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شرکت پالایش و پخش فر آورده های میعانات شیمیایی پلیمر پارس هرمزان (سهامی خاص)

در اواخر سال ۱۳۸۶ شمسی فعالیت خود را در زمینه احداث پالایشگاه خصوصی و سرماییه
گذاری در کارخانجات تولیدی فر آورده های نفتی ، صادرات و واردات مشتقات نفتی با شماره
۳۱۴۷۷۴ به ثبت رسانده و عمده سهامدار شرکت تجهیز نیروی زنگان با درصد سهام ۳۳ %
می باشد.واحد تولیدی این شرکت جدیدا" در خراسان جنوبی افتتاح و شروع به فعالیت نموده

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آدرس دفتر مرکزی : تهران–اتوبان محمد علی جناح–نرسیده به فلکه دوم صادقیه–کوچه خسرو–پلاک ۲۴ طبقه دوم

تلفن: ۶۰ – ۴۴۲۸۷۲۰۶ و ۴-۳۵۵۵۳۳۳ فکس: ۴۴۲۸۷۲۰۶

آدرس کارخانه : استان خراسان جنوبی – سربیشه – شهرک صنعتی سربیشه

تلفن و فکس : ۳۶۲۲۶۳۴ – ۲۶۵۰

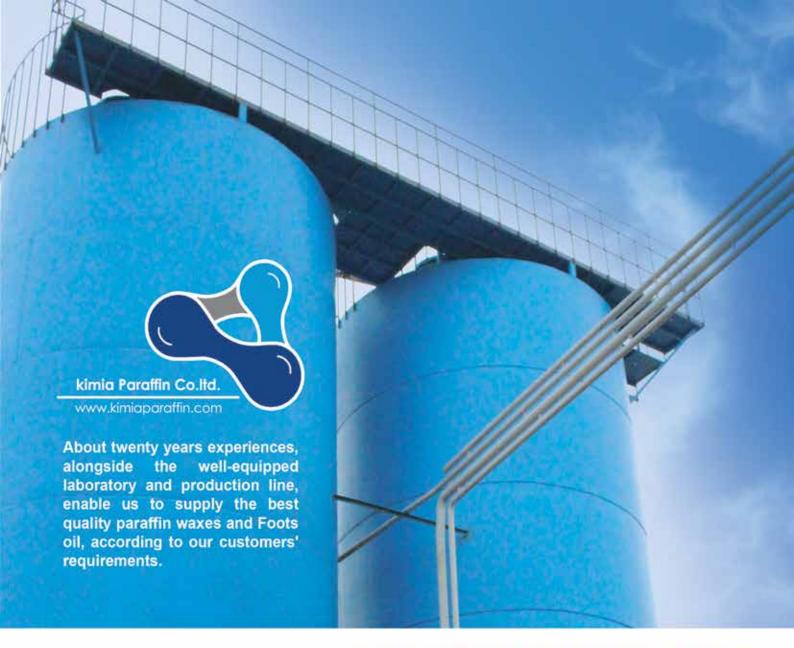


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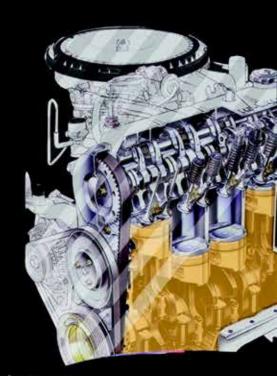
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Printed by: Dehkadeh Publishing
Address: No 4, Damavand Mall, Bakhshi
Far St,Damavand St Iran.
Telephone: +98-21-77548470
Print: 5000 copies





Zanganeh:

Political Reasons behind Oil Price Decline

ran's oil minister said political reasons have played a key role in the continued declined of global oil price, adding that the US and its allies are trying to deal a blow to the Iranian and Russian economy using the low oil price.

Bijan Namdar Zanganeh said political factors have "undoubtedly" had a role in the oil price slump, but underlined that "market fundamentals" (supply and demand) were the main reasons behind the global decline in prices. US President Barack Obama has recently acknowledged that "political

will" has been behind a decline in the oil prices, he added.

"In this regard, he (Obama) announced that Russia' economic growth has faced a crisis following the decline in the oil price and that the US was able to exert pressure on the country (Russia) over Crimea and Ukraine using the policy (oil price decline)," Zanganeh added. "We think the US and its allies also had the intention to deal a blow to Iran," Zanganeh underlined.

Over the past seven months, the oil prices have fallen about 50 percent due to a glut of supplies by certain

countries such as Saudi Arabia. In October 2014, Supreme Leader of the Islamic Revolution Ayatollah Seyed Ali Khamenei called for formulation of necessary plans to cut Iran's dependence on oil revenues and govern the country on the basis of domestic capabilities instead of natural resources.

Iran's new administration, which took office in August 2013, has voiced determination to increase the volume of non-oil exports as a determining factor in countering economic stagnation in the country.



Fossil Fuels And How to Save the World ?

MATT RIDLEY

Ridley is the author of "The Rational Optimist: How Prosperity Evolves" and a member of the British House of Lords.

ere are problems with oil, gas and coal, but their benefits for people—and the planet—are beyond dispute

The environmental movement has advanced three arguments in recent years for giving up fossil fuels: (1) that we will soon run out of them anyway; (2) that alternative sources of energy will price them out of the marketplace; and (3) that we cannot afford the climate consequences of burning them.

These days, not one of the three arguments is looking very healthy. In fact, a more realistic assessment of our energy and environmental situation suggests that, for decades to come, we will continue to rely overwhelmingly on the fossil fuels that have contributed so dramatically to the world's prosperity and progress. In 2013, about 87% of the energy that the world consumed came from fossil fuels, a figure that—remarkably—was unchanged from 10 years before. This roughly divides into three categories of fuel and three categories of use: oil used mainly for transport, gas used mainly for heating, and coal used mainly for electricity.

Over this period, the overall volume of fossil-fuel consumption has increased dramatically, but with an encouraging environmental trend: a diminishing amount of carbondioxide emissions per unit of energy

produced. The biggest contribution to decarbonizing the energy system has been the switch from high-carbon coal to lower-carbon gas in electricity generation.

On a global level, renewable energy sources such as wind and solar have contributed hardly at all to the drop in carbon emissions, and their modest growth has merely made up for a decline in the fortunes of zero-carbon nuclear energy. (The reader should know that I have an indirect interest in coal through the ownership of land in Northern England on which it is mined, but I nonetheless applaud the displacement of coal by gas in recent years.)

The argument that fossil fuels will soon run out is dead, at least for a while. The collapse of the price of oil over the past six months is the result of abundance: an inevitable consequence of the high oil prices

of recent years, which stimulated innovation in hydraulic fracturing, horizontal drilling, seismology and information technology. The U.S.the country with the oldest and most developed hydrocarbon fields—has found itself once again, surprisingly, at the top of the energy-producing league, rivaling Saudi Arabia in oil and Russia in gas.

The shale genie is now out of the bottle. Even if the current low price drives out some high-cost oil producers—in the North Sea, Canada, Russia, Iran and offshore, as well as in America—shale drillers can step back in whenever the price rebounds. As Mark Hill of Allegro Development Corporation argued last week, the frackers are currently experiencing their own version of Moore's law: a rapid fall in the cost and time it takes to drill a well, along with a rapid rise in the volume of hydrocarbons they are able to extract.

So those who predict the imminent exhaustion of fossil fuels are merely repeating the mistakes of the U.S. presidential commission that opined in 1922 that "already the output of gas has begun to wane. Production of oil cannot long maintain its present rate." Or President Jimmy Carter when he announced on television in 1977 that "we could use up all the proven reserves of oil in the entire world by the end of the next decade."

That fossil fuels are finite is a red herring. The Atlantic Ocean is finite, but that does not mean that you risk bumping into France if you row out of a harbor in Maine. The buffalo of the American West were infinite, in the sense that they could breed, yet they came close to extinction. It is an ironic truth that no nonrenewable resource has ever run dry, while renewable resources—whales, cod, forests, passenger pigeons—have frequently done so.

The second argument for giving up fossil fuels is that new rivals will shortly price them out of the market. But it is not happening. The great hope has long been nuclear energy, but even if there is a rush to build new nuclear power stations over the next few years, most will simply replace old ones due to close. The world's nuclear output is down from 6% of world energy consumption in 2003 to 4% today. It is forecast to inch back up to just 6.7% by 2035, according the Energy Information Administration.

Nuclear's problem is cost. In meeting the safety concerns of environmentalists, politicians and regulators added requirements for extra concrete, steel and pipework, and even more for extra lawyers, paperwork and time. The effect was to make nuclear plants into huge and lengthy boondoggles with no competition or experimentation to drive down costs. Nuclear is now able to compete with fossil fuels only when it is subsidized.

As for renewable energy, hydroelectric is the biggest and cheapest supplier, but it has the least capacity for expansion. Technologies that tap the energy of waves and tides remain unaffordable and impractical, and most experts think that this won't change in a hurry. Geothermal is a minor player for now. And bioenergy—that is, wood, ethanol made from corn or sugar cane, or diesel made from palm oilis proving an ecological disaster: It encourages deforestation and foodprice hikes that cause devastation among the world's poor, and per unit of energy produced, it creates even more carbon dioxide than coal. Wind power, for all the public money spent on its expansion, has inched up -wait for it—1% of world energy consumption in 2013. Solar, for all the hype, has not even managed that: If we round to the nearest whole number, it accounts for 0% of world energy consumption. Both wind and solar are entirely reliant on subsidies for such economic viability as they have. World-wide, the subsidies given to renewable energy currently amount to roughly \$10 per gigajoule: These sums are paid by consumers to producers, so they tend to go from the poor to the rich, often to

solar subsidies). It is true that some countries subsidize the use of fossil fuels, but they do so at a much lower rate—the world average is about \$1.20 per gigajoule—and these are mostly subsidies for consumers (not producers), so they tend to help the poor, for whom energy costs are a disproportionate share of spending. The costs of renewable energy are coming down, especially in the case of solar. But even if solar panels were free, the power they produce would still struggle to compete with fossil

landowners (I am a landowner and

can testify that I receive and refuse

many offers of risk-free wind and

fuel—except in some very sunny locations—because of all the capital equipment required to concentrate and deliver the energy. This is to say nothing of the great expanses of land on which solar facilities must be built and the cost of retaining sufficient conventional generator capacity to guarantee supply on a dark, cold, windless evening.

The two fundamental problems that renewables face are that they take up too much space and produce too little energy. Consider Solar Impulse, the solar-powered airplane now flying around the world. Despite its huge wingspan (similar to a 747), slow speed and frequent stops, the only cargo that it can carry is the pilots themselves. That is a good metaphor for the limitations of renewables.

To run the U.S. economy entirely on wind would require a wind farm the size of Texas, California and New Mexico combined—backed up by gas on windless days. To power it on wood would require a forest covering two-thirds of the U.S., heavily and continually harvested.

John Constable, who will head a new Energy Institute at the University of Buckingham in Britain, points out that the trickle of energy that human beings managed to extract from wind, water and wood before the Industrial Revolution placed a great limit on development and progress. The incessant toil of farm laborers generated so little surplus energy in the form of food for men and draft animals that the accumulation of capital, such as machinery, was painfully slow. Even as late as the 18th century, this energy-deprived economy was sufficient to enrich daily life for only a fraction of the

Our old enemy, the second law of thermodynamics, is the problem here. As a teenager's bedroom generally illustrates, left to its own devices, everything in the world becomes less ordered, more chaotic, tending toward "entropy," or thermodynamic equilibrium. To reverse this tendency and make something complex, ordered and functional requires work. It requires energy.

The more energy you have, the more intricate, powerful and complex you can make a system. Just as human bodies need energy to be ordered and functional, so do societies. In that sense, fossil fuels were a unique advance because they allowed

ENERGY WORLD

human beings to create extraordinary patterns of order and complexity machines and buildings—with which to improve their lives.

The result of this great boost in energy is what the economic historian and philosopher Deirdre McCloskey calls the Great Enrichment. In the case of the U.S., there has been a roughly 9,000% increase in the value of goods and services available to the average American since 1800, almost all of which are made with, made of, powered by or propelled by fossil fuels. Still, more than a billion people on the planet have yet to get access to electricity and to experience the leap in living standards that abundant energy brings. This is not just an inconvenience for them: Indoor air pollution from wood fires kills four million people a year. The next time that somebody at a rally against fossil fuels lectures you about her concern for the fate of her grandchildren, show her a picture of an African child dying today from inhaling the dense muck of a smoky fire.

Notice, too, the ways in which fossil fuels have contributed to preserving the planet. As the American author and fossil-fuels advocate Alex Epstein points out in a bravely unfashionable book, "The Moral Case for Fossil Fuels," the use of coal halted and then reversed the deforestation of Europe and North America. The turn to oil halted the slaughter of the world's whales and seals for their blubber. Fertilizer manufactured with gas halved the amount of land needed to produce a given amount of food, thus feeding a growing population while sparing land for wild nature. To throw away these immense economic, environmental and moral benefits, you would have to have a very good reason. The one most often invoked today is that we are wrecking the planet's climate. But are we? Although the world has certainly warmed since the 19th century, the rate of warming has been slow and erratic. There has been no increase in the frequency or severity of storms or droughts, no acceleration of sea-level rise. Arctic sea ice has decreased, but Antarctic sea ice has increased. At the same time, scientists are agreed that the extra carbon dioxide in the air has contributed to an improvement in crop yields and a roughly 14% increase in the amount of all types of green



vegetation on the planet since 1980. That carbon-dioxide emissions should cause warming is not a new idea. In 1938, the British scientist Guy Callender thought that he could already detect warming as a result of carbon-dioxide emissions. He reckoned, however, that this was "likely to prove beneficial to mankind" by shifting northward the climate where cultivation was possible. Only in the 1970s and 1980s did scientists begin to say that the mild warming expected as a direct result of burning fossil fuels—roughly a degree Celsius per doubling of carbon-dioxide concentrations in the atmosphere—might be greatly amplified by water vapor and result

in dangerous warming of two to four degrees a century or more. That "feedback" assumption of high "sensitivity" remains in virtually all of the mathematical models used to this day by the U.N. Intergovernmental Panel on Climate Change, or IPCC. And yet it is increasingly possible that it is wrong. As Patrick Michaels of the libertarian Cato Institute has written, since 2000, 14 peer-reviewed papers, published by 42 authors, many of whom are key contributors to the reports of the IPCC, have concluded that climate sensitivity is low because net feedbacks are modest. They arrive at this conclusion based on observed temperature changes, ocean-heat uptake and the balance between



warming and cooling emissions (mainly sulfate aerosols). On average, they find sensitivity to be 40% lower than the models on which the IPCC relies.

If these conclusions are right, they would explain the failure of the Earth's surface to warm nearly as fast as predicted over the past 35 years, a time when—despite carbondioxide levels rising faster than expected—the warming rate has never reached even two-tenths of a degree per decade and has slowed down to virtually nothing in the past 15 to 20 years. This is one reason the latest IPCC report did not give a "best estimate" of sensitivity and why it lowered its estimate of near-term

Most climate scientists remain reluctant to abandon the models and take the view that the current "hiatus" has merely delayed rapid warming. A turning point to dangerously rapid warming could be around the corner, even though it should have shown up by now. So it would be wise to do something to cut our emissions, so long as that something does not hurt the poor and those struggling to reach a modern standard of living. We should encourage the switch from coal to gas in the generation of electricity, provide incentives for energy efficiency, get nuclear power back on track and keep developing

solar power and electricity storage. We should also invest in research on ways to absorb carbon dioxide from the air, by fertilizing the ocean or fixing it through carbon capture and storage. Those measures all make sense. And there is every reason to promote open-ended research to find some unexpected new energy technology.

The one thing that will not work is the one thing that the environmental movement insists upon: subsidizing wealthy crony capitalists to build lowdensity, low-output, capital-intensive, land-hungry renewable energy schemes, while telling the poor to give up the dream of getting richer through fossil fuels.



Nick Hodge: Oil Price will slump until something meaningful will happen in Global Economy

hile some celebrated shale oil as a "boom," Nick Hodge derided it as a "Ponzi scheme." Today the shale sector quivers before the specter of falling oil prices, and the oil majors that have invested heavily in shale may be humbled. In this interview with The

Energy World, the founder of the Outsider Club and investment director of Early Advantage argues that nuclear energy is about to reassert itself, and that solar power is on the verge of becoming a major energy source. He also highlights one uranium and four solar companies with especially bright futures.



■ You call yourself an "outsider," and have founded an investment club of that name. In what sense are you an outsider?

Being an outsider stems from my upbringing. Both my parents were middle to lower middle class, and I never had anything given to me. I've always had to work for what I have, starting with a lawn-service business when I was 12 and working my way through college as a butcher. I look at the "mainstream" with a skeptical eye. I'm a contrarian. I'm not on the inside of big business, big banking and politics, and don't want to be. The Outsider Club has been around for about a year now. I founded it after writing for several newsletters over the past decade about energy and speculative investments.

■ What does being an outsider mean with regard to your views on energy?

I'll give two examples. First is my belief in the peak oil theory. Second is my early adoption of a belief in renewable technologies, such as solar and smart-grid technologies.

■ It would be safe to say you're not an admirer of our financial elite?

That would be fair. I think it's a corrupt cabal: back-scratching, closed-door and manipulative. Until recently, one could call this a "conspiracy theory," but now I can point to the LIBOR and FOREX riggings, and to the laundering of money for terrorists and drug cartels by HSBC, as proof.

I'm not opposed to greed at the individual level per se, but when institutions and corporations are colluding to take the lion's share of the world's wealth—when only the 1% have gained since 2008, with the middle-class failing—I think that's wrong.

■ Future energy needs are obviously dependent on the growth of the world economy. Do you think that we are going to muddle through our present difficulties, or is a reckoning in the cards?

I think muddle is a good word. It's hard to forecast a reckoning, but there certainly are difficulties ahead. The World Bank has cut its forecast for global GDP growth to 3% for 2015 and 3.3% for 2016. Most of that growth will come from the U.S., while Europe's growth is forecast to be a mere 1%. Energy supply and demand

is trying to find a balance. It's not going to come quickly.

■ What are the causes of the oil price collapse?

I would attribute 50 percent to a decline in growth and 50 percent to the quick ramp-up of U.S. shale production, which has reached 8.5-9 million barrels per day (8.5-9 MMbbl/d). That's getting close to our early 1970s peak of 10 MMbbl/d. A huge increase in production coupled with struggling economies is a perfect recipe for lower oil prices.

■ What is the role of Saudi Arabia here?

The Saudis are playing a long game. They know that continued production above their OPEC target of 30 MMbbl/d will shake out the shale industry, which they regard as a flea on the back. Their plan is working. We've already seen a couple of shale producers go into receivership.

You've described the shale boom as a Ponzi scheme. Could you elaborate?

