $60/bl +



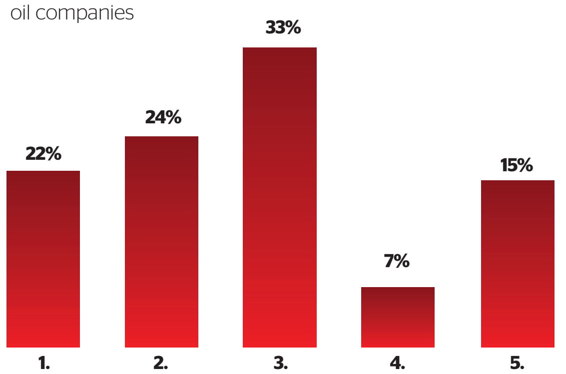
Q2 Which macroeconomic trend should the Middle East's energy industry keep a closest eye on in 2016?

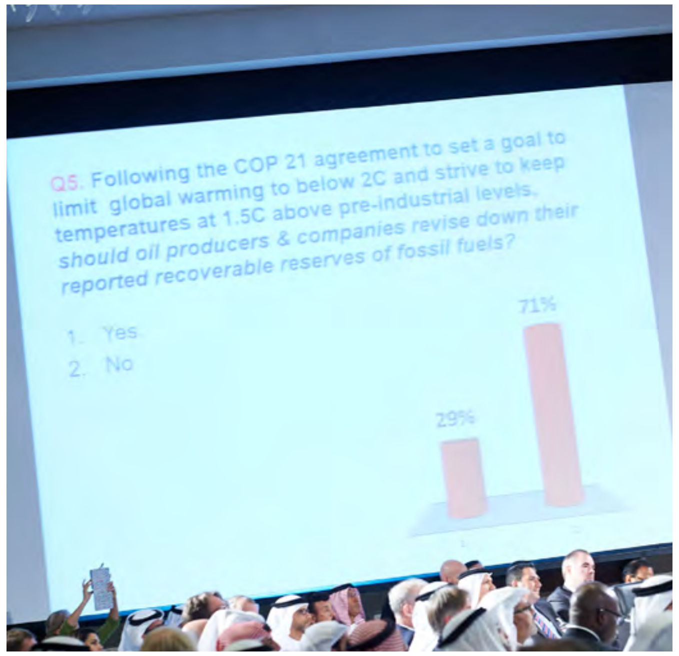
1. Gulf States' rising deficits and constrained government budgets
2. China's economic weakness
3. Rising interest rates in the US
4. Europe's zero economic growth
5. BRIC countries' weakening economy (Brazil, Russia, India, China)



Q3 What is the most significant take-away from Saudi Arabia's announcement to possibly issue an IPO?

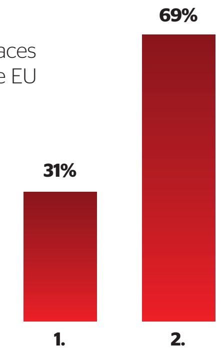
1. Saudi Arabia determined to end role as swing producer and allow markets to determine oil price
2. Saudi Arabia will have little problem navigating lower oil price era as it has many valuable assets
3. Saudi Aramco to join IOCs global trend of divesting refining assets
4. IPO would release a treasure trove of data about the world's largest oil reserves
5. Other Gulf states may look to follow suit with IPOs of their own national oil companies





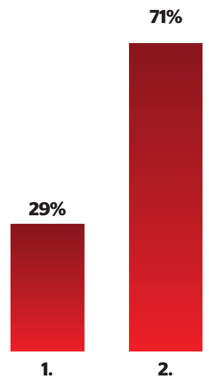
Q4 Will natural gas prices recover in 2016 as investments in new capacity are shelved, gas displaces coal-fired power plants in the US and China and the EU diversifies its supplier base away from Russia?

1. Yes
2. No



Q5 Following the COP 21 agreement to set a goal to limit global warming to below 2C and strive to keep temperatures at 1.5C above pre-industrial levels, should oil producers & companies revise down their reported recoverable reserves of fossil fuels?