From 2008–2012, four of the biggest shale producers, Chesapeake Energy Corp. (CHK:NYSE), Southwestern Energy Co. (SWN:NYSE), Devon Energy Corp. (DVN:NYSE) and EOG Resources Inc. (EOG:NYSE), actually lost money. This was at the peak of the boom. From 2008-2012, these companies expended \$133 billion (\$133B) in capital to buy equipment and drill holes, but they've regained

"The oil sands are potentially in even more trouble than shale. . .Only the companies with economies of scale, best practices and lowest production costs are going to make it."

only \$80B in cash flow from operating activity. That's a \$53M loss. These companies have taken on exorbitant amounts of debt to extract an unproven resource.

Then we have the production decline rates. An existing conventional oil field has a decline rate of 4-5 percent per year. By contrast, the typical Bakken well declines at 40 percent per year-10 times faster. By the end of 2013, the typical Bakken well was

losing 63 thousand barrels per day (63 Mbbl/d). That's an escalator to nowhere, the classic definition of a Ponzi scheme

"The Saudis know that continued production above their OPEC target of 30 MMbbl/d will shake out the U.S. shale industry."

Third and last would be marginal cost of production. According to Bernstein Research, the marginal cost of producing a barrel of shale oil in 2012 was \$114 per barrel (\$114/bbl). And the price of oil hasn't been at \$114 for three years. Here's a quotation on shale from Rex Tillerson, CEO of Exxon Mobil Corp. (XOM:NYSE): "We are all losing our shirts today. We're making no money. It's all in the red."

■ Despite these numbers, American politicians and other boosters continue to talk about the U.S. becoming the new Saudi Arabia.

I don't think the U.S. will ever be energy independent. We're not producing more oil than we did in 1971, despite the U.S. having almost half the world's oil rigs. We don't produce half the world's oil, only 9%. That doesn't say "boom" to me.

Assuming there isn't a tremendous recovery in the oil price soon, what are the prospects over the next two or three years for shale companies and for



Alberta's oil sands?

The oil sands are potentially in even more trouble than shale. Oil companies that have taken on new debt to jump into shale have a big problem. We could see a 30–35% correction in the share prices of the majors. Only the companies with economies of scale, best practices and lowest production costs are going to make it.

Over the longer term, we're still believers in peak oil. That doesn't mean we're running out of oil; it means we're running out of cheap oil. We will increasingly be left with oil that is neither economic nor technologically recoverable.

How long will the oil price slump last?

Until we see a meaningful global economic recovery—something much higher than 3% per year—or a lot of production comes offline. Goldman Sachs said, on Jan. 12, that we could test \$30/bbl before we see \$70/bbl. Let's take that as a range for the next 18–24 months.

Which oil majors will come out of this crisis best? NH: Those that aren't so exposed to the shale industry—companies such as Statoil ASA (STO:NYSE; STL:OSE), Total S.A. (TOT:NYSE) and BP Plc (BP:NYSE; BP:LSE). But it depends on how fast they react; how fast they draw down the rigs and how fast they turn their sights and their resources to economic projects. I wouldn't be a buyer of American majors now. I would wait until an uptrend has been reestablished.

When it comes to Statoil, I like the Norwegian model of blocking off its oil reserves and only going after so much at one time. I like the sovereign fund the company has set up. I just like the way Statoil does business. It has a 10% dividend compared to Exxon's 3%. Total pays a 6% dividend. Statoil and BP have been unfairly punished. Exxon is down something like 10%, but Statoil and BP are down anywhere from 25–35% in the past year. That's an overreaction. I think there's value there.

Moving on to nuclear, China is engaged in the greatest nuclear power expansion the world has ever seen, despite the Fukushima disaster. Does it know something

the rest of the world doesn't?

No, it knows what the rest of the world also knows: Nuclear energy is by far the safest form of baseload energy, and it is carbon free. China has a big pollution problem, so the country has made a big commitment to clean energy. China has 22 reactors in operation right now, 26 under construction, and 28 planned to start by 2017. It is looking for threefold nuclear growth by 2020 to 50 gigawatts (GW), and then tripling that again by 2030 to more than 150 GW. And it's not just China betting on nuclear. Saudi Arabia has committed to 16 nuclear reactors over the next 20 years at a cost of \$80B. The United Arab Emirates is building four reactors at a cost of \$20B, with the help of a South Korean consortium. India has six reactors under construction and is planning on building 35. Germany has said it plans to phase out its reactors, but the reality is the country will have those reactors until 2022. Meanwhile Japan, where Fukushima took place, is restarting its reactor fleet.

You've described uranium as a "good contrarian bet." Why?

Long term, we have the generation of new reactors I've just discussed. Short term, we've seen utilities enter the spot market. Specifically, Exelon Corp. (EXC:NYSE), the largest nuclear utility in America (the largest nuclear market in the world), stepped in when the U3O8 price fell to \$28/lb. That led other utilities to move to secure uranium supply for the 2017–2018 cycle. That's one of the catalysts that got the spot price up to over \$40/lb late last year.

"China knows what the rest of the world also knows: Nuclear energy is by far the safest form of baseload energy, and it is carbon free."

Where do you see the spot price going?

I expect a \$50–55 range by the end of 2015—dependent, of course, on Japan's timeline.

What's your favorite uranium project?

19

"The Saudis know that continued production above their OPEC target of 30 MMbbl/d will shake out the U.S. shale industry."

Fission Uranium Corp.'s (FCU:TSX) Patterson Lake South (PLS) project in Saskatchewan's Athabasca Basin. It's the best unmined deposit of uranium in the world. The company announced its initial NI 43-101 resource on Jan. 9: 79.6 Mlbs Indicated and 25.9 Mlbs Inferred. Nobody expected the maiden to come in this high; the expected range was 50-80 Mlb. And that's only for two of the four mineralized zones Fission has found so far

At 100 Mlb, taking the recent uranium acquisition price of projects in the area at \$10/lb, PLS is a \$1B deposit. Fission's market cap is only \$359M. I anticipate the company increasing its resource to 150-200 Mlb once the other zones are included.

"China knows what the rest of the world also knows: Nuclear energy is by far the safest form of baseload energy, and it is carbon free."



This deposit is absolutely going to be bought by a major. This year? I don't know. But it's a better deposit than Hathor Exploration Ltd.'s Roughrider, which was ultimately sold to Rio Tinto Plc (RIO:NYSE; RIO:ASX; RIO:LSE; RTPPF:OTCPK) for \$642M. It's purer, and it's shallower. It's open-pittable. I'm bullish on Fission. As Rick Rule says, I'm going to own it until it's not called Fission anymore.

Ever since the first oil shock of 1973, we have been informed that fossils fuels are on the way out and that alternative energy is the way of the future. Yet 40 years later, oil, coal and gas continue to power the world. Will alternative energy triumph?

I don't know that "triumph" is the right word. Will it make inroads? Yes. Will it gain generation share? Yes. Will it ever be the lion's share of generation? I don't know, because there are so many technologies: wind, geothermal, concentrated solar, rooftop solar. Alternative energies are already growing faster than conventional sources. The U.S. solar market became an \$800M industry in 2007-2008. Now it's a \$15B industry. U.S. solar installations for 2014 are projected to be 70 times more than in 2006. The U.S. installed 20 GW of solar power over the past 40 years. We're now

Skeptics claim that solar power has been too dependent on government subsidies. How do you respond?

doing 20 GW every two years.

These subsidies were training wheels. Germany has installed a huge base of distributed solar because of its generous feed-in tariff during 2007-2008. But the training wheels are nearly ready to come off. Costs have come almost straight down, to \$0.80/watt, and that's projected to be reduced another 60–70%. Solar proceeds toward grid parity, the point at which it costs the same as an installed, baseload, natural gas plant. We're already there in many places, such as Hawaii, California and the Mediterranean. Once that threshold is crossed, solar's success will be compounded all the more quickly.

■ What is the biggest technical problem that solar faces?

Solar has been commoditized, especially as it relates to the silicon cell. The industry is really all about the polysilicon, which is cheap right



now, so that all solar panels are more or less alike. However, because no blanket quality-control measures were ever adopted for solar cell production, currently 5% or more of the solar cells coming off the line aren't up to snuff. This presents a big growth opportunity for companies that can solve this problem.

■ You follow one such company, correct?

Yes, ACT Aurora Control Technologies Corp. (ACU:TSX.V). Its CEO, Michael Heaven, solved a similar quality control problem in the paper industry, and then sold that company to Honeywell International Inc. (HON:NYSE). ACT Aurora has developed what it calls the Decima, which is bolted onto solar-cell fabrication plants and laser scans each cell when it comes from the furnace. Defective cells are rejected in real time. This technology pays for itself within six months.

ACT's market cap is only \$7M. A company such as this, if successful, would give investors enormous leverage, correct?

That's one of the reasons I'm interested. ACT plans to publish a variability index report ranking the cells of the solar cell manufacturers. These data have previously been secret. This publication will bring the furnace suppliers to the table. I know for a fact they're already meeting with ACT management. There is even talk of bundling the Decima into the furnaces when they are delivered to solar cell manufacturers.



What other solar companies do you follow?

I'll discuss three. The first is Yingli Green Energy Holding Co. Ltd. (YGE:NYSE). It is a Chinese company and the largest cell manufacturer in the world. It has the first-mover advantage, but is troubled by issues following the collapse of the solar sector in 2008. The company took on a lot of debt and made some missteps. But it has the volume and the customers to succeed. It is merging into vertical channels downstream to help increase margins. Looking at a three- to five-year time frame, buying Yingli at under \$2/share is a pretty good bet.

■ What's the second company? Natcore Technology (NXT:TSX.V). We were just talking about furnaces. Natcore, through a process licensed from the National Renewable Energy Laboratory, can help eliminate some costly steps in cell manufacturing. Instead of baking cells at high temperatures with dangerous chemicals like silane gas, they can be etched and coated in an aqueous solution—basically a water bath containing nanoparticles.

"The oil sands are potentially in even more trouble than shale. . . Only the companies with economies of scale, best practices and lowest production costs are going to make it." Natcore's technology also uses a laser

"I don't think the U.S. will ever be energy independent." to dope the cells to a hundredth of a micron, reducing cost, reducing the time to make the cells, and, ultimately, increasing efficiency. The company's model is to license this process to any solar cell manufacturer. It has been in discussions with Costa Rica, which would prefer to make its own cells and not be dependent on the Chinese. Natcore would not only license its technology, but would also act as consultant to customers building their own fabrication facilities.

Natcore also has a small market cap, less than \$20M.

The solar manufacturers are already established. We know who they are—SunPower Corp. (SPWR:NASDAQ), Yingli, First Solar Inc. (FSLR:NYSE), if you're looking for thin film. But the technology is still young. Solar supplies less than 1% of global energy, so there will be advances and disruptions. The young technology companies can be more nimble



because they are in the research stage. They are pre-revenue, and or he can split the cost of the savings. aren't yet producing a commoditized This model enables more customers to adopt solar more quickly, which product. means bigger business for SolarCity. And the third solar company you

wanted to discuss?

SolarCity Corp. (SCTY:NASDAQ). This is not a micro cap—it has a market cap of \$4.5B. I like SolarCity because it's not a producer and doesn't have to fight over pennies and percentage points. It's an installer. It was cofounded by Elon Musk of Tesla Motors Inc. (TSLA:NASDAQ) and Space Exploration Technologies Corp. (SpaceX) fame. There aren't many public installers, and none on the scale of SolarCity. Its customer is just "Bob Homeowner," who maybe doesn't have \$20-25K to put a brandnew solar array on his house. SolarCity is developing interesting financing mechanisms whereby Bob can lease the panels. He can sell the electricity back to SolarCity or back to the grid;

he can pay off those panels over time;

■ To what extent does the adoption of solar power require a significant level of economic growth? Putting solar panels on new houses and retrofitting old ones is not cheap. Solar will be offered as an upgrade for new houses, just like marble countertops. Yes, the post-2008 recession has resulted in homeowners tightening their belts. SolarCity has cracked that nut, and that's why it is gaining traction. It can go to homeowners and explain how solar installation can pay for itself over time through electricity savings.

You haven't mentioned wind power. Is that because you deprecate it compared to solar? In my heart of hearts, yes. One, the

costs haven't come down as fast. Two, there are greater hurdles to installation. And three, people don't want to look out their windows and see turbines. We don't know how long turbines will last, how much service they need and how much power they add to the grid.

■ Would you advise people to choose nuclear and solar investment vehicles rather than fossil fuels?

I think investors have to be diversified. I would advise investors to make safe, long-term, yield-producing investments in conventional forms of energy, and then to invest in mediumto long-term plays in quality midsize and small-cap renewable companies. The International Energy Agency says solar will be the world's largest source of electricity by 2050. Given that, I would want the best-of-breed solar companies in my portfolio for the next 30 years.





Nick Hodge is founder and president of the Outsider Club, and investment director of Early Advantage. He is the author of Energy Investing for Dummies, appears regularly at investment conferences, including the Cambridge House Vancouver Resource Investment Conference, and is frequently interviewed by major media outlets. He is a graduate of Loyola University, Maryland.





BP CEO on oil: 'It's going to be very painful'

he dramatic drop in oil prices and the transfer of wealth to consumers is going to be very painful for the oil and gas industry, Bob Dudley, CEO of BP, told CNBC Saturday.

Speaking at Egypt's Economic Development Conference in the resort town of Sharm el-Sheikh, Dudley said that oil prices - which have fallen around 60 percent since last June - had been a "huge shock" for companies like his.

The industry had been living in a "world of luxury" over the last few years, he said, when prices were above \$100 a barrel.

"We're back into the normal world of volatility for oil and gas prices," he said on a CNBC-hosted panel. "Anything that happens that fast can have unintended consequences." BP was the first European major to sound the alarm on tumbling oil prices - on December 10, it warned that it was implementing a costcutting program as a result. In December, oil majors in Europe also received a stark warning from credit ratings agency Standard & Poor's (S&P), which placed BP, Total and Shell on a negative watch. It means the three firms are more likely to have their debt rating downgraded over the next three months. In January, BP announced job cuts in its onshore operations in the U.K. It told CNBC that it expected a reduction of around 200 staff and 100 contractor roles in light of "major

where it is.

He added that speculators were trying to bet where the price will be in the future, but stressed that nobody had the answer.

"We have both lower demand...and also we have global oversupply," Boisseau said.

Egypt investment

Speaking at the investment event in Egypt, Dudley added that BP had operated continuously in the country for the last 25 years.

His comments come after the oil giant signed an deal to develop gas resources in Egypt, with investment of around \$12 billion from BP and its partners. The company said the project underlined its commitment to the Egyptian market and was a vote of confidence in the country's investment climate and economic potential.

Three days later, BP also announced a gas discovery in the East Nile Delta which it said was expected to be the deepest well ever drilled in Egypt.

"I think the time is absolutely right," Dudley said about investing in the Middle Eastern nation.
"(Egypt) really is the lynchpin...it's the largest market in the Middle East."
On Saturday, Dudley said the investments would increase in gas

production in the country by 25 to 30

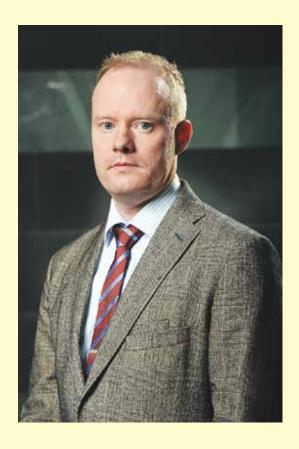
percent.

reshaping" for the business and "toughening market conditions." Speaking on the same panel in Egypt, Philippe Boisseau, president of marketing and services at Total, said the price of oil was going to stay

Should bunker prices dictate the industry's priorities?

here has been a lot of speculation in the last few months about how the fall in bunker prices could affect those shipowners and charterers investing - or planning to invest - in clean technologies and the clean technology companies themselves. I will be the first to admit that one of the key benefits NAPA has been championing in recent years is the relatively short payback period on software that can deliver fuel savings at the sustained high prices we were

However, we should not forget the damage done to this industry and our joint fortunes following the economic crash in 2008. As we all know, the shipping industry was riding high upon the boom in global trade and low fuel costs. In such buoyant economic conditions, many threw caution to the wind, only heightening the industry's subsequent struggle to recover when the tide turned. To say recent market conditions have been challenging would be an understatement. But together the industry is managing to get through it, teaching us in the meantime that pragmatism and innovation can indeed stem from adversity. A vessel is a 20-30 year asset investment, and one requiring significant outlay and upkeep over that time. As such accurate and useful data on how that investment is performing will never cease to be relevant and invaluable to its owners and operators. Particularly at a time when, as scientists and economists never seem to tire of reminding us, the next thirty years present the shipping community with significant challenges. Some we can already see and plan for, such as incoming regulation from the IMO and EU, for example reduction in the sulphur content of fuel burnt in ECAs and eventually across the world, and reducing carbon. Others can only be predicted; whether fracking will continue to flood the market with low-cost LNG, or if global conflicts will once again drive oil prices up. We are an industry that has been bitten by unexpected economic impacts and, as the old saying goes, once bitten twice shy. On a practical



level, savings and opportunities continue to abound even at current fuel price levels. The introduction of 0.10% ECAs and the new costs they represent to the vast majority of vessels (even if is only for a small proportion of their time) as well as the unpredictable nature of energy costs require long-term not near-term thinking; teaching us not to settle for what works for now, but to seek mitigation strategies for the long road ahead.

Together we must keep planning for the future, both expected and unexpected, to move our industry forward. At NAPA, we have seen the achievement of substantial fuel savings, including the benefits of software optimisation on the existing fleet through ClassNK-NAPA GREEN. This reminds us that technologies and collaborations will drive the shipping industry forward to a new, more progressive footing, similar to the evolution of other transportation

High fuel prices opened the door of opportunity to the shipping industry but even with the cost reductions we've seen in recent months, bunkers remain the largest component of vessel running costs. Now is not a time for short-term thinking. As these lower bunker prices have a positive impact on profitability for ship owners and operators, they have to opportunity to turn it to their long term advantage; freeing up capital to invest in fuel efficiency for the future of their business.

Esa Henttinen is Executive Vice President, NAPA for Operations, in the NAPA Group, a world leading software house supplying safe and eco-efficient solutions for ship design and operation.

Henttinen holds a Master's degree in Naval Architecture from the Helsinki University of Technology (Aalto University). He has worked with NAPA since 1999.

Henttinen has gained extensive experience in the marine industry by developing safe and sustainable solutions for ship owners, operators and seafarers.

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What Happens When the Oil Stops?

ast month, an explosion and fire roared through an ExxonMobil Corporation (NYSE: XOM) refinery in Torrance, California. With oil refining out of commission in the area, West Coast gasoline and petroleum products shot up in price, a glimpse into a world where oil stops flowing. Here's what happened. The details

February 18, 2015 was not a good day for ExxonMobil Corporation. While the exact cause of the explosion is still unknown, what is certain is that it resulted in four injuries, lock-downs at 14 nearby schools, and the temporary shutdown of a 750-acre plant that normally churns through 155,000 oil barrels every day to produce nearly 10

percent of California's gasoline. On the day of the explosion, ExxonMobil Corporation shares dropped around 2%. And although it's impossible to know how much of the oil company's stock price drop since then is in response to the explosion, how much is in response to Warren Buffett's Berkshire Hathaway ExxonMobil sell-off, or how much is because investors' Ouija Boards pointed in different directions, Exxon stock has steadily underperformed the S&P 500 (SNPINDEX: ^GSPC) . West Coast woes

When we want something in America, we get it. So, what stopped the West Coast from simply shipping in refined petroleum products from elsewhere? Two things.

First, even in this day and age, geographic isolation can become an issue. With the Pacific Ocean to the West and the Rocky Mountains to the East, the West Coast region is actually relatively isolated.

And second, the refinery produces a special low-emissions fuel for California, Arizona, and Nevada that creates a miniature supply market all its own.

The ultimate result: a 22% spike in gasoline spot prices to \$2.02 per gallon over just five days. That jump pushed West Coast gas prices a whopping \$0.41 per gallon above New York Mercantile Exchange prices. The end of oil?

This isn't the first time the West Coast has been strapped for gas.



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In 1988, an explosion at the same factory killed one person and injured nine, and a 1994 explosion injured 28. Similar West Coast supply disruptions in 2008, 2009, and 2012 also resulted in higher retail prices. But those higher prices are exactly the reason ExxonMobil Corporation won't disappear overnight -- oil shortage or not. Limited supply doesn't necessarily create limited sales. In fact, it can be a lucrative opportunity to raise prices. But over the long term, those prices may deter oil users who have

better options. We've already seen it happen with electricity. Oil use dropped 75% from 2002 to 2012 as other generation fuels (most notably natural gas) shot up in generation capacity. Currently, our auto industry is undergoing a gasoline divorce as carmakers like Tesla Motors, Inc offer all-electric options. But for now, a refinery explosion and temporary price hike isn't the economic shock that shakes America off oil. It does, however, provide investors with a unique insight into a future where oil supply might

not always meet demand -- and its ensuing price effects on everything from gasoline to Exxon stock. On April 1, our CEO will buy one of these three stocks... Will Thorndike's book The Outsiders details eight CEOs whose unconventional business approach allowed their companies to outperform the S&P 500 by a staggering 20X. Mean that just \$10,000 invested into each of these eight companies would have been worth more than \$1.5 MILLION just 25 years later.









eal-time reporting and data analysis are key tools to understanding and improving complex operating environments of today's companies where the overall effects of any individual action can be very difficult to identify without a proper tool set at hand.

Identifying and continuously improving best practices are also best served by the same process which then allows shipowners and operators to see what's happening underneath all the noise — to find what otherwise would be lost in the variance of the data.

In order to make operational improvements driven by data analysis and reporting, a systematic approach is needed that covers key areas which must be studied, analyzed, changed and constantly monitored in order to meet the desired outcome; efficient, cost-effective operations. The 5 steps of this systematic approach are to:

- * Identify improvement areas: digging deep into the details to find the issue
- * Understand the current situation: learning how operations/processes are created and linked
- * Plan improvement actions: charting a course for reaching a desired target state *Implement change: working the plan for continuous improvement practices
- * Follow up and maintain change: ensuring the change benefits continue to materialize

When analysing a fleet's performance in general or a focused area of operations, bringing the lowest performers to at least the level of average performers is often both the fastest and most effective action. The following examples reveal how deep analytics and reporting can pro-actively create changes that have a positive domino effect across an entire organization.

Example 1: Fleet Speed Profile Performance

We compared two vessels operated on comparable schedules under similar conditions, looking at how much extra energy was used because of the speed profile and engine combinations. Problem identified: By using specific data-gathering processes via our Eniram Platform on both vessels, we were able to determine that Vessel A had a tendency to sprint in the beginning of the leg, then loiter at the end, which naturally leads to lower overall speed profile performance.

Result: By identifying the vessel differences, we were able to help the customer reduce the total fuel consumption of Vessel A by approximately 1% of the total fuel consumption. The visibility of the effects of the speed profile enabled the shipping company to take improvement actions on vessels where it was most needed.

Observation/recommendation:

Further analysis can be used to find the real causes behind those differences. Planning improvement action, executing on that action and consistently following up is the only way to ensure a successful outcome.

Example 2: Bunkering management case study

Our customer needed to find out if some of the vessels in their fleet were holding too much Heavy Fuel Oil (HFO) on board.

Problem identified: Again using the Eniram Platform, we performed several analyses on tank levels on these ships and found that despite consistent bunkering patterns in the same port and no major bunker price differences, many vessels were indeed holding an overage of HFO.

Result: We helped the customer eliminate the extra 1,000 tons of HFO on each vessel; the difference of over 1000 tons of HFO onboard between the minimum levels means increased draft, and that there is an extra half a million USD tied in working capital on the vessel, which costs in total circa \$100k each year per vessel depending on the type of vessels and company's internal cost of capital.

Observation/recommendation:

Simply by using our in-depth reporting analysis, and performing follow-ups on tank levels through a regular report that aggregates data on the amount of fuel onboard, the company could easily track fuel levels. Our customer was able to bring down the levels of HFO closer to the company's policy by using sophisticated data analytics.

Example 3: Active Route Management



Routing is a very traditional problem and also very complex with many factors affecting it such as weather, shallows, distance to the shore, currents and ECA zones.

When analyzing routing, quite often the most effective way to improve this within the fleet is to compare where the vessels are having the most problems and then create best practices for those legs which seem to be problematic. In this case, the difference between the best and worst routes is over 12% of the total fuel consumption (a rare case). According to our advanced analytics studies, the overall average potential improvement of actively managing routes of a fleet is typically around 3% of the total fuel consumption.

We understand that every operational issue is different and every company has different operating parameters.

That's why we customize our solution, yet use a proven systematic approach. Detailed analysis and modelling enables separating environmental effects from operational effects and understanding where the focus of improvement action is needed. Without data gathering, analyses and constant reporting, it can be very difficult to find the case and effect from complex onboard systems.







No Real Oil Price Relief Until Q3

ost of the publicly traded upstream oil & gas company share prices have moved up off the lows they set in December and January as crude oil prices have stabilized. Although it is encouraging, I do expect to see lots of share price movement (up and down) as the oil & gas sector struggles during the first half of 2015. We are not out of the woods yet, but there is definitely light at the end of the tunnel and

investors are beginning to return to the sector.

The oil markets should tighten in the third quarter. The International Energy Agency (IEA) is predicting a sharp increase in crude oil demand in the 3rd quarter, about the same time reduced upstream spending begins to impact oil supplies in the United States. Saudi Arabia says they are seeing an increase in demand from Asia, which is definitely an encouraging sign.

FEAR and GREED drive the markets and "speculators" determine the daily moves in crude oil prices that are traded on NYMEX.

You may have noticed that the oil traders are reacting to each midweek crude oil storage report and each Friday's active rig count report from Baker Hughes (BHI). There are also an increasing number of "experts" telling us why oil prices will go up or down. I recently saw an article that forecast crude would





drop to \$10/bbl. When you see wild predictions, keep in mind that a lot of the articles with sensational titles are posted on the internet by individuals that get paid by the "hit'. I'm sure the doomsday predictions and volatility in the oil markets will continue, but fundamentals do eventually matter when it comes to any commodity's price.

Crude oil storage is building in the United States because we have too much light oil coming from the shale plays for our refineries to handle and it is still illegal to export oil, except for a small amount of condensate. The political reason forbidding oil exports is outdated, but the gang we have in Washington doesn't favor the domestic oil producers and no politician wants to be tied to a bill that might increase gasoline prices for consumers. Storage levels are also building because there is a lot of money to be made by those

accumulating oil at today's price. Known as the "Pipeline Crossroads of the World," Cushing, Oklahoma is home to the nation's largest oil storage facility, a massive complex of tanks and pipes capable of holding more than 80 million barrels of crude. Cushing is also the price point for domestic benchmark West Texas Intermediate (WTI) crude. If you buy a NYMEX futures contract for WTI and hold it to the expiration date, "your oil" will be delivered to Cushing and you will be getting a call asking you how you want to handle it. A lot more individuals are taking physical ownership of oil these days because the oil markets are in "contango" (front month oil price is lower than the prices for future delivery). On February 27, the April 2016 WTI futures contract settled at \$61.95/bbl, more than a \$12.00/bbl premium to the front month (April, 2015) contract. This encourages refineries and

speculators to build inventory since all indications are that oil will cost more in the future.

As the price of oil has plummeted over the past eight months, companies and individuals have stockpiled as much as 2.2 million barrels a week at Cushing, rapidly filling it to more than half capacity. As of February 20th, Cushing's storage tanks held nearly 49 million barrels of crude, according to the U.S. Energy Information Administration. As storage fills up at Cushing, the gap between WTI and Brent widens. Cushing also raises their storage fees as inventory levels approach capacity. As you can see in the chart below, refiners begin drawing more oil from storage each year in May. This is because they need to ramp up gasoline production. Lower demand period just ahead

Lower demand period just ahead During March and April a lot of refineries shut down for a couple of

weeks to do annual maintenance and make adjustments necessary to produce summer blends of gasoline. Crude oil demand by the refiners is reduced during this period. Since there is a record amount of crude oil in storage today, we will see pressure on the oil markets until storage levels return to normal.

Summer driving season in the U.S. is just a few months away. Each year there is a sharp increase in demand for crude oil from the 2nd quarter to the 3rd quarter. This is primarily driven by the increased demand for transportation fuels. Also, refiners cannot blend as many NGLs with crude oil for the summer blends of gasoline, increasing the demand for black oil. Take a look at the IEA Oil Market Report and you will see that the IEA is now forecasting more than a 1.5 million barrel per day spike in oil demand during the 3rd quarter. Weather does have some impact on crude oil supply / demand. The official start of spring is about a month away. For those of you living in the Northeast it can't come soon enough. This is the region's second very cold winter in a row. If cold weather continues through March, as predicted by Dr. Joe Bastardi, it will put pressure on heating oil supplies in March.

The 3rd quarter spike in demand will help to balance global supply / demand, but it will take a while to work off the big build in crude oil storage. I think we will have a much tighter oil market by year-end, but stock prices should move higher months before that happens. U.S. Oil Production will peak in 6-9 months

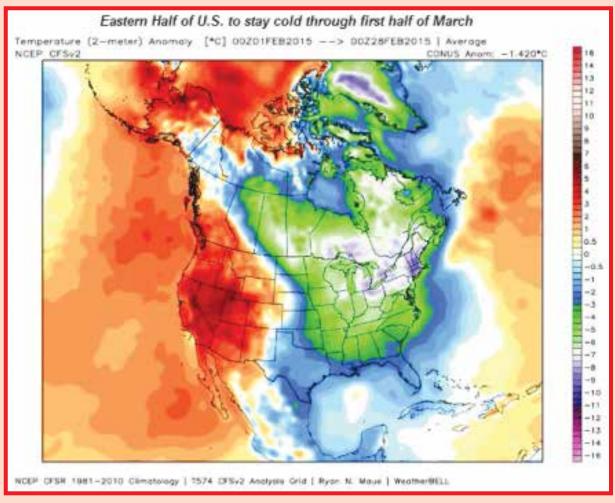
By now you all know that the global supply of oil increased much faster than demand growth in 2014, resulting in a temporary "glut" that is the primary reason for the sharp drop in oil prices. A strong U.S. dollar and Saudi Arabia's refusal to lower exports accelerated the price decline. Many people believe speculators, which now dominate oil markets, have over-reacted and pushed oil prices lower than justified by the physical market. The global market for oil has already moved back over \$60/bbl. On February 28, Brent crude closed at \$60.60/bbl.

"The cure for low oil prices is low oil prices". Upstream companies are slashing capital expenditures

and drilling rigs are moving back to the yard in record numbers. Last Friday, Baker Hughes reported that the number of rigs drilling for oil in the United States dropped to 986, compared to 1,430 a year ago. I believe the number of rigs drilling for oil in the U.S. will drop below 800 in April. That is not enough to maintain our current level of production. The U.S. Energy Information Administration (EIA) is predicting U.S. onshore production will peak within six months.

Demand Growth is Relentless

Demand for refined products goes up by about a million barrels per day each year. I believe demand will increase by more than 1.5 million barrels per day this year as lower fuel costs and increasing SUV sales increase demand. We are already seeing increasing demand in Asia. On Friday, February 20th I attended an Energy Summit at Rice University. There were a lot of knowledgeable speakers and they all forecast that West Texas Intermediate (WTI) will be trading in the \$60-\$80 range by year-end. In my opinion, it will be over \$60/bbl early in the 3rd quarter,





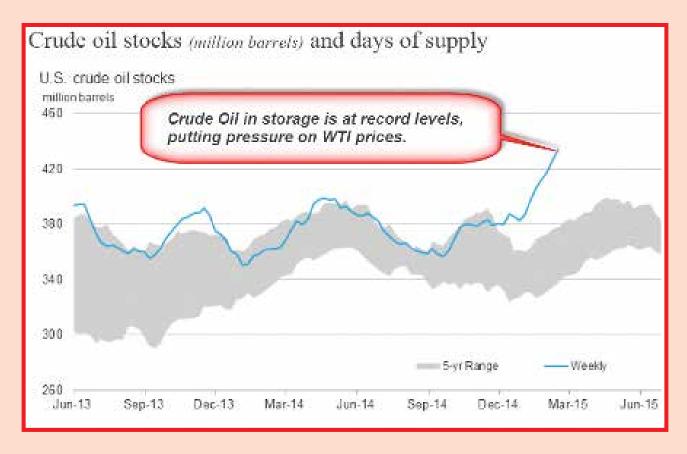
but we may see a dip back to the mid-\$40's during the next few months. I do not see much chance of oil prices moving back to \$100/bbl anytime soon, unless there is a major supply disruption in the Middle East. Of course this is quite possible. Libya is already a mess and their exports have been slashed because of terrorist activity. Within the territory held by the Islamic State in Syria & Iraq there are no major oilfields, but there is no telling what those idiots will do. I'm sure they realize that attacks on pipelines or large oilfields in Southern Iraq or Saudi Arabia would send oil prices higher and threaten the economies of the "infidels". ISIS also benefits directly from higher oil prices as they sell oil into the black market that ends up in Turkey. OPEC production capacity actually declined slightly in 2014 and is expected to decline again in 2015. Future OPEC supply growth is highly dependent on Iraq. In fact, according to IEA, more than half of OPEC's supply growth will be coming from Iraq from 2016 to 2020.

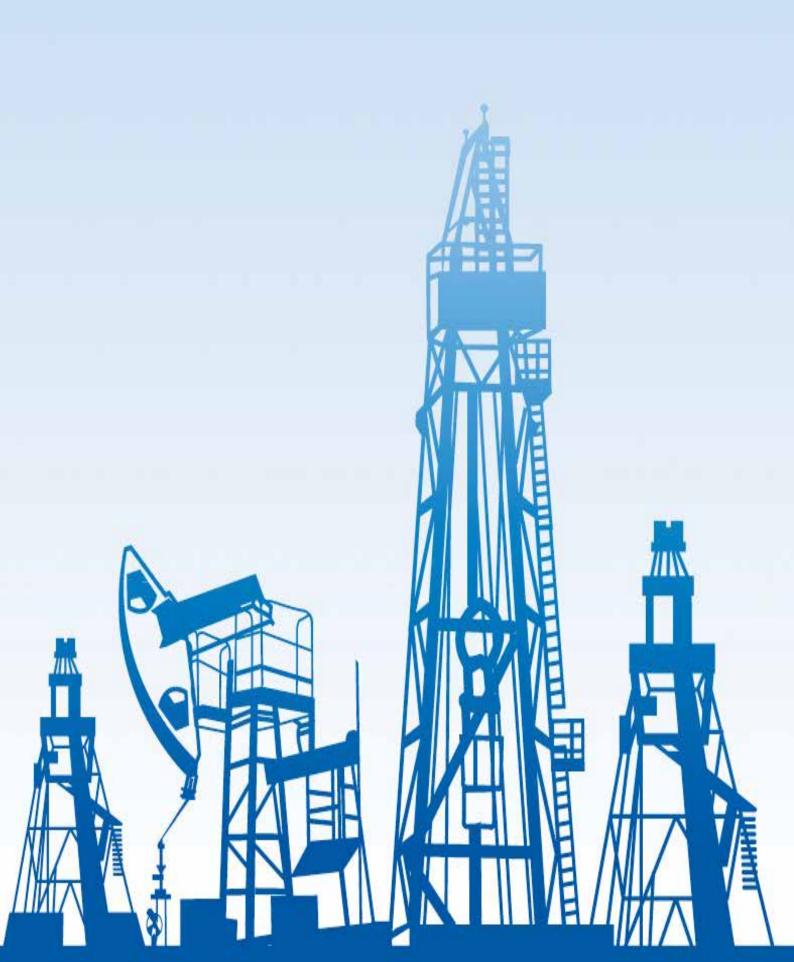
Unless ISIS is pushed back I don't see it happening. The major oilfield services and supply firms will not risk their capital and people in Iraq if the violence continues. Most of the OPEC nations are expected to report falling production during the next six years. Now is the time to do your homework and add high quality upstream oil & gas companies to your portfolio. Look for companies that have strong balance sheets, a solid base of proven reserves and hedges in place to insulate them from low oil & gas prices during 2015. Three companies that have impressed me recently are:

- Gulfport Energy (GPOR): Although this company is primarily a natural gas producer, they have incredible growth locked in and some of the best acreage in the Utica Shale.
- Newfield Exploration (NFX): Their 4th quarter results beat my forecast and their guidance is for approximately 35% crude oil production growth in 2015. I really like their "STACK" play in Central Oklahoma.

- SM Energy (SM): The Company is now focused on developing their core acreage in the Eagle Ford Shale. SM is getting much better results by using more frac sand per well and they have been successful in driving down their drilling & completion cost.
- Hi-Crush Partners LP (HCLP): This MLP is a leading supplier of Northern White frac sand. Most of their revenues are locked in by long-term supply contracts to the major oilfield service firms. Upstream companies are getting much better results in the tight oil plays by using a lot more sand per frac stage. I do not see a significant decline in demand for frac sand despite the decline in active rigs. Hi-Crush pays quarterly dividends that are expected to increase again this year. HCLP is one of my top picks for growth and high vield.

If oil prices do rebound in the 3rd quarter as supply/demand tighten, there are going to be a lot of gains harvested in the upstream oil & gas sector by year-end.







Notall black & white

he new 0.10% emission control area (ECA) sulphur limit is now in force. This much we know. It's there in black and white in MARPOL Annex VI and has been written into national legislation in most of the countries that have waters falling within an ECA.

After years of everyone trying to guess what this would mean for marine fuel suppliers and buyers, there have been some positive surprises.

With most ships expected to use low sulphur marine distillates to comply, global demand for this fuel could increase by around 50 million metric tonnes (mt) in 2015, equivalent to approximately 3% of total global middle-distillate consumption. There were fears that this would lead to huge pressure on availability of compliant fuels, and that marine gas oil (MGO)

prices relative to heavy fuel oil (HFO) would rise significantly. But as the date for the new sulphur limit approached, and so far in 2015, it looks like supply has kept up with demand, and thanks to falling oil prices, compliance has not been as big a financial burden as owners had feared.