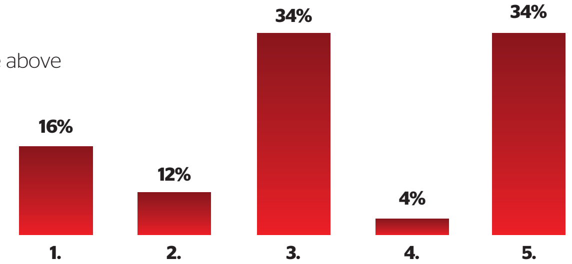
1. Yes
2. No



WHAT IS THE OUTLOOK FOR A WIN-WIN INTERCONNECTED ENERGY INFRASTRUCTURE ALONG THE SOUTH-SOUTH CORRIDOR THAT LINKS THE GULF, SOUTH ASIA AND AFRICA?

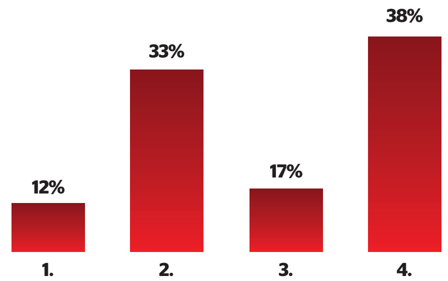
Q1 South Asia (India-Pakistan-Iran) is one of the world's least integrated regions. Plans for a gas pipeline stretching from Iran's massive South Pars field to New Delhi are constantly delayed, for example. Which country/countries stand to gain the most from greater integration between the states of South Asia?

1. India
2. Pakistan
3. Iran
4. GCC
5. All of the above



Q2 African oil exports to the US have declined significantly due to the shale oil revolution in America. With many more African energy suppliers due in global markets in coming years, what will be the most likely impact of African producers searching for new markets?

1. Create greater opportunities for partnerships between Africa and the Middle East on the emerging South-South energy corridor
2. Create competition for market share in Asia between African and Gulf producers
3. India and China will provide ample demand for all energy suppliers
4. African producers will increasingly find markets locally, with a population boom and 6% GDP growth across the continent



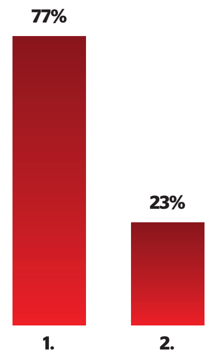
Q3 The world has shrunk into blocs and regions with interconnected growth stories and opportunities. This includes the BRIC countries (Brazil, Russia, India and China), the Association of South East Asian Nations (Asean), the European Union (EU), the Gulf Cooperation Council (GCC) and more. Energy can underpin the emergence of a new South-South bloc known as MEASA (Middle East – Africa – South Asia).

1. Agree
2. Disagree

DISRUPTION IN THE ENERGY INDUSTRY: CHANGE OR BE CHANGED?

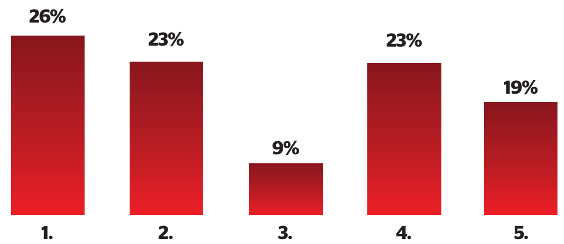
Q1 Disruptive technologies are set to accelerate the transformation of the oil and gas industry in a lower price era?

1. Agree
2. Disagree



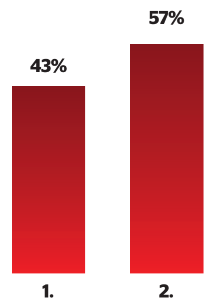
Q2 Over the next 20 years, which of the following technologies will have the biggest game-changing impact on the oil and gas industry?

1. Big data & analytics
2. Automation & robotics
3. Nanotechnology
4. Advancements of existing EOR technologies
5. All will be made redundant in due course by even newer technologies



Q3 A company's information and communications technology (ICT) is the most critical operational architecture in many sectors, including oil and gas.Is it time for IOCs and NOCs to open innovation centers in Silicon Valley to tap into the best ICT talent and build a true 21st century workforce?

1. Yes
2. No



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