We know why the cost of ECA compliance has not been as bad as predicted. Tumbling oil prices which have more than halved since June 2014 - have brought down prices for all marine fuel grades. As a result, the price differential between ECA compliant fuel compared to HFO measured in dollars per metric tonne (pmt) has shrunk significantly. As of January 2015, MGO was actually cheaper than regular HFO was just half a year prior to the regulatory change. The differential is wider, however, in percentage terms. While the MGO premium over HFO





ENERGY WORLD

in June 2014 typically ranged from 50-60%, that premium rose to 80-90% in January. Current low prices may encourage owners to comply, but the price gap between HFO and MGO is still wide enough that some may be tempted to cheat. Availability of compliant fuels has been supported by a variety of factors. Thanks to regulations requiring ships calling at any European Union (EU) port to burn fuels with maximum 0.10% sulphur while at berth, in force since the start of 2010, international ship operators have increasingly turned to MGO. Suppliers in the EU have since offered mainly distillate fuels that meet the 0.10% sulphur limit, and supply elsewhere has also been growing in response to demand. In the US, marine distillates typically have sulphur content below 0.05%, probably because it comes from the same supply pool as heating oil, where the domestic sulphur limit is 500 ppm (0.05%).

But there would still be a huge jump in demand if all the low sulphur fuel oil (LSFO) previously used for ECA compliance was replaced by MGO. Rotterdam, for example, would see MGO demand increase by 400-500%. In December 2014, when many

owners were already buying MGO in preparation for the lower ECA limit, Rotterdam saw MGO sales increase by 150-177% compared to normal monthly volumes. This gives an indication that compliance could be high, but only if January MGO sales are even higher.

Which brings us onto the things we don't know yet. Just how high will compliance levels be? Will supply continue to meet demand? If low oil and bunker prices encourage compliance, will the temptation to cheat increase when prices go up again (and when will that happen)? Will the number of inspections be ramped up to the extent required by the EU, and just how much will the EU, US and Canada step up control and enforcement efforts? And just how will those found in breach of sulphur limits be penalised? At present, the US has a statutory maximum penalty of \$25,000 per violation, per day, but this will be adjusted, according to the US **Environmental Protection Agency** (EPA). It has said penalties will "remove the economic benefit of non-compliance" and "reflect the gravity of the violation". Several north European countries have signalled similar intentions. We still don't know what this means.

Would a ship using fuel found to be fractionally above the limit face the same penalties as one that is still using HFO? It would seem unfair that



operators that have endeavoured to comply, but failed, were to face the same penalties as those that clearly disregarded the ECA limit. For those that operate globally and need to switch fuel only for the ECA part of their journey, error margins are extremely thin. Achieving full compliance could take around 70 hours if the ship is switching from a 'typical' HFO with 2.70% sulphur if the new fuel has exactly 0.10% sulphur. The time to achieve compliance would fall to around 11 hours if the fuel used to comply has a sulphur content of 0.09%.

At these sorts of levels, it would take very little for the calculations to go wrong, as it is quite possible, due to normal variations in sulphur test results, that a fuel supposed to be 0.09% sulphur is actually closer to 0.10% sulphur. Likewise, variations in sulphur test results means a 0.10% sulphur fuel may show a 0.09% or a 0.11% sulphur test result.

The Netherlands has said it will take test result variations into account and accept sulphur test results up to 0.12% as compliant with the new ECA limit. Other countries may follow the stricter guidelines found in Appendix VI to MARPOL Annex VI, which make 0.10% sulphur an absolute limit for ECA operations. Whether inspectors follow the strictest sulphur verification guidelines or not, one can only hope that their views are not all black and white when it comes to dishing out penalties.









he second largest OPEC producer, Iran sits atop 11 percent of oil and 18 percent of gas reserves in the world. Every year, the country hosts an international Oil Show in different oil, gas, refining and petrochemical sectors. It is among the most significant oil and gas events in the world in terms of the number of participants and its diversity. The presence of famous foreign companies as well as domestic producers and industrialists provide a good chance for mutual cooperation in view of signature of contracts.



About organizer

M&T Solutions organizes International trade fairs and in different exhibitions in numerous countries. A variety of services related to successful participation in trade fairs such as Stand design, brochure design & production, preparation of commercial gifts, trade tours are provided.

Beside organising exhibitions, we offer our clients marketing,management and trade solutions. M&T Solutions, based on the experience of its specialists offers it marketing solutions and is ready to act on your behalf in Market Research and help you with a successful approach to your target markets especially Iraq Market.

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Iran's top 10 tourist destinations – in pictures



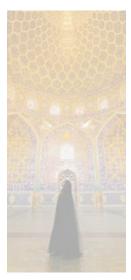




















ENERGY WØRLD



s Iran makes a push to increase inbound tourism, we take a look at its top destinations – from ancient cities and beach resorts.

- 1. Persepolis (Takht-e-Jamshid), the capital of the Achaemid empire and one of the world's most magnificient ancient sites, was declared a world heritage site in 1979 by Unesco Alamy
- 2. Amir Chakhmaq Square, built in the ninth century in Yazd. The desert city, famous for its windcatchers [ventilators], is located in the middle of Iran and is the centre of Zoroastrian culture Paule Seux/ Paule Seux/Hemis/Corbis
- 3. View of cupolas of the bazaars, a minaret and a windcatcher in Yazd province Paule Seux/Paule Seux/Hemis/Corbis





4. The Eram garden (Garden of Paradise) in Shiraz is a typical Persian garden. This waterway leads towards the historic Qavam house. Shiraz is the city of love and Persian poetry, and home to many touristic sites including the tome of Hafez, a well-known Persian poet from the 14th century. Saadi, another celebrated poet of the 13th century, is also buried in Shiraz Heico Neumeyer/Flickr Vision

5. Evening prayers at the ninth century shrine of Imam Reza in Mashhad. The city in east Iran close to the _____

border with Afghanistan is a popular destination for religious tourists and pilgrims. The shrine of Imam Reza, the eighth imam in Shia Islam, is the largest mosque in the world. Mashdad is also home to the tomb of Ferdowsi, the Persian poet behind the Shahnameh, a national epic Kazuyoshi Nomachi/Kazuyoshi Nomachi/Corbis

6. An Iranian woman dressed in a chador inside Sheikh Lotfollah Mosque in Isfahan. The city nicknamed Half the World is perhaps Iran's best known touristic city.





Naqsh-e Jahan Square, a square at the centre of the city, is also a Unesco world heritage site Frans Lanting/Frans Lanting/Corbis

7. Dome of the mosque in Hamadan. The capital of Iran's Hamedan province is one of the oldest cities in the world. The internationally known Iranian scientist Avicenna is buried here Dea / W. Buss/De Agostini/Getty

Images

- 8. View of Tehran with Milad Tower at sunset. The Iranian capital is a modern metropolis which also boasts a number of palaces belonging to the Pahlavi dynasty and dozens of museums Franco Czerny/Getty Images
- 9. Visitors look at an artwork by Victor Vasarely at Tehran's Museum of Contemporary Art, which has the finest collection of modern art anywhere outside Europe and the US, boasting works by Jackson Pollock, Francis Bacon, Andy Warhol, Edvard Munch, René Magritte and Mark Rothko Morteza Nikoubazl/Morteza Nikoubazl/reuters/corbis
- 10. The carpet section of Tehran's Grand Bazaar The Washington Post/The Washington Post/Getty Images
- 11. Sunset on a beach at Ramsar, a popular resort on the Caspian Sea Shahabn Nahrevanian / Alamy/Alamy











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Big Oil's business model is broken

any reasons have been provided for the dramatic plunge in the price of oil to about \$60 per barrel (nearly half of what it was a year ago): slowing demand due to global economic stagnation; overproduction at shale fields in the United States; the decision of the Saudis and other Middle Eastern OPEC producers to maintain output at current levels (presumably to punish higher-cost producers in the U.S. and elsewhere); and the increased value of the dollar relative to other currencies. There is, however, one reason that's not being discussed, and yet it could be the most important of all: the complete collapse of Big Oil's production-maximizing business model.

higher. But Big Oil was also operating according to a business model that assumed an ever-increasing demand for its products, however costly they might be to produce and refine. This meant that no fossil fuel reserves, no potential source of supply - no matter how remote or hard to reach, how far offshore or deeply buried, how encased in rock — was deemed untouchable in the mad scramble to increase output and profits. In recent years, this output-maximizing strategy had, in turn, generated historic wealth for the giant oil companies. Exxon, the largest U.S.based oil firm, earned an eye-popping \$32.6 billion in 2013 alone, more than any other American company

biggest oil firm, posted earnings of \$21.4 billion that same year. Stateowned companies like Saudi Aramco and Russia's Rosneft also reaped mammoth profits.

How things have changed in a matter of mere months. With demand stagnant and excess production the story of the moment, the very strategy that had generated recordbreaking profits has suddenly become hopelessly dysfunctional.

To fully appreciate the nature of

To fully appreciate the nature of the energy industry's predicament, it's necessary to go back a decade, to 2005, when the productionmaximizing strategy was first adopted. At that time, Big Oil faced a critical juncture. On the one hand, many existing oil fields were being depleted



at a torrid pace, leading experts to predict an imminent "peak" in global oil production, followed by an irreversible decline. On the other, rapid economic growth in China, India, and other developing nations was pushing demand for fossil fuels into the stratosphere. In those same years, concern over climate change was also beginning to gather momentum, threatening the future of Big Oil and generating pressures to invest in alternative forms of energy.

gas supplies at a staggering rate, he had a message for that country and the world: "The era of easy access to energy is over."

To prosper in such an environment, O'Reilly explained, the oil industry would have to adopt a new strategy. It would have to look beyond the easy-to-reach sources that had powered it in the past and make massive investments in the extraction of what the industry calls "unconventional oil" and what I labeled at the time "tough oil": resources located far offshore, in the threatening environments of the far north, in politically dangerous places like Iraq, or in unvielding rock

formations like shale. "Increasingly," O'Reilly insisted, "future supplies will have to be found in ultradeep water and other remote areas, development projects that will ultimately require new technology and trillions of dollars of investment in new infrastructure." For top industry officials like O'Reilly, it seemed evident that Big Oil had no choice in the matter. It would have to invest those needed trillions in tough-oil projects or lose ground to other sources of energy, drying up its stream of profits. True, the cost of extracting unconventional oil would be much greater than from easier-to-reach conventional reserves (not





to mention more environmentally hazardous), but that would be the world's problem, not theirs. "Collectively, we are stepping up to this challenge," O'Reilly declared. "The industry is making significant investments to build additional capacity for future production." On this basis, Chevron, Exxon, Royal Dutch Shell, and other major firms indeed invested enormous amounts of money and resources in a growing unconventional oil and gas race, an extraordinary saga I described in my book The Race for What's Left. Some, including Chevron and Shell, started drilling in the deep waters of the Gulf of Mexico; others, including Exxon, commenced operations in the Arctic and eastern Siberia. Virtually every one of them began exploiting U.S. shale reserves via hydro-fracking. Only one top executive questioned this drill-baby-drill approach: John Browne, then the chief executive of BP. Claiming that the science of climate change had become too convincing to deny, Browne argued that Big Energy would have to look "beyond petroleum" and put major resources into alternative sources of supply. "Climate change is an issue which raises fundamental questions about the relationship between companies and society as a whole, and between one generation and the next," he had declared as early as 2002. For BP, he indicated, that meant developing wind

power, solar power, and biofuels. Browne, however, was eased out of BP in 2007 just as Big Oil's outputmaximizing business model was taking off, and his successor, Tony Hayward, quickly abandoned the "beyond petroleum" approach. "Some may question whether so much of the [world's energy] growth needs to come from fossil fuels," he said in 2009. "But here it is vital that we face up to the harsh reality [of energy availability]." Despite the growing emphasis on renewables, "we still foresee 80 percent of energy coming from fossil fuels in 2030." Under Hayward's leadership, BP largely discontinued its research into alternative forms of energy and reaffirmed its commitment to the production of oil and gas, the tougher the better. Following in the footsteps of other giant firms, BP hustled into the Arctic, the deep water of the Gulf of Mexico, and Canadian tar sands, a particularly carbon-dirty and messyto-produce form of energy. In its drive to become the leading producer in the Gulf, BP rushed the exploration of a deep offshore field it called Macondo, triggering the Deepwater Horizon blow-out of April 2010 and the devastating oil spill of monumental proportions that followed.

Over the cliff

By the end of the first decade of

this century, Big Oil was united in its embrace of its new productionmaximizing, drill-baby-drill approach. It made the necessary investments, perfected new technology for extracting tough oil, and did indeed triumph over the decline of existing, "easy oil" deposits. In those years, it managed to ramp up production in remarkable ways, bringing ever more hard-to-reach oil reservoirs online. According to the Energy Information Administration (EIA) of the U.S. Department of Energy, world oil production rose from 85.1 million barrels per day in 2005 to 92.9 million in 2014, despite the continuing decline of many legacy fields in North America and the Middle East. Claiming that industry investments in new drilling technologies had vanquished the specter of oil scarcity, BP's latest CEO, Bob Dudley, assured the world only a year ago that Big Oil was going places and the only thing that had "peaked" was "the theory of peak oil." That, of course, was just before oil prices took their leap off the cliff, bringing instantly into question the wisdom of continuing to pump out record levels of petroleum. The production-maximizing strategy crafted by O'Reilly and his fellow CEOs rested on three fundamental assumptions that, year after year, demand would keep climbing; that such rising demand would ensure prices high enough to justify costly

investments in unconventional oil; and that concern over climate change would in no significant way alter the equation. Today, none of these assumptions holds true.

Demand will continue to rise — that's undeniable, given expected growth in world income and population — but not at the pace to which Big Oil has become accustomed. Consider this: In 2005, when many of the major investments in unconventional oil were getting under way, the EIA projected that global oil demand would reach 103.2 million barrels per day in 2015; now, it's lowered that figure for this year to only 93.1 million barrels. Those 10 million "lost" barrels per day in expected consumption may not seem like a lot, given the total figure, but keep in mind that Big Oil's multibillion-dollar investments in tough energy were predicated on all that added demand materializing, thereby generating the kind of high prices needed to offset the increasing costs of extraction. With so much anticipated demand vanishing, however, prices were bound to collapse.

Current indications suggest that consumption will continue to fall short of expectations in the years to come. In an assessment of future trends released last month, the EIA reported that, thanks to deteriorating global economic conditions, many

countries will experience either a slower rate of growth or an actual reduction in consumption. While still inching up, Chinese consumption, for instance, is expected to grow by only 0.3 million barrels per day this year and next — a far cry from the 0.5 million barrel increase it posted in 2011 and 2012 and its 1 million barrel increase in 2010. In Europe and Japan, meanwhile, consumption is actually expected to fall over the next two years.

And this slowdown in demand is likely to persist well beyond 2016, suggests the International Energy Agency (IEA), an arm of the Organization for Economic Cooperation and Development (the club of rich industrialized nations). While lower gasoline prices may spur increased consumption in the United States and a few other nations, it predicted, most countries will experience no such lift and so "the recent price decline is expected to have only a marginal impact on global demand growth for the remainder of the decade." This being the case, the IEA believes that oil prices will only average about \$55 per barrel in 2015 and not reach \$73 again until 2020. Such figures fall far below what would be needed to justify continued investment in and exploitation of tough-oil options like Canadian tar sands. Arctic oil, and many shale projects.

Indeed, the financial press is now full of reports on stalled or cancelled mega-energy projects. Shell, for example, announced in January that it had abandoned plans for a \$6.5 billion petrochemical plant in Qatar, citing "the current economic climate prevailing in the energy industry." At the same time, Chevron shelved its plan to drill in the Arctic waters of the Beaufort Sea, while Norway's Statoil turned its back on drilling in Greenland.

There is, as well, another factor that threatens the well-being of Big Oil: Climate change can no longer be discounted in any future energy business model. The pressures to deal with a phenomenon that could quite literally destroy human civilization are growing. Although Big Oil has spent massive amounts of money over the years in a campaign to raise doubts about the science of climate change, more and more people globally are starting to worry about its effects extreme weather patterns, extreme storms, extreme drought, rising sea levels, and the like — and demanding that governments take action to reduce the magnitude of the threat. Europe has already adopted plans to lower carbon emissions by 20 percent from 1990 levels by 2020 and to achieve even greater reductions in the following decades. China, while still increasing its reliance on fossil



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fuels, has at least finally pledged to cap the growth of its carbon emissions by 2030 and to increase renewable energy sources to 20 percent of total energy use by then. In the United States, increasingly stringent automobile fuel-efficiency standards will require that cars sold in 2025 achieve an average of 54.5 miles per gallon, reducing U.S. oil demand by

2.2 million barrels per day. (Of course, the Republican-controlled Congress — heavily subsidized by Big Oil — will do everything it can to eradicate curbs on fossil fuel consumption.)

Still, however inadequate the response to the dangers of climate change thus far, the issue is on the energy map and its influence on policy globally can only increase. Whether Big Oil is ready to admit it or not, alternative energy is now on the planetary agenda and there's no turning back from that. "It is a different world than it was the last time we saw an oil-price plunge," said IEA Executive Director Maria van der Hoeven in February, referring to the 2008 economic meltdown. "Emerging economies, notably China, have entered less oil-intensive stages of development ... On top of this, concerns about climate change are influencing energy policies [and so] renewables are increasingly pervasive." The oil industry is, of course, hoping that the current price plunge will soon reverse itself and that its now-crumbling maximizing-output model will make a comeback along with \$100-per-barrel price levels. But these hopes for the return of "normality" are likely energy pipe dreams. As van der Hoeven suggests, the world has changed in significant ways, in the process obliterating the very foundations on which Big Oil's production-maximizing strategy rested. The oil giants will either have to adapt to new circumstances, while scaling back their operations, or face takeover challenges from more nimble and aggressive firms.





Saudi Oil Discount Meant to Defend Market Share

n Iranian oil official described Saudi Arabia's decision to lower oil prices for Asian buyers as a tactic to preserve market share, dismissing the notion that the world's biggest exporter might be after exerting pressure on Iran.

"It is not about undermining Iran. Competition in Asia's market is now intense, and the US, South Americans, Venezuela and even Russia are present at the Asian market, so... it seems logical that Saudi Arabia lowers oil prices to hold its share," Mohsen Qamsari, director of the international affairs at the National Iranian Oil Company to Energy World.

"Saudi Arabia is acting based on the market conditions and principles. Iran would do the same if it was in that country's (Saudi Arabia's) shoes," he added.

Saudi Arabia's state-owned producer, Aramco, surprised the oil market in October when it trimmed November crude prices to five-year lows in Asia, signaling the biggest producer in OPEC would defend its market share rather than seeking to prop up prices. Oil prices collapsed 32 percent since the Organization of Petroleum Exporting Countries (OPEC) decided to maintain its output target on November 27.



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he Japanese oil imports from Iran in January 2015 reached 192,000 barrels per day (bpd), showing a 34 percent increase compared to the month before, according to data released by Japanese authorities.

In Q1 of 2015 , Japan purchased 864,000 kiloliters, equal to 192,000 bpd, Japan's Economy, Trade and Industry Ministry announced in its latest report on oil imports.

The East Asian country had imported 641,000 kiloliters, equal to 143,000 bpd in December 2014, according to the report.

Iran is the 5th country in terms of supplying Japan's demand for oil in January 2015,.

Asian imports of Iranian crude oil increased by 19.8 percent last year to

hit a three-year high, despite Western sanctions against the Iranian oil industry over the country's peaceful nuclear program.

Imports by Iran's four biggest buyers
- China, India, Japan and South Korea
- averaged 1.12 million barrels per day
(bpd) in 2014, government and tankertracking data showed, the highest
since the region took more than 1.5

million bpd in 2011.





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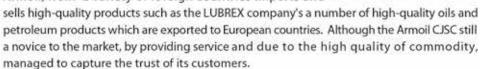






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Armoil CJSC was founded in 2013. The company carries out its activities in the petroleum market in Armenia and European countries, presenting petroleum and engine oil. Armoil, from a variety of foreign countries imports and









Chemidor is an Iranian conglomerate founded in Salafchegan special economy zone (SSEZ) in 1999. It has diversified interests across various fields of petroleum included manufacturing of Recycled Base Oil, heavy and light fuel oils, cutter stocks and exporting of various grade of bitumen, Diesels, Gasoil, Rubber processes oils, slack waxes and in follow-up with concerning to our shipping of handy cap cargoes (about 4000 m/t) in area. Our products are manufactured on the basis of raw materials provided in prime refineries for meeting all international and domestic standards with a primary focus on the GCC, Middle East, Indian and Far East, markets. Chemidor is uniquely positioned to lead in development and marketing in the nascent regional and international markets, having realized that a critical factor of success in any venture is the access tospecific industry knowledge.

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Gary Evans

Gary Evans, Chairman and CEO of Magnum Hunter Resources Corp. (MHR) is one smart operator. With over three decades of oil and gas exploration experience under his belt, Evans has a multi-billion dollar trophy to prove it. In 2005, he sold Magnum Hunter Resources Inc. (MHRI) to Cimarex (XEC) for \$2.2 billion. He took a few years off, and then took over at MHR in 2009.

Is Natural Gas a Better Bet Than Oil?

n Sept. 24, 2014, Evans announced to the world that Magnum Hunter had discovered what is still the largest producing shale well in history. It's a gas well in Tyler County, West Virginia, and the initial rate of natural gas production was 46.5 million cubic feet of gas. On a per-barrel of oil equivalent, that would be about 8,000 barrels of oil per day.

Evans made a decision in 2012 that will shape the direction of Magnum Hunter Resources. Throughout a two-year period, MHR liquidated over \$700 million of their oil wells while prices were at their peak, raising abundant capital that would promptly be turned around and invested in natural gas wells, specifically in the Marcellus and Utica shale formations of Ohio, Pennsylvania and West Virginia. "We



made a decision to focus totally on natural gas, so we're 90-percent natural gas today. We believe that's the future for the U.S. and we obviously have more control over that: we think industrial demand, chemical demand, LNG demand will continue to drive natural gas prices up," Evans told CNBC's Closing Bell in February.

Magnum Hunter even has a subsidiary midstream operation, Eureka Hunter, that often bring its pipelines right up to Magnum Hunter's wells to transport their own gas straight to market. Smart.

According to the Energy Information Administration, the Marcellus and Utica shale formations hold enough gas to supply America's current gas demands for well over 100 years. "Many people compare the Marcellus and Utica to Ghawar," Evans says, referring to the per-barrel equivalent, suggesting the northeast could hold incredible amounts of a cheap energy source. Ghawar, located in eastern Saudi Arabia, is the world's largest oil

reserve.

What Evans is doing in the Northeast with gas may very well set the bar for crude producers in other plays around the country like the Bakken, Eagle Ford and Permian. Evans is drilling multiple wells from pad locations, a technology where one rig site can drill multiple well bores from the same proximity. Additionally, Evans is drilling deep. His Stewart Winland monster reached a depth of 10,000 feet. Yet, in spite of these long well bores, Magnum Hunter is profitable with natural gas at prices below \$2.00. Oil producers will eventually have to develop new technologies and strategies to drive per-barrel extraction costs down to a comparable rate.

Evans big gas bet is based on more control, less overseas competition and growing domestic and international demand. Even President Obama has been advocating natural gas as one of the cornerstone energy sources in his "all of the above" plan for America's energy future. Dow Chemical announced last week that it was

investing \$6 billion in new Gulf Coast manufacturing plants, laying a big bet that abundant, cheap natural gas will allow it to save money over offshore facilities.

"When you find reserves as cheap as we can up in the Marcellus and Utica, which is undoubtedly from a gas standpoint the lowest cost basin in the U.S., then we're making great returns,' Evans says. "These cheap sources of energy is what will drive this country into the next generation for our children and our grandchildren," he added.

The market has precipitously un-rewarded MHR's stock price, plummeting it below \$3 in the acrossthe-board sell-off, but Evans firmly believes traders and investors will eventually come back into exploration and production stocks, and he is working diligently during these down days to insure MHR is well positioned to provide that cheap gas to meet America's growing energy needs.

It pays to be smart. ■





Why Energy Investors **Find EIA's Crude Oil Inventory Report Crucial**

EIA inventory data

he EIA (US Energy Information Administration) usually reports weekly figures on crude oil inventories. The report also provides data on distillate and gasoline inventories. Distillates and gasoline are refined products of crude

Crude oil inventory levels change based on demand and supply trends. Demand is primarily from refineries that process this crude into refined products, like gasoline and heating oil. Supply comes from domestic production and imports from other countries.

Inventories increase when demand is lower and decrease when demand is higher than supplies for the week. Every week analysts anticipate

an increase or decrease in crude inventories based on demand and supply expectations in that week. Analysts expected an increase of ~4.75 million barrels (or MMbbls) in crude inventories last week. We'll discuss the actual changes in inventories.

Price and profitability

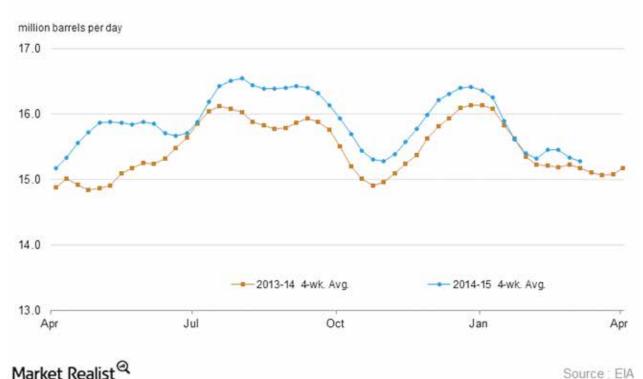
The difference between actual and expected changes in inventories impact crude prices. We'll cover recent crude price movements in a later part of this series. Crude oil prices directly affect major oil producers' earnings, like Continental Resources (CLR), Oasis Petroleum (OAS), Chevron (CVX), and ConocoPhillips (COP). COP and CVX are parts of the Energy Select Sector

SPDR (XLE) and make up ~17% of the

Cushing inventories

Another important figure the EIA reports is the level of crude oil inventories at Cushing, Oklahoma. It's a major inland oil hub in the US. It's the pricing point for the North American benchmark, WTI (West Texas Intermediate) crude. Inventory levels at Cushing reflect the pace that the increasing US oil supply is moving from major inland production areas, like the Bakken in North Dakota and the Permian in Western Texas, to the major refining hubs situated on the Gulf Coast. A buildup of inventories at Cushing can pressure the WTI crude price downwards and vice versa.

US Crude Oil Refinery Inputs



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Source: EIA



Crude Inventories Fall Short of Analysts' Expectations

A less-than-expected increase

On March 11, the EIA (US Energy Information Administration) reported that crude inventories rose significantly yet again, increasing by 4.5 million barrels (or MMbbls) in the week ending March 6.

While the build resulted in record high inventory figures, they still came in below analysts' expectations. Analysts had expected a 4.75 MMbbl increase. The total US commercial crude inventory now stands at ~449 MMbbls, setting another all-time high record. Inventories surpassed their previous high record of ~444 MMbbls set last week.

Changes in inventories drive WTI (West Texas Intermediate) prices, which impacts the profitability for companies that produce oil, like Hess (HES), ExxonMobil (XOM), and Marathon Oil (MRO). These companies

make up 19% of the Energy Select Sector SPDR ETF (XLE) and ~3.4% of the SPDR S&P Oil & Gas Exploration & Production ETF (XOP).

Supply-related factors caused crude inventories to build

For the past few weeks, inventory movement has been driven by strong crude oil production. Output touched ~9.3 million barrels per day (or Mmbpd) in the week ending February 27. For this week, output almost touched 9.4 Mmbpd, increasing 42,000 bpd (barrels per day) over the prior week's levels. At these levels, output levels are at their highest level in weekly data since 1983.

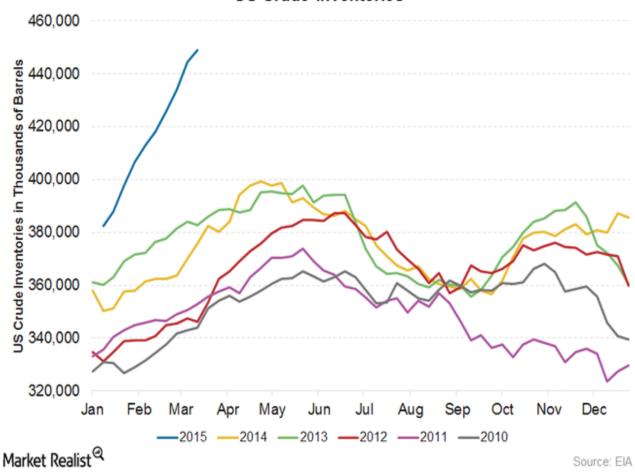
An increase in imports has also caused the surge in inventories over the past few weeks. Last week, however, imports decreased 575,000 bpd to ~6.8 Mmbpd last week. This curbed the inventory build to an extent.



Supply forecasts for 2015

According to the EIA's March STEO (Short-Term Energy Outlook), total US crude oil production averaged 9.4 Mmbpd in February. The EIA forecasts that output will average ~9.3 Mmbpd in 2015, and increase further in 2016 to average ~9.5 Mmbpd. These levels would be close to the record high US production levels of 9.6 Mmbpd in

US Crude Inventories





1970.

To put this into context, output averaged ~8.67 Mmbpd in 2014. A strong crude supply level is bearish for crude prices, unless it's met with parallel demand.

Increase in Refinery Activity Moderates the Crude Inventory Build

Refinery demand

Refineries are the main source of crude demand. Refinery input levels affect inventory draws and builds. So, refining throughputs affect inventory levels not only for crude oil, but also for refined products like gasoline and distillates. We'll discuss inventory levels for these products in the next parts of this series.

Refinery input trends

US crude oil refinery inputs averaged 15.3 million barrels per day (or Mmbpd) during the week ending March 6, increasing by 187,000 barrels per day (or bpd) compared to last week's average.

The increase in crude input demand from refineries along with an increase in imports curtailed another huge inventory build. While inventories did rise this week, thanks to record high production, the increase was relatively lower than last week's numbers when they rose 10.3 million

barrels, the largest weekly gain since March 2001.

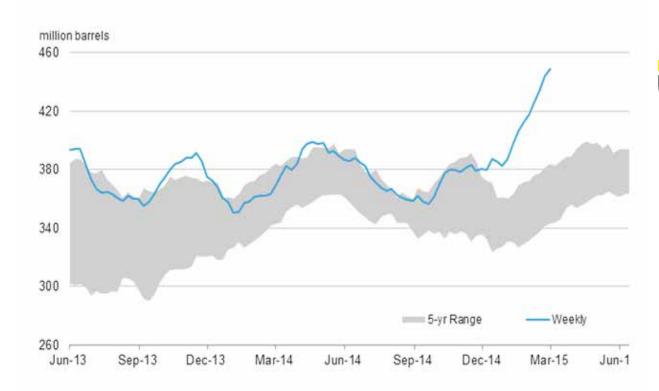
The rise in refinery inputs likely indicates the end of seasonal maintenance that refineries enter into to prepare for the summer driving season.

Demand for crude inputs is high during peak driving season, which is bullish for crude prices. Peak driving season is also bullish for major oil producers like Murphy Oil (MUR), Continental Resources (CLR), Occidental Petroleum (OXY), and Cimarex Energy (XEC). MUR, OXY, and XEC are part of the Energy Select Sector SPDR ETF (XLE), and make up 5% of the ETF.

Operating capacity

The rise in crude inputs increased the operating levels by 1.2 percentage points, to touch 87.8% of operable capacity last week. Analysts' expectations called for a 0.5 percentage point decline.s -

US Crude Oil Stocks



Market Realist@

Source : EIA

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ENERGY WORLD

etrochemical markets in Asia have reacted swiftly to recent rising crude oil and naphtha prices but European and US markets are still feeding through the sharp crude price downturn of the past six months, ICIS data has shown. The ICIS Petrochemical Index (IPEX), which represents a capacity-weighted basket of 12 primary petrochemical products, fell 1.5% in February from January 2015. The index is down 37% from February 2014 and 36% lower than in August 2014 when crude oil prices began to fall dramatically. The average Brent crude price was US\$58.16/bbl in February 2015 down from the US\$109.89/bbl average in February 2014. WTI crude was US\$50.72/bbl in February from US\$100.75 the year before on the same

Crude prices began to drop in August last year and have prompted steep falls in the price of the petrochemical industry's primary liquid feedstock, naphtha. The rally in crude prices, however, which began at the end of January 2015 has yet to feed fully in to prices for the major petrochemicals given the time lag for costs to pass along the primary petrochemical product chains.

Spot price-driven markets in Asia reacted quickly to the uptick in crude in February. The sharpest increases were in prices for propylene, ethylene, benzene and their derivatives. Contract paraxylene prices continued to fall in an over-supplied market. Paraxylene is a feedstock for the polyester cloth and polyethylene terephthalate (PET) bottle industry.

Petrochemical price movements in the US were mixed although prices rose for products most directly linked to oil. Ethane and other natural gas liquids (NGLs) predominantly produced from shale gas are the preferred feedstock for many petrochemicals in the US. Prices have been lower since the second half of last year and in February were in the 16.50 to 20.50 US cents/ gal range. The chart of the US IPEX, WTI and Henry Hub natural gas prices illustrates the cost advantage that US petrochemical producers cracking ethane can achieve. (Ethane prices in the US are related to those for natural

Petrochemical prices in Europe have

ICIS data on the petrochemical market

been falling with lower crude and lower naphtha costs and generally continued to drop in February, often significantly. Prices for some commodities rolled over in the quarter in euro terms but were lower in US dollars.

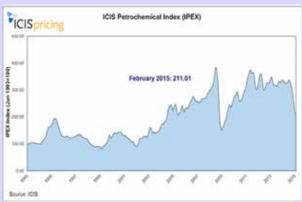
Europe ethylene and propylene prices dropped by more than the equivalent

of US\$100/tonne in February. Polyolefin prices fell by a greater amount. At the end of January, Europe spot pipeline ethylene prices were at a five year low.

Naphtha prices in Europe in February were US\$511/tonne on average, 44% lower than in February 2014.







OPEC Still Effective

Mehdi Asadi

uring the article that was obscurely entitled as "OPEC Crossing OPEC", the writer believes that the era of OPEC has come to an end and tries to explain this assumption in his article implying that the organization is frail and is in its final days. However, the majority of this is in effect contrary to how most oil and gas observers view the organization as the most successful intergovernmental organization in the third world and envisage a bright future for OPEC based on a number of reasons which follow: During its 55-year history, the organization has left behind numerous crises and has managed to retain its influence on the oil and energy markets. In fact, the Gas Exporting Countries Forum (GECF) with its headquarters in Doha, Qatar, was formed to follow OPEC's example. So, it is still too soon to call OPEC's davs off.

On the contrary, the data from international energy organizations suggest that OPEC's influence will be on the rise in coming years simply because of the enormous oil and gas reserves OPEC members states hold within their borders and the call for energy from great economic powers like China and Europe is predicted to grow in the future. Even though the 166th Ministerial Meeting of OPEC was more or less a different meeting, we should not forget that the organization has already managed to take [appropriate] decisions in even more difficult situations and in some cases, like Jakarta meeting, has been able to correct its decision. "OPEC Crossing OPEC" assumes that the organization would turn into asymbolic organization in not-so-far a future. But this won't be true so long as oil is the world's most crucial energy carrier and OPEC member states enjoy the

largest oil reserves.

Regarding disunity in OPEC,

one should never forget that joining the organization is subject to a voluntarily process and based on the will and interests of the members, as is stepping out of the body; this is to say that being a member in OPEC is still beneficial for its members as oil experts maintain that without existence of OPEC oil prices could have plunged to less than \$25 a barrel and in this case it was not economical for the producers to withdraw it from their reserves. Existence of OPEC provides the opportunity for its members to shore up prices through reaching consensus on cutting production as it was the case in 2009 in OPEC meeting in Algeria.

The abundance of quality analyses, articles and news stories released every day and month on OPEC and its decisions is yet another indication of the strategic significance of the organization in world economic and energy markets as well.

That numerous news pieces, reports and analyses are being published about OPEC somehow implies the importance of the place of the organization in world energy markets as well as world economy. So, we as Iranians should not make the mistake by announcing that OPEC has lost its influence or it is an ineffective body. The respected writer of the article has tried to announce that "those members backing oil reduction in the organization have followed those members who are against cutting production, just simply because they regard cutting production policy as passive with short-lived effects". In response I would like to say that this view is far from reality. Because both those who were of the opinion that OPEC should cut production and those who opposed the view, believed that their stances meet the interests of the members in the

best way. But since they could reach consensus, they decided to maintain an agreement they had reached earlier and was in place in 2011.

At the end of the article, the writer believes in that OPEC members have lost their hope for having any impact on world oil markets.
Fortunately, this is not true either. Furthermore, the writer neither suggests any solution nor says what OPEC members, including Iran, should do to influence the markets.

And finally I would like to announce that just criticizing the performance of the states and international organizations is very simple, but what is most needed now is a concrete and expertise view.





Hidden energy crisis in the Middle East

hile most of the world is preoccupied with the impact of instability in the Middle East on oil prices and the world economy, a different kind of energy crisis is unfolding practically unnoticed. An ongoing reshuffle in natural gas supplies has left at least Zionist Regime and Jordan - without much of the gas they need.

In general, the politics of Middle Eastern gas will probably be just as dramatically affected by the upheaval as those of oil, but will follow a separate trajectory. Their effect will, at least initially, be more local in nature, and will vary for each country. However, the energy status quo in the region is slated to change dramatically.

On February 5, at the height of the uprising against then-president Hosni Mubarak, a massive explosion rocked

a gas terminal near the Egyptian town of El-Arish. The head of the Egyptian natural gas company, Magdy Toufik, blamed it on "a small amount of gas leaking'," but it soon emerged that the most likely cause was an act of terror - in some accounts, two separate terrorist attacks. According to reports in the Associated Press, "The terminal's guards testified that [four masked gunmen] stormed the terminal in two cars, briefly restrained the guards and then set off the explosives by remote control."

The terminal lay on the Arab gas pipeline carrying Egyptian gas to Jordan, Syria, Lebanon and even Turkey. The section that branches off of that pipeline into Zionist Regime was not affected, but Egypt shut off gas supplies to the Jewish state as well. Egyptian authorities claimed that the system needed "to cool off", and that they would resume supplies

within a week or so.

Over a month and US\$150 million of losses later (for Zionists and Jordan combined), the gas is still not flowing. Egyptian authorities are quickly changing their tune: having missed at least two self-imposed deadlines to resume the supplies, until a few days ago they continued to insist that the pipeline would be activated very shortly.

Now, however, they have started to ask for an increase in the price at which they are selling the gas. "Egypt has officially informed Jordan that the gas supplies will resume only if Amman signs an agreement on new rates," an unnamed official told Agence France-Presse.

There is some sound logic in this request, while less so in the manner it was made. For the past five years, Egypt has been selling gas to its northern neighbors at highly subsidized rates despite facing a



shortage of gas at home. This led to an absurd situation last year when the Egyptian government was forced to consider buying back its own gas from Zionists at a 600% premium to match the market rate.

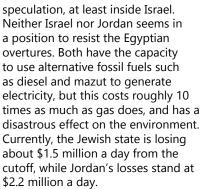
The Egyptian military regime, facing a dire financial situation, seems intent on righting this injustice.

on righting this injustice. In the case of Israel, it has some trumps to play, not least of which is the antipathy of the Egyptian street toward the Jewish state. In late 2008, a Cairo court ordered the government to stop the exports, because they were never approved by the Egyptian parliament. Mubarak ignored the order, which did not have a timeline attached to it, but it seems that the current government will use it as an excuse to renegotiate the treaty.

Meanwhile, recent reports indicate that Mubarak and his family are facing indictments for corruption, including possibly for taking bribes in order to ensure the gas deal. [2] Jordan is even more important than Israel, because it buys more gas and at an even lower price. Whereas Israel currently pays \$4.5 per MBTU (million British thermal units - a unit of measurement used for natural gas), Jordan pays \$3. Egypt's gas accounts for 40% of Israel's gas imports and 20% of the Jewish state's electricity. while Jordan relies on it for 80% of its electricity production. (Syria's and Lebanon's imports are meager by comparison - Syria, for example, relies on Egypt for only about 7% of its gas).

Thus, the Egyptian leadership is applying a familiar tactic: beating up on Israel to convey a message to the Arab world. Indeed, this is more or less exactly how a message to Amman is being framed. In the words of a Western diplomat in the Jordanian capital speaking to Agence France-Presse, "It is difficult for Egypt to export gas to Jordan, and not Israel, without raising an international outcry."

The crisis has generated a lot of



According to the Israeli business newspaper The Calcalist, there are three possible scenarios: either the gas remains cut off permanently (unlikely), or deliveries resume in smaller quantities (moderately likely), or deliveries resume in full but with a price hike (most likely). The Calcalist estimates that an increase in payments of about 33% would settle the dispute; over the course of the 20-year contract, this would bring Egypt an extra between two and three billion dollars from Israel alone.

Most Israeli analysts see in this a temporary solution at best. "While the current disruption appears to be temporary," Zafrir Rinat writes in the Israeli daily Ha'aretz, "those in charge of Israel's energy economy must prepare now for the possibility of more prolonged interruptions, whether due to problems operating the pipeline or a reversal in Egypt's commitment to supplying natural gas



What is remarkable is that Israel itself has recently started to eye prospects at becoming a gas exporter. In December 2010, off its Mediterranean coast, the Noble Energy Consortium confirmed the most significant deep-water gas discovery in the past decade: Leviathan. The previous year, a smaller but still major discovery was made at the Tamar field nearby. More statistics can be found here, but the punch line is: "Israel now faces the unprecedented prospect of at least partial energy independence."

It will take several years before gas from the new fields starts flowing, and this is exactly how much time Israel needs to buy. The process faces further complications, as the Benjamin Netanyahu administration already initiated a procedure to raise its tariffs on the profits of the gas companies, but we can assume that with instability in Egypt, officials will do their best to stick to their selfproposed deadline of 2013. Once the new gas is pumping, it will impact substantially on the energy and geostrategic calculations in the region. In a related development, Cyprus and Israel agreed to delineate their maritime border (in itself a diplomatic advance for the Jewish state), which in turn drew negative attention from other countries, including Turkey and Lebanon. Lebanon has already attempted to claim ownership of the Leviathan, and this may become the next issue of contention between Israel and Hezbollah. [3] On the other hand, Egypt will probably be relieved, and its relationship with Israel will likely improve. The same applies to Jordan, which may start depending on the Jewish state for some of its energy

(in all likelihood, the Israelis would





welcome that, if only to have more leverage in the Arab world). The exploration of off-shore gas fields could also provide some creative solutions to the Israeli-Palestinian talks, specifically related to the sustainability of Gaza's economy. According to a report in the Israeli business daily Globes, last Sunday, "Prime Minister Benjamin Netanyahu ... proposed to Palestinian Authority President Mahmoud Abbas (Abu-Mazen) to jointly develop the Gaza Marine and Noa offshore natural gas fields. The Noa field, which has 7-8 billion cubic meters of gas could replace Egyptian gas, if its supply

is not resumed, while the 30-billion cubic meter Gaza Marine field could meet the electricity needs of Gaza's 1.5 million residents."

This specific proposal is, at best, tongue-in-cheek. The political climate right now would hardly allow for such a joint project to develop. The Gaza rulers from Hamas have a bitter feud with the Palestinian Authority in the West Bank; both Netanyahu and Abbas are weak internally, challenged by right-wing factions in their own governments. With all the instability in the region, one can never be sure if one's partners of today will still be around tomorrow.

However, under different conditions - for example, a significant advance in the peace talks - the idea could be quite viable. Israel is already drawing most of the gas that it consumes from a smaller find nearby, called Mary-B, which is expected to be exhausted in a year or two.

Other aspects of this thinking - the idea of energy independence for Gaza - can also aide unilateral action by Israel. In my article "A major reshuffle in the Levant" (http://www.atimes.com/atimes/Middle_East/MC05Ak07.html, Asia Times Online, March 4, 2011), I argued that Israel will most likely attempt to disengage fully from



Gaza in the near future. Netanyahu's statement can be interpreted in this context as well.

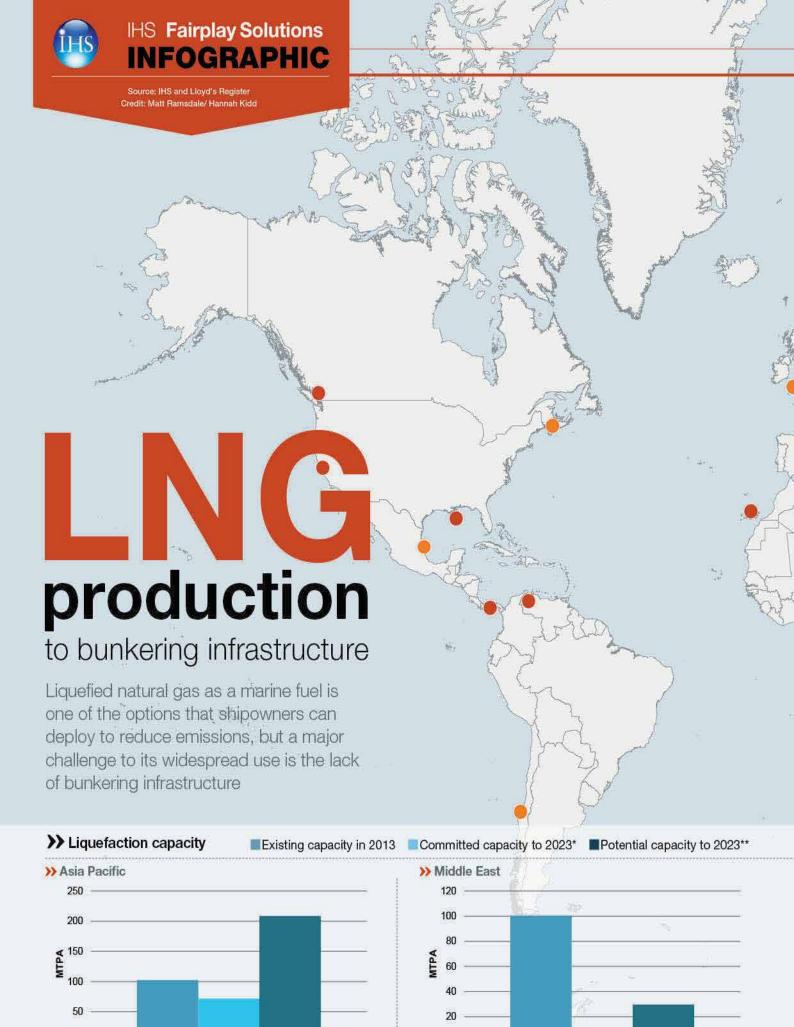
Besides Egypt, the natural gas supply in the Mediterranean region is disrupted by the events in Libya, and somewhat threatened by tensions in Algeria (whose pipe to Spain is expected to be launched soon). But these crises will have very different repercussions, since the local dynamics in each country are different. As opposed to oil, natural gas is very difficult and expensive to ship, and thus it is a more important factor on a regional than on a global scale.

Most of Libya's gas exports go via the Greenstream underwater pipeline to Italy; the Greenstream has been shut off since February 22, meaning that Italy is hit the hardest. According to a Reuters report, however, the closure could actually work to Italy's favor. "The lack of Libyan gas means [Italian oil and gas company] Eni can take delivery of fuel it would have to pay for anyway under take-or-pay (ToP) contracts with Russian export monopoly Gazprom," Reuters writes.

If this analysis is correct, it is conceivable that Gaddafi very carefully picked which resource to

shut off first, taking into account the sensitivities of his friend Italian Prime Minister Silvio Berlusconi. By contrast, and despite reductions and the bombing on Wednesday of the major oil terminal of Libya, Gaddafi's oil exports to Europe have not stopped, as a recent Financial Times report indicates.

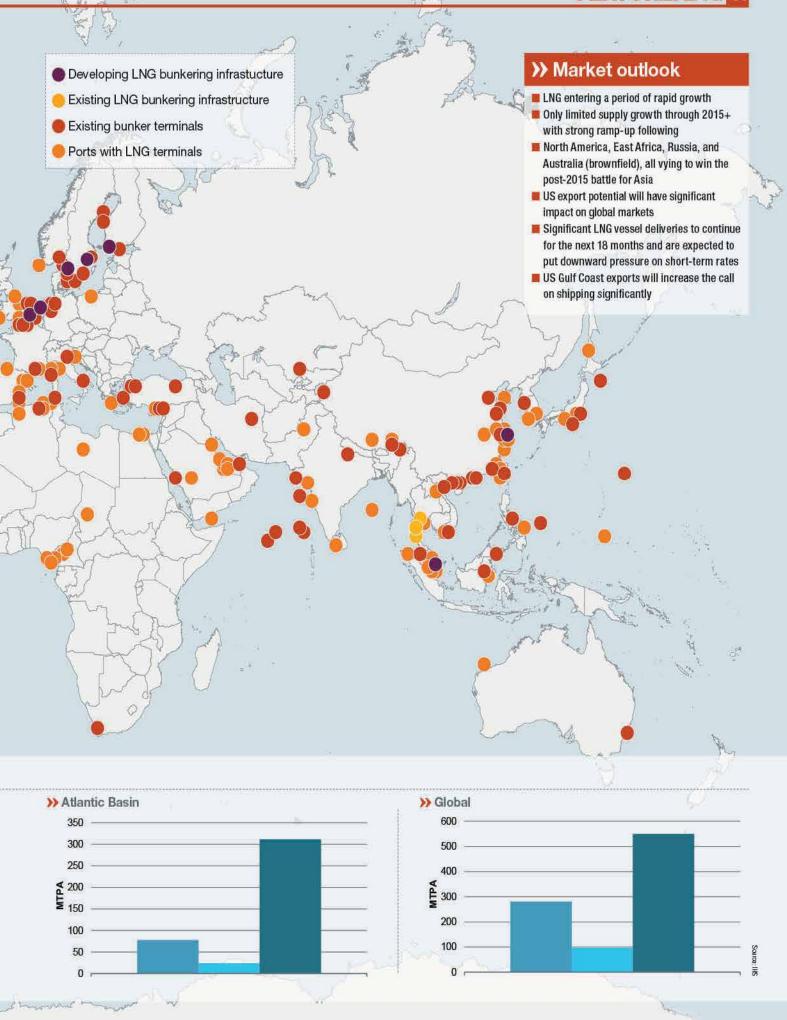
A common pattern that emerges is that the political upheaval catalyzes powerful existing trends in the regional natural gas market. We can expect instability in the short run followed by a major restructuring of the basic energy relationships in the Mediterranean and the Middle East.



* Committed capacity means currently under construction and/or final investment decision (FID) achieved

** Potential capacity means proposed and planned capacity without FID

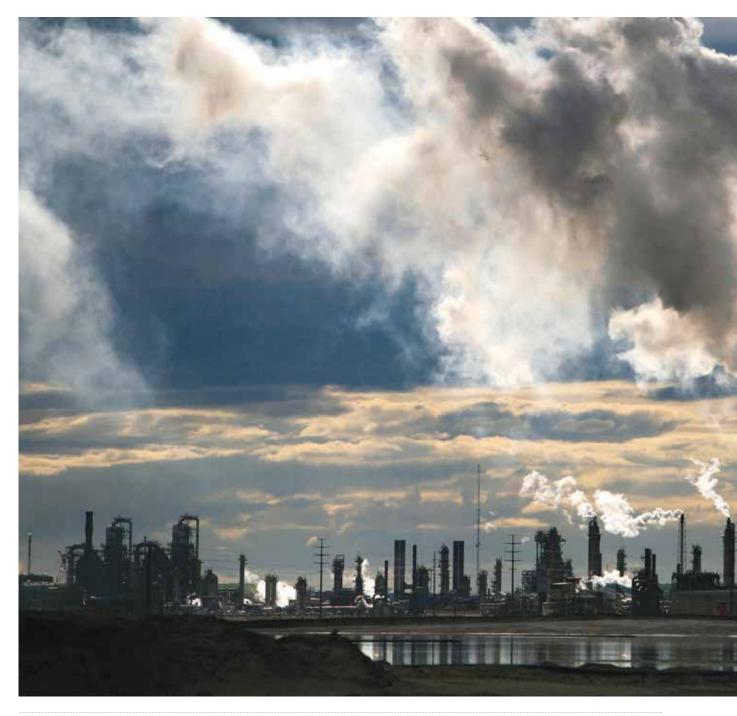
FEATURE: LNG



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Qatar grants Egypt 5 LNG shipments to relieve industrial sector



atar announced on Monday it is granting five shipments of liquefied natural gas (LNG) to Egypt lieve the energy strain on the latter's industrial sector. The shipments are set to arrive throughout the summer, when peaking demand for electricity results in intermittent outages, forcing many industrial companies to reduce production.

The cargoes will arrive from the Gulf state, a main supporter of postrevolution Egypt, between the end of July and through mid-September; the Egyptian Petroleum Ministry's statement cited the Qatari Energy and Industry Minister Mohamed al-Sada as saying. The statement did not clarify the sizes of the shipments.

Qatari Prime Minister Sheikh Hamad bin Jassim Al Thani said in April that the emirate will supply Egypt with gas throughout the summer as needed. Egypt's natural gas shortage is taking its toll on the country's industrial sector, with a range of factors pointing towards a looming resource crunch. This includes the onset of the summer production season, with a number of electricity production stations being shut down, in addition to the stalling of negotiations with foreign companies to import reserve

quantities from abroad. These factors could coalesce to threaten the sector with collapse, especially considering the government's desire to further raise the price of gas.

Ahmed Al-Migani, member of the board of directors for the South Valley Fertilizer Company, stated that lower rates of natural gas distribution to factories throughout Egypt have helped create an additional production crisis. Decreases in the amount of natural gas available on the Egyptian market may require that the company's production capacity decrease to 1.5 million tons annually,

He went on to explain that South Valley Fertilizer Company consumed 15 million cubic feet of gas per day, and that any failure to provide fuel alternatives for decreases seen in natural gas could permanently threaten the country's fertiliser sector. Responsibility for the crisis he said fell on the shoulders of government. which he said has failed to take measures to seriously address Egypt's economic problems.

Faruq Mustafa, Managing Director of the Egypt Beni Suef Fertilizer Company, said that the company consumes 28 million cubic feet of natural gas per day, qualifying however that what they receive in reality is less than 20% of this number. He added that price increases that occur as a result of gas shortages, worker strikes or broken machinery almost always get passed onto customers.

Failure to obtain the required necessary amounts of natural gas has forced many factories to cut their production rates by as much as 50%, a fact which will lead to decreases in supply, and the gradual increase in gas prices over the coming months. Mustafa further stated that domestic consumption will be most affected by the government's decision to raise prices, given that gas is the primary fuel for production used for most products. Decreases in the availability of gas will inevitably lead to shortages in fertiliser, which will cause price increases on the local market. Tamer Bashri, Finance Director for the ALFA Ceramics Company, stated that according to its contract with NATGAS, it is supposed to obtain 20 million cubic metres of gas per year, with any additional fuel consumed provided at the same cost. He went on to say that the 20 million cubic metres was enough to



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operate both the company's ALFA 1 and ALFA 2 factories, enough to produce 43,000 square metres of ceramics per year. He added however that Egypt's ceramics sector was also experiencing disruption as a result of the government's recent decision to raise gas prices from \$3 to \$6 for every million units.

Raising the price of gas he said would inevitably lead to increases in the price of ceramics throughout Egypt, at a time when companies have been suffering from recession for the last several months. This scenario will hurt the ability of Egyptian companies to compete abroad on global markets he said, adding that the government should have instead taken to raising prices gradually, as opposed to announcing the one-time immediate increases.

Increases in the price of gas he said would push the sector's financial situation closer to critical, forcing companies to suffer huge losses due to differences in the new and old prices of gas. He stated that he was not against the notion of raising the price of gas in order to help address Egypt's budget deficit, but that such a

decision should have been conducted only after its effects were first studied in depth. Any such increases that occurred thereafter should have been implemented gradually, he said.

Doing so would allow companies to continue running their production lines without disrupting their ability to meet the market's needs or forcing them to increase the prices of their products for consumers in order to combat increases in fuel prices. He warned of the negative fallback such decisions would have on Egypt's ceramics market, in particular its ability to compete abroad, given that 40% of the country's production of ceramics usually gets exported.

Walid Abdel Hamid, Planning Director for the company Dream Stone, a subsidiary of the Bahgat Group, stated that its factories did not require natural gas except to produce burned marble surfaces which it sells to Spanish companies. He stated that decisions reached by a number of petroleum companies to decrease the amount of natural gas available on the national market would have a negative effect on production.

Ahmed Shibl, previous Managing Director of Lafarge, attributed decreases in the available supply of fertiliser on the Egyptian market to the inability of factories to acquire enough natural gas to meet their energy needs. He rejected claims that





decreases in supply were the result of companies taking to exporting a majority of their products, pointing to the high price of fertiliser in the domestic market compared to prices internationally as evidence of their incentive to sell their products locally. He added that increases in the cost of production, in addition to natural gas shortages, could both be attributed to imbalances in supply and demand. It has become easy and common, he said, for companies to pass increases in the cost of production onto consumers, especially considering the difficulty of exporting fertiliser abroad, due to its low international prices and with many countries, such as Turkey and Greece, already possessing large fertiliser surpluses.

He went on to say that claims made by production company owners saying that the price of fertiliser had gone beyond its maximum stated rate of EGP 620 per ton was in fact an exaggeration. He said that despite increases in the price of mazut to EGP 1600, compared to EGP 1000 before government increases in fuel prices, that most factories do not obtain their fuel at official prices. He called on the government to take serious steps to provide additional mazut supplies to fertiliser factories operating throughout Egypt.

Salah Abu Bakr, Chairman of the Giza Association for Brick Factory Owners, stated that officials from the Egyptian Natural Gas Holding Company (EGAS) had informed a number of Egyptian companies of their plans to conduct repairs on pipelines located throughout the country. He stated



that as of now, this has not led to additional decreases in the amount of gas available in brick factories throughout Egypt.

Despite this, he said that brick factories are still suffering from shortages in mazut, saying that 60% of factories had completely shut down production, while others had decreased their production rates by as much as 50%.

Hesham Qandil, Egypt's Prime Minister, recently released a decision raising the price of natural gas sold to and used by brick and fertiliser factories from \$4 to \$6 per one million BTU.

The decision further set the price of sale for a ton of mazut at EGP 1500, with the exception of those companies operating in the country's electricity sector, for which the price

of mazut will remain the same as it was prior.

A number of fertiliser factories, such as Abu Qir and Delta, in addition to those companies operating in free trading zones, such as Alexandria and Helwan called on the government to pump additional amounts of natural gas onto the market, saying that what was available now was only enough to allow factories to operate at 50% capacity, a fact which may lead to a fertiliser crisis during the coming summer season.

These factories called on the government to re-asses their position regarding new prices for natural gas, which totaled \$4 per million BTU's, saying that these prices, when combined with shortages in supply, will inevitably lead many companies to suffer huge losses.

Many fertiliser companies made their acceptance of the government's new fuel prices conditional on pledges being made by the latter to study and work to address the demands of the



New Saudi petrochemical plant to begin production this year

audi Arabian Oil Co. and Dow Chemical Co. are planning to begin production at their new US\$20 billion petrochemical plant, Sadara Chemical Co., this year. According to Khalid Al Hamid, Manager for Engineering and Technology, ethylene and polyethylene will be the first products produced at the plant. Full output is scheduled for late 2017.

Other similar projects being planned in the region are facing the obstacle of falling crude prices. Saudi Arabia started the petrochemical project in 2011, when oil averaged approximately US\$111 a barrel. Since then, prices have fallen by around 45%. Last month, Qatar Petroleum and Royal Dutch Shell Plc terminated their plans to construct a US\$6.5 billion petrochemical plant as a result of the current energy environment.

"Middle East chemicals projects are facing stiff review," Sanjay Sharma, Vice President for Middle East and India at IHS Inc., told local press in an interview in Dubai. "Industry does not need to react to the short-term swing and needs to look long-term for projects as the market will return."













Price War Has No Winner

Peyman Jounobi

PEC members are not the only countries that the falling oil prices will inflict damage on their economies but the U.S and European countries are expected to have hard days ahead as well.

While OPEC has decided not to cut its production and Non-OPEC producers keep raising their output, the price of oil has hit its lowest level in five years. Figures released by IEA show that world oil demand will edge down to 92.56 million barrels per day during the first quarter of 2015 and if world oil supply it to continue at the current level of 93.22 million barrels per day, the market will face 660 thousand barrels surplus per day.

Provided that the IEA maintains its forecast unchanged, world oil demand over the second, third and fourth quarters of 2015 is estimated to hit respectively 92.71, 94.18 and

94.71 million barrels per day implying that in case of maintaining the current level of production, the market will face shortage of 0.96 and 1.42 million barrels of oil per day.

In the meantime, it is noticeable that despite maintaining production unchanged by most members of OPEC, some oil producing countries including Russia and Iraq have continued pumping more oil and at the same time the U.S has renounced banning oil supply beyond its borders which have put more pressure on falling oil prices.

So, while raising oil production by Russia and Iraq has boosted overhang in the market on the one hand and economic slowdown in a number of countries has lowered demand on the other hand, oil prices are expected to plunge more and more reaching 40 to 45 dollars which in itself will put

more pressure on cost-effectiveness of tight oil projects, leading to falling investments in oil industry projects across the globe.

The downward trend of falling oil prices is projected to result in falling the price of fuel, energy and consumer commodities. Similarly we should keep in mind that falling oil prices will be followed by the fall of revenues in oil exporting countries, cutting excise duties on oil products in the oil importing countries and lower level of international trade. For example falling oil prices from 100 to 40 dollars will be followed by: -Oil revenues in A country, as an oil exporting country, will plunge from 100 billion dollars to 40 billion dollars. These developments could reduce budget revenues and available funds for investment in the A country leading to resorting to tight economic policies by the country.







We should also take into account that falling oil prices will follow by falling gas prices, falling foreign exchange and tax incomes as well and more pressure on budget earnings reducing welfare and social services as well as investment.

-In B country, as an oil importing country, the revenues the government makes mainly through excise duties on fuel consumption will fall to a great extent. This change leads in itself to disequilibrium in budget and result in some problems in providing social security and welfare in the country. For example falling oil prices by sixty

percent will lead to falling excise duties on selling gasoline by similar percentage point.

To prove this, it should be noticed that in 2010, 28 members of EU earned 250 billion dollars through excise and duties on fuel which is forecast to come down to 150 billion dollars after falling oil prices now.

The same is true on excise duties on petrochemical products and other oil derivatives not only in EU but in the U.S. which should be compensated by raising tax on other products and services.

It seems raising taxes on other services and products won't be able to make up for the falling revenues these countries used to collect and consider in their budget once oil prices were between 100 to 120 dollars. The sequence of falling oil prices and its impact on the chain of oil derivatives makes total economy of oil exporting and oil importing countries smaller and smaller and reduces the excise duties and taxes the governments could earn from exports accordingly. Consequently, a smaller world economy will reduce demand for oil as well as demand for industrialized countries' products and shrinking financial markets.

We could see now the consequences of falling oil prices in developments of financial markets. The wave of pressure on the oil producing countries, economic slowdown and budget deficit will hit the economies of the industrial countries and in a

closed circle, the problems will swing from one side of the spectrum to the other side.

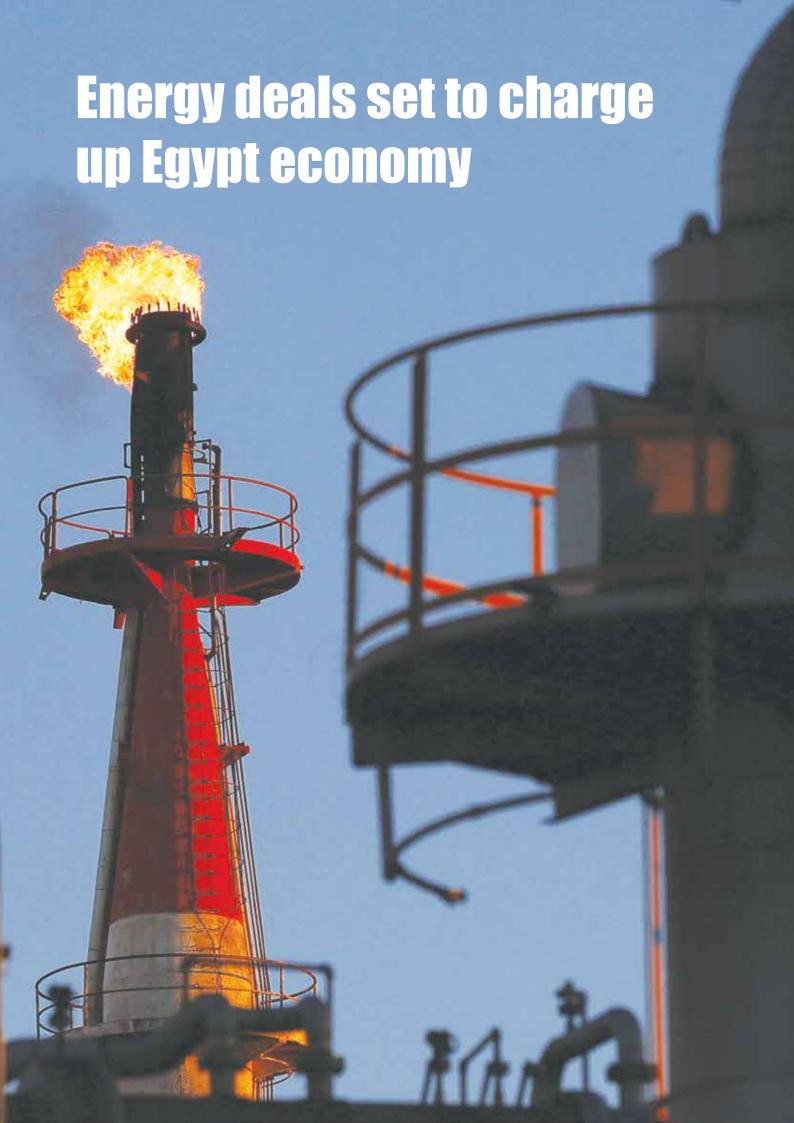
In these circumstances, tight oil projects will experience higher risks for investment and regarding lower level of available funds which is the result of smaller markets, some banks will find no way but to quit the markets which in turn will jeopardize availability of enough resources for investment. One solution to get rid of this situation is reaching a deal between conventional and non-conventional oil producers so that they commit themselves to quota and comply with it. Otherwise, OPEC countries won't be the only countries that will suffer from falling oil prices but the U.S and EU will inflict losses as well.

To this end, the U.S has decided to abandon bans on oil exports because oversupply in domestic market of the country has put downward pressures on fuel prices which in turn will lead to some challenges in setting federal budget in the future.

Now the U.S is waiting to force OPEC and conventional oil producers to cede their market share before it has to abandon its own shale oil projects.

But the question is that how far OPEC and conventional oil producers should retreat and shale oil advances? For example, doses cutting oil production by OPEC by 2 mb/d is a right solution or it should repeat cutting the same amount after several months and continue the process until it loses its market share?







Anthony McAuley

gypt signed a number of deals with energy companies during its weekend Egypt the Future conference in the Red Sea resort of Sharm El Sheikh.

The agreements were part of attempts to address the country's worsening energy crisis, which has been a major drag on the economy as well as a source of political unrest. The centrepiece was the formal signing of a previously announced US\$12 billion deal with BP to develop 5 trillion cubic feet of gas resources and 55 million barrels of condensate in the North Alexandria and West Mediterranean Deep Water areas in the West Nile Delta. The deal represents the largest foreign

direct investment in Egypt to date, according to the BP chief executive Bob Dudley.

According to a separate BP statement, "the project envisages peak production of 1.2 billion cubic feet of gas a day, equating to a guarter of Egypt's current gas production", with the first gas expected in 2017. The project would double BP's current level of gas supply to a domestic market that has for years been chronically undersupplied, leading to regular power outages at times of greatest need during the summer heat.

BP also announced it had made

another significant gas find in Egypt, in its North Damietta offshore concession, where the company estimated there is more than 5 trillion cubic feet of recoverable gas. Meanwhile, the Italian oil major Eni signed initial documents for a \$5bn deal to develop several discoveries in Mediterranean, Western Desert, Nile Delta and Sinai concessions that the company said would generate 900 million cubic feet of gas. The Future of Egypt summit is targeting \$60bn of foreign investment to keep building momentum in the economy, which is forecast to grow 6 per cent a year over the next five years, and to reduce unemployment and the potential for political unrest. The energy sector particularly has suffered from chronic underinvestment for decades, and was particularly badly hit by the unrest that followed the Arab Spring protests in

Last summer, power generation stood at only 70 per cent of capacity, and the government ordered cutbacks to various industrial sectors.

In the decade-and-a-half to the end of 2013, Egypt added only about 10 gigawatts of power-generating capacity to bring the total to 30GW - a woefully inadequate level for a population of nearly 90 million, according to the Middle East Institute, a think tank.

Countries with half the population, for example South Africa and South Korea, have capacities of 44GW and 80GW, respectively.

The sector's problems have been a significant contributor to unrest over the years. The former prime minister Hisham Qandil angered citizens during a crisis in the summer of 2012 when he advised them to conserve energy by congregating in single rooms and wear cotton clothes.

The former president Mohammed Morsi blamed political enemies for cutting power lines to stir up trouble.

The North African country's demand for electricity is growing by about 12 per cent a year.

In another energy deal at the conference, General Electric said it agreed to sell gas turbines worth \$1.7bn, which it estimates will add 10 per cent to the country's generating capacity.

"It's one of the largest single power projects for the year globally, Bloomberg News quoted GE's head of power and water, Steve Bolze, as saying.

The GE order is for 46 turbines and will provide 2.7 gigawatts of electricity, enough to supply 2.5 million homes. At current rates of growth, Egypt's capacity will have to rise to 50GW by 2025 to meet the country's needs, GE forecasts.

Last September, Egypt's electricity and energy department said it also aims to garner 20 per cent of Egypt's energy from renewable sources, 12 per cent of which would be from wind power. Yesterday, the German engineering firm Siemens said it had reached a deal with Egypt to build a 4.4GW combined-cycle power plant and install wind power capacity of 2GW.

Siemens said it will build a factory in Egypt to manufacture rotor blades for wind turbines, creating up to 1,000





jobs and therefore nearly trebling the company's footprint in the country. Siemens said it also had an initial agreement to build additional combined cycle power plants with a capacity of up to 6.6GW and 10 substations for reliable power supply.

"Egypt has great potential for wind power generation, especially in the Gulf of Suez and the Nile Valley," said Markus Tacke, the head of Siemens's wind and renewables unit. In an effort to secure more investment in its gas sector, Egypt last year began to reach deals with companies including BP, BG and Sharjah-based Dana Gas to pay back billions of dollars in arrears that had accumulated during the country's political crisis. It agreed an umbrella deal to pay a total of \$1.5bn toward the more than \$5bn owed.

The Dana Gas chief executive Patrick Allman-Ward said at the Egypt summit that arrears have been reduced from about \$300m last October to \$185m. The company has agreed to invest \$270m to drill 37 new development wells, which it expects to increase its production by 50 per cent and extend plateau production - expected to reach 250 cubic feet a day - by several years.

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Latin America petrochemical capacity outlook dims with dropping of Comperj

Joseph Chang

hile Braskem will seek to double the size of its existing Rio cracker rather than embark on the Comperj project, the scale of the expansion will be much smaller

Prospects for additional major capacity in Latin America's petrochemical sector have dimmed with the scrapping of the Comperi petrochemical project in Brazil. What was once envisioned as the largest project in the region with a world-scale cracker and downstream facilities, is now gone.

For years, Brazil-based petrochemical and polymers company Braskem had been unable to reach a feedstock agreement with state operated oil and gas giant Petrobras for the large-scale project. Braskem is finally dropping the project, according to a source familiar with the situation (see

The ethane/propane feedstock for the new gas-based cracker of Comperj would have come from Brazil's vast offshore pre-salt hydrocarbon formations.

Instead, Braskem is pivoting to another project that would double the size of its existing 540,000 tonne/ year gas cracker in Duque de Caxias, Rio de Janeiro state. It is the only gas cracker in Brazil - the other three are naphtha-based and also owned by Braskem.

The scale of this project is likely about a third of what would have been built with Comperj, assuming a world-scale 1.5m tonne/year cracker.

And timing is uncertain, as Braskem would need a supply agreement on ethane/propane feedstock before proceeding with any expansion of the Rio cracker.

The Rio cracker is currently running at reduced rates on lack of feedstock. Braskem executive vice president

Luciano Guidolin in November 2014 said the company was analysing US ethane/propane imports for the cracker, as capacity utilisation was around 80% at the time. Local naphtha feedstock is also insufficient for the other three crackers. Brazil imports around 30% of its naphtha requirements for its three naphtha crackers, according to Braskem.

It's a constant struggle to secure local naphtha feedstock for petrochemicals, as Petrobras uses it to produce gasoline, which is also in short supply in Brazil, noted ChemVision. If Braskem wants to source local ethane/propane, it would have to come from the offshore pre-salt formations being developed by Petrobras.

Yet Petrobras is embroiled in its own issues – a widening corruption scandal that is crimping its ability to raise funds for its ambitious \$221bn capital spending programme in the period 2014-2018, along with the collapse in crude oil prices.

The company already is heavily in debt and has delayed filing audited financial statements in the midst of the corruption investigation. All the oil majors are slashing capital budgets - you would expect no less from a beleaguered Petrobras. That would slow development of the oil fields from which the much needed feedstock would be sourced. The only major petrochemical project coming up in Latin America is Ethylene XXI in Mexico – a joint venture between Braskem and Mexico-based Idesa. The 1.05m tonne/year cracker and derivative polyethylene (PE) plants are set to start up in Q4 2015. Braskem and Brazil-based industrial conglomerate Odebrecht are also evaluating a world-scale cracker in West Virginia, US. The fact that Braskem would rather put major capital investment in Mexico and

the US versus its own backyard

situation and business climate in

speaks volumes about the feedstock

Brazil.



Turkey moves to boost energy supplies



urkey's first National
Renewable Energy Action
Plan will increase the share
of renewables in the overall
energy mix, while also maintaining
the security of the nation's energy
supply, officials said.

The plan, which was recently announced by the Energy Ministry, was developed with the support of the European Bank for Reconstruction and Development (EBRD). "According to current estimates, an increase of around 90 percent in primary energy demand will take place during the period of 2011-2023. Aside from investments for the creation of new capacity within the field, the source of energy (for instance, the need for local and renewable sources) and maximising energy efficiency are also critical points for Turkey," the plan stated.

During the launch last month, Minister of Energy and Natural Resources Taner Yildiz said the focus was on renewable sources. "Turkey will continue increasing energy generation from its domestic resources, including from renewable sources such as hydro, wind, geothermal and biomass," he said. Accordingly, Turkey has committed to obtain 30 percent of its total installed capacity from renewable sources by 2023, the centennial of the republic. The plan also envisions ways to improve the administrative procedures to encourage investors to embrace the renewable energy business, by avoiding costly and time-consuming licensing and permit procedures. Volkan Emre, a US-based energy analyst and the founder of the

World Energy Security Analysis Platform (Wesap.org), said there

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were two clear rationales behind this comprehensive renewable energy plan.

"First, the ruling AKP government wants to show its commitment to the EU's legally-binding targets in EU accession chapters. Secondly, Turkey has energy security concerns stemming from its heavy reliance on natural gas," Emre told SES Türkiye. "Over-reliance on one energy source [natural gas], especially when imported primarily from Russia, is inherently risky. Turkey must diversify its energy resources by moving toward renewable energy sources such as hydro, thermal, solar and wind power generation," he added. With the latest plan, Turkey aims to add 34 gigawatts (GW) of hydropower, 20 GW of wind energy, 5 GW of solar energy, 1 GW of geothermal and 1 GW of biomass into its energy mix by 2023. The plan includes specific measures to achieve those targets.

According to Emre, the latest effort is a timely push for market players to move in that direction, and the successful implementation of the plan would be beneficial for Turkey's energy security and rising energy demand.

"While some targets outlined in the plan are achievable, others would require such a dramatic shift in energy consumption that they are not likely to be achieved," Emre said. "One objective is to increase the share of renewable energy in electricity production to 30 percent of the total demand by 2023. This objective can be achieved if the desired energy efficiency policies are implemented at the same time as the technological and industrial developments needed for increased renewable energy capacity," he said.

"The largest energy contribution would come from the wind sector, followed by the hydro sector. Given the current market situation, government policies, and legal framework, the goal of reaching 30 percent of the total demand through renewables is achievable," Emre added.

On the other hand, Emre said the target of 10 percent renewables in the transportation sector is too optimistic. "Renewables currently make up less than 1 percent of the current energy consumption in the transportation sector. Based on current consumption patterns, supply chain, and



technology, it is unlikely that Turkey will reduce its dependence on fossil fuels in the transportation sector," he said

"Turkey is heavily dependent on natural gas and coal, and transitioning to different energy sources in the heating sector would be impossible in both the short and the long term. Currently, just 13 percent of the country's heating energy comes from renewable resources, mostly from hydroelectricity production, and we can expect it to stay under 15 percent for the foreseeable future," Emre added.

According to Emre, Turkey must act decisively and aggressively with a multi-pronged approach that includes increasing natural gas import capacity, improving energy efficiency, and increasing domestic energy exploration, including the adoption of sustainable and safe nuclear energy technology.

"Turkey cannot be fully independent in the energy sector. Turkey will continue to rely on imported natural gas as a key energy source," he said. "Both the Trans-Anatolian Pipeline Project and Turkish Stream natural gas pipeline must be completed, and Turkey should seek opportunities to build additional pipelines from Iraqi Kurdistan, Iran and Turkmenistan."

Gurkan Kumbaroglu, president-elect

of the International Association of Energy Economics (IAEE) and a professor at Bogazici University, said the renewable energy plan is following the example of the EU by setting long-term technology-specific target levels and elaborating on policy instruments to achieve those targets.

"The European experience, however, has proven to be troublesome in the electricity sector, leading to criticism by energy economists as the target and policy approach does not rely on market forces, leading to inefficiency and high cost," Kumbaroglu told SES Türkiye.

Kumbaroglu noted that the plan followed the European approach in limiting greenhouse gas emissions through the trading of emission allowances.

"Allowance prices affect technological choices and thereby constitute a market-based instrument that affects the diffusion of renewable power generation technologies," he said. "I support short-term subsidy policies for renewables, but don't think technology-specific goals and long-term subsidies are sustainable from an economic point of view. Instead, Turkey should adopt a market-based strategy based for introducing an industry-wide emission trading scheme with high allowance prices," Kumbaroglu added.



Gas supply routes shake up geopolitical-game-changers

nalysts warn Europe might face roadblocks from Moscow after official statements favoring Caspian gas were issued. Europe's aspiration of independence from Russian supplies aims to score long-term political commitment. The Russian-favored Turkish Stream's joining the race to bring gas to Europe introduced many new challenges in this regard. Recent developments show that all steps taken to realize the blue energy routes from the Caspian basin in the direction of Europe may shake up existing plans. The Ukraine crisis was indeed a wake-up call that has raised awareness to the importance of an energy security strategy for the EU. Brussels recognized the importance of diversification and said it would be targeting Algeria and Turkey; Azerbaijan and Turkmenistan; the Middle East; Africa and other potential suppliers to ensure its energy security.

Russia and new routes

The European Union believes the

launch of the Southern Gas Corridor is a milestone for reducing the energy dependence on one source and with Moscow's cancellation of the South Stream Europe will make its position even stronger.

The failure of the South Stream gas pipeline significantly broke Russia's reputation as a reliable partner and pushed Europe to seek alternative supply sources, hereby putting Turkmenistan with other Caspian states in the most benefiting position. Brussels has repeatedly voiced its pleasure with having non-Russian gas routes for energy-hungry Europe. The point is that Russia will hardly stand idly as an observer while its strongest leverage loses position and will never welcome such huge volumes of gas entering Europe so easily. Despite Europe's efforts to bring Turkmen gas to its market, nothing concrete has been achieved yet to get this gas across the Caspian.

"Azerbaijan has the commercial interest as does Turkmenistan and

others, but they are all vulnerable to Russian pressure," believes Dimitar Bechev, the senior visiting fellow at LSEE Research on South Eastern Europe. "Moscow can live with the Southern Gas Corridor in its present shape but if the stakes go up it'll take a tougher approach." Speaking about numerous challenges

to Turkmenistan's joining the European gas race and Moscow's possible counter moves, Bechev said pressure should be expected. "I'm sure there'll be pressure – Caspian delimitation, Turkmen in big Russian cities, Turkmen leadership assets. Also positive incentives – better price for Turkmen gas which Gazprom gets at fire-sale levels," he wrote in an e-mail to AzerNews.

Amanda Paul, the policy analyst at the European Policy Centre in Brussels also shares the view saying that the Turkmen are very careful in terms of their foreign policy moves, including on energy.

"It is clear that Russia would not like to see Turkmenistan sell huge amounts







of gas to Europe. But this is far from being realized anyway, not least, because it is not clear which route would take the gas to hook up to the Southern Gas Corridor.

The Turkmens prefer to play a waiting game — they wait until all the necessary infrastructure is in place and operational, when gas is flowing from other sources.

I do not think we should overestimate what would be Russia's "counter move" if Turkmen gas is eventually sold.

Azerbaijan has already achieved this as Baku broke Russia's hold on pipes going to the West when the BTC pipe was inaugurated. It's not always easy to do this but ultimately sovereign states should be allowed to pursue their own interests," she added.

Continuing to Turkey

The increased Russian involvement in energy supplies has always been a threat for Europe in case of a real conflict. With the blowing of cold winds in its relations with the West and Europe's turning to other Caspian states for gas, forced Russia to change its pivot to Turkey and economically weaker European counties.

Eurasia energy observer, Andrej Tibold believes that Russia will not accept failure with Turkish Stream. since it has already invested a lot in creating its own infrastructure for the South Stream.

Experts warn that the possibility of strong Ankara-Moscow alliance with supportive Middle East countries can end in energy catastrophe for Europe. Turkey, with its rush to benefit its quite beneficial geo-position and good ties with the energy rich Azerbaijan and Turkmenistan, has emerged as a key player in negotiations between energy sources and main consumer.

Turkey is the key country to bring Azerbaijani, Iranian, or Turkmen gas to Europe. As the country holds leverage in pipeline policy after

Moscow instituted to build Turkish Stream, a South Stream alternative under the Black Sea to Turkey, Europe's energy choice may also affect Ankara's EU membership aspiration.

Paul also notes that the biggest winner from Turkish Stream will probably be Ankara as it will take Turkey nearer to its dream of being an energy hub as well as the face that the Russians will sell their gas at a lower rather than they have done hitherto.

"However, despite the fact that Turkey is increasingly important for the EU in energy security terms, this does not mean it will make Turkish accession to the EU any easier. There sill remains strong opposition to Turkish membership and I expect it to stay that way for the time being," she stressed.

Another concern is Iran

Tehran, which is trying to get into the European gas market, has long been signaling to European customers, suppliers in the Caspian Basin, and transit country Turkey that Iran is ready to get into the gas game. Regarding a possible Iranian gas supply toward Europe, Bechev said Iran seems close to a nuclear deal but that he'd be cautious about its prospects as a gas exporter. "Domestic demand there sucks up all extracted gas and dispute-ridden Iranian-Turkish trade in gas has shown Tehran is far from a reliable supplier. It all depends on whether the political opening brings in foreign investment to tap into new fields but then again energy firms have to factor in political risk and plunging gas prices in the short and medium term," he wrote.

Iran, with the second-largest gas reserves in the world, is well-placed to sell gas to Europe but that will be a complicated process, as the country still couldn't agree with the West over its nuclear issue.

Paul, for her part, believes a deal with Iran will change the face of the entire region and Iran would once again be able to play a full regional and global role including related to its energy policy. "However, after so many years of isolation due to sanctions, Iran's gas infrastructure is not in good shape and would require huge investments which could take several years. Furthermore it is likely that resurrecting the oil industry may take precedence over gas. However, ultimately Iran could be a source

for the Southern Gas Corridor," she stressed.

Spots on Azerbaijan

The spotlight in energy games in the next few years will most certainly be on Baku with its friendly ties with all the involved parties. The country will play a significant role in the coming period in shaping of the EU gas supplies aiming to decrease dependence on Gazprom. Paul notes that the point is to reduce the amount of gas the EU currently gets from Russia by achieving the maximum routes and sources. The expert said the Southern Gas Corridor is a top priority for the EU in terms of its energy diversification plans.

"So far Azerbaijan is the only country that has committed gas to the SGC although it is hoped that more will follow. At this point the most important thing is bringing the corridor to life and that is what Azerbaijan is doing, bringing it to life," she wrote in an e-mail to AzerNews.

"The ultimate goal would be for each EU member state to have two pipelines for two different sources of gas," she noted.

Changes in the market indeed requires sound decisions that will determine who remains in big energy game, but will ultimately trigger interests of all sides involved. New energy supplies can only be secured if Europe speaks with one voice and stands strong by geopolitical power players.



Steve Palmer:

Oil and Gas prices are in the process of finding equilibrium

uilding a small-cap energy portfolio that maintains balance in turbulence requires the

ability to spot junior firms with solid backbones. Steve Palmer of AlphaNorth Asset Management has made a career of spotting companies loaded with value, and he tells The Energy World not only what he looks for, but also where he has found it.

■ Please give us your overview of the oil and gas markets.

Right now, there is a supply/demand imbalance: Too much supply for both gas and oil. The imbalance has created downward pressure on the price of both commodities. Investor sentiment is quite negative in the space, which is shortsighted.

Does the low price of energy have a positive effect in terms of industry being able to make products cheaper?

There are industries that benefit from cheaper energy—airlines, transportation, some manufacturing. But in Canada, energy production and export are a big part of our economy, so the downside of the price decline overwhelms the benefits of lower energy prices.

Will oil and gas prices gravitate to equilibriums?

Yes—oil and gas prices are in the process of finding equilibrium. Prices go into freefall when the market overreacts, and then they bounce up. Oil went from \$95/barrel (\$95/bbl) to \$45/bbl. It is not going to bounce back to \$90/bbl in the near term, but it seems to have found a bottom and should settle in a new range, likely higher than current levels, within the next few months.

At what equilibrium price can a junior exploration and production company remain profitable?
Each company has its own economics. It is very hard to predict exactly where the oil price will settle. Nobody predicted that it was going to collapse to \$45/bbl! My guess is that oil will trade up to the low \$60s, and sit there for a bit.

What do these price fluctuations mean for the Canadian smallcap energy market, in which you specialize?

It is not a very pretty sight. A lot of junior firms have been crushed by falling prices. All of the analysts have revised their oil numbers into the \$50s. Companies are cutting capital expenditures (capex).

How has your firm, AlphaNorth Asset Management, fared?

We have taken some lumps here and there but, by and large, we've done OK considering how badly the sector has performed. I focus on names that have company-specific catalysts, and names that are not as dependent on the commodity price.

■ Who do you like in natural gas?

Painted Pony Petroleum Ltd. (PPY.A:TSX.V) is heavily weighted toward natural gas—90%. It's a midcap name with good management and a very strong growth profile. Its valuation may come down a little bit, but in this environment, many companies are just hoping to maintain production in 2015 with lower capex.

"Oil prices seem to have found a bottom and should settle in a new range, likely higher than current levels, within the next few months."

Does Painted Pony have the cash to survive the downturn?

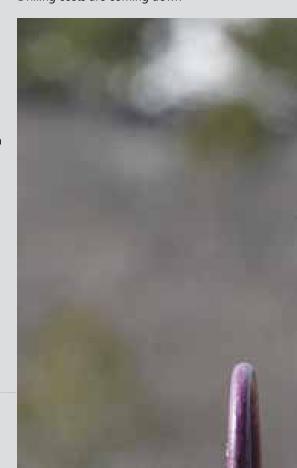
The company has a very strong balance sheet, loaded with unused credit facilities. Painted Pony raised a good deal of money in the public market at \$12/share just prior to the meltdown, which was fortunate timing. The real upside is that Painted Pony is operating in the Montney, which is one of the most economic plays in North America. The company is in the top economic decile for Montney players.

What makes the Montney a good play?

The cost to drill a well versus the return. Liquids are the key component. Many Montney drillers get a mix of different liquids, which provides a premium to West Texas Intermediate (WTI).

• Are the drilling costs cheaper in the Montney?

Drilling costs are coming down



everywhere, because demand has dropped substantially for drilling rigs. Guys are canceling rigs.

■ Are purveyors of drilling rigs holding the line?

Drillers tend to make money in any pricing environment. Their costs are largely variable: They can just lay off people and park the rigs.

■ Who else do you like in the Montney?

Blackbird Energy Inc. (BBI:TSX.V) has a strong management team. The company has a lot of cash and has just finished drilling two high-impact wells testing the Upper Montney and Middle Montney. The results will be released soon. Blackbird's odds of success are quite high in my view. After drilling these wells, it will have a strong cash position with no debt. If the wells are successful, Blackbird will have proven up a significant portion of its land. The analysts will extrapolate success across the rest of its land base and lower their discount rate assumptions.

Blackbird's share price has doubled during the last two quarters. Why?

Blackbird's share price has responded to the firm's strong financial position and the significant upside to its land base if the newly drilled wells are successful. In a terrible market, Blackbird is trading within a couple pennies of its all-time high, which is a big deal given that most of the

energy names are down 50% or more. Blackbird's stock could perform strongly once the well results are out.

Have you been following Blackbird for a while?

Yes, we have been a long-term supporter of Blackbird. I know the CEO quite well. My firm has participated in all of Blackbird's financings. One of the financings was below \$0.10/share, so Blackbird has been a significant win for us, so far. Blackbird is about \$0.35/share today.

Are there any other Canadian small caps that you like?

The western Canadian market is a fairly mature basin. Most of my current focus is on developing highimpact international situations.

■ Who do you like for basics on the international scene?

We are invested in Primeline Energy Holdings Inc. (PEH:TSX.V), which is a very good risk/reward opportunity. Its main project is a bit behind schedule, but management has executed on what it said it was going to do, which was to build a natural gas pipeline from the East China Sea to the mainland. The company started production in Q4/14. This year, that project will generate approximately US\$50 million (US\$50M) cash flow. It is important to note that the depressed natural gas prices in Canada are locked into the supply/ demand reality of North America.

"Drilling costs are coming down everywhere, because demand has dropped substantially for drilling rigs."

and gas is very different in China. Primeline has a price of about \$14/ thousand cubic feet guaranteed in long-term contracts.

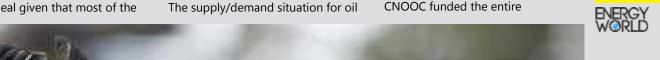
What is the energy resource potential in the area that Primeline is exploring?

The East China Sea is a very significant gas resource. Primeline has identified excellent locations for exploratory wells. Its drilling partner is a Chinese national oil company, China National Offshore Oil Corp. (CNOOC [883:HKSE; CEO:NYSE]).

How do you assess the quality of Primeline's management?

Primeline is run by experienced energy guys who have delivered on what they said. I have met them many times over the years, and we are moving forward together.

■ How is Primeline financing its **East China Sea project?** CNOOC funded the entire





ENERGY WORLD

development of the pipeline and production platform. A syndicate of Chinese banks has now financed Primeline's portion of these costs, resulting in about \$200M debt to Primeline at a reasonable interest rate. At first glance, that appears like an awful lot of debt for a small company, but Primeline does have significant cash flow, and it is not subject to fluctuations in the commodity price. The whole situation of supply/demand and financing opportunity is not comparable to what is going on in western Canada.

How is the market treating Primeline's share price?

Primeline's stock is above what I paid for it several years ago. That is a big win, given the shape of the junior market during that period.

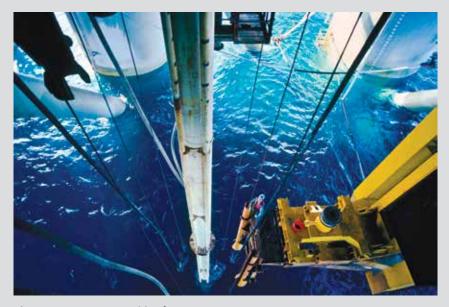
Are there any Canadian-based juniors making waves in South America?

We have held shares in Sintana Energy Inc. (SNN:TSX.V) for a long time. We like Sintana because, at the end of the day, we see a very good return potential relative to the risk. Sintana has partnered with Exxon Mobil Corp. (XOM:NYSE), which is a very strong partner. Exxon only gets involved in sizable projects. It is paying the entire cost of the first two wells for Sintana in Colombia. These wells will take a couple of months to drill.

■ What's the geological layout of the Sintana's holdings in Colombia?

Sintana's property is located in the Magdalena Valley in Colombia. Many major energy companies have had success in that region. Sintana has three-dimensional seismic over its property. Management believes that the odds are high—50% plus—that the wells it is drilling with Exxon will be successful in finding an economic hydrocarbon resource.

"Investor sentiment is quite negative in the space, which is shortsighted."



There are two opportunities for success here. It is not just a one-shot situation. Exxon is only farming into the unconventional portion, which is the lower zone of the well. There is also a conventional zone midway down in the structure, to which Sintana retains 100% control. If that project is successful, the net amount to Sintana could be 200 million barrels of unconventional resource. Let's throw around a valuation number—say \$5/ bbl in the ground. That amounts to \$1 billion of value. This is a ballpark figure, but the numbers are so big in this region that it really does not matter what the exact multiplier is, given that Sintana's market cap is only \$15M.

How is the political situation in Colombia for foreign investors?

Colombia is not the ideal place in the world to be operating, but it has been good for Sintana and Exxon. Many major international energy players have been successful and are active in Colombia.

Do you have a guiding investment strategy?

In the energy space, short-term investors are negative on both gas and oil. Analysts are aggressively lowering forecasts. Generally, when that happens, it is a good time to be contrarian. As a long-term investor, I actively search the space for opportunities.

■ Has being a contrarian paid off for your investment firm, AlphaNorth? Our total return since we launched our flagship fund seven years ago has been approximately 50%. In the context of the TSX Venture index, which has returned -75% over the same period, we have done very well. ■



Steve Palmer is a founding partner, president and chief investment officer of AlphaNorth Asset Management and currently manages the award winning AlphaNorth Partners Fund, AlphaNorth Growth Fund and AlphaNorth Resource Fund. Prior to founding AlphaNorth in 2007, Palmer was employed as vice president at one of the world's largest financial institutions, where he managed equity assets of approximately CA\$350M. Palmer managed a pooled fund, which focused on Canadian small-capitalization companies, from its inception to August 2007, achieving returns of 35.8% annualized over a nine-year period, which ranked it No. 1 in performance by a major fund ranking service in its small-cap, pooled-fund category. Palmer earned a bachelor's degree in economics from the University of Western Ontario and is a Chartered Financial Analyst.







